SUBPART J – INSTRUCTORS

SECTION 1 – COMMON REQUIREMENTS

FCL.900 Instructor certificates

Regulation (EU) 2019/1747

(a) General. A person shall only carry out:

(1) flight instruction in aircraft when he/she holds:

(i) a pilot licence issued or accepted in accordance with this Regulation;

(ii) an instructor certificate appropriate to the instruction given, issued in accordance with this Subpart;

(2) synthetic flight instruction or MCC instruction when he/she holds an instructor certificate appropriate to the instruction given, issued in accordance with this Subpart.

(b) Special conditions:

(1) The competent authority may issue a specific certificate granting privileges for flight instruction when compliance with the requirements established in this Subpart is not possible in the case of the introduction of:

(i) new aircraft in the Member States or in an operator's fleet; or

(ii) new training courses in this Annex (Part-FCL).

Such a certificate shall be limited to the training flights necessary for the introduction of the new type of aircraft or the new training course and its validity shall not, in any case, exceed 1 year.;

(2) Holders of a certificate issued in accordance with (b)(1) who wish to apply for the issue of an instructor certificate shall comply with the prerequisites and revalidation requirements established for that category of instructor. Notwithstanding FCL.905.TRI(b), a TRI certificate issued in accordance with this (sub)paragraph will include the privilege to instruct for the issue of a TRI or SFI certificate for the relevant type.

(c) Instruction provided outside the territory of the Member States:

(1) By way of derogation from point (a), in the case of flight instruction provided during a training course approved in accordance with this Annex outside the territory for which Member States are responsible under the Chicago Convention, the competent authority shall issue an instructor certificate to applicants who:

(i) holds a pilot licence that meets all of the following criteria:

(A) it complies with Annex 1 to the Chicago Convention;

(B) in any case, it is at least a CPL in the relevant aircraft category with a relevant rating or certificate;

(ii) complies with the requirements established in this Subpart for the issue of the relevant instructor certificate;

(iii) demonstrates to the competent authority an adequate level of knowledge of European aviation safety rules to be able to exercise instructional privileges in accordance with this Annex.

(2) The certificate shall be limited to providing flight instruction during a training course approved in accordance with this Annex which meets all of the following conditions:

(i) it is provided outside the territory for which Member States are responsible under the Chicago Convention;

(ii) it is provided to student pilots who have sufficient knowledge of the language in which flight instruction is provided.

GM1 FCL.900 Instructor certificates

ED Decision 2011/016/R

GENERAL

(a) Nine instructor categories are recognised:

(1) FI certificate: aeroplane (FI(A)), helicopter (FI(H)), airship (FI(As)), sailplane (FI(S)) and balloon (FI(B));

(2) TRI certificate: aeroplane (TRI(A)), helicopter (TRI(H)), powered-lift aircraft (TRI(PL));

(3) CRI certificate: aeroplane (CRI(A));

(4) IRI certificate: aeroplane (IRI(A)), helicopter (IRI(H)) and airship (IRI(As));

(5) SFI certificate: aeroplane (SFI(A)), helicopter (SFI(H)) and poweredlift aircraft (SFI(PL));

(6) MCCI certificate: aeroplanes (MCCI(A)), helicopters (MCCI(H)), powered-lift aircraft(MCCI(PL)) and airships (MCCI(As));

(7) STI certificate: aeroplane (STI(A)) and helicopter (STI(H));

(8) MI certificate: (MI);

(9) FTI certificate: (FTI).

(b) For categories (1) to (4) and for (8) and (9) the applicant needs to hold a pilot licence. For categories (5) to (7) no licence is needed, only an instructor certificate.

(c) A person may hold more than one instructor certificate.

SPECIAL CONDITIONS

(a) When new aircraft are introduced, requirements such as to hold a licence and rating equivalent to the one for which instruction is being given, or to have adequate flight experience, may not be possible to comply with. In this case, to allow for the first instruction courses to be given to applicants for licences or ratings for these aircraft, competent authorities need the possibility to issue a specific certificate that does not have to comply with the requirements established in this Subpart.

(b) The competent authority should only give these certificates to holders of other instruction qualifications. As far as possible, preference should be given to persons with at least 100 hours of experience in similar types or classes of aircraft.

(c) When the new aircraft type introduced in an operator's fleet already existed in a Member State, the competent authority should only give the specific certificate to an applicant that is qualified as PIC on that aircraft.

(d) The certificate should ideally be limited in validity to the time needed to qualify the first instructors for the new aircraft in accordance with this Subpart, but in any case it should not exceed the 1 year established in the rule.

GM1 FCL.900(c); FCL.1000(c) Instruction or examination outside the territory of the Member States

ED Decision 2020/005/R

Instruction or examination outside the territory of the Member States is possible within the scope of:

— ATOs that have their principal place of business outside the territory of the Member States; or

— ATOs that have their principal place of business in a Member State and one or more additional training sites outside the territory of the Member States.

GM1 FCL.900(c)(1) Instructor certificates

ED Decision 2020/005/R

INSTRUCTION OUTSIDE THE TERRITORY OF THE MEMBER STATES

The competent authority may issue an unrestricted flight instructor (FI) certificate (FI(A) for aeroplanes or FI(H) for helicopters) to an applicant that has at least 100 hours of experience in flight instruction and 25 hours in solo-flight supervision.

FCL.915 General prerequisites and requirements for instructors

Regulation (EU) 2024/2076

(a) General.

Applicants for the issue of an instructor certificate shall be at least 18 years of age.

(b) Additional requirements for instructors that provide flight instruction in aircraft.

Applicants for the issue of or holders of an instructor certificate with privileges to conduct flight instruction in an aircraft shall:

(1) for licence training, hold at least the licence or, in the case of point FCL.900(c), the equivalent licence, for which flight instruction is to be given;

(2) for a rating training, hold the relevant rating or, in the case of point FCL.900(c), the equivalent rating, for which flight instruction is to be given;

(3) except in the case of flight test instructors (FTIs), have:

(i) completed at least 15 hours of flight time as pilots of the class or type of aircraft on which flight instruction is to be given, of which a maximum of 7 hours may be in an FSTD representing the class or type of aircraft, if applicable; or

(ii) passed an assessment of competence for the relevant category of instructor on that class or type of aircraft;

(4) be entitled to act as PIC in the aircraft during such flight instruction; and

(5) when providing flight instruction in a variant of the SEP aeroplane class with a particular type of engine referred to in Article 2, point (8c), of this Regulation, have complied with one of the following conditions:

(i) completed at least 5 hours of flight time as pilots in that variant;

(ii) passed an assessment of competence for the relevant category of instructor in that variant.

(c) Credit towards further instructor certificates and for the purpose of revalidation:

(1) Full credit towards the teaching and learning skills may be granted to:

(i) holders of an instructor certificate who apply for further instructor certificates; and

(ii) applicants for an instructor certificate who already hold an instructor certificate issued in accordance with Annex III (Part-BFCL) to Commission Regulation (EU) 2018/395 or with Annex III (Part-SFCL) to Commission Implementing Regulation (EU) 2018/1976.

(2) Hours flown as an examiner during skill tests or proficiency checks shall be credited in full towards revalidation requirements for all instructor certificates held.

(d) Credit for extension to further types shall take into account the relevant elements as defined in the operational suitability data established in accordance with Annex I (Part-21) to Regulation (EU) No 748/2012 (OSD).

(e) Additional requirements for instructing in a training course in accordance with FCL.745.A:

(1) In addition to (b), before acting as instructors for a training course according to FCL.745.A, holders of an instructor certificate shall:

(i) have at least 500 hours of flight time as pilots of aeroplanes, including 200 hours of flight instruction;

(ii) after complying with the experience requirements in point (e)(1)(i), have completed a UPRT instructor training course at an ATO, during which the competence of applicants shall have been assessed continuously; and

(iii) upon completion of the course, have been issued with a certificate of course completion by the ATO, whose Head of Training (HT) shall have entered the privileges specified in point (e)(1) in the logbook of the applicants.

(2) The privileges referred to in point (e)(1) shall only be exercised if instructors have, during the last year, received refresher training at an ATO during which the competence required to instruct on a course in accordance with point FCL.745.A is assessed to the satisfaction of the HT.

(3) Instructors holding the privileges specified in point (e)(1) may act as instructors for a course as specified in point (e)(1)(ii), provided that they:

(i) have 25 hours of flight instruction experience during training according to FCL.745.A;

(ii) have completed an assessment of competence for this privilege; and

(iii) comply with the recency requirements in point (e)(2).

(4) These privileges shall be entered in the logbook of the instructors and signed by the examiner.

AMC1 FCL.915(e) General prerequisites and requirements for instructors

ED Decision 2019/005/R

ADDITIONAL REQUIREMENTS FOR INSTRUCTING IN A TRAINING COURSE IN ACCORDANCE WITH FCL.745.A — GENERAL

(a) The objective of the course required by point FCL.915(e)(1) is to train instructors to deliver training on the advanced UPRT course according to point FCL.745.A using the train-to-proficiency concept.

(b) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching upset recovery techniques and strategies, whilst exploring the associated physiological and psychological aspects.

(c) Within 6 months preceding the start of the course, the instructor should have completed a pre-course assessment with an instructor holding the privilege in accordance with FCL.915(e)(1) to assess their ability to undertake the course.

(d) The training course should comprise:

(1) theoretical knowledge instruction on the theoretical knowledge elements presented in the advanced UPRT course and the additional elements required for an instructor to deliver effective training;

(2) flight instruction on the exercises used in the advanced UPRT course; and

(3) flight instruction on recovery from upsets that could result from students mis-handling the aircraft during the advanced UPRT course including spin recovery.

(e) The content of the theoretical knowledge and flight instruction should be tailored to the competence of the applicant as demonstrated during both pre-course and continuous assessment.

(f) Successful completion of the course requires that the instructor:

(1) demonstrates the resilience to be able to recover from any feasible upset in the aircraft to be used for training;

(2) demonstrates the ability to provide instruction to achieve the objectives of the advanced UPRT course to a wide range of trainees; and

(3) manages the physiological and psychological well-being of students during training.

(g) The instructor should be issued with a certificate following successful completion of the course.

AMC2 FCL.915(e) General prerequisites and requirements for instructors

ED Decision 2019/005/R

ADDITIONAL REQUIREMENTS FOR INSTRUCTING IN A TRAINING COURSE IN ACCORDANCE WITH FCL.745.A – SYLLABUS

The following tables contain theoretical knowledge (Table 1) and practical training exercises (Table 2) that should be taught in the context of the advanced UPRT course as per point FCL.745.A.

TABLE 1: THEORETICAL KNOWLEDGE	
1.	Completion of a flight risk assessment
2.	Resilience-building strategies, managing startle and surprise
3	The limitations and type-specific characteristics of the aeroplane used for training
4	The importance of adhering to the scenarios that have been validated by the training programme developer
5.	Instructor techniques to induce and manage startle and surprise
6.	Upset recognition and recovery strategies
7.	Disorientation
8.	Distraction
9.	Immediate recognition of student pilot errors
10.	Intervention strategies
11.	Delivery of the theoretical knowledge instruction of the advanced UPRT course

TABLE 2: PRACTICAL TRAINING EXERCISES	
SECTION 1 — PRE-FLIGHT PREPARATION	
1.1	Correct completion of a flight risk assessment (such as weather, terrain, traffic density, student's experience level and capabilities)
1.2	Safety briefing
SECTION 2 — FLIGHT	
2.1	Selection of suitable airspace for the conduct of recovery exercises
2.2	Accurate execution of all of the manoeuvres required for the advanced UPRT course
2.3.	Recovery from upsets that could result from the student or instructor mishandling the aeroplane including: – timely and appropriate intervention; – accelerated stall; – secondary stall; – incipient spin; – fully developed spin; and – Spiral dive.
2.4	Delivery of all of the training exercises in the advanced UPRT course
2.5	Anticipating and immediately recognising incorrect student inputs which might exceed aeroplane limitations and acting swiftly and appropriately to maintain the necessary margins of safety
2.6	Exercises to surprise the student
2.7	Adapt the training programme to take account of the physiological and psychological state of the student
2.8	Ensure the safety of the operation during training by maintaining awareness of the operating environment
2.9	Assess the competence of the student

SECTION 3 — POST-FLIGHT	
3.1	Provide effective instructor feedback to the student and plan subsequent training details
3.2	Avoid negative transfer of training

GM1 FCL.915(e) General prerequisites and requirements for instructors

ED Decision 2019/005/R

TRAINING ON SPIN AVOIDANCE AND SPIN RECOVERY

(a) While the purpose of advanced UPRT course is to expose students to psychological and physiological effects, students' responses and actions on controls may take any conceivable variations, including some which can initiate spin entry or, most importantly, can highly aggravate the upset or loss-of-control they are supposed to recover from.

(b) The advanced UPRT course in accordance with point FCL.745.A is not aerobatic training and only requires training for the incipient spin as well as uncoordinated side slipped stalls which are prone to initiating spins. Full spin training or the development of spin recovery proficiency is reserved for the training course in accordance with point FCL.915(e).

(c) Even though most flights will go exactly as planned without an unanticipated departure from controlled flight, the instructor is responsible for the safety of flight despite anomalies or unexpected student inputs.

(d) Even in a case where an aeroplane is not certified for intentional flat or aggravated or inverted spins, it does not mean that mishandled student recovery avoids placing the aeroplane in such a situation. Some student inputs will take the aeroplane uncontrolled far beyond the normal scope of the aerobatic rating as defined in point FCL.800. Those situations might also have the potential to draw the aeroplane outside its certified flight envelope (e.g. overloads, snap-roll departures above limit speed, spin or inverted spin when not certified for, flat spins, etc.). Most importantly, those resulting situations could startle the instructor.

(e) For the reasons specified in point (d), instructors should:

(1) be trained to the extent of proficiency on the specific type of aircraft they use to deliver the course;

(2) have academic understanding of the factors assisting or deterring spin recoveries (upright and inverted spins), altitude requirements for safe recovery margins, and other operational considerations;

(3) demonstrate that they have the ability to early recognise abnormal situations, timely take action, and safely recover from all the conditions that they may encounter in the delivery of training; and

(4) demonstrate their ability to recover from all spin types, not only from spins entered intentionally, but from spins of unannounced direction of autorotation, and from all potential spin variations, including:

(i) normal (non-aggravated) spins;

(ii) flat spins;

(iii) accelerated spins; and

(iv) transition spins (incorrect recovery resulting in reversal of rotation).

(f) In the context of points (d) and (e), it is recommended that candidates either hold an aerobatic rating for aeroplanes or have equivalent experience.

AMC1 FCL.915(e)(2) General prerequisites and requirements for instructors

ED Decision 2019/005/R

CONTENT OF THE REFRESHER TRAINING FOR UPRT INSTRUCTIONAL PRIVILEGES

(a) The objective of the refresher training is for the instructor to maintain or to re-obtain, as applicable, the level of competence required for instructing on a training course as per point FCL.745.A.

(b) The content of the refresher training should:

(1) consist of elements from the initial UPRT instructor training course as per point FCL.915(e)(1)(ii); and

(2) be determined by the ATO on a case-by-case basis, considering the needs of the individual instructor and taking into account the following factors:

(i) the experience of the instructor;

(ii) the amount of time elapsed since the instructor provided instruction on a training course as per point FCL.745.A for the last time; and

(iii) the performance of the instructor during a simulated UPRT training session comprising exercises from the advanced UPRT course as per point FCL.745.A. During this simulated training session, another instructor qualified in accordance with point FCL.915(e) should play the role of the student on the advanced UPRT course.

(c) Taking into account the factors listed in (b)(2) above, the ATO may also count the simulated training session as per point (b)(2)(iii) as refresher training without the need for further refresher training sessions, provided that the instructor demonstrates that he or she already possesses the required level of competence.

(d) The completion of the refresher training should be entered in the logbook of the instructor and should be signed by the head of training of the ATO.

FCL.920 Instructor competencies and assessment

Regulation (EU) No 1178/2011

All instructors shall be trained to achieve the following competences:

— Prepare resources,

— Create a climate conducive to learning,

— Present knowledge,

— Integrate Threat and Error Management (TEM) and crew resource management,

— Manage time to achieve training objectives,

— Facilitate learning,

— Assess trainee performance,

— Monitor and review progress,

— Evaluate training sessions,

— Report outcome.

AMC1 FCL.920 Instructor competencies and assessment

ED Decision 2019/005/R

(a) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching and assessing threat and error management and CRM.

(b) The training and assessment of instructors should be made against the following performance standards:

Competence	Performance	Knowledge
Prepare resources	(a) ensures adequate facilities; (b) prepares briefing material; (c) manages available tools; (d) plans training within the training envelope of the training platform, as determined by the ATO (Note: See GM1 ORA.ATO.125 point (f)).	(a) understand objectives; (b) available tools; (c) competency-based training methods; (d) understands the training envelope of the training platform, as determined by the ATO (Note: See GM1 ORA.ATO.125 point (f)) and avoids training beyond the boundaries of this envelope.
Create a climate conducive to learning	(a) establishes credentials, role models appropriate behaviour; (b) clarifies roles; (c) states objectives; (d) ascertains and supports student pilot's needs.	(a) barriers to learning; (b) learning styles.
Present knowledge	(a) communicates clearly; (b) creates and sustains realism; (c) looks for training opportunities.	teaching methods
Integrate TEM and CRM	(a) makes TEM and CRM links with technical training; (b) for aeroplanes: makes upset prevention links with technical training.	(a) TEM and CRM; (b) Causes and countermeasures against undesired aircraft states
Manage time to achieve training objectives	Allocates the appropriate time to achieve competency objective.	syllabus time allocation
Facilitate learning	(a) encourages trainee participation; (b) shows motivating, patient, confident and assertive manner; (c) conducts one-to-one coaching; (d) encourages mutual support.	(a) facilitation; (b) how to give constructive feedback; (c) how to encourage trainees to ask questions and seek advice.
Assesses trainee performance	(a) assesses and encourages trainee self-assessment of performance against competency standards; (b) makes assessment decision and provides clear feedback; (c) observes CRM behaviour.	(a) observation techniques; (b) methods for recording observations.

Competence	Performance	Knowledge
Monitor and review progress	(a) compares individual outcomes to defined objectives; (b) identifies individual differences in learning rates; (c) applies appropriate corrective action.	(a) learning styles; (b) strategies for training adaptation to meet individual needs.
Evaluate training sessions	(a) elicits feedback from student pilots; (b) tracks training session processes against competence criteria; (c) keeps appropriate records.	(a) competency unit and associated elements; (b) performance criteria.
Report outcome	Reports accurately using only observed actions and events.	(a) phase training objectives; (b) individual versus systemic weaknesses.

FCL.925 Additional requirements for instructors for the MPL

Regulation (EU) No 1178/2011

(a) Instructors conducting training for the MPL shall:

(1) have successfully completed an MPL instructor training course at an ATO; and

(2) additionally, for the basic, intermediate and advanced phases of the MPL integrated training course:

(i) be experienced in multi-pilot operations; and

(ii) have completed initial crew resource management training with a commercial air transport operator approved in accordance with the applicable air operations requirements.

(b) MPL instructors training course

(1) The MPL instructor training course shall comprise at least 14 hours of training.

Upon completion of the training course, the applicant shall undertake an assessment of instructor competencies and of knowledge of the competency-based approach to training.

(2) The assessment shall consist of a practical demonstration of flight instruction in the appropriate phase of the MPL training course. This assessment shall be conducted by an examiner qualified in accordance with Subpart K.

(3) Upon successful completion of the MPL training course, the ATO shall issue an MPL instructor qualification certificate to the applicant.

(c) In order to maintain the privileges, the instructor shall have, within the preceding 12 months, conducted within an MPL training course:

(1) 1 simulator session of at least 3 hours; or

(2) 1 air exercise of at least 1 hour comprising at least 2 take-offs and landings.

(d) If the instructor has not fulfilled the requirements of (c), before exercising the privileges to conduct flight instruction for the MPL he/she shall:

(1) receive refresher training at an ATO to reach the level of competence necessary to pass the assessment of instructor competencies; and

(2) pass the assessment of instructor competencies as set out in (b)(2).

AMC1 FCL.925 Additional requirements for instructors for the MPL

ED Decision 2011/016/R

MPL INSTRUCTOR COURSE

(a) The objectives of the MPL instructors training course are to train applicants to deliver training in accordance with the features of a competency-based approach to training and assessment.

(b) Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching and assessing threat and error management and CRM in the multicrew environment.

(c) The course is intended to adapt instructors to conduct competency-based MPL training. It should cover the items specified below:

THEORETICAL KNOWLEDGE

(d) Integration of operators and organisations providing MPL training:

(1) reasons for development of the MPL;

(2) MPL training course objective;

(3) adoption of harmonised training and procedures;

(4) feedback process.

(e) The philosophy of a competency-based approach to training: principles of competency-based training.

(f) Regulatory framework, instructor qualifications and competencies:

(1) source documentation;

(2) instructor qualifications;

(3) syllabus structure.

(g) Introduction to Instructional systems design methodologies (see ICAO PANSTRG Doc):

(1) analysis;

(2) design and production;

(3) evaluation and revision.

(h) Introduction to the MPL training scheme:

(1) training phases and content;

(2) training media;

(3) competency units, elements and performance criteria.

(i) Introduction to human performance limitations, including the principles of threat and error management and appropriate countermeasures developed in CRM:

(1) definitions;

(2) appropriate behaviours categories;

(3) assessment system.

(j) Application of the principles of threat and error management and CRM principles to training:

(1) application and practical uses;

(2) assessment methods;

(3) individual corrective actions;

(4) debriefing techniques.

(k) The purpose and conduct of assessments and evaluations:

(1) basis for continuous assessment against a defined competency standard;

(2) individual assessment;

(3) collection and analysis of data;

(4) training system evaluation.

PRACTICAL TRAINING

(l) Practical training may be conducted by interactive group classroom modules, or by the use of training devices. The objective is to enable instructors to:

(1) identify behaviours based on observable actions in the following areas:

(i) communications;

(ii) team working;

(iii) situation awareness;

(iv) workload management;

(v) problem solving and decision making.

(2) analyse the root causes of undesirable behaviours;

(3) debrief students using appropriate techniques, in particular:

(i) use of facilitative techniques;

(ii) encouragement of student self-analysis.

(4) agree corrective actions with the students;

(5) determine achievement of the required competency.

AMC2 FCL.925(d)(1) Additional requirements for instructors for the MPL

ED Decision 2011/016/R

RENEWAL OF PRIVILEGES: REFRESHER TRAINING

(a) Paragraph (d) of FCL.925 determines that if the applicant has not complied with the requirements to maintain his/her privileges to conduct competency-based approach training, he or she shall receive refresher training at an ATO to reach the level of competence necessary to pass the assessment of instructor competencies. The amount of refresher training needed should be determined on a case-by-case basis by the ATO, taking into account the following factors:

(1) the experience of the applicant;

(2) the amount of time lapsed since the last time the applicant has conducted training in an MPL course. The amount of training needed to reach the desired level of competence should increase with the time lapsed. In some cases, after evaluating the instructor, and when the time lapsed is very limited, the ATO may even determine that no further refresher training is necessary.

(b) Once the ATO has determined the needs of the applicant, it should develop an individual training programme, which should be based on the MPL instructor course and focus on the aspects where the applicant has shown the greatest needs.

GM1 FCL.925 Additional requirements for instructors for the MPL

ED Decision 2011/016/R

MPL INSTRUCTORS

The following table summarises the instructor qualifications for each phase of MPL integrated training course:

Phase of training	Qualification
Line flying under supervision according to operational requirements	Line training captain or TRI(A)
Phase 4: Advanced base training	TRI(A)
Phase 4: Advanced skill test	TRE(A)
Phase 4: Advanced	SFI(A) or TRI(A)
Phase 3: Intermediate	SFI(A) or TRI(A)
Phase 2: Basic	(a) FI(A) or IRI(A) and IR(A)/ME/MCC and 1500 hours multi-crew environment and IR(A) instructional privileges, or (b) FI(A) and MCCI(A), or (c) FI(A) and SFI(A), or (d) FI(A) and TRI(A)
Phase 1: Core flying skills	FI(A) and 500 hours, including 200 hours of instruction Instructor qualifications and privileges should be in accordance with the training items within the phase. STI for appropriate exercises conducted in an FNPT or BITD.

FCL.930 Training course

Regulation (EU) 2024/2076

(a) An applicant for an instructor certificate shall have completed a course of theoretical knowledge and flight instruction at an ATO.

(b) In addition to the specific elements set out in this Annex (Part-FCL) for each category of instructor, the training course shall contain the elements required in point FCL.920.

FCL.935 Assessment of competence

Regulation (EU) No 1178/2011

(a) Except for the multi-crew cooperation instructor (MCCI), the synthetic training instructor (STI), the mountain rating instructor (MI) and the flight test instructor (FTI), an applicant for an instructor certificate shall pass an assessment of competence in the appropriate aircraft category to demonstrate to an examiner qualified in accordance with Subpart K the ability to instruct a student pilot to the level required for the issue of the relevant licence, rating or certificate.

(b) This assessment shall include:

(1) the demonstration of the competencies described in FCL.920, during pre-flight, post-flight and theoretical knowledge instruction;

(2) oral theoretical examinations on the ground, pre-flight and post-flight briefings and in-flight demonstrations in the appropriate aircraft class, type or FSTD;

(3) exercises adequate to evaluate the instructor's competencies.

(c) The assessment shall be performed on the same class or type of aircraft or FSTD used for the flight instruction.

(d) When an assessment of competence is required for revalidation of an instructor certificate, an applicant who fails to achieve a pass in the assessment before the expiry date of an instructor certificate shall not exercise the privileges of that certificate until the assessment has successfully been completed.

AMC1 FCL.935 Assessment of competence

ED Decision 2020/005/R

GENERAL

(a) The format and application form for the assessment of competence are determined by the competent authority.

(b) When an aircraft is used for the assessment, it should meet the requirements for training aircraft.

(c) If an aircraft is used for the test or check, the examiner acts as the PIC, except in circumstances agreed upon by the examiner when another instructor is designated as PIC for the flight.

(d) During the assessment of competence the applicant occupies the seat normally occupied by the instructor (instructors seat if in an FSTD, or pilot seat if in an aircraft), except in the case of balloons. The examiner, another instructor or, for MPA in an FFS, a real crew member under instruction, functions as the 'student'. The applicant is required to explain the relevant exercises and to demonstrate their conduct to the 'student', where appropriate. Thereafter, the 'student' executes the same manoeuvres (if the 'student' is the examiner or another instructor, this can

include typical mistakes of inexperienced students). The applicant is expected to correct mistakes orally or, if necessary, by intervening physically.

(e) The assessment of competence should also include additional demonstration exercises, as decided by the examiner and agreed upon with the applicant before the assessment. These additional exercises should be related to the training requirements for the applicable instructor certificate.

(f) All relevant exercises should be completed within a period of 6 months. However, all exercises should, where possible, be completed on the same day. In principle, failure in any exercise requires a retest covering all exercises, with the exception of those that may be retaken separately. The examiner may terminate the assessment at any stage if they consider that a retest is required.

AMC2 FCL.935 Assessment of competence

ED Decision 2011/016/R

MCCI, STI AND MI

In the case of the MCCI, STI and MI, the instructor competencies are assessed continuously during the training course.

AMC3 FCL.935 Assessment of competence

ED Decision 2011/016/R

CONTENT OF THE ASSESSMENT FOR THE FI

(a) In the case of the FI, the content of the assessment of competence should be the following:

SECTION 1 THEORETICAL KNOWLEDGE ORAL	
1.1	Air law
1.2	Aircraft general knowledge
1.3	Flight performance and planning
1.4	Human performance and limitations
1.5	Meteorology
1.6	Navigation
1.7	Operational procedures
1.8	Principles of flight
1.9	Training administration

Sections 2 and 3 selected main exercises:

SECTION 2 PRE-FLIGHT BRIEFING	
2.1	Visual presentation
2.3	Technical accuracy
2.4	Clarity of explanation
2.5	Clarity of speech
2.6	Instructional technique
2.7	Use of models and aids
2.8	Student participation

SECTION 3 FLIGHT	
3.1	Arrangement of demo
3.2	Synchronisation of speech with demo
3.3	Correction of faults
3.4	Aircraft handling
3.5	Instructional technique
3.6	General airmanship and safety
3.7	Positioning and use of airspace

SECTION 4 ME EXERCISES	
4.1	Actions following an engine failure shortly after take-off[1]
4.2	SE approach and go-around[1]
4.3	SE approach and landing[1]

SECTION 5 POST-FLIGHT DE-BRIEFING	
5.1	Visual presentation
5.2	Technical accuracy
5.3	Clarity of explanation
5.4	Clarity of speech
5.5	Instructional technique
5.6	Use of models and aids
5.7	Student participation

(b) Section 1, the oral theoretical knowledge examination part of the assessment of competence, is for all FI and is subdivided into two parts:

(1) The applicant is required to give a lecture under test conditions to other 'student(s)', one of whom will be the examiner. The test lecture is to be selected from items of section 1. The amount of time for preparation of

the test lecture is agreed upon beforehand with the examiner. Appropriate literature may be used by the applicant. The test lecture should not exceed 45 minutes;

(2) The applicant is tested orally by an examiner for knowledge of items of section 1 and the 'core instructor competencies: teaching and learning' content given in the instructor courses.

(c) Sections 2, 3 and 5 are for all FIs. These sections comprise exercises to demonstrate the ability to be an FI (for example instructor demonstration exercises) chosen by the examiner from the flight syllabus of the FI training courses. The applicant is required to demonstrate FI abilities, including briefing, flight instruction and de-briefing.

(d) Section 4 comprises additional instructor demonstration exercises for an FI for ME aircraft. This section, if applicable, is done in an ME aircraft, or an FFS or FNPT II simulating an ME aircraft. This section is completed in addition to sections 2, 3 and 5.

[1] These exercises are to be demonstrated at the assessment of competence for FI for ME aircraft.

AMC4 FCL.935 Assessment of competence

ED Decision 2011/016/R

CONTENT OF THE ASSESSMENT FOR THE SFI

The assessment should consist of at least 3 hours of flight instruction related to the duties of an SFI on the applicable FFS or FTD 2/3.

AMC5 FCL.935 Assessment of competence

ED Decision 2018/009/R

REPORT FORMS FOR THE INSTRUCTOR CERTIFICATES

(a) Assessment of competence form for the FI, IRI and CRI certificates:

<table>
<tr><td colspan="6">APPLICATION AND REPORT FORM FOR THE INSTRUCTOR ASSESSMENT OF COMPETENCE</td></tr>
<tr><td colspan="6">1 Applicants personal particulars:</td></tr>
<tr><td>Applicant’s last name(s):</td><td colspan="2"></td><td>First name(s):</td><td colspan="2"></td></tr>
<tr><td>Date of birth:</td><td colspan="2"></td><td>Tel (home):</td><td colspan="2">Tel (work):</td></tr>
<tr><td>Address:</td><td colspan="2"></td><td>Country:</td><td colspan="2"></td></tr>
<tr><td colspan="6">2 Licence details</td></tr>
<tr><td>Licence type:</td><td colspan="2"></td><td>Number:</td><td colspan="2"></td></tr>
<tr><td>Class ratings included in the licence:</td><td colspan="2"></td><td>Exp. Date:</td><td colspan="2"></td></tr>
<tr><td rowspan="5">Type ratings included in the licence:</td><td colspan="5">1.</td></tr>
<tr><td colspan="5">2.</td></tr>
<tr><td colspan="5">3.</td></tr>
<tr><td colspan="5">4.</td></tr>
<tr><td colspan="5">5.</td></tr>
<tr><td rowspan="5">Other ratings included in the licence:</td><td colspan="5">1.</td></tr>
<tr><td colspan="5">2.</td></tr>
<tr><td colspan="5">3.</td></tr>
<tr><td colspan="5">4.</td></tr>
<tr><td colspan="5">5.</td></tr>
<tr><td colspan="6">3 Pre-course flying experience</td></tr>
<tr><td>Total flying hours</td><td>PIC
SEP or TMG hours</td><td>SEP preceding 6 months</td><td>Instrument flight instruction</td><td colspan="2">Cross-country hours</td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2"></td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2"></td></tr>
<tr><td colspan="6">4 Pre-entry flight test</td></tr>
<tr><td colspan="6">I recommend .....for the FI course.</td></tr>
</table>

Name of ATO:			Date of flight test:		
Name(s) of FI conducting the test (capital letters):					
Licence number:					
Signature:					
5	**Declaration by the applicant**				
I have received a course of training in accordance with the syllabus for the: (tick as applicable)					
FI certificate FI(A)/(H)/(As)		IRI certificate IRI(A)/(H)/(As)		CRI certificate CRI(A)	
Applicant's name(s): (capital letters)			Signature:		
6	**Declaration by the CFI**				
I certify that ..... has satisfactorily completed an approved course of training for the					
FI certificate FI(A)/(H)/(As)		IRI certificate IRI(A)/(H)/(As)		CRI certificate CRI(A)	
in accordance with the relevant syllabus.					
Flying hours during the course:					
Aircraft or FSTDs used :					
Name(s) of CFI:					
Signature:					
Name of ATO:					
7	**Flight instructor examiner's certificate**				
I have tested the applicant according to to Part-FCL					
A. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT (in case of partial pass):					
Theoretical oral examination:			Skill test:		
Passed	***Failed***		***Passed***	***Failed***	
	I recommend further flight or ground training with an instructor before re-test				
	I do not consider further flight or theoretical instruction necessary before re-test (tick as applicable)				
B. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT:					
	FI certificate				
	IRI certificate				
	CRI certificate *(tick as applicable)*				
Name(s) of FIE (capital letters):					
Signature:					
Licence number:			Date:		

(b) Report form for the FI for sailplanes

APPLICATION AND REPORT FORM FOR THE FI(S) ASSESSMENT OF COMPETENCE										
1	**Applicants personal particulars:**									
Applicant's last name(s):			First name(s):							
Date of birth:			Tel (home):			Tel (work):				
Address:			Country:							
2	**Licence details**									
Licence type:			Number:							
TMG extension:										
3	**Pre-course flying experience**									
Total flying hours	PIC hours		Sailplane (PIC hours and take-offs)		TMG (PIC hours and take-offs)					
4	**Pre-entry flight test**									
I recommend .....for the FI course.										
Name of ATO:			Date of flight test:							
Name(s) of FI conducting the test (capital letters):										
Licence number:										
Signature:										
5	**Declaration by the applicant**									
I have received a course of training in accordance with the syllabus for the:										
FI certificate FI(S)										
Applicant's name(s): (capital letters)			Signature:							
6	**Declaration by the chief flight instructor**									
I certify that ..... has satisfactorily completed an approved course of training for the										
FI certificate FI(S)										
in accordance with the relevant syllabus.										
Flying hours during the course:			Take-offs during the course:							
Sailplanes, powered sailplanes or TMGs used :										

Name(s) of CFI:			
Signature:			
Name of DTO or ATO:			
7	**Flight instructor examiner's certificate**		
I have tested the applicant according to Part-FCL			
A. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT (in case of partial pass):			
Theoretical oral examination:		Skill test:	
Passed	***Failed***	***Passed***	***Failed***
	I recommend further flight or ground training with an instructor before re-test		
	I do not consider further flight or theoretical instruction necessary before re-test (tick as applicable)		
B. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT:			
	FI certificate		
	Date:		
Name(s) of FIE (capital letters):			
Signature:			
Licence number:		Date:	

(c) Report form for the FI for balloons:

APPLICATION AND REPORT FORM FOR THE FI(B) ASSESSMENT OF COMPETENCE					
1	**Applicants personal particulars:**				
Applicant's last name(s):			First name(s):		
Date of birth:			Tel (home):	Tel (work):	
Address:			Country:		
2	**Licence details**				
Licence type:			Number:		
Class extension:	1.		Groups:		
	2.		Groups:		
	3.		Groups:		
3	**Pre-course flying experience**				
Total flying hours in different groups	PIC hours	Hot-air balloon	Gas balloon	Hot-air airship	
4	**Pre-entry flight test**				
I recommend .....for the FI course.					
Name of ATO:			Date of flight test:		

Name(s) of FI conducting the test (capital letters):					
Licence number:					
Signature:					
5	**Declaration by the applicant**				
I have received a course of training in accordance with the syllabus for the:					
FI certificate FI(B)					
Applicant's name(s): (capital letters)			Signature:		
6	**Declaration by the chief flight instructor**				
I certify that ..... has satisfactorily completed an approved course of training for the					
FI certificate FI(B)					
in accordance with the relevant syllabus.					
Flying hours during the course:			Take-offs during the course:		
Balloons, hot-air airships used:					
Name(s) of CFI:					
Signature:					
Name of DTO or ATO:					
7	**Flight instructor examiner's certificate**				
I have tested the applicant according to Part-FCL					
A. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT (in case of partial pass):					
Theoretical oral examination:			Skill test:		
Passed	***Failed***		***Passed***	***Failed***	
	I recommend further flight or ground training with an FI before re-test				
	I do not consider further flight or theoretical instruction necessary before re-test (tick as applicable)				
B. FLIGHT INSTRUCTOR EXAMINER'S ASSESSMENT:					
	FI certificate				
Name(s) of FIE (capital letters):					
Signature:					
Licence number:			Date:		

FCL.940 Validity of instructor certificates

Regulation (EU) 2019/1747

With the exception of the MI, and without prejudice to FCL.900(b)(1) and FCL.915 (e)(2), instructor certificates shall be valid for a period of 3 years.

FCL.945 Obligations for instructors

Regulation (EU) 2024/2076

Upon completion of the training flight for the revalidation of an SEP aeroplane or TMG class rating in accordance with point FCL.740.A(b)(1)(ii)(C) or for the revalidation of a single-engine helicopter type rating in accordance with point FCL.740.H(a)(2)(ii)(B), and only in the event of fulfilment of all the other revalidation criteria required by point FCL.740.A(b)(1)(ii) or point FCL.740.H(a)(2)(ii), as applicable, the instructor shall endorse the applicant's licence with the new expiry date of the rating, if specifically authorised for that purpose by the competent authority responsible for the applicant's licence.

SECTION 2 – SPECIFIC REQUIREMENTS FOR THE FLIGHT INSTRUCTOR – FI

FCL.905.FI FI – Privileges and conditions

Regulation (EU) 2020/359

The privileges of FIs are to conduct flight instruction for the issue, revalidation or renewal of:

(a) a PPL and LAPL in the appropriate aircraft category;

(b) class and type ratings for single-pilot aircraft, except for single-pilot high-performance complex aeroplanes;

(c) class and type ratings for single-pilot aeroplanes, except for single-pilot high-performance complex aeroplanes, in multi-pilot operations, provided that FIs meet any of the following conditions:

(1) hold or have held a TRI certificate for multi-pilot aeroplanes;

(2) have completed all of the following:

(i) at least 500 hours as pilots in multi-pilot operations on aeroplanes;

(ii) the training course for an MCCI in accordance with point FCL.930.MCCI;

(d) type ratings for single or multi-pilot airships;

(e) a CPL in the appropriate aircraft category, provided that FIs have completed at least 200 hours of flight instruction in that aircraft category;

(f) the night rating, provided that FIs meet all of the following conditions:

(1) are qualified to fly at night in the appropriate aircraft category;

(2) have demonstrated the ability to instruct at night to an FI qualified in accordance with point (j);

(3) comply with the night experience requirement laid down in point FCL.060(b)(2);

(g) a towing or aerobatic rating, provided that such privileges are held and the FI has demonstrated the ability to instruct for that rating to an FI who is qualified in accordance with point (j);

(h) a BIR or an IR in the appropriate aircraft category, provided that FI meets the following conditions:

(1) they have completed as student pilots the IRI training course and have passed an assessment of competence for the IRI certificate;

(2) they comply with points FCL.915.CRI(a), FCL.930.CRI and FCL.935 in the case of multi-engine aeroplanes and with points FCL.910.TRI(c)(1) and FCL.915.TRI(d)(2) in the case of multi-engine helicopters;

In addition to conditions (1) and (2):

(3) if during an approved training course at an ATO, the FI is providing training in FSTDs or supervising SPIC training flights that take place under IFR, the FI shall have completed at least 50 hours of flight time under IFR after the issuance of the BIR or the IR, of which a maximum of 10 hours may be instrument ground time in an FFS, an FTD 2/3 or an FNPT II,;

(4) if the FI is providing training in an aircraft, the FI shall have completed at least 200 hours of flight time under IFR, of which up to 50 hours may be instrument ground time in an FFS, an FTD 2/3 or an FNPT II.'

(i) single-pilot multi-engine class or type ratings, except for single-pilot high-performance complex aeroplanes, provided that they meet the following conditions:

(1) in the case of aeroplanes, comply with points FCL.915.CRI(a), FCL.930.CRI and FCL.935;

(2) in the case of helicopters, comply with points FCL.910.TRI(c)(1) and FCL.915.TRI(d)(2);

(j) an FI, an IRI, a CRI, an STI or an MI certificate provided that they meet all of the following conditions:

(1) they have completed at least 500 hours of flight instruction in the appropriate aircraft category;

(2) they have passed an assessment of competence in accordance with point FCL.935 in the appropriate aircraft category to demonstrate to a flight instructor examiner (FIE) the ability to instruct for the relevant certificate;

(k) an MPL, provided that the FIs meet all of the following conditions:

(1) for the core flying phase of the training, have completed at least 500 hours of flight time as a pilot of aeroplanes, including at least 200 hours of flight instruction;

(2) for the basic phase of the training:

(i) hold a multi-engine aeroplane IR and the privilege to instruct for an IR;

(ii) have completed at least 1 500 hours of flight time in multi-crew operations;

(3) in the case of FIs already qualified to instruct on ATP(A) or CPL(A)/IR integrated courses, the requirement in point (2)(ii) may be replaced by the completion of a structured course of training consisting of:

(i) MCC qualification;

(ii) observation of five sessions of flight instruction in Phase 3 of an MPL course;

(iii) observation of five sessions of flight instruction in Phase 4 of an MPL course;

(iv) observation of five operator recurrent line-oriented flight training sessions;

(v) the content of the MCCI course.

In this case, FIs shall conduct their first five instructor sessions under the supervision of a TRI(A), an MCCI(A) or an SFI(A) qualified for MPL flight instruction.

GM1 FCL.905.FI(h)(2) Privileges and conditions

ED Decision 2020/005/R

FSTDs should not be used to pass an assessment of competence on the class or type of aircraft.

FCL.910.FI FI – Restricted privileges

Regulation (EU) 2020/359

(a) An FI shall have his or her privileges limited to conducting flight instruction under the supervision of an FI for the same category of aircraft nominated by the DTO or the ATO for this purpose, in the following cases:

(1) for the issue of the PPL and LAPL;

(2) in all integrated courses at PPL level, in case of aeroplanes and helicopters;

(3) for class and type ratings for single-pilot, single-engine aircraft, except for single-pilot high-performance complex aeroplanes;

(4) for the night, towing or aerobatic ratings.

(b) While conducting training under supervision, in accordance with (a), the FI shall not have the privilege to authorise student pilots to conduct first solo flights and first solo cross-country flights.

(c) The limitations in (a) and (b) shall be removed from the FI certificate when the FI has completed at least:

(1) for the FI(A), 100 hours of flight instruction in aeroplanes or TMGs and, in addition has supervised at least 25 student solo flights;

(2) for the FI(H) 100 hours of flight instruction in helicopters and, in addition has supervised at least 25 student solo flight air exercises;

(3) for the FI(As), 15 hours or 50 take-offs of flight instruction covering the full training syllabus for the issue of a PPL(As).

FCL.915.FI FI – Prerequisites

Regulation (EU) 2024/2076

An applicant for an FI certificate shall:

(a) in the case of the FI(A) and FI(H):

(1) have received at least 10 hours of instrument flight instruction on the appropriate aircraft category, of which not more than 5 hours may be instrument ground time in an FSTD;

(2) have completed 20 hours of VFR cross-country flight on the appropriate aircraft category as PIC; and

(b) additionally, for the FI(A):

(1) hold at least a CPL(A); or

(2) hold at least a PPL(A), or hold an MPL with additional PPL privileges in accordance with point FCL.405.A(b)(1), and have complied with the following conditions:

(i) except for an FI(A) providing training for the LAPL(A) only, passed the CPL theoretical knowledge examination, which may be taken without completing a CPL theoretical knowledge training course and which in that case shall not be valid for any of the following:

(A) the issue of a CPL;

(B) receiving credits for CPL theoretical knowledge in accordance with point FCL.035 and Appendix 1;

(ii) completed at least 200 hours of flight time on aeroplanes or TMGs, of which 150 hours as PIC;

(3) have completed at least 30 hours in the class or type of aeroplane used for the FI(A) training course, of which at least 5 hours shall have been completed during the 6 months preceding the pre-entry flight assessment set out in point FCL.930.FI(a);

(4) have completed a VFR cross-country flight as PIC, including a flight of at least 540 km (300 NM) in the course of which full stop landings at 2 different aerodromes shall be made;

(c) additionally, for the FI(H), have completed 250 hours total flight time as pilot on helicopters of which:

(1) at least 100 hours shall be as PIC, if the applicant holds at least a CPL(H); or

(2) at least 200 hours as PIC if the applicant holds at least a PPL(H) and has passed the CPL theoretical knowledge examination, which may be taken without completing a CPL theoretical knowledge training course and which shall not be valid for the issue of a CPL;

(d) for an FI(As), have completed 500 hours of flight time on airships as PIC, of which 400 hours shall be as PIC holding a CPL(As).

FCL.930.FI FI – Training course

Regulation (EU) 2024/2076

(a) Applicants for the FI certificate shall, at an ATO, have passed a specific pre-entry flight assessment with an FI qualified in accordance with point FCL.905.FI(j) within the 6 months preceding the start of the course, to assess their ability to undertake the course. That pre-entry flight assessment shall be based on the proficiency check for the class and type ratings as set out in Appendix 9.

(b) The FI training course shall include:

(1) 25 hours of teaching and learning;

(2) at least 100 hours of theoretical knowledge instruction, including progress tests;

(3) (i) in the case of an FI(A) and (H), at least 30 hours of flight instruction, of which 25 hours shall be dual flight instruction, of which 5 hours may be conducted in an FFS, an FNPT I or II or an FTD 2/3;

(ii) in the case of an FI(As), at least 20 hours of flight instruction, of which 15 hours shall be dual flight instruction.

(4) Applicants for an FI certificate in another category of aircraft who are holding or have held an FI(A), (H) or (As) shall be credited with 55 hours towards the requirement in point (b)(2).

(c) Applicants for the FI certificate who hold or have held any other instructor certificate issued in accordance with this Annex shall be deemed to meet the requirements in point (b)(1).

AMC1 FCL.930.FI FI Training course

ED Decision 2020/005/R

FI(A), FI(H) AND FI(AS) TRAINING COURSE

GENERAL

(a) The aim of the FI training course is to train aircraft licence holders to the level of competence defined in FCL.920.

(b) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the FI task including at least the following:

(1) refresh the technical knowledge of the student instructor;

(2) train the student instructor to teach the ground subjects and air exercises;

(3) ensure that the student instructor's flying is of a sufficiently high standard;

(4) teach the student instructor the principles of basic instruction and to apply them at the PPL level.

FLIGHT INSTRUCTION

(c) The remaining 5 hours in FCL.930.FI(b)(3) may be mutual flying (that is, two applicants flying together to practice flight demonstrations).

(d) The tassessment of competence is additional to the course training time.

CONTENT

(e) The training course consists of two parts:

(1) Part 1, theoretical knowledge, including the teaching and learning instruction that should comply with AMC1 FCL.920;

(2) Part 2, flight instruction.

Part 1

TEACHING AND LEARNING

(a) The course should include at least 125 hours of theoretical knowledge instruction, including at least 25 hours teaching and learning instruction.

CONTENT OF THE TEACHING AND LEARNING INSTRUCTIONS (INSTRUCTIONAL TECHNIQUES):

(b) The learning process:

(1) motivation;

(2) perception and understanding;

(3) memory and its application;

(4) habits and transfer;

(5) obstacles to learning;

(6) incentives to learning;

(7) learning methods;

(8) rates of learning.

(c) The teaching process:

(1) elements of effective teaching;

(2) planning of instructional activity;

(3) teaching methods;

(4) teaching from the 'known' to the 'unknown';

(5) use of 'lesson plans'.

(d) Training philosophies:

(1) value of a structured (approved) course of training;

(2) importance of a planned syllabus;

(3) integration of theoretical knowledge and flight instruction.

(e) Techniques of applied instruction:

(1) theoretical knowledge: classroom instruction techniques:

(i) use of training aids;

(ii) group lectures;

(iii) individual briefings;

(iv) student participation or discussion.

(2) flight: airborne instruction techniques:

(i) the flight or cockpit environment;

(ii) techniques of applied instruction;

(iii) post-flight and in-flight judgement and decision making.

(f) Student evaluation and testing:

(1) assessment of student performance:

(i) the function of progress tests;

(ii) recall of knowledge;

(iii) translation of knowledge into understanding;

(iv) development of understanding into actions;

(v) the need to evaluate rate of progress.

(2) analysis of student errors:

(i) establish the reason for errors;

(ii) tackle major faults first, minor faults second;

(iii) avoidance of over criticism;

(iv) the need for clear concise communication.

(g) Training programme development:

(1) lesson planning;

(2) preparation;

(3) explanation and demonstration;

(4) student participation and practice;

(5) evaluation.

(h) Human performance and limitations relevant to flight instruction:

(1) physiological factors:

(i) psychological factors;

(ii) human information processing;

(iii) behavioural attitudes;

(iv) development of judgement and decision making.

(2) threat and error management.

(i) Specific hazards involved in simulating systems failures and malfunctions in the aircraft during flight:

(i) importance of 'touch drills';

(ii) situational awareness;

(iii) adherence to correct procedures.

(j) Training administration:

(1) flight or theoretical knowledge instruction records;

(2) pilot's personal flying logbook;

(3) the flight or ground curriculum;

(4) study material;

(5) official forms;

(6) flight manual or equivalent document (for example owner's manual or pilot's operating handbook);

(7) flight authorisation papers;

(8) aircraft documents;

(9) the private pilot's licence regulations.

A. Aeroplanes

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the training of PPL(A) but with additional items designed to cover the needs of an FI.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the aim and a brief allusion to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include information on how the flight will be conducted, who is to fly the aeroplane and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing will be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practise the principles of basic instruction at the PPL(A) level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat normally occupied by the FI(A).

(i) It is to be noted that airmanship and look-out is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at all times.

(j) If the privileges of the FI(A) certificate are to include instruction for night flying, exercises 19 and 20 of the flight instruction syllabus should be undertaken at night in addition to by day either as part of the course or subsequent to certification issue.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

LONG BRIEFINGS AND AIR EXERCISES

Note: though exercise 11b is not required for the PPL(A) course, it is a requirement for the FI course.

EXERCISE 1: FAMILIARISATION WITH tHE AEROPLANE

(a) Long briefing objectives:

(1) introduction to the aeroplane;

(2) explanation of the cockpit layout;

(3) aeroplane and engine systems;

(4) checklists, drills and controls;

(5) propeller safety;

(i) precautions general;

(ii) precautions before and during hand turning;

(iii) hand swinging technique for starting (if applicable to type).

(6) differences when occupying the instructor's seat;

(7) emergency drills:

(i) action if fire in the air and on the ground: engine, cock or cabin and electrical fire;

(ii) system failure as applicable to type;

(iii) escape drills: location and use of emergency equipment and exits.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 2: PREPARATION FOR AND ACTION AFTER FLIGHT

(a) Long briefing objectives:

(1) flight authorisation and aeroplane acceptance, including technical log (if applicable) and certificate of maintenance;

(2) equipment required for flight (maps, etc.);

(3) external checks;

(4) internal checks;

(5) student comfort, harness, seat or rudder pedal adjustment;

(6) starting and warming up checks;

(7) power checks;

(8) running down, system checks and switching off the engine;

(9) leaving the aeroplane, parking, security and picketing;

(10) completion of authorisation sheet and aeroplane serviceability documents.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 3: AIR EXPERIENCE

(a) Long briefing objectives:

Note: there is no requirement for a long briefing for this exercise.

(b) Air exercise:

(1) air experience;

(2) cockpit layout, ergonomics and controls;

(3) cockpit procedures: stability and control.

EXERCISE 4: EFFECTS OF CONTROLS

(a) Long briefing objectives:

(1) function of primary flying controls: when laterally level and banked;

(2) further effect of ailerons and rudder;

(3) effect of inertia;

(4) effect of air speed;

(5) effect of slipstream;

(6) effect of power;

(7) effect of trimming controls;

(8) effect of flaps;

(9) operation of mixture control;

(10) operation of carburettor heat control;

(11) operation of cabin heat or ventilation systems;

(b) Air exercise:

(1) primary effects of flying controls: when laterally level and banked;

(2) further effects of ailerons and rudder;

(3) effect of air speed;

(4) effect of slipstream;

(5) effect of power;

(6) effect of trimming controls;

(7) effect of flaps;

(8) operation of mixture control;

(9) operation of carburettor heat control;

(10) operation of cabin heat or ventilation systems;

(11) effect of other controls as applicable.

EXERCISE 5: TAXIING

(a) Long briefing objectives:

(1) pre-taxiing checks;

(2) starting, control of speed and stopping;

(3) engine handling;

(4) control of direction and turning (including manoeuvring in confined spaces);

(5) parking area procedures and precautions;

(6) effect of wind and use of flying controls;

(7) effect of ground surface;

(8) freedom of Rudder movement;

(9) marshalling signals;

(10) instrument checks;

(11) ATC procedures;

(12) emergencies: steering failure and brake failure.

(b) Air exercise:

(1) pre-taxiing checks;

(2) starting, control of speed and stopping;

(3) engine handling;

(4) control of direction and turning;

(5) turning in confined spaces;

(6) parking area procedures and precautions;

(7) effect of wind and use of flying control;

(8) effect of ground surface;

(9) freedom of Rudder movement;

(10) marshalling signals;

(11) instrument checks;

(12) ATC procedures;

(13) emergencies: steering failure and brake failure.

EXERCISE 6: STRAIGHT AND LEVEL FLIGHT

(a) Long briefing objectives:

(1) the forces;

(2) longitudinal stability and control in pitch;

(3) relationship of CG to control in pitch;

(4) lateral and directional stability (control of lateral level and balance);

(5) attitude and balance control;

(6) trimming;

(7) power settings and air speeds;

(8) drag and power curves;

(9) range and endurance.

(b) Air exercise:

(1) at normal cruising power;

(2) attaining and maintaining straight and level flight;

(3) demonstration of inherent stability;

(4) control in pitch, including use of elevator trim control;

(5) lateral level, direction and balance, use of rudder trim controls as applicable at selected air speeds (use of power):

(i) effect of drag and use of power (two air speeds for one power setting);

(ii) straight and level in different aeroplane configurations (flaps and landing gear);

(iii) use of instruments to achieve precision flight.

EXERCISE 7: CLIMBING

(a) Long briefing objectives:

(1) the forces;

(2) relationship between power or air speed and rate of climb (power curves maximum rate of climb (vy));

(3) effect of mass;

(4) effect of flaps;

(5) engine considerations;

(6) effect of density altitude;

(7) the cruise climb;

(8) maximum angle of climb (vx).

(b) Air exercise:

(1) entry and maintaining the normal maximum rate climb;

(2) levelling off;

(3) levelling off at selected altitudes;

(4) climbing with flaps down;

(5) recovery to normal climb;

(6) en-route climb (cruise climb);

(7) maximum angle of climb;

(8) use of instruments to achieve precision flight.

EXERCISE 8: DESCENDING

(a) Long briefing objectives:

(1) the forces;

(2) glide descent: angle, air speed and rate of descent;

(3) effect of flaps;

(4) effect of wind;

(5) effect of mass;

(6) engine considerations;

(7) power assisted descent: power or air speed and rate of descent;

(8) cruise descent;

(9) sideslip.

(b) Air exercise:

(1) entry and maintaining the glide;

(2) levelling off;

(3) levelling off at selected altitudes;

(4) descending with flaps down;

(5) powered descent: cruise descent (including effect of power and air speed);

(6) side-slipping (on suitable types);

(7) use of instrument to achieve precision flight.

EXERCISE 9: TURNING

(a) Long briefing objectives:

(1) the forces;

(2) use of controls;

(3) use of power;

(4) maintenance of attitude and balance;

(5) medium level turns;

(6) climbing and descending turns;

(7) slipping turns;

(8) turning onto selected headings: use of gyro heading indicator and magnetic compass.

(b) Air exercise:

(1) entry and maintaining medium level turns;

(2) resuming straight flight;

(3) faults in the turn (incorrect pitch, bank and balance);

(4) climbing turns;

(5) descending turns;

(6) slipping turns (on suitable types);

(7) turns to selected headings: use of gyro heading indicator and magnetic compass

(8) use of instruments to achieve precision flight;

Note: stall or spin awareness and avoidance training consists of exercises 10a, 10b and 11a.

EXERCISE 10a: SLOW FLIGHT

(a) Long briefing objectives:

(1) aeroplane handling characteristics during slow flight at:

(i) v_{s1} & v_{so} + 10 knots;

(ii) v_{s1} & v_{so} + 5 knots.

(2) slow flight during instructor induced distractions;

(3) effect of overshooting in configurations where application of engine power causes a strong 'nose-up' trim change.

(b) Air exercise:

(1) safety checks;

(2) introduction to slow flight;

(3) controlled slow flight in the clean configuration at:

(i) v_{s1} + 10 knots and with flaps down;

(ii) v_{so} + 10 knots;

(iii) straight and level flight;

(iv) level turns;

(v) climbing and descending;

(vi) climbing and descending turns.

(4) controlled slow flight in the clean configuration at:

(i) v_{s1} + 5 knots and with flaps down;

(ii) v_{so} + 5 knots;

(iii) straight and level flight;

(iv) level turns;

(v) climbing and descending;

(vi) climbing and descending turns;

(vii) descending 'unbalanced' turns at low air speed: the need to maintain balanced flight.

(5) 'instructor induced distractions' during flight at low air speed: the need to maintain balanced flight and a safe air speed;

(6) effect of going around in configurations where application of engine power causes a strong 'nose up' trim change.

EXERCISE 10b: STALLING

(a) Long briefing objectives:

(1) characteristics of the stall;

(2) angle of attack;

(3) effectiveness of the controls at the stall;

(4) factors affecting the stalling speed:

(i) effect of flaps, slats and slots;

(ii) effect of power, mass, CG and load factor.

(5) effects of unbalance at the stall;

(6) symptoms of the stall;

(7) stall recognition and recovery;

(8) stalling and recovery:

(i) without power;

(ii) with power on;

(iii) with flaps down;

(iv) maximum power climb (straight and turning flight to the point of stall with uncompensated yaw);

(v) stalling and recovery during manoeuvres involving more than 1 G (accelerated stalls, including secondary stalls and recoveries);

(vi) recovering from incipient stalls in the landing and other configurations and conditions;

(vii) recovering at the incipient stage during change of configuration;

(viii) stalling and recovery at the incipient stage with 'instructor induced' distractions.

Note: consideration is to be given to manoeuvre limitations and references to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) in relation to mass and balance limitations. The safety checks should take into account the minimum safe altitude for initiating such exercises in order to ensure an adequate margin of safety for the recovery. If specific procedures for stalling or spinning exercises and for the recovery techniques are provided by the flight manual or equivalent document (for example owner's manual or pilot's operating handbook), they have to be taken into consideration. These factors are also covered in the next exercise spinning.

(b) Air exercise:

(1) safety checks;

(2) symptoms of the stall;

(3) stall recognition and recovery:

(i) without power;

(ii) with power on;

(iii) recovery when a wing drops at the stall;

(iv) stalling with power 'on' and recovery;

(v) stalling with flap 'down' and recovery;

(vi) maximum power climb (straight and turning flight) to the point of stall with uncompensated yaw: effect of unbalance at the stall when climbing power is being used;

(vii) stalling and recovery during manoeuvres involving more than 1 G (accelerated stalls, including secondary stalls and recoveries);

(viii) recoveries from incipient stalls in the landing and other configurations and conditions;

(ix) recoveries at the incipient stage during change of configuration;

(x) instructor induced distractions during stalling.

Note: consideration of manoeuvre limitations and the need to refer to the aeroplane manual and weight (mass) and balance calculations. The safety checks should take into account the minimum safe altitude for initiating such exercises in order to ensure an adequate margin of safety for the recovery. If specific procedures for stalling or spinning exercises and for the recovery techniques are provided by the flight manual or equivalent document (for example owner's manual or pilot's operating handbook), they have to be taken into consideration. These factors are to be covered in the next exercise: spinning.

EXERCISE 11a: SPIN RECOVERY AT THE INCIPIENT STAGE

(a) Long briefing objectives:

(1) causes, stages, autorotation and characteristics of the spin;

(2) recognition and recovery at the incipient stage: entered from various flight attitudes;

(3) aeroplane limitations.

(b) Air exercise:

(1) aeroplane limitations;

(2) safety checks;

(3) recognition at the incipient stage of a spin;

(4) recoveries from incipient spins entered from various attitudes with the aeroplane in the clean configuration, including instructor induced distractions.

EXERCISE 11b: SPIN RECOVERY AT THE DEVELOPED STAGE

(a) Long briefing objectives:

(1) spin entry;

(2) recognition and identification of spin direction;

(3) spin recovery;

(4) use of controls;

(5) effects of power or flaps (flap restriction applicable to type);

(6) effect of the CG upon spinning characteristics;

(7) spinning from various flight attitudes;

(8) aeroplane limitation;

(9) safety checks.

(b) Air exercise:

(1) aeroplane limitations;

(2) safety checks;

(3) spin entry;

(4) recognition and identification of the spin direction;

(5) spin recovery (reference to flight manual);

(6) use of controls;

(7) effects of power or flaps (restrictions applicable to aeroplane type);

(8) spinning and recovery from various flight attitudes.

EXERCISE 12: TAKE-OFF AND CLIMB TO DOWNWIND POSITION

(a) Long briefing objectives:

(1) handling: factors affecting the length of take-off run and initial climb;

(2) correct lift off speed, use of elevators (safeguarding the nose wheel), rudder and power;

(3) effect of wind (including crosswind component);

(4) effect of flaps (including the decision to use and the amount permitted);

(5) effect of ground surface and gradient upon the take-off run;

(6) effect of mass, altitude and temperature on take-off and climb performance;

(7) pre take-off checks;

(8) ATC procedure before take-off;

(9) drills, during and after take-off;

(10) noise abatement procedures;

(11) tail wheel considerations (as applicable);

(12) short or soft field take-off considerations or procedures;

(13) emergencies:

(i) aborted take-off;

(ii) engine failure after take-off.

(14) ATC procedures.

(b) Air exercise:

(1) take-off and climb to downwind position;

(2) pre take-off checks;

(3) into wind take-off;

(4) safeguarding the nose wheel;

(5) crosswind take-off;

(6) drills during and after take-off;

(7) short take-off and soft field procedure or techniques (including performance calculations);

(8) noise abatement procedures.

EXERCISE 13: CIRCUIT, APPROACH AND LANDING

(a) Long briefing objectives:

(1) downwind leg, base leg and approach: position and drills;

(2) factors affecting the final approach and the landing run;

(3) effect of mass;

(4) effects of altitude and temperature;

(5) effect of wind;

(6) effect of flap;

(7) landing;

(8) effect of ground surface and gradient upon the landing run;

(9) types of approach and landing:

(i) powered;

(ii) crosswind;

(iii) flapless (at an appropriate stage of the course);

(iv) glide;

(v) short field;

(vi) soft field.

(10) tail wheel aeroplane considerations (as applicable);

(11) missed approach;

(12) engine handling;

(13) wake turbulence awareness;

(14) windshear awareness;

(15) ATC procedures;

(16) mislanding and go-around;

(17) special emphasis on look-out.

(b) Air exercise:

(1) circuit approach and landing;

(2) circuit procedures: downwind and base leg;

(3) powered approach and landing;

(4) safeguarding the nose wheel;

(5) effect of wind on approach and touchdown speeds and use of flaps;

(6) crosswind approach and landing;

(7) glide approach and landing;

(8) flapless approach and landing (short and soft field);

(9) short field and soft field procedures;

(10) wheel landing (tail wheel aircraft);

(11) missed approach and go-around;

(12) mislanding and go-around;

(13) noise abatement procedures.

EXERCISE 14: FIRST SOLO AND CONSOLIDATION

Note: a summary of points to be covered before sending the student on first solo.

(a) Long briefing objectives:

During the flights immediately following the solo circuit consolidation period the following should be covered:

(1) procedures for leaving and rejoining the circuit;

(2) local area (restrictions, controlled airspace, etc.);

(3) compass turns;

(4) QDM meaning and use.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 15: ADVANCED TURNING

(a) Long briefing objectives:

(1) the forces;

(2) use of power;

(3) effect of load factor:

(i) structural considerations

(ii) increased stalling speed.

(4) physiological effects;

(5) rate and radius of turn;

(6) steep, level, descending and climbing turns;

(7) stalling in the turn and how to avoid it;

(8) spinning from the turn: recovery at the incipient stage;

(9) spiral dive;

(10) unusual attitudes and recoveries.

Note: considerations are to be given to manoeuvre limitations and reference to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) in relation to mass and balance, and any other restrictions for practice entries to the spin.

(b) Air exercise:

(1) level, descending and climbing steep turns;

(2) stalling in the turn;

(3) spiral dive;

(4) spinning from the turn;

(5) recovery from unusual attitudes;

(6) maximum rate turns.

EXERCISE 16: FORCED LANDING WITHOUT POWER

(a) Long briefing objectives:

(1) selection of forced landing areas;

(2) provision for change of plan;

(3) gliding distance: consideration;

(4) planning the descent;

(5) key positions;

(6) engine failure checks;

(7) use of radio: R/T 'distress' procedure;

(8) base leg;

(9) final approach;

(10) go-around;

(11) landing considerations;

(12) actions after landing: aeroplane security;

(13) causes of engine failure.

(b) Air exercise:

(1) forced landing procedures;

(2) selection of landing area:

(i) provision for change of plan;

(ii) gliding distance considerations.

(3) planning the descent;

(4) key positions;

(5) engine failure checks;

(6) engine cooling precautions;

(7) use of radio;

(8) base leg;

(9) final approach;

(10) landing;

(11) actions after landing: when the exercise is conducted at an aerodrome;

(12) aeroplane security.

EXERCISE 17: PRECAUTIONARY LANDING

(a) Long briefing objectives:

(1) occasions when necessary (in-flight conditions);

(2) landing area selection and communication (R/T procedure);

(3) overhead inspection;

(4) simulated approach;

(5) climb away;

(6) landing area selection:

(i) normal aerodrome;

(ii) disused aerodrome;

(iii) ordinary field;

(7) circuit and approach;

(8) actions after landing; aeroplane security.

(b) Air exercise:

(1) occasions when necessary (in-flight conditions):

(2) landing area selection

(3) overhead inspection

(4) simulated approach

(5) climb away

(6) landing area selection:

(i) normal aerodrome;

(ii) disused aerodrome;

(iii) ordinary field;

(7) circuit and approach;

(8) actions after landing; aeroplane security;

EXERCISE 18a: NAVIGATION

(a) Long briefing objectives:

(1) flight planning;

(i) weather forecast and actual(s);

(ii) map selection, orientation, preparation and use:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s) and time(s) en-route;

(B) fuel consumption;

(C) mass and balance;

(D) mass and performance.

(iv) flight information:

(A) NOTAMs etc.;

(B) noting of required radio frequencies;

(C) selection of alternate aerodrome(s).

(v) aeroplane documentation.

(vi) notification of the flight:

(A) pre-flight administration procedures;

(B) flight plan form (where appropriate).

(2) departure;

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) setting heading procedures;

(C) noting of ETA(s).

(iii) en-route map reading: identification of ground features;

(iv) maintenance of altitudes and headings;

(v) revisions to ETA and heading, wind effect, drift angle and groundspeed checks;

(vi) log keeping;

(vii) use of radio (including VDF if applicable);

(viii) minimum weather conditions for continuance of flight;

(ix) 'in-flight' decisions;

(x) diversion procedures;

(xi) operations in regulated or controlled airspace;

(xii) procedures for entry, transit and departure;

(xiii) navigation at minimum level;

(xiv) uncertainty of position procedure, including R/T procedure;

(xv) lost procedure;

(xvi) use of radio navaids.

(3) arrival procedures and aerodrome circuit joining procedures:

(i) ATC liaison, R/T procedure, etc.;

(ii) altimeter setting,

(iii) entering the traffic pattern (controlled or uncontrolled aerodromes);

(iv) circuit procedures;

(v) parking procedures;

(vi) security of aircraft;

(vii) refuelling;

(viii) booking in.

(b) Air exercise:

(1) flight planning:

(i) weather forecast and actual(s);

(ii) map selection and preparation:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s) and time(s) en-route;

(B) fuel consumption;

(C) mass and balance;

(D) mass and performance.

(iv) flight information:

(A) NOTAMs etc.;

(B) noting of required radio frequencies;

(C) selection of alternate aerodromes.

(v) aircraft documentation;

(vi) notification of the flight:

(A) flight clearance procedures (as applicable);

(B) flight plans.

(2) aerodrome departure;

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) en-route;

(C) noting of ETA(s).

(iii) wind effect, drift angle and ground speed checks;

(iv) maintenance of altitudes and headings;

(v) revisions to ETA and heading;

(vi) log keeping;

(vii) use of radio (including VDF if applicable);

(viii) minimum weather conditions for continuance of flight;

(ix) 'in-flight' decisions;

(x) diversion procedure;

(xi) operations in regulated or controlled airspace;

(xii) procedures for entry, transit and departure;

(xiii) uncertainty of position procedure;

(xiv) lost procedure;

(xv) use of radio navaids.

(3) arrival procedures and aerodrome joining procedures:

(i) ATC liaison, R/T procedure etc.;

(ii) altimeter setting,

(iii) entering the traffic pattern;

(iv) circuit procedures;

(v) parking procedures

(vi) security of aircraft;

(vii) refuelling;

(viii) booking in.

EXERCISE 18b: NAVIGATION AT LOWER LEVELS AND IN REDUCED VISIBILITY

(a) Long briefing objectives:

(1) general considerations:

(i) planning requirements before flight in entry or exit lanes;

(ii) ATC rules, pilot qualifications and aircraft equipment;

(iii) entry or exit lanes and areas where specific local rules apply.

(2) low level familiarisation:

(i) actions before descending;

(ii) visual impressions and height keeping at low altitude;

(iii) effects of speed and inertia during turns;

(iv) effects of wind and turbulence;

(3) low level operation:

(i) weather considerations;

(ii) low cloud and good visibility;

(iii) low cloud and poor visibility;

(iv) avoidance of moderate to heavy rain showers;

(v) effects of precipitation;

(vi) joining a circuit;

(vii) bad weather circuit, approach and landing.

(b) Air exercise:

(1) general considerations: entry or exit lanes and areas where specific local rules apply;

(2) low level familiarisation:

(i) actions before descending;

(ii) visual impressions and height keeping at low altitude;

(iii) effects of speed and inertia during turns;

(iv) effects of wind and turbulence;

(v) hazards of operating at low levels;

(3) low level operation:

(i) weather considerations;

(ii) low cloud and good visibility;

(iii) low cloud and poor visibility;

(iv) avoidance of moderate to heavy rain showers;

(v) effects of precipitation (forward visibility);

(vi) joining a circuit;

(vii) bad weather circuit, approach and landing.

EXERCISE 18c: USE OF RADIO NAVIGATION AIDS UNDER VFR

(a) Long briefing objectives:

(1) use of VOR:

(i) availability, AIP and frequencies;

(ii) signal reception range;

(iii) selection and identification;

(iv) radials and method of numbering;

(v) use of OBS;

(vi) to or from indication and station passage;

(vii) selection, interception and maintaining a radial;

(viii) use of two stations to determine position.

(2) use of ADF equipment:

(i) availability of NDB stations, AIP and frequencies;

(ii) signal reception range;

(iii) selection and identification;

(iv) orientation in relation to NDP;

(v) homing to an NDP.

(3) use of VHF/DF:

(i) availability. AIP and frequencies;

(ii) R/T procedures;

(iii) obtaining QDMs and QTEs.

(4) use of radar facilities:

(i) availability and provision of service and AIS;

(ii) types of service;

(iii) R/T procedures and use of transponder:

(A) mode selection;

(B) emergency codes.

(5) use of distance DME:

(i) availability and AIP;

(ii) operating modes;

(iii) slant range.

(6) use of GNSS (RNAV – SATNAV):

(i) availability;

(ii) operating modes;

(iii) limitations.

(b) Air exercise:

(1) use of VOR:

(i) availability, AIP and frequencies;

(ii) selection and identification;

(iii) use of OBS;

(iv) to or from indications: orientation;

(v) use of CDI;

(vi) determination of radial;

(vii) intercepting and maintaining a radial;

(viii) VOR passage;

(ix) obtaining a fix from two VORs.

(2) use of ADF equipment;

(i) availability of NDB stations, AIP and frequencies;

(ii) selection and identification;

(iii) orientation relative to the beacon;

(iv) homing.

(3) use of VHF/DF:

(i) availability, AIP and frequencies;

(ii) R/T procedures and ATC liaison;

(iii) obtaining a QDM and homing.

(4) use of en-route or terminal radar:

(i) availability and AIP;

(ii) procedures and ATC liaison;

(iii) pilot's responsibilities;

(iv) secondary surveillance radar;

(v) transponders;

(vi) code selection;

(vii) interrogation and reply.

(5) use of DME:

(i) station selection and identification;

(ii) modes of operation.

(6) use of GNSS (RNAV – SATNAV):

(i) setting up;

(ii) operation;

(iii) interpretation.

EXERCISE 19: BASIC INSTRUMENT FLIGHT

(a) Long briefing objectives:

(1) flight instruments;

(i) physiological sensations;

(ii) instrument appreciation;

(iii) attitude instrument flight;

(iv) pitch indications;

(v) bank indications;

(vi) different dial presentations;

(vii) introduction to the use of the attitude indicator;

(viii) pitch attitude;

(ix) bank attitude;

(x) maintenance of heading and balanced flight;

(xi) instrument limitations (inclusive system failures).

(2) attitude, power and performance;

(i) attitude instrument flight:

(ii) control instruments;

(iii) performance instruments;

(iv) effect of changing power and configuration;

(v) cross-checking the instrument indications;

(vi) instrument interpretation;

(vii) direct and indirect indications (performance instruments);

(viii) instrument lag;

(ix) selective radial scan;

(3) basic flight manoeuvres (full panel);

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns onto pre-selected headings:

(A) level;

(B) climbing;

(C) Descending.

(b) Air exercise:

(1) Introduction to instrument flying
  (i) flight instruments;
  (ii) physiological sensations;
  (iii) instrument appreciation;
  (iv) attitude instrument flight;
  (v) pitch attitude;
  (vi) bank attitude;
  (vii) maintenance of heading and balanced flight;
(2) attitude, power and performance;
  (i) attitude instrument flight;
  (ii) effect of changing power and configuration;
  (iii) cross-checking the instruments;
  (iv) selective radial scan;
(3) basic flight manoeuvres (full panel);
  (i) straight and level flight at various air speeds and aeroplane configurations;
  (ii) climbing;
  (iii) descending;
  (iv) standard rate turns onto pre-selected headings:
    (A) level;
    (B) climbing;
    (C) Descending

EXERCISE 20: NIGHT FLYING (if night instructional qualification required)

(a) Long briefing objectives:
(1) start up procedures;
(2) local procedures: including ATC liaison;
(3) taxiing:
  (i) parking area and taxiway lighting;
  (ii) judgement of speed and distances;
  (iii) use of taxiway lights;
  (iv) avoidance of hazards: obstruction lighting;
  (v) instrument checks;
  (vi) holding point: lighting procedure;
  (vii) initial familiarisation at night;
  (viii) local area orientation;

(ix) significance of lights on other aircraft;

(x) ground obstruction lights;

(xi) division of piloting effort: external or instrument reference;

(xii) rejoining procedure;

(xiii) aerodrome lighting: approach and runway lighting (including VASI and PAPI):

(A) threshold lights;

(B) approach lighting;

(C) visual approach slope indicator systems.

(4) night circuits;

(i) take-off and climb:

(A) line up;

(B) visual references during the take-off run;

(C) transfer to instruments;

(D) establishing the initial climb;

(E) use of flight instruments;

(F) instrument climb and initial turn.

(ii) circuit:

(A) aeroplane positioning: reference to runway lighting;

(B) the traffic pattern and look-out;

(C) initial approach and runway lighting demonstration;

(D) aeroplane positioning;

(E) changing aspect of runway lights and VASI (or PAPI);

(F) intercepting the correct approach path;

(G) the climb away.

(iii) approach and landing:

(A) positioning, base leg and final approach;

(B) diurnal wind effect;

(C) use of landing lights;

(D) the flare and touchdown;

(E) the roll out;

(F) turning off the runway: control of speed.

(iv) missed approach:

(A) use of instruments;

(B) re-positioning in the circuit pattern;

(5) night navigation:

(i) particular emphasis on flight planning;

(ii) selection of ground features visible at night:

(A) air light beacons;

(B) effect of cockpit lighting on map colours;

(C) use of radio aids;

(D) effect of moonlight upon visibility at night;

(iii) emphasis on maintaining a 'minimum safe altitude';

(iv) alternate aerodromes: restricted availability;

(v) restricted recognition of weather deterioration;

(vi) lost procedures;

(6) night emergencies;

(i) radio failure;

(ii) failure of runway lighting;

(iii) failure of aeroplane landing lights;

(iv) failure of aeroplane internal lighting;

(v) failure of aeroplane navigation lights;

(vi) total electrical failure;

(vii) abandoned take-off;

(viii) engine failure;

(ix) obstructed runway procedure.

(b) Air exercise: during the air exercise all long briefing objectives mentioned above should also be trained on site and the student instructor should demonstrate the following items:

(1) how to plan and to perform a flight at night;

(2) how to advise the student pilot to plan and prepare a flight at night;

(3) how to advise the student pilot to perform a flight at night;

(4) how to analyse and correct errors as necessary.

B. Helicopters

GROUND INSTRUCTION

Note: During ground instruction the student instructor should pay specific attention to the teaching of enhanced ground instruction in weather interpretation, planning and route assessment, decision making on encountering DVE including reversing course or conduction a precautionary landing.

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the training of PPL(H) but with additional items designed to cover the needs of an FI.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment;

(6) applicability of the exercises to the helicopter type.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the objectives and a brief reference to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include how the flight will be conducted about who is to fly the helicopter and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing will be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practise the principles of basic instruction at the PPL(H) level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat normally occupied by the FI(H).

(i) It is to be noted that airmanship and look-out is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at all times.

(j) If the privileges of the FI(H) certificate are to include instruction for night flying, exercise 28 should be undertaken either as part of the course or subsequent to certificate issue.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

(l) The student instructor should be trained to keep in mind that wherever possible, flight simulation should be used to demonstrate to student pilots the effects of flight into DVE and to enhance their understanding and need for avoidance of this potentially fatal flight regime.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: FAMILIARISATION WITH THE HELICOPTER

(a) Long briefing objectives:

(1) introduction to the helicopter;

(2) explanation of the cockpit layout;

(3) helicopter and engine systems;

(4) checklist(s) and procedures;

(5) familiarisation with the helicopter controls;

(6) differences when occupying the instructor's seat;

(7) emergency drills:

(i) action if fire in the air and on the ground: engine, cockpit or cabin and electrical fire;

(ii) system failure drills as applicable to type;

(iii) escape drills: location and use of emergency equipment and exits.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 2: PREPARATION FOR AND ACTION AFTER FLIGHT

(a) Long briefing objectives:

(1) flight authorisation and helicopter acceptance, including technical log (if applicable) and certificate of maintenance:

(2) equipment required for flight (maps, etc.);

(3) external checks;

(4) internal checks;

(5) student comfort, harness, seat and rudder pedal adjustment;

(6) starting and after starting checks;

(7) system, power or serviceability checks (as applicable);

(8) closing down or shutting down the helicopter (including system checks).

(9) parking and leaving the helicopter (including safety or security as applicable);

(10) completion of authorisation sheet and helicopter serviceability documents.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 3: AIR EXPERIENCE

(a) Long briefing objectives:

Note: there is no requirement for a long briefing for this exercise.

(b) Air exercise:

(1) air experience;

(2) cockpit layout, ergonomics and controls;

(3) cockpit procedures: stability and control.

EXERCISE 4: EFFECTS OF CONTROLS

(a) Long briefing objectives:

(1) function of the flying controls (primary and secondary effect);

(2) effect of air speed;

(3) effect of power changes (torque);

(4) effect of yaw (sideslip);

(5) effect of disc loading (bank and flare);

(6) effect on controls of selecting hydraulics on/off;

(7) effect of control friction;

(8) use of instruments;

(9) operation of carburettor heat or anti-icing control.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 5: POWER AND ATTITUDE CHANGES

(a) Long briefing objectives:

(1) relationship between cyclic control position, disc attitude, fuselage attitude and air speed flap back;

(2) power required diagram in relation to air speed;

(3) power and air speed changes in level flight;

(4) use of the instruments for precision;

(5) engine and air speed limitations;

(b) Air exercise:

(1) relationship between cyclic control position, disc attitude, fuselage attitude and air speed flap back;

(2) power and air speed changes in level flight;

(3) use of instruments for precision (including instrument scan and lookout).

EXERCISE 6: LEVEL FLIGHT, CLIMBING, DESCENDING AND TURNING

Note: for ease of training this exercise is divided into four separate parts in the PPL(H) syllabus but may be taught complete or in convenient parts.

(a) Long briefing objectives:

(1) basic factors involved in level flight;

(2) normal power settings;

(3) use of control friction or trim;

(4) importance of maintaining direction and balance;

(5) power required or power available diagram;

(6) optimum climb and descent speeds, angles or rates;

(7) importance of balance, attitude and co-ordination in the turn;

(8) effects of turning on rate of climb or descent;

(9) use of the gyro direction or heading indicator and compass;

(10) use of instruments for precision.

(b) Air exercises:

(1) maintaining straight and level flight at normal cruise power;

(2) control in pitch, including use of control friction or trim;

(3) use of the ball or yaw string to maintain direction and balance;

(4) setting and use of power for selected air speeds and speed changes;

(5) entry to climb;

(6) normal and maximum rate of climb;

(7) levelling off from climb at selected altitudes or heights;

(8) entry to descent;

(9) effect of power and air speed on rate of descent;

(10) levelling off from descent at selected altitudes or heights;

(11) entry to medium rate turns;

(12) importance of balance, attitude and co-ordination to maintain level turn;

(13) resuming straight and level flight;

(14) turns onto selected headings, use of direction indicator and compass;

(15) turns whilst climbing and descending;

(16) effect of turn on rate of climb or descent;

(17) use of instruments for precision (including instrument scan and lookout).

EXERCISE 7: AUTOROTATION

(a) Long briefing objectives:

(1) characteristics of autorotation;

(2) safety checks (including look-out and verbal warning);

(3) entry and development of autorotation;

(4) effect of AUM, IAS, disc loading, G forces and density altitude on RRPM and rate of descent;

(5) rotor and engine limitations;

(6) control of air speed and RRPM;

(7) recovery to powered flight;

(8) throttle override and control of ERPM or RRPM during re-engagement (as applicable);

(9) danger of vortex condition during recovery.

(b) Air exercise:

(1) safety checks (including verbal warning and look-out);

(2) entry to and establishing in autorotation;

(3) effect of IAS and disc loading on RRPM and rate of descent;

(4) control of air speed and RRPM;

(5) recovery to powered flight;

(6) medium turns in autorotation;

(7) simulated engine off landing (as appropriate).

EXERCISE 8: HOVERING AND HOVER TAXIING

(a) Long briefing objectives:

(1) ground effect and power required;

(2) effect of wind, attitude and surface;

(3) stability in hover and effects of over controlling;

(4) effect of control in hover;

(5) control and co-ordination during spot turns;

(6) requirement for slow hover speed to maintain ground effect;

(7) effect of hydraulic failure in hover;

(8) specific hazards, for example snow, dust, etc.

(b) Air exercise:

(1) ground effect and power or height relationship;

(2) effect of wind, attitude and surface;

(3) stability in hover and effects of over controlling;

(4) effect of control and hover technique;

(5) gentle forward running touchdown;

(6) control and co-ordination during spot (90 ° clearing) turns;

(7) control and co-ordination during hover taxi;

(8) dangers of mishandling and over pitching;

(9) (where applicable) effect of hydraulics failure in hover;

(10) simulated engine failure in the hover and hover taxi.

EXERCISE 9: TAKE-OFF AND LANDING

(a) Long briefing objectives:

(1) pre take-off checks or drills;

(2) importance of good look-out;

(3) technique for lifting to hover;

(4) after take-off checks;

(5) danger of horizontal movement near ground;

(6) dangers of mishandling and over pitching;

(7) technique for landing;

(8) after landing checks;

(9) take-off and landing crosswind and downwind.

(b) Air exercise:

(1) pre take-off checks or drills:

(2) pre take-off look-out technique;

(3) lifting to hover;

(4) after take-off checks;

(5) landing;

(6) after landing checks or drills;

(7) take-off and landing crosswind and downwind.

EXERCISE 10: TRANSITIONS FROM HOVER TO CLIMB AND APPROACH TO HOVER

(a) Long briefing objectives:

(1) revision of ground effect;

(2) translational lift and its effects;

(3) inflow roll and its effects;

(4) revision of flap back and its effects;

(5) avoidance of curve diagram and associated dangers;

(6) effect or dangers of wind speed and direction during transitions;

(7) transition to climb technique;

(8) constant angle approach;

(9) transition to hover technique.

(b) Air exercise:

(1) revision of take-off and landing;

(2) transition from hover to climb;

(3) effect of translational lift, inflow roll and flap back;

(4) constant angle approach;

(5) technique for transition from descent to hover;

(6) a variable flare simulated engine off landing.

EXERCISE 11: CIRCUIT, APPROACH AND LANDING

(a) Long briefing objectives:

(1) circuit and associated procedures;

(2) take-off and climb (including checks or speeds);

(3) crosswind leg (including checks, speeds or angles of bank in turns);

(4) downwind leg (including pre-landing checks);

(5) base leg (including checks, speeds or angles of bank in turns);

(6) final approach (including checks or speeds);

(7) effect of wind on approach and hover IGE;

(8) crosswind approach and landing technique;

(9) missed approach and go-around technique (as applicable);

(10) steep approach technique (including danger of high sink rate);

(11) limited power approach technique (including danger of high speed at touchdown);

(12) use of the ground effect;

(13) abandoned take-off technique;

(14) hydraulic failure drills and hydraulics off landing technique (where applicable);

(15) drills or technique for tail rotor control or tail rotor drive failure;

(16) engine failure drills in the circuit to include;

(17) engine failure

(18) on take-off:

(i) crosswind;

(ii) downwind;

(iii) base leg;

(iv) on final approach.

(19) noise abatement procedures (as applicable).

(b) Air exercise:

(1) revision of transitions and constant angle approach;

(2) basic training circuit, including checks;

(3) crosswind approach and landing technique;

(4) missed approach and go-around technique (as applicable);

(5) steep approach technique;

(6) basic limited power approach or run on technique;

(7) use of ground effect;

(8) hydraulic failure and approach to touchdown with hydraulics off and to recover at safe height (as applicable);

(9) simulated engine failure on take-off, crosswind, downwind, base leg and finals;

(10) variable flare simulated engine off landing.

EXERCISE 12: FIRST SOLO

(a) Long briefing objectives:

(1) warning of change of attitude due to reduced and laterally displaced weight;

(2) low tail, low skid or wheel during hover or landing;

(3) dangers of loss of RRPM and over pitching;

(4) pre take-off checks;

(5) into wind take-off;

(6) drills during and after take-off;

(7) normal circuit, approach and landing;

(8) action if an emergency.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 13: SIDEWAYS AND BACKWARDS HOVER MANOEUVRING

(a) Long briefing objectives:

(1) revision of hovering;

(2) directional stability and weather cocking effect;

(3) danger of pitching nose down on recovery from backwards manoeuvring;

(4) helicopter limitations for sideways and backwards manoeuvring;

(5) effect of CG position.

(b) Air exercise:

(1) revision of hovering and 90 ° clearing turns;

(2) manoeuvring sideways heading into wind;

(3) manoeuvring backwards heading into wind;

(4) manoeuvring sideways and backwards heading out of wind;

(5) manoeuvring backwards too fast and recovery action.

EXERCISE 14: SPOT TURNS

(a) Long briefing objectives:

(1) revision of ground effect and effect of wind;

(2) weather cocking and control actions;

(3) control of RRPM;

(4) torque effect;

(5) cyclic limiting stops due to CG position (where applicable);

(6) rate of turn limitations;

(7) spot turn about pilot position;

(8) spot turn about tail rotor position;

(9) spot turn about helicopter geometric centre;

(10) square (safe visibility) and clearing turn.

(b) Air exercise:

(1) weather cocking, torque effect and control actions;

(2) rate of turn;

(3) spot turn about pilot position;

(4) spot turn about tail rotor position;

(5) spot turn about helicopter geometric centre;

(6) square and clearing turn.

EXERCISE 15: HOVER OUT OF GROUND EFFECT AND VORTEX RING

(a) Long briefing objectives:

(1) revision of ground effect and power required diagram;

(2) drift, height and power control, look-out or scan;

(3) vortex ring, (including dangers, recognition and recovery actions);

(4) loss of tail rotor effectiveness.

(b) Air exercise:

(1) to demonstrate hover OGE;

(2) drift, height, power control and look-out, and instrument scan technique;

(3) recognition of incipient stage of vortex ring and settling with power;

(4) recovery action from incipient stage of vortex ring;

(5) recognition of loss of tail rotor effectiveness and recovery actions.

EXERCISE 16: SIMULATED ENGINE OFF LANDINGS

(a) Long briefing objectives:

(1) revision of basic autorotation;

(2) effect of AUM, disc loading, density altitude and RRPM decay;

(3) use of cyclic and collective to control speed or RRPM;

(4) torque effect;

(5) use of flare or turn to restore RRPM;

(6) technique for variable flare simulated EOL;

(7) technique for constant attitude simulated EOL;

(8) revision of technique for hover or hover taxi simulated EOL;

(9) emergency technique for engine failure during transition;

(10) technique for low level simulated EOL.

(b) Air exercise

(1) revision of entry to and control in autorotation;

(2) variable flare simulated EOL

(3) constant attitude simulated EOL;

(4) hover simulated EOL;

(5) hover taxi simulated EOL;

(6) low level simulated EOL.

EXERCISE 17: ADVANCED AUTOROTATIONS

(a) Long briefing objectives:

(1) effect of air speed or AUM on angles or rates of descent

(2) effect of RRPM setting on angle or rate of descent;

(3) reason and technique for range autorotation;

(4) reason and technique for constant attitude autorotation;

(5) reason and technique for low speed and 'S' turns in autorotation;

(6) speed or bank limitations in turns in autorotation;

(7) revision of re-engagement or go-around procedures.

(b) Air exercise:

(1) selection of ground marker and standard datum height to determine distance covered during various autorotation techniques;

(2) revision of basic autorotation;

(3) technique for range autorotation;

(4) technique for constant attitude autorotation;

(5) technique for low speed autorotation, including need for timely speed recovery;

(6) technique for 'S' turn in autorotation;

(7) 180 and 360 ° turns in autorotation;

(8) revision of re-engagement and go-around technique.

EXERCISE 18: PRACTICE FORCED LANDINGS

(a) Long briefing objectives:

(1) types of terrain or surface options for choice of best landing area;

(2) practice forced landing procedure;

(3) forced landing checks and crash actions;

(4) rules or height for recovery and go-around.

(b) Air exercise:

(1) recognition of types of terrain from normal cruise height or altitude;

(2) practice forced landing technique;

(3) revision of recovery or go-around technique.

EXERCISE 19: STEEP TURNS

(a) Long briefing objectives:

(1) air speed or angle of bank limitations;

(2) technique for co-ordination to hold bank or attitude;

(3) revision of speed or bank limitations in autorotation including RRPM control;

(4) significance of disc loading, vibration and control feedback;

(5) effect of wind in turns at low level.

(b) Air exercise:

(1) technique for turning at 30 ° of bank;

(2) technique for turning at 45 ° of bank (where possible);

(3) steep autorotative turns;

(4) explanation of faults in the turn: balance, attitude, bank and coordination;

(5) effect of wind at low level.

EXERCISE 20: TRANSITIONS

(a) Long briefing objectives:

(1) revision of effect of ground cushion, translational lift and flap back;

(2) training requirement for precision exercise;

(3) technique for transition to forward flight and back to hover as precision exercise;

(4) effect of wind.

(b) Air exercise:

(1) transition from hover to minimum 50 knots IAS and back to hover;

Note: select constant height (20 - 30 ft) and maintain.

(2) effect of wind.

EXERCISE 21: QUICK STOPS

(a) Long briefing objectives:

(1) power control co-ordination;

(2) revision of effect of wind;

(3) technique for quick stop into wind;

(4) technique for quick stop from crosswind;

(5) revision of air speed and angles of bank limitations;

(6) technique for emergency turn from downwind;

(7) technique for quick stop from downwind from high speed: flare and turn;

(8) technique for quick stop from downwind from low speed: turn and flare;

Note: use reasonable datum speed for example high speed, low speed.

(9) danger of holding flare when downwind, (vortex ring) - (minimum speed 70 knots);

(10) to revise danger of high disc loading.

(b) Air exercise:

(1) technique for quick stop into wind;

(2) technique for quick stop from crosswind;

(3) danger of vortex ring and disc loading;

(4) technique for quick stop from downwind with low speed;

(5) technique for quick stop from downwind with high speed;

(6) emergency turns from downwind.

EXERCISE 22: NAVIGATION

(a) Long briefing objectives:

Note: to be broken down into manageable parts at discretion of instructor.

(1) flight planning:

(i) weather forecasts and actuals;

(ii) map selection, orientation, preparation and use:

(A) choice of route;

(B) regulated or controlled airspace;

(C) danger, prohibited and restricted areas;

(D) safety altitude.

(iii) calculations:

(A) magnetic heading(s), time(s) en route;

(B) fuel consumption;

(C) mass and balance.

(iv) flight information:

(A) NOTAMs etc;

(B) noting of required radio frequencies;

(C) selection of alternate landing sites.

(v) helicopter documentation;

(vi) notification of the flight:

(A) pre-flight administration procedures;

(B) flight plan form (where appropriate).

(2) departure:

(i) organisation of cockpit workload;

(ii) departure procedures:

(A) altimeter settings;

(B) ATC liaison in controlled or regulated airspace;

(C) setting heading procedure;

(D) noting of ETA(s);

(E) maintenance of height or altitude and heading.

(iii) procedure for revisions of ETA and headings to include:

(A) 10° line, double track, track error and closing angle;

(B) 1 in 60 rule;

(iv) amending an ETA;

(v) log keeping;

(vi) use of radio;

(vii) use of navaids;

(viii) weather monitoring and minimum weather conditions for continuation of flight;

(ix) significance of in-flight decision making;

(x) technique for transiting controlled or regulated airspace;

(xi) uncertainty of position procedure;

(xii) lost procedure.

(3) arrival:

(i) aerodrome joining procedure, in particular ATC liaison in controlled or regulated airspace:

(A) altimeter setting;

(B) entering traffic pattern;

(C) circuit procedures.

(ii) parking procedures, in particular:

(A) security of helicopter;

(B) refuelling;

(C) closing of flight plan, (if appropriate);

(D) post flight administrative procedures.

(4) navigation problems at low heights and reduced visibility:

(i) actions before descending;

(ii) significance of hazards, (for example obstacles and other traffic);

(iii) difficulties of map reading;

(iv) effects of wind and turbulence;

(v) significance of avoiding noise sensitive areas;

(vi) procedures for joining a circuit from low level;

(vii) procedures for a bad weather circuit and landing;

(viii) actions in the event of encountering DVE;

(ix) appropriate procedures and choice of landing area for precautionary landings;

(x) decision to divert or conduct precautionary landing;

(xi) precautionary landing.

(5) radio navigation:

(i) use of VOR:

(A) availability, AIP and frequencies;

(B) selection and identification;

(C) use of OBS;

(D) to or from indications: orientation;

(E) use of CDI;

(F) determination of radial;

(G) intercepting and maintaining a radial;

(H) VOR passage;

(I) obtaining a fix from two VORs.

(ii) use of ADF equipment:

(A) availability of NDB stations, AIP and frequencies;

(B) selection and identification;

(C) orientation relative to beacon;

(D) homing.

(iii) use of VHF/DF

(A) availability, AIP and frequencies;

(B) R/T procedures and ATC liaison;

(C) obtaining a QDM and homing.

(iv) use of en-route or terminal radar:

(A) availability and AIP;

(B) procedures and ATC liaison;

(C) pilots responsibilities;

(D) secondary surveillance radar:

(a) transponders;

(b) code selection;

(E) interrogation and reply.

(v) use of DME:

(A) station selection and identification;

(B) modes of operation: distance, groundspeed and time to run.

(vi) use of GNSS:

(A) selection of waypoints;

(B) to or from indications and orientation;

(C) error messages;

(D) hazards of over-reliance in the continuation of flight in DVE.

(b) Air exercise:

(1) navigation procedures as necessary;

(2) to advise student and correct errors as necessary;

(3) map reading techniques;

(4) the significance of calculations;

(5) revision of headings and ETA's;

(6) use of radio;

(7) use of navaids: ADF/NDB, VOR, VHF/DF, DME and transponder;

(8) cross-country flying by using visual reference, DR, GNNS and, where available, radio navigation aids; simulation of deteriorating weather conditions and actions to divert or conduct precautionary landing;

(8) log keeping;

(9) importance of decision making;

(10) procedure to deal with uncertainty of position;

(11) lost procedure;

(12) appropriate procedures and choice of landing area for precautionary landings;

(13) aerodrome joining procedure;

(14) parking and shut-down procedures;

(15) post-flight administration procedures.

EXERCISE 23: ADVANCED TAKE-OFF, LANDINGS AND TRANSITIONS

(a) Long briefing objectives:

(1) revision of landing and take-off out of wind (performance reduction);

(2) revision of wind limitations;

(3) revision of directional stability variation when out of wind;

(4) revision of power required diagram;

(5) technique for downwind transitions;

(6) technique for vertical take-off over obstacles;

(7) reconnaissance technique for landing site;

(8) power checks;

(9) technique for running landing;

(10) technique for zero speed landing;

(11) technique for crosswind and downwind landings;

(12) steep approach, including dangers;

(13) revision of go-around procedures.

(b) Air exercise

(1) technique for downwind transition;

(2) technique for vertical take-off over obstacles;

(3) reconnaissance technique for landing site;

(4) power check and assessment;

(5) technique for running landing;

(6) technique for zero speed landing;

(7) technique for crosswind and downwind landings;

(8) technique for steep approach;

(9) go-around procedures.

EXERCISE 24: SLOPING GROUND

(a) Long briefing objectives:

(1) limitations;

(2) wind and slope relationship, including blade and control stops;

(3) effect of CG when on slope;

(4) ground effect and power required when on slope;

(5) landing technique when on slope, left, right and nose-up;

(6) avoidance of dynamic rollover, dangers of soft ground and sideways movement;

(7) dangers of over controlling near ground on slope;

(8) danger of striking main or tail rotor on up slope.

(b) Air exercise

(1) technique for assessing slope angle;

(2) technique for landing and take-off left skid up slope;

(3) technique for landing and take-off right skid up slope;

(4) technique for landing nose up slope;

(5) dangers of over controlling near ground.

EXERCISE 25: LIMITED POWER

(a) Long briefing objectives:

(1) use of appropriate helicopter performance graphs;

(2) selection of technique according to available power;

(3) effect of wind on available power.

(b) Air exercise: to revise and refine techniques demonstrated in exercise 23.

EXERCISE 26: CONFINED AREAS

(a) Long briefing objectives:

(1) revision of use of helicopter performance graphs;

(2) procedure for locating landing site and selecting site marker;

(3) procedures for assessing wind speed and direction;

(4) landing site reconnaissance techniques;

(5) reason for selecting landing markers;

(6) procedure for selecting direction and type of approach;

(7) dangers of out of wind approach;

(8) circuit procedures;

(9) reason for approach to committal point and go-around, (practice approach);

(10) approach technique;

(11) revision of clearing turn and landing (sloping ground technique);

(12) hover power check or performance assessment IGE and OGE (if necessary);

(13) take-off procedures.

(b) Air exercise

(1) procedures for locating landing site and selecting site marker;

(2) procedures for assessing wind speed and direction;

(3) landing site reconnaissance techniques;

(4) selecting landing markers, direction and type of approach;

(5) circuit procedure;

(6) practice approach, go-around and approach technique;

(7) revision of clearing turn and landing (sloping ground technique);

(8) hover power check or performance assessment IGE and OGE (if necessary);

(9) take-off procedures.

EXERCISE 27: BASIC INSTRUMENT FLIGHT

(a) Long briefing objectives:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) instrument scan;

(5) instrument limitations;

(6) basic manoeuvres by sole reference to instruments:

(i) straight and level flight at various air speeds and configurations;

(ii) climbing and descending;

(iii) standard rate turns, climbing and descending, onto selected headings;

(iv) recoveries from climbing and descending turns (unusual attitudes).

(b) Air exercise:

(1) attitude instrument flight and instrument scan;

(2) basic manoeuvres by sole reference to instruments:

(i) straight and level flight at various air speeds and configurations;

(ii) climbing and descending;

(iii) standard rate turns, climbing and descending, onto selected headings;

(iv) recoveries from climbing and descending turns (unusual attitudes).

EXERCISE 28: NIGHT FLYING (if night instructional qualification required)

(a) Long briefing objectives:

(1) medical or physiological aspects of night vision;

(2) requirement for torch to be carried (pre-flight inspection, etc.);

(3) use of the landing light;

(4) take-off and hover taxi procedures at night;

(5) night take-off procedure;

(6) cockpit procedures at night;

(7) approach techniques;

(8) night landing techniques;

(9) night autorotation techniques (power recovery at safe height);

(10) technique for practice forced landing at night (using appropriate illumination);

(11) emergency procedures at night;

(12) navigation principles at night;

(13) map marking for night use (highlighting built up or lit areas with thicker lines, etc.).

(b) Air exercise:

(1) use of torch for pre-flight inspection;

(2) use of landing light;

(3) night take-off to hover (no sideways or backwards movement);

(4) night hover taxi (higher and slower than by day);

(5) night transition procedure;

(6) night circuit;

(7) night approach and landing (including use of landing light);

(8) night autorotation (power recovery at safe height);

(9) practice forced landing at night (using appropriate illumination);

(10) night emergency procedures;

(11) night cross country techniques, as appropriate.

C. Airships

Part 2

AIR EXERCISES

(a) The air exercises are similar to those used for the training of PPL(As) but with additional items designed to cover the needs of an FI.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment.

(c) It follows that student instructors will eventually be faced with similar interrelated factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(d) The briefing normally includes a statement of the aim and a brief allusion to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include how the flight will be conducted about who is to fly the airship and what airmanship, weather and flight safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(e) The four basic components of the briefing will be:

(1) the aim;

(2) principles of flight (briefest reference only);

(3) the air exercise(s) (what, and how and by whom);

(4) airmanship (weather, flight safety etc.).

PLANNING OF FLIGHT LESSONS

(f) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(g) The student instructor should complete flight training to practise the principles of basic instruction at the PPL(As) level.

(h) During this training, except when acting as a student pilot for mutual flights, the student instructor occupies the seat normally occupied by the FI(As).

(i) It is to be noted that airmanship and look-out is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at all times.

(j) The exercises 15 and 16 of the flight instruction syllabus should be undertaken at night in addition to by day as part of the course.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

LONG BRIEFINGS AND AIR EXERCISES

Note: although exercise 16 is not required for the PPL(As) course it is a requirement for the FI(As) course.

EXERCISE 1: FAMILIARISATION WITH THE AIRSHIP

(a) Long briefing objectives:

(1) introduction to the airship;

(2) characteristics of the airship;

(3) cockpit layout;

(4) airship and engine systems;

(5) use of the checklist(s) and procedures;

(6) to familiarise the student with the airship controls;

(7) differences when occupying the instructor's seat;

(8) emergency drills:

(i) action if fire in the air or on the ground: engine, cockpit or cabin and electrical fire;

(ii) system failure drills as applicable to type;

(iii) escape drills: location and use of emergency equipment and exits.

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 2: PREPARATION FOR AND ACTION AFTER FLIGHT

(a) Long briefing objectives:

(1) flight authorisation and airship acceptance including tech log (if applicable) and certificate of maintenance;

(2) equipment required for flight (maps, etc.);

(3) external checks;

(4) internal checks;

(5) student comfort, harness, seat and rudder pedal adjustment;

(6) starting and after starting checks;

(7) system, power or serviceability checks (as applicable);

(8) closing down or shutting down the airship (including system checks);

(9) parking, masting and unmasting, leaving the airship (including safety or security as applicable);

(10) completion of the authorisation sheet and airship serviceability documents;

(b) Air exercise: all long briefing objectives mentioned above should also be trained on site during the air exercise.

EXERCISE 3: AIR EXPERIENCE

(a) Long briefing objectives:

Note: there is no requirement for a long briefing for this exercise.

(b) Air exercise:

(1) air experience;

(2) cockpit layout, ergonomics and controls;

(3) cockpit procedures: stability and control.

EXERCISE 4: EFFECTS OF CONTROLS

(a) Long briefing objectives:

(1) function of the flying controls (primary and secondary effect);

(2) effect of air speed;

(3) effect of power changes;

(4) effect of trimming and other controls;

(5) use of instruments;

(6) use of carburettor heat.

(b) Air exercise:

(1) function of the flying controls;

(2) effect of air speed;

(3) effect of power changes;

(4) effect of trimming and other controls;

(5) use of instruments (including instrument scan);

(6) use of carburettor heat.

EXERCISE 5: GROUND MANOEUVERING

(a) Long briefing objectives:

(1) pre-taxi checks;

(2) starting, control of speed and stopping;

(3) engine handling;

(4) masting procedures;

(5) control of direction and turning;

(6) effects of wind;

(7) effects of ground surface;

(8) marshalling signals;

(9) instrument checks;

(10) ATC procedures;

(11) emergencies.

(b) Air exercise:

(1) starting, control of speed and stopping;

(2) engine handling;

(3) masting procedures;

(4) control of direction and turning;

(5) effect of wind.

EXERCISE 6: TAKE-OFF PROCEDURES

(a) Long briefing objectives:

(1) pre take-off checks;

(2) take-off with different static heaviness;

(3) drills during and after take-off;

(4) noise abatement procedures.

(b) Air exercise:

(1) take-off with different static heaviness;

(2) drills during and after take-off.

EXERCISE 6e: EMERGENCIES

(a) Long briefing objectives:

(1) abandoned take-off;

(2) engine failures and actions after take-off;

(3) malfunctions of thrust vector control;

(4) aerodynamic control failures;

(5) electrical and system failures.

(b) Air exercise:

(1) how to abandon a take-off;

(2) engine failure and suitable action;

(3) malfunctions of thrust vector control;

(4) aerodynamic control failures.

EXERCISE 7: CLIMBING

(a) Long briefing objectives:

(1) entry and how to maintain the normal and max rate of climb;

(2) levelling off procedure;

(3) how to level off at selected altitudes;

(4) maximum angle of climb;

(5) maximum rate of climb.

(b) Air exercise:

(1) how to level off at selected altitudes;

(2) maximum angle of climb.

EXERCISE 8: STRAIGHT AND LEVEL FLIGHT

(a) Long briefing objectives:

(1) how to attain and maintain straight and level flight;

(2) flight at or close to pressure height;

(3) control in pitch, including use of trim;

(4) at selected air speeds (use of power);

(5) during speed changes;

(6) use of instruments for precision.

(b) Air exercise:

(1) how to attain and maintain straight and level flight;

(2) flight at or close to pressure height;

(3) control in pitch, including use of trim;

(4) at selected air speeds (use of power);

(5) during speed changes.

EXERCISE 9: DESCENDING

(a) Long briefing objectives:

(1) entry, maintaining and levelling off techniques;

(2) levelling off at selected altitudes;

(3) maximum rate of descent;

(4) maximum angle of descent;

(5) use of instruments for precision flight.

(b) Air exercise:

(1) levelling off at selected altitudes;

(2) maximum rate of descent;

(3) maximum angle of descent.

EXERCISE 10: TURNING

(a) Long briefing objectives:

(1) entry and maintaining level turns;

(2) resuming straight flight;

(3) faults in the turn;

(4) climbing turns;

(5) descending turns;

(6) turns to selected headings: use of gyro heading indicator and compass;

(7) use of instruments for precision.

(b) Air exercise

(1) faults in the turn and correction techniques;

(2) climbing turns;

(3) descending turns.

EXERCISE 11: HOVERING

(a) Long briefing objectives: hovering manoeuvres (as applicable).

(b) Air exercise: hovering manoeuvres (as applicable).

EXERCISE 12: APPROACH AND LANDING

(a) Long briefing objectives:

(1) effect of wind on approach and touchdown speeds;

(2) landing with different static heaviness;

(3) missed approach and go-around procedures;

(4) noise abatement procedures.

(b) Air exercise

(1) a landing with different static heaviness;

(2) missed approach and go-around procedures.

EXERCISE 12e: EMERGENCIES

(a) Long briefing objectives:

(1) aborted approach or go-around;

(2) malfunction of thrust vector control;

(3) envelope emergencies;

(4) fire emergencies;

(5) aerodynamic control failures;

(6) electrical and system failures.

(b) Air exercise: emergency drills and actions.

EXERCISE 13: PRECAUTIONARY LANDING

(a) Long briefing objectives:

(1) occasions necessitating a precautionary landing;

(2) in-flight conditions;

(3) landing area selection;

(4) circuit and approach.

(b) Air exercise:

(1) how to perform the landing area selection;

(2) circuit and approach.

EXERCISE 14a: NAVIGATION

(a) Long briefing objectives:

(1) how to do the flight planning;

(2) departure for a navigation flight;

(3) in-flight navigational techniques;

(4) arrival and aerodrome joining procedures;

(b) Air exercise:

(1) complete flight planning of a navigation flight;

(2) departure for a navigation flight;

(3) in-flight navigational techniques;

(4) arrival and aerodrome joining procedures.

EXERCISE 14b: NAVIGATION AT LOWER LEVELS AND IN REDUCED VISIBILITY

(a) Long briefing objectives:

(1) actions before descending;

(2) possible hazards (for example obstacles and terrain) and actions;

(3) student difficulties of map reading;

(4) effects of winds, turbulence and precipitation;

(5) vertical situational awareness;

(6) avoidance of noise sensitive areas;

(7) joining the circuit;

(8) bad weather circuit and landing.

(b) Air exercise:

(1) actions before descending;

(2) map reading techniques;

(3) vertical situational awareness;

(4) avoidance of noise sensitive areas;

(5) joining the circuit;

(6) bad weather circuit and landing.

EXERCISE 14c: RADIO NAVIGATION

(a) Long briefing objectives:

(1) use of VOR;

(2) use of ADF equipment;

(3) use of NDB stations;

(4) use of VHF/DF;

(5) use of en-route or terminal radar;

(6) use of DME equipment.

(b) Air exercise

(1) use of navaids;

(2) procedure to deal with uncertainty of position.

EXERCISE 15: BASIC INSTRUMENT FLIGHT

(a) Long briefing objectives:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) instrument scan;

(5) instrument limitations;

(6) basic manoeuvres by sole reference to the instruments:

(i) straight and level;

(ii) climbing and descending;

(iii) turns, climbing and descending, onto selected headings;

(iv) recoveries from climbing and descending turns.

(b) Air exercise:

(1) attitude instrument flight and instrument scan;

(2) the basic manoeuvres:

(i) straight and level;

(ii) climbing and descending;

(iii) turns, climbing and descending, onto selected headings;

(iv) recoveries from climbing and descending turns.

EXERCISE 16: NIGHT FLYING (if night instructional qualification required)

(a) Long briefing objectives:

(1) medical and physiological aspects of night vision;

(2) requirement for torch to be carried (pre-flight inspection, etc.);

(3) use of the landing light;

(4) ground manoeuvring procedures at night;

(5) night take-off procedure;

(6) cockpit procedures at night;

(7) approach techniques;

(8) night landing techniques

(9) emergency procedures at night;

(10) navigation principles at night.

(b) Air exercise:

(1) use of landing light;

(2) night ground manoeuvring;

(3) night take-off, circuit or approach and landing (including use of landing light).

AMC2 FCL.930.FI FI – Training course

ED Decision 2018/009/R

FI(S) AND FI(B) TRAINING COURSE

GENERAL

(a) The aim of the FI(S) and FI(B) training course at a DTO or an ATO is to train SPL and BPL holders to the level of competence defined in FCL.920 as instructor competencies.

(b) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the FI task including at least the following:

(1) refresh the technical knowledge of the student instructor;

(2) train the student instructor to teach the ground subjects and air exercises;

(3) ensure that the student instructor's flying is of a sufficiently high standard; and

(4) teach the student instructor the principles of basic instruction and to apply them at all training levels.

(c) With the exception of the section on teaching and learning, all the subject detail contained in the ground and flight training syllabus is complementary to the SPL and BPL course syllabus.

(d) The FI training course should give particular stress to the role of the individual in relation to the importance of human factors in the man-machine and theoretical knowledge environment interaction. Special attention should be paid to the applicant's maturity and judgement including an understanding of adults, their behavioural attitudes and variable levels of education.

(e) During the training course, the applicants should be made aware of their own attitudes to the importance of flight safety. Improving safety awareness should be a fundamental objective throughout the training course. It will be of major importance for the training course to aim at giving applicants the knowledge, skills and attitudes relevant to a flight instructor's task.

(f) On successful completion of the training course and final test the applicant may be issued with an FI certificate.

CONTENT

(g) The training course consists of two parts:

(1) Part 1, theoretical knowledge including the teaching and learning instruction that should comply with AMC1 FCL.920;

(2) Part 2, flight instruction.

Part 1

The content of the teaching and learning part of the FI course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

The course should include at least 55 hours of theoretical knowledge including at least 25 hours teaching and learning instructions for the FI (S) and FI(B) certificate.

Part 2

FLIGHT INSTRUCTION SYLLABUS

An approved FI training course should comprise at least the minimum hours of flight instruction as defined in FCL.930.FI.

AIR EXERCISES

(a) The air exercises are similar to those used for the training of SPL or BPL but with additional items designed to cover the needs of a flight instructor.

(b) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide: therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors:

(1) the applicant's progress and ability;

(2) the weather conditions affecting the flight;

(3) the flight time available;

(4) instructional technique considerations;

(5) the local operating environment;

(6) Applicability of the exercises to the aircraft type.

(c) At the discretion of the instructors some of the exercises may be combined whereas some other exercises may be done in several flights.

(d) It follows that student instructors will eventually be faced with similar inter-related factors. They should be shown and taught how to construct flight lesson plans, taking these factors into account, so as to make the best use of each flight lesson, combining parts of the set exercises as necessary.

GENERAL

(e) The briefing normally includes a statement of the aim and a brief allusion to principles of flight only if relevant. An explanation is to be given of exactly what air exercises are to be taught by the instructor and practised by the student during the flight. It should include how the flight will be conducted with regard to who is to fly the aircraft and what airmanship, weather and flight

safety aspects currently apply. The nature of the lesson will govern the order in which the constituent parts are to be taught.

(f) The five basic components of the briefing will be:

(1) the aim;

(2) the air exercise(s) (what, and how and by whom);

(3) flight briefing;

(4) check of understanding;

(5) airmanship.

PLANNING OF FLIGHT LESSONS

(g) The preparation of lesson plans is an essential prerequisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of flight lesson plans.

GENERAL CONSIDERATIONS

(h) The student instructor should complete flight training in order to practise the principles of basic instruction at the SPL or BPL level. During this training the student instructor occupies the seat normally occupied by the FI.

(i) The instructor providing this instructor training is normally taking over the role of the student pilot. In the case of the course for the FI(B) an additional person holding a BPL or LAPL(B) licence or a student pilot for these licences may be on board in order to function as a student pilot under the supervision of the instructor.

(j) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(k) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

SYLLABUS OF FLIGHT INSTRUCTION CONTENTS

A. SAILPLANES

LONG BRIEFINGS AND AIR EXERCISES

Note: although the fully developed spin in exercise 10 is not required for the LAPL course, it is a requirement for the FI course.

EXERCISE 1: FAMILIARISATION WITH THE SAILPLANE

(a) Objective:

To advise the student instructor on how to familiarise the student with the sailplane which will be used for the training and to test his/her position in the sailplane for comfort, visibility, and ability to use all controls and equipment.

(b) Briefing and exercise:

The student Instructor has to:

(1) present the type of sailplane which will be used;

(2) explain the cockpit layout: instruments and equipment;

(3) explain the flight controls: stick, pedals, airbrakes, flaps, cable release, undercarriage;

(4) check the position of the student on the seat for comfort, visibility, ability to use all controls;

(5) explain the use of the harness;

(6) demonstrate how to adjust the rudder pedal;

(7) explain the differences when occupying the instructor's position;

(8) explain all checklists, drills, controls.

EXERCISE 2: PROCEDURE IN THE EVENT OF EMERGENCIES

(a) Objective:

To advise the student instructor on how to familiarise the student with the use of the parachute and how to explain the bail out procedure in case of emergency.

(b) Briefing and exercise:

The student instructor has to:

(1) explain how to handle the parachute with care (transport, storage and drying after use);

(2) demonstrate the adjustment of the parachute harness;

(3) explain the bail out procedure (especially from a sailplane in unusual attitude);

(4) explain the procedure for landing with a parachute in normal conditions and with a strong wind.

EXERCISE 3: PREPARATION FOR FLIGHT

(a) Objective:

To advise the student instructor on how to explain all the operations to be completed prior to flight. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the need for a pre-flight briefing;

(2) the structure and the content of this briefing;

(3) which documents are required on board;

(4) which equipment are required for a flight;

(5) how to handle the sailplane on the ground, how to move it, how to tow it out and how to park it;

(6) how to do the pre-flight external and internal checks;

(7) the procedure for verifying in-limits mass and balance;

(8) the pre-launch checks (checklist).

(c) Air exercise:

The student instructor has to demonstrate:

(1) the need for a pre-flight briefing;

(2) that the required documents are on board;

(3) that the equipment required for the intended flight is on board;

(4) how to handle the sailplane on the ground, move it to the start position, tow it out and park it;

(5) how to perform a pre-flight external and internal check;

(6) how to verify in-limits mass and balance;

(7) how to adjust harness as well as seat or rudder pedals;

(8) the pre-launch checks;

(9) how to advise the student pilot in performing the pre-flight preparation;

(10) how to analyse and correct pre-flight preparation errors as necessary.

EXERCISE 4: INITIAL AIR EXPERIENCE

(a) Objective:

To advise the student instructor on how to familiarise the student with being in the air, with the area around the airfield, to note his/her reactions in this situation, and to draw his/her attention to safety and look-out procedures.

(b) Briefing:

The student instructor has to explain:

(1) the area around the airfield;

(2) the need for looking out;

(3) the change of aircraft control.

(c) Air exercise:

The student instructor has to:

(1) show the noteworthy references on the ground;

(2) analyse the reactions of the student;

(3) check that the student looks out (safety).

EXERCISE 5: PRIMARY EFECTS OF CONTROLS

(a) Objective:

To advise the student instructor on how to:

(1) demonstrate the primary effects of each control with the help of visual references;

(2) train the student pilot to recognise when the sailplane is no longer in a normal attitude along one of the axes and to return to the normal attitude;

(3) train continuous and efficient look-out during these exercises;

(4) analyse and correct errors and student pilot mistakes as necessary.

(b) Briefing:

The student instructor has to explain:

(1) define the axes of a sailplane;

(2) the look-out procedures;

(3) the visual references along each axis;

(4) the primary effects of controls when laterally level;

(5) the relationship between attitude and speed;

(6) the use of flaps;

(7) the use of airbrakes.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the visual references in flight;

(2) the primary effect of the elevator;

(3) the relationship between attitude and speed (inertia);

(4) the primary effect of rudder on the rotation of the sailplane around the vertical axis;

(5) the primary effect of ailerons on banking;

(6) the effect of airbrakes (including changes in pitch when airbrakes are extended or retracted);

(7) the effects of flaps (provided the sailplane has flaps);

(8) the look-out procedures during all the exercises;

(9) how to advise the student pilot to recognise the primary effects of each control;

(10) how to analyse and correct errors as necessary.

EXERCISE 6: CO-ORDINATED ROLLING TO AND FROM MODERATE ANGLES OF BANK

(a) Objective:

To advise the student instructor on secondary effects of controls and on how to teach the student to coordinate ailerons and rudder in order to compensate for the adverse yaw effect. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the secondary effects of controls;

(2) the adverse yaw effect;

(3) how to compensate for the adverse yaw;

(4) the further effect of the rudder (roll).

(c) Air exercise:

The student instructor has to demonstrate:

(1) the adverse yaw effect with a reference on ground;

(2) the further effect of the rudder (roll);

(3) the coordination of ruder and aileron controls to compensate for the adverse yaw effects;

(4) rolling to and from moderate angles of bank (20 to 30 °) and returning to the straight flight;

(5) how to advise the student pilot to coordinate ailerons and rudder;

(6) how to analyse and correct errors as necessary.

EXERCISE 7: STRAIGHT FLYING

(a) Objective:

To advise the student instructor on how to train the student to maintain straight flight with a constant heading without slipping and skidding. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to:

(1) explain how to maintain straight flight;

(2) explain different air speed limitations;

(3) explain the pitch stability of the sailplane;

(4) explain the effect of trimming.

(c) Air exercise:

The instructor student has to demonstrate:

(1) maintaining straight flight;

(2) inherent pitch stability;

(3) the control of the sailplane in pitch, including use of trim with visual references and speed;

(4) how to perform the instrument monitoring;

(5) the control of level attitude with visual references;

(6) the control of the heading with a visual reference on the ground;

(7) the look-out procedures during all the exercises;

(8) how to advise the student pilot to maintain straight flight;

(9) how to analyse and correct errors as necessary.

EXERCISE 8: TURNING

(a) Objective:

To advise the student instructor on how to teach students to fly turns and circles with a moderate constant bank of about 30 ° with constant attitude (speed) and coordinated flight. Furthermore**,** the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the forces on the sailplane during a turn;

(2) the need to look out before turning;

(3) the sequences of a turn (entry, stabilizing and exiting);

(4) the common faults during a turn;

(5) how to turn on to selected headings, use of compass;

(6) the use of instruments (ball indicator or slip string) for precision.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the look-out procedure before turning;

(2) entering a turn (correction of adverse yaw);

(3) the stabilisation of a turn (keeping the attitude and compensating the induced roll);

(4) the exit from a turn;

(5) the most common faults in a turn;

(6) turns on to selected headings (use landmarks as reference);

(7) use of instruments (ball indicator or slip string) for precision:

(8) how to advise the student pilot to fly a turn or circle with a moderate bank;

(9) how to analyse and correct errors as necessary.

EXERCISE 9a: SLOW FLIGHT

(a) Objective:

To advise the student instructor on how to improve the student's ability to recognise inadvertent flight at critically low speeds (high angle of attack) and to provide practice in maintaining the sailplane in balance while returning to normal attitude (speed). Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the characteristics of slow flight;

(2) the risks of stalling.

(c) Air Exercise:

The student instructor has to check that the airspace below the sailplane is free of other aircraft before starting the exercise.

The student instructor has to demonstrate:

(1) a controlled flight down to critically high angle of attack (slow air speed), and draw the attention of the student to the nose up attitude, reduction of noise, reduction of speed;

(2) a return to the normal attitude (speed);

(3) how to advise the student pilot to recognise inadvertent flight at critically low speeds;

(4) how to provide practice in maintaining the sailplane in balance while returning to normal attitude;

(5) how to analyse and correct errors as necessary.

EXERCISE 9b: STALLING

(a) Objective:

To advise the student Instructor on how to improve the student's ability to recognize a stall and to recover from it. This includes stall from a level flight and stalls when a wing drops. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the mechanism of a stall;

(2) the effectiveness of the controls at the stall;

(3) pre-stall symptoms, recognition and recovery;

(4) factors affecting the stall (importance of the angle of attack and high speed stall);

(5) effect of flaps if any on the sailplane;

(6) the effects of unbalance at the stall safety checks;

(7) stall symptoms, recognition and recovery;

(8) recovery when a wing drops; approach to stall in the approach and in the landing configurations: recognition and recovery from accelerated stalls.

(c) Air Exercise:

The student instructor has to check that the airspace below the sailplane is free of other aircraft or traffic before starting the exercise.

The student instructor has to demonstrate:

(1) stall from a level flight;

(2) pre-stall symptoms, recognition and recovery;

(3) stall symptoms, recognition and recovery;

(4) recovery when a wing drops;

(5) approach to stall in the approach and in the landing configurations;

(6) recognition and recovery from accelerated stalls;

(7) stalling and recovery at the incipient stage with 'instructor induced' distractions;

(8) how to improve the student pilot's ability to recognise a stall and to recover from it;

(9) how to analyse and correct errors as necessary.

Note: consideration is to be given to manoeuvre limitations and references to the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) in relation to mass and balance limitations. The safety checks should take into account the minimum safe altitude for initiating such exercises in order to ensure an adequate margin of safety for the recovery. If specific procedures for stalling or spinning exercises and for the recovery techniques are provided by the flight manual or equivalent document (for example owner's manual or pilot's operating handbook), they have to be taken into consideration. These factors are also covered in the next exercise.

EXERCISE 10a: SPIN RECOGNITION AND AVOIDANCE

(a) Objective:

To advise the student Instructor on how to improve the student's ability to recognize a spin at the incipient stage and to recover from it. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) why a sailplane spins;

(2) how to recognise the symptoms of a spin (not to be confused with spiral dive);

(3) what are the parameters influencing the spin;

(4) how to recover from a spin.

(c) Air exercise:

The student instructor has to check that the airspace below the sailplane is free of other aircraft or traffic before starting the exercise.

The student instructor has to:

(1) demonstrate stalling and recovery at the incipient spin stage (stall with excessive wing drop, about 45 °);

(2) make sure that the student recognises the spin entry;

(3) make sure that the student pilot is able to recover from the spin;

(4) check if the student still reacts properly if the instructor induces distractions during the spin entry;

(5) demonstrate how to analyse and correct errors as necessary.

Note: consideration of manoeuvre limitations and the need to refer to the sailplane manual and mass and balance calculations.

EXERCISE 10b: DEVELOPED SPINS: ENTRY AND RECOVERY

(a) Objective:

To advise the student instructor on how to recognize a developed spin and to recover from it. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the spin entry;

(2) the symptoms of a real spin and the recognition and identification of spin direction;

(3) the spin recovery;

(4) use of controls;

(5) effects of flaps (flap restriction applicable to type);

(6) the effect of the CG upon spinning characteristics;

(7) the spinning from various flight attitudes;

(8) the sailplane limitations;

(9) safety checks;

(10) common errors during recovery.

(c) Air exercise:

The student instructor has to check that the airspace below the sailplane is free of other aircraft or traffic before starting the exercise.

The student instructor has to demonstrate:

(1) safety checks;

(2) the spin entry;

(3) the recognition and identification of the spin direction;

(4) the spin recovery (reference to flight manual);

(5) the use of controls;

(6) the effects of flaps (restrictions applicable to sailplane type);

(7) spinning and recovery from various flight attitudes;

(8) how to improve the student pilot's ability to recognise a spin and how to recover from it;

(9) how to analyse and correct errors as necessary.

EXERCISE 11: TAKE OFF OR LAUNCH METHODS

Note: the student instructor has to teach at least one of the following launch methods: winch launch, aero tow, self-launch. At least three launch failure exercises should be completed. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

EXERCISE 11a: WINCH LAUNCH

(a) Objective:

To advise the student instructor on how to teach winch launches and on how to make sure that their student will manage an aborted launch. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the signals or communication before and during launch;

(2) the use of the launching equipment;

(3) the pre-take-off checks;

(4) the procedure for into wind take-off;

(5) the procedure for crosswind take-off;

(6) the optimum profile of winch launch and limitations;

(7) the launch failure procedures.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the use of the launching equipment;

(2) the pre-take-off checks;

(3) the into wind take-off;

(4) the crosswind take-off;

(5) the optimum profile of winch launch and limitations;

(6) the procedure in case of cable break or aborted launch, launch failure procedures;

(7) how to teach the student pilot to perform safe winch launches;

(8) how to teach the student pilot to manage an aborted launch (different altitudes);

(9) how to analyse and correct errors as necessary.

EXERCISE 11b: AERO TOW

(a) Objective:

To advise the student instructor on how to teach aero towing and on how to make sure that their student will manage an aborted launch. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the signals or communication before and during launch;

(2) the use of the launch equipment;

(3) the pre-take-off checks;

(4) the procedure for into wind take-off;

(5) the procedure for crosswind take-off;

(6) the procedure on tow: straight flight, turning and slip stream;

(7) the recovery from out-of-position on tow;

(8) the procedures in case of launch failure and abandonment;

(9) the descending procedure on tow (towing aircraft and sailplane);

(10) the reasons for launch failures and abandonment or procedures.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the signals before and during launch;

(2) the use of the launch equipment;

(3) the pre-take-off checks;

(4) the procedure for into wind take-off;

(5) the procedure for a crosswind take-off;

(6) the procedures on tow: straight flight, turning and slip stream;

(7) the recovery from out-of-position on tow;

(8) the procedure in case of launch failure and abandonment;

(9) the descending procedure on tow;

(10) how to teach the student pilot to perform safe aero tow launches;

(11) how to teach the student pilot to manage an aborted launch;

(12) how to analyse and correct errors as necessary.

EXERCISE 11c: SELF LAUNCH

(a) Objective:

To advise the student instructor on how to teach launching with a self launching sailplane and on how to make sure that his/her student will manage an aborted launch. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the engine extending and retraction procedures;

(2) the engine starting and safety precautions;

(3) the pre-take-off checks;

(4) the noise abatement procedures;

(5) the checks during and after take-off;

(6) the into wind take-off;

(7) the crosswind take-off;

(8) the procedure in case of power failure;

(9) the procedure in case of abandoned take-off;

(10) the maximum performance (short field and obstacle clearance) take-off;

(11) the short take-off and soft field procedure or techniques and performance calculations.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the engine extending and retraction procedures;

(2) the engine starting and safety precautions;

(3) the pre-take-off checks;

(4) the noise abatement procedures;

(5) the checks during and after take off;

(6) the into wind take-off;

(7) the crosswind take-off;

(8) the power failures and procedures;

(9) the procedure in case of abandoned take-off;

(10) the maximum performance (short field and obstacle clearance) take-off;

(11) the short take-off and soft field procedure or techniques and performance calculations;

(12) how to teach the student pilot to perform safe self launches;

(13) how to teach the student pilot to manage an aborted launch (different altitudes);

(14) how to analyse and correct errors as necessary.

EXERCISE 12: CIRCUIT APPROACH AND LANDING

(a) Objective:

To advise the student instructor on how to teach their students to fly a safe circuit approach and to land the sailplane. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the procedures for rejoining the circuit;

(2) the procedures for collision avoidance and the lookout techniques;

(3) the pre-landing check;

(4) the normal circuit procedures, downwind, base leg;

(5) the effect of wind on approach and touchdown speeds ;

(6) the visualisation of a reference point;

(7) the approach control and use of airbrakes;

(8) the use of flaps (if applicable);

(9) the procedures for normal and crosswind approach and landing.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the procedures for rejoining the circuit;

(2) the procedures for collision avoidance and the look-out techniques;

(3) the pre-landing check;

(4) the standard circuit and contingency planning (for example running out of height);

(5) the effect of wind on approach and touchdown speeds;

(6) the visualisation of an aiming point;

(7) the approach control and use of airbrakes;

(8) the use of flaps (if applicable);

(9) the procedures for normal and crosswind approaches and landings;

(10) how to teach the student pilot to fly a safe circuit approach;

(11) how to improve the student pilot's ability to perform a safe landing;

(12) how to analyse and correct errors as necessary.

EXERCISE 13: FIRST SOLO

(a) Objective:

To advise the student instructor on how to prepare their students for the first solo flight.

(b) Briefing:

The student instructor has to explain:

(1) the limitations of the flight (awareness of local area and restrictions);

(2) the use of required equipment.

(c) Air exercise:

The student instructor has to;

(1) check with another or more senior instructor if the student can fly solo;

(2) monitor the flight;

(3) debrief the flight with the student.

EXERCISE 14 : ADVANCED TURNING

(a) Objective:

To advise the student instructor on how to fly steep turns or circles (45 ° banking) at constant attitude (speed) and with the yaw string centred. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain;

(1) the relationship between banking and speed;

(2) how to master steep turns or circles;

(3) the unusual attitudes which can occur (stalling or spinning and spiral dive);

(4) how to recover from these unusual attitudes.

(c) Air exercise:

The student has to demonstrate:

(1) steep turns (45 °) at constant speed and with the yaw string centred;

(2) common errors (slipping and skidding);

(3) unusual attitudes and how to recover from them;

(4) how to teach the student pilot to fly steep turns or circles;

(5) how to analyse and correct errors as necessary.

EXERCISE 15: SOARING TECHNIQUES

Note: if the weather conditions during the instructor training do not allow the practical training of soaring techniques, all items of the air exercises have to be discussed and explained during a long briefing exercise only.

EXERCISE 15a: THERMALLING

(a) Objective:

To advise the student instructor on how to teach their students to recognise and detect thermals, on how to join a thermal and on how to look out, in order to avoid mid-air collisions. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain;

(1) the look-out procedures;

(2) the detection and recognition of thermals;

(3) the use of audio soaring instruments;

(4) the procedure for joining a thermal and giving way;

(5) how to fly in close proximity to other sailplanes;

(6) how to centre in thermals;

(7) how to leave thermals.

(c) Air exercise:

The student instructor has to demonstrate;

(1) the look-out procedures;

(2) the detection and recognition of thermals;

(3) the use of audio soaring instruments;

(4) the procedure for joining a thermal and giving way;

(5) the procedure for flying in close proximity to other sailplanes;

(6) the centering in thermals;

(7) the procedure for leaving thermals;

(8) how to improve the student pilot's ability to recognise and detect thermals;

(9) how to improve the student pilot's ability to join a thermal and how to look out;

(10) how to analyse and correct errors as necessary.

EXERCISE 15b: RIDGE FLYING

(a) Objective:

To advise the student instructor on how to teach his/her students to fly safely on ridges, to control their speed, and to apply the rules in order to avoid midair collisions. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the look-out procedures;

(2) the ridge flying rules;

(3) the recognition of optimum flight path;

(4) speed control.

(c) Air exercise: (if applicable during training and, if possible, at training site)

The student instructor has to demonstrate:

(1) the look-out procedures;

(2) the practical application of ridge flying rules;

(3) the recognition of optimum flight path;

(4) speed control;

(5) how to teach the student pilot to fly safely on ridges;

(6) how to analyse and correct errors as necessary.

EXERCISE 15c: WAVE FLYING

(a) Objective:

To advise the student instructor on how to introduce students to wave flying and to teach them to fly safely at high altitude. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the look-out procedures;

(2) the techniques to be used to accede to a wave;

(3) the speed limitations with increasing height;

(4) the risks of hypoxia and the use of oxygen.

(c) Air exercise: (if applicable during training and if possible at training site) The student instructor has to demonstrate:

(1) the look-out procedures;

(2) the wave access techniques;

(3) the speed limitations with increasing height;

(4) the use of oxygen (if available);

(5) how to improve the student pilot's ability to recognise and detect waves;

(6) how to teach the student pilot to fly safely in a wave;

(7) how to analyse and correct errors as necessary.

EXERCISE 16: OUT-LANDINGS

Note: if the weather conditions during the instructor training do not allow the practical training of out-landing procedures (a touring motor glider may be used) all items of the air exercise have to be discussed and explained during a long briefing exercise only. Instructors may only teach the safe out-landing exercise after they have demonstrated the practical ability to do so.

(a) Objective:

To advise the student instructor on how to teach students to select an outlanding field, to fly the circuit and how to master the unusual landing situation. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the gliding range at max L/D;

(2) the engine re-start procedures (only for self-launching and selfsustaining sailplanes);

(3) the selection of a landing area;

(4) the circuit judgement and key positions;

(5) the circuit and approach procedures;

(6) the actions to be done after landing.

(c) Air exercise:

The student instructor has to demonstrate:

(1) precision landings on the airfield;

(2) the gliding range;

(3) the procedures for joining, arrival and circuit at a remote aerodrome;

(4) the selection of an out-landing area;

(5) the procedures for circuit and approach on an out-landing field;

(6) the actions to be done after landing;

The student instructor also has to be trained:

(7) how to advise the student pilot to do perform a safe out-landing;

(8) how to master an unusual landing situation;

(9) how to analyse and correct errors as necessary.

EXERCISE 17: CROSS COUNTRY FLYING

Note: if the weather conditions during the instructor training do not allow a cross country training flight the items of the air exercise have to be discussed and explained during a long briefing exercise only.

EXERCISE 17a: FLIGHT PLANNING

(a) Objective:

To advise the student instructor on how plan and prepare a cross-country flight.

(b) Briefing:

The student instructor has to explain:

(1) the weather forecast and current situation;

(2) the selection of the amount of water to be carried as a function of the weather forecast;

(3) the method for selecting a task, taking into account the average speed to be expected;

(4) the map selection and preparation;

(5) the NOTAMs and airspace considerations;

(6) the radio frequencies (if applicable);

(7) the pre-flight administrative procedures;

(8) the procedure for filing a flight plan where required;

(9) alternate aerodromes and landing areas.

EXERCISE 17b: IN-FLIGHT NAVIGATION

(a) Objective:

To advise the student instructor on how to teach performing a cross-country flight.

(b) Briefing:

The student instructor has to explain:

(1) how to maintain track and re-route if necessary;

(2) the altimeter settings;

(3) the use of radio and phraseology;

(4) the in-flight planning;

(5) the procedures for transiting regulated airspace or ATC liaison where required;

(6) the procedure in case of uncertainty of position;

(7) the procedure in case of becoming lost;

(c) Air exercise:

The student instructor has to demonstrate:

(1) maintaining track and re-routing if necessary;

(2) altimeter settings;

(3) the use of radio and phraseology;

(4) in-flight planning;

(5) procedures for transiting regulated airspace or ATC liaison where required;

(6) uncertainty of position procedure;

(7) lost procedure;

(8) use of additional equipment where required;

(9) joining, arrival and circuit procedures at remote aerodrome;

(10) how to teach the student pilot to perform a cross-country flight;

(11) how to analyse and correct errors as necessary.

EXERCISE 17c: CROSS-COUNTRY SOARING TECHNIQUES

(a) Objective:

To advise the student instructor on the techniques for an efficient cross country flight.

(b) Briefing:

The student instructor has to explain:

(1) the speed to fly at maximal L/D ratio;

(2) the speed to fly to maximise the cruise speed (Mc Cready theory);

(3) how to select the optimal track (efficient use of cloud streets etc.);

(4) how to calculate the final glide;

(5) how to perform a safe out-landing.

(c) Air exercise:

The student instructor has to demonstrate:

(1) a cross-country flight;

(2) the selection of the optimal track (efficient use of cloud streets, etc) ;

(3) the use of the Mc Cready ring;

(4) use of final glide computers;

(5) how to reduce risk and to react to potential dangers;

(6) how to plan and perform an out-landing;

(7) how to teach the student pilot techniques for an efficient crosscountry flight;

(8) how to analyse and correct errors as necessary.

B. BALLOONS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: FAMILIARISATION WITH THE BALLOON

(a) Objective:

To advise the student Instructor on how to familiarise the student with the balloon which will be used for the training and to test his position in the basket for comfort, visibility, and ability to use all controls and equipment. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing and exercise:

The student instructor has to:

(1) present the type of balloon which will be used;

(2) explain the characteristics of the balloon;

(3) explain the components, instruments and equipment;

(4) explain the re-fuelling procedures (in the case of hot air balloons);

(5) to familiarise the student with the balloon controls;

(6) explain the differences when occupying the instructor’s position;

(7) explain all checklists, drills and controls.

EXERCISE 2: PREPARATION FOR FLIGHT

(a) Objective:

To advise the student instructor on how to explain all the operations and necessary preparation to be completed before the flight. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing

The student instructor has to explain:

(1) the need for a pre-flight briefing;

(2) the structure and the content of this briefing;

(3) which documents are required on board;

(4) which equipment are required for a flight;

(5) the use of weather forecasts or actuals;

(6) the flight planning with particular regard to NOTAMs, airspace structure, sensitive areas, expected track and distance, pre-flight picture and possible landing fields;

(7) the use of load calculation chart;

(8) the selection of launch field with particular regard to permission, behaviour and adjacent fields.

(c) Air exercise:

The student instructor has to prepare and give a pre-flight briefing.

The student instructor has to demonstrate:

(1) that the required documents are on board;

(2) that the equipment required for the intended flight is on board;

(3) how to advice the student to do the pre-planning procedures for each flight;

(4) how to perform a pre-launch check;

(5) how to select a launch field with particular regard to permission, behaviour and adjacent fields;

(6) how to teach the student pilot to perform the preparation to be completed prior to flight;

(7) how to analyse and correct errors of the student pilot as necessary.

EXERCISE 3: CREW AND PASSENGER BRIEFING

(a) Objective:

To advise the student instructor on how to explain all the importance of correct clothing for pilot, passengers and crew and how to perform the briefing of ground- and retrieve crew and the briefing of passengers. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the correct clothing for passengers and crew;

(2) the briefings for ground- and retrieve crew and passengers.

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to advise the passengers and crew about the correct clothing;

(2) the briefing of ground- and retrieve crew;

(3) the briefing of passengers;

(4) how to familiarise the student pilot with the different type of briefings;

(5) how to analyse and correct errors of the student pilot.

EXERCISE 4: ASSEMBLY AND LAYOUT

(a) Objective:

To advise the student instructor on how to familiarise the student pilot with the control of the crowd and how to perform the securing of launch site. Furthermore the student instructor has to demonstrate how to familiarise the student pilot with the correct rigging of envelope and basket, the burner test procedure (hot air balloons) and the pre-inflation checks. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the control of the crowd;

(2) the securing of the launch site;

(3) the correct rigging procedure;

(4) the use of the restraint line;

(5) the pre-inflation checks.

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to control the crowd and securing of launch site;

(2) the correct rigging of envelope and basket;

(3) the correct use of the restraint line;

(4) the burner test procedure (hot air balloons);

(5) the pre-inflation checks;

(6) how to teach the student pilot to perform the correct rigging;

(7) how to analyse and correct assembly errors of the student pilot as necessary.

EXERCISE 5: INFLATION

(a) Objective:

To advise the student instructor on how to familiarise the student pilot with the different phases of the inflation procedure, the use of restraint line and inflation fan (hot air balloons) and the avoidance of electrostatic discharge (gas balloons). Furthermore**,** the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the different phases of the inflation procedure;

(2) the crowd control and securing procedures during inflation;

(3) the use of the inflation fan (hot air balloons);

(4) how to avoid electronic discharge (gas balloons).

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to control of crowd and securing of launch site during inflation procedure; the cold inflation procedure and use of restraint line and inflation fan (hot air balloons);

(2) the hot inflation procedure (hot air balloons);

(3) the avoidance of electrostatic discharge (gas balloons);

(4) the inflation procedure (gas balloons);

(5) how to teach the student pilot to perform the inflation procedures;

(6) how to analyse and correct errors of the student pilot during the inflation procedure as necessary.

EXERCISE 6: TAKE OFF IN DIFFERENT WIND CONDITIONS

(a) Objective:

To advise the student instructor how to explain the pre take-off checks and briefings, the preparation for controlled climb and the use of restraint equipment. Furthermore the student instructor should be able to demonstrate the assessment of wind and obstacles, the preparation for false lift and the take off techniques in different wind conditions. In addition to this the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the pre take-off checks and briefings;

(2) the preparation for controlled climb;

(3) the ‘hands off and hands on’ procedure for ground crew;

(4) the assessment of lift;

(5) the use of the restraint equipment ;

(6) the assessment of wind and obstacles;

(7) the preparation for false lift;

(8) the take off techniques from sheltered and non sheltered launch fields.

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to perform the pre take-off checks and briefings;

(2) how to prepare for controlled climb;

(3) how to perform the 'hands off and hands on' procedure for ground crew;

(4) how to perform the assessment of lift without endangering the ground crew;

(5) how to use the restraint equipment;

(6) how to perform the assessment of wind and obstacles;

(7) how to prepare for false lift;

(8) how to teach the student pilot the correct take off techniques from sheltered and non sheltered launch fields;

(9) how to analyse and correct errors of the student pilot as necessary.

EXERCISE 7: CLIMB TO LEVEL FLIGHT

(a) Objective:

To advise the student instructor on how to explain and demonstrate the climb to flight level. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the climbing with a predetermined rate of climb;

(2) the effect on envelope temperature (hot air balloons);

(3) the maximum rate of climb according to manufacturer's flight manual;

(4) how to level off at selected altitude.

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to climb with a predetermined rate of climb;

(2) how to perform look out techniques;

(3) the effect on envelope temperature (hot air balloons);

(4) the maximum rate of climb according to manufacturer's flight manual;

(5) the levelling off techniques at selected altitude;

(6) how to advise the student pilot to perform the climb to level flight;

(7) how to analyse and correct faults or errors of the student pilot during the climb.

EXERCISE 8: LEVEL FLIGHT

(a) Objective:

To advise the student instructor on how to explain and demonstrate level flight. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) how to maintain level flight by use of instruments;

(2) how to maintain level flight by use of visual references;

(3) how to maintain level flight by use of all available means;

(4) the use of parachute;

(5) the use of turning vents if installed (hot air balloons).

(c) Air exercise:

The student instructor has to demonstrate:

(1) how to maintain level flight by use of instruments;

(2) how to maintain level flight by use of visual references;

(3) how to maintain level flight by use of all available means;

(4) the use of parachute;

(5) the use of turning vents if installed (hot air balloons);

(6) how to advise the student pilot to perform the level flight;

(7) how to analyse and correct faults or errors of the student pilot during the level flight.

EXERCISE 9: DESCENT TO LEVEL FLIGHT

(a) Objective:

To advise the student instructor on how to explain and demonstrate the descent to a certain flight level. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) how to descent with a predetermined rate of descent;

(2) a fast descent;

(3) the maximum rate of descent according to manufacturer’s flight manual;

(4) the use of parachute;

(5) a parachute stall and cold descent (hot air balloons);

(6) the levelling off technique at selected altitude.

(c) Air exercise:

The student instructor has to demonstrate:

(1) a descent with a predetermined rate of descent;

(2) how to perform look out techniques;

(3) a fast descent;

(4) the maximum rate of descent according to manufacturer's flight manual;

(5) the use of parachute;

(6) how to level off at selected altitudes;

(7) how to advise the student pilot to perform a descent to a certain flight level;

(8) how to analyse and correct faults or errors of the student pilot during the descent.

EXERCISE 10: EMERGENCIES

(a) Objective:

To advise the student instructor on how to explain and demonstrate the different emergency situations and how to react. Furthermore the student instructor should learn how to identify student errors during the simulated emergency exercises and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the pilot light failure (hot air balloons);

(2) burner failures, valve leaks, flame out and re-light (hot air balloons);

(3) gas leaks;

(4) closed appendix during take-off and climb (gas balloons);

(5) the envelope over temperature (hot air balloons);

(6) envelope damage in flight;

(7) the parachute or rapid deflation system failure;

(8) fire on ground and in the air;

(9) how to avoid an obstacle contact including contact with electrical power lines;

(10) escape drills, location and use of emergency equipment.

(c) Air exercise:

The student instructor has to demonstrate:

(1) a pilot light failure (hot air balloons);

(2) a burner failure, valve leaks, flame out and re-light (hot air balloons);

(3) gas leaks;

(4) a closed appendix during take-off and climb (gas balloons);

(5) envelope over temperature (hot air balloons);

(6) envelope damage in flight;

(7) parachute or rapid deflation system failure;

(8) a fire on ground and in the air;

(9) the escape drills, location and use of emergency equipment;

(10) how to advise the student pilot in performing the different emergency drills;

(11) how to analyse and correct faults or errors of the student pilot.

EXERCISE 11: NAVIGATION

(a) Objective:

To advise the student instructor on how to explain and demonstrate the advanced navigational flight preparation. Furthermore the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the maps selection;

(2) the plotting of the expected track;

(3) the marking of positions and time;

(4) the calculation of distance and speed;

(5) the calculation of fuel consumption (hot air balloons);

(6) the calculation of ballast consumption (gas balloons);

(7) the ceiling limitations (ATC or weather);

(8) how to plan ahead;

(9) the monitoring of weather development;

(10) the monitoring of fuel or ballast consumption;

(11) ATC liaison (if applicable);

(12) the communication with retrieve crew;

(13) the use of GNSS.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the use of selected maps;

(2) the plotting of the expected track;

(3) the marking of positions and time;

(4) how to monitor of distance and speed;

(5) how to monitor the fuel or ballast consumption;

(6) the observance of ceiling limitations (ATC or weather);

(7) the planning ahead;

(8) the monitoring of weather development;

(9) the monitoring of envelope temperature (hot air balloons);

(10) ATC liaison (if applicable);

(11) communication with retrieve crew;

(12) use of GNSS;

(13) how to advise the student pilot in performing the navigational preparation;

(14) how to advise the student pilot in performing the different navigational in-flight tasks;

(15) how to analyse and correct faults or errors of the student pilot.

EXERCISE 12a: FUEL MANAGEMENT HOT AIR BALLOONS

(a) Objective:

To advise the student instructor on how to explain and demonstrate the fuel management techniques. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the cylinder arrangement and the burner systems;

(2) the function of the pilot light supply (vapour or liquid);

(3) the use of master cylinders (if applicable);

(4) the fuel requirement and expected fuel consumption;

(5) the fuel state and pressure;

(6) the minimum fuel reserves;

(7) cylinder contents gauge and change procedure;

(8) the use of cylinder manifolds.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the cylinder arrangement and burner systems;

(2) the pilot light supply (vapour or liquid);

(3) the use of master cylinders (if applicable);

(4) how to monitor of fuel requirement and expected fuel consumption;

(5) the monitoring of fuel state and pressure;

(6) the monitoring of fuel reserves;

(7) the use of cylinder contents gauge and change procedure;

(8) the use of cylinder manifolds;

(9) how to advise the student pilot to perform the fuel management;

(10) how to analyse and correct faults or errors of the student pilot.

EXERCISE 12b: BALLAST MANAGEMENT GAS BALLOONS

(a) Objective:

To advise the student instructor on how to explain and demonstrate the ballast management. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the minimum ballast;

(2) the arrangement and securing of ballast;

(3) the ballast requirement and expected ballast consumption;

(4) the ballast reserves.

(c) Air exercise:

The student instructor also has to demonstrate:

(1) the arrangement of minimum ballast;

(2) the arrangement and securing of ballast;

(3) the ballast requirement calculation and expected ballast consumption;

(4) how to secure ballast reserves;

(5) how to advise the student pilot to perform the ballast management;

(6) how to analyse and correct faults or errors of the student pilot.

EXERCISE 13: APPROACH FROM LOW LEVEL

(a) Objective:

To advise the student instructor on how to explain and demonstrate the approach from level. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the pre landing checks;

(2) passenger pre-landing briefing;

(3) the selection of field;

(4) the use of burner and parachute (hot air balloons);

(5) the use of ballast or parachute and valve (gas balloons);

(6) the use of trail rope (if applicable) (gas balloons);

(7) the look-out;

(8) missed approach and fly on procedures.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the use of the pre landing checks;

(2) the selection of fields;

(3) the use of burner and parachute (hot air balloons);

(4) the use of ballast or parachute and valve (gas balloons);

(5) the use of trail rope (if applicable) (gas balloons);

(6) the look out procedures and how to avoid possible distractions;

(7) the missed approach and fly on techniques;

(8) how to advise the student pilot to perform an approach from low level;

(9) how to analyse and correct faults or errors of the student pilot.

EXERCISE 14: APPROACH FROM HIGH LEVEL

(a) Objective:

To advise the student instructor on how to explain and demonstrate the approach from high level. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the pre-landing checks;

(2) passenger pre-landing briefing;

(3) the selection of field;

(4) the rate of descent;

(5) the use of burner and parachute (hot air balloons);

(6) the use of ballast and parachute (gas balloons);

(7) the use of trail rope (if applicable) (gas balloons);

(8) the look-out;

(9) the missed approach and fly on procedures.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the pre-landing checks;

(2) the selection of field;

(3) the rate of descent;

(4) the use of burner and parachute (hot air balloons);

(5) the use of ballast and parachute (gas balloons);

(6) the use of trail rope (if applicable) (gas balloons);

(7) the look out procedures and how to avoid potential distraction;

(8) the missed approach and fly on techniques;

(9) how to advise the student pilot to perform an approach from a higher level;

(10) how to analyse and correct faults or errors of the student pilot.

EXERCISE 15: OPERATING AT LOW LEVEL

(a) Objective:

To advise the student instructor on how to explain and demonstrate the operation at a low height. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the use of burner and parachute (hot air balloons);

(2) the use of ballast and parachute (gas balloons);

(3) the look out;

(4) how to avoid a contact with low level obstacles;

(5) how to avoid sensitive areas (for example nature protection areas);

(6) landowner relations.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the use of burner and parachute (hot air balloons);

(2) the use of ballast and parachute (gas balloons);

(3) the look out procedures and how to avoid potential distraction;

(4) how to avoid low level obstacles;

(5) good landowner relations;

(6) how to advise the student pilot to operate the balloon at a low level;

(7) how to analyse and correct faults or errors of the student pilot.

EXERCISE 16: LANDING IN DIFFERENT WIND CONDITIONS

(a) Objective:

To advise the student instructor on how to explain and demonstrate landings in different wind conditions. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the correct actions for turbulences during the approach or landing;

(2) the passenger pre-landing briefing;

(3) the use of burner and pilot lights (hot air balloons);

(4) the use of ballast, parachute, valve and rip panel (gas balloons);

(5) the use of parachute and turning vents (if applicable);

(6) the look out;

(7) the landing, dragging and deflation;

(8) landowner relations.

(c) Air exercise:

The student instructor has to demonstrate:

(1) the pre-landing checks;

(2) the passenger briefing;

(3) the selection of field;

(4) the effect of turbulence;

(5) the use of burner and pilot lights (hot air balloons);

(6) the use of ballast, parachute, valve and rip panel (gas balloons);

(7) the use of parachute and turning vents (if applicable);

(8) the look out procedures and how to avoid potential distraction;

(9) the landing, dragging and deflation procedures;

(11) how to advise the student pilot to perform a safe landing in different wind conditions;

(12) how to analyse and correct faults or errors of the student pilot.

EXERCISE 17: FIRST SOLO

(a) Objective:

To advise the student instructor on how to prepare their students for the first solo flight.

(b) Briefing:

The student instructor has to explain:

(1) the limitations of the flight;

(2) the use of required equipment.

(c) Air exercise:

The student instructor has to:

(1) check with another or more senior instructor if the student can fly solo;

(2) monitor the pre-flight preparation;

(3) brief the student (expected flight time or emergency actions);

(4) monitor the flight as far as possible;

(5) debrief the flight with the student.

EXERCISE 18: TETHERED FLIGHT HOT AIR BALLOONS (if tethered flight instructional qualification is required)

(a) Objective:

To advise the student instructor on how to explain and demonstrate the tethering techniques. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the ground preparations;

(2) the weather suitability;

(3) the tethering techniques and equipment;

(4) the maximum all-up-weight limitation;

(5) the crowd control;

(6) the pre take-off checks and briefings;

(7) the heating for controlled lift off;

(8) the 'hands off and hands on' procedure for ground crew;

(9) the assessment of wind and obstacles;

(10) the controlled climb to a pre-defined altitude (at least 60 ft).

(c) Air exercise:

The student instructor has to demonstrate:

(1) the ground preparations;

(2) the tethering techniques;

(3) the reason for maximum all-up-weight limitation;

(4) how to perform the crowd control;

(5) the pre take-off checks and briefings;

(6) the heating for controlled lift off;

(7) the 'hands off and hands on' procedure for ground crew;

(8) the assessment of wind and obstacles;

(9) the controlled climb;

(10) the landing techniques;

(11) how to advise the student pilot to perform a tethered flight;

(12) how to analyse and correct faults or errors of the student pilot.

EXERCISE 19: NIGHT FLYING (if night instructional qualification required)

(a) Objective:

To advise the student instructor on how to explain and demonstrate the night flying techniques. Furthermore, the student instructor should learn how to identify student errors and how to correct them properly.

(b) Briefing:

The student instructor has to explain:

(1) the medical or physiological aspects of night vision;

(2) the use of lights for assembly, layout and inflation;

(3) the requirement for torch to be carried, (pre-flight inspection, etc.);

(4) the use of the external- and instrument lights;

(5) the night take-off procedure;

(6) the checklist procedures at night;

(7) the emergency procedures at night;

(8) the navigation principles at night;

(9) map marking for night use (highlighting built up or lit areas with thicker lines, etc.).

(c) Air exercise:

The student instructor has to demonstrate:

(1) the use of lights for assembly, layout and inflation;

(2) the use of torch for pre-flight inspection;

(3) the use of external- and instrument lights;

(4) the night take-off procedure;

(5) how to perform the checklist procedures at night;

(6) simulated night emergency procedures;

(7) night cross country techniques, as appropriate;

(8) how to advise the student pilot to perform a flight at night;

(9) how to analyse and correct faults or errors of the student pilot.

FCL.940.FI FI – Revalidation and renewal

Regulation (EU) 2024/2076

(a) Revalidation

(1) To revalidate an FI certificate, holders shall fulfil at least two out of the three following requirements before the expiry date of the FI certificate:

(i) they have completed

(A) in the case of an FI(A) and an FI(H), at least 50 hours of flight instruction in the appropriate aircraft category as FIs, TRIs, CRIs, IRIs, MIs or examiners. If the privileges to instruct for the BIR and the IR are to be revalidated, 10 of those 50 hours shall be flight instruction for a BIR or an IR and shall have been completed within the last 12 months immediately preceding the expiry date of the FI certificate;

(B) in the case of an FI(As), at least 20 hours of flight instruction in airships as FIs, IRIs or as examiners. If the privileges to instruct for the IR are to be revalidated, 10 of those hours shall be flight instruction for an IR and shall have been completed in the period of 12 months immediately preceding the expiry date of the FI certificate;

(ii) they have completed instructor refresher training as an FI at an ATO or at the competent authority;

(iii) they have passed an assessment of competence in accordance with point FCL.935 in the period of 12 months immediately preceding the expiry date of the FI certificate.

(2) For at least each alternate revalidation, in the case of FI(A) or FI(H), or each third revalidation, in the case of FI (As), holders of the relevant FI certificate shall pass an assessment of competence in accordance with point FCL.935.

(b) Renewal.

If the FI certificate has expired, applicants shall, within a period of 12 months before the application date for the renewal, complete instructor refresher training as an FI at an ATO or at a competent authority and complete an assessment of competence in accordance with point FCL.935.

AMC1 FCL.940.FI; FCL.940.IRI Revalidation and renewal

ED Decision 2020/005/R

(a) The instructor refresher training for the revalidation of the FI and IRI certificates should be provided as a seminar by either an ATO, DTO, or competent authority.

(1) FI or IRI refresher seminars made available in Member States should have due regard to geographical location, numbers attending, and periodicity throughout the territory of the Member State concerned.

(2) Such seminars should run for at least 2 days (1 day = 6 hours), and attendance from participants will be required for the whole duration of the seminar including breakout groups and workshops. Different aspects, such as inclusion of participants holding certificates in other categories of aircraft, should be considered.

(3) Appropriately experienced FIs or IRIs currently involved with flying training and with a practical understanding of the revalidation requirements and current instructional techniques should be included as speakers at these seminars.

(4) The attendance form will be completed and signed by the organiser of the seminar as approved by the competent authority, following attendance and satisfactory participation by the FI or IRI.

(5) The content of the FI or IRI refresher seminar should be selected from the following:

(i) new or current rules or regulations, with emphasis on knowledge of Part-FCL and operational requirements;

(ii) teaching and learning;

(iii) instructional techniques;

(iv) the role of the instructor;

(v) national regulations (as applicable);

(vi) human factors;

(vii) flight safety, incident and accident prevention;

(viii) airmanship;

(ix) legal aspects and enforcement procedures;

(x) navigational skills including new or current radio navigation aids;

(xi) teaching instrument flying;

(xii) weather-related topics including methods of distribution;

(xiii) any additional topic selected by the competent authority.

(6) Formal sessions should allow time for presentations and related questions. The use of visual aids is recommended, with interactive videos and other teaching aids (where available) for breakout groups and workshops.

(b) If the instructor certificate lapsed, the ATO, DTO, or competent authority, whichever is appropriate to the category of aircraft, should consider all the above as well as the following, when assessing the refresher training programme:

(1) the ATO, DTO, or competent authority should determine on a case-by-case basis the amount of refresher training needed, following an assessment of the candidate taking into account the following factors:

(i) the experience of the applicant;

(ii) the amount of time elapsed since the expiry of the FI or IRI certificate; and

(iii) the technical elements of the FI or IRI training course, as determined by the assessment of the candidate by the ATO, DTO, or competent authority; and

(2) the individual training programme should be based on the content of the FI or IRI training course and focus on the aspects where the applicant showed the greatest needs.

(c) After successful completion of the seminar or refresher training, as applicable, the ATO, DTO, or competent authority should:

(1) in case of a seminar, in accordance with point (a), issue the applicant with a seminar completion certificate or another document specified by the competent authority, which describes the content of the seminar as in point (a), as well as a statement that the seminar was successfully completed; and

(2) in case of refresher training, in accordance with point (b), issue the applicant with a training completion certificate or another document specified by the competent authority, which describes the evaluation of the factors listed in point (b)(1) and the training received, as well as a statement that the training was successfully completed; the training completion certificate should be presented to the examiner prior to the assessment of competence.

Upon successful completion of the refresher seminar or refresher training, as applicable, the ATO or DTO should submit the seminar or training completion certificate, or the other document specified by the competent authority, to the competent authority.

(d) Taking into account the factors listed in point (b)(1), the ATO, DTO, or competent authority, as applicable, may also decide that it is sufficient for the candidate to complete a seminar in accordance with point (a). In such a case, the completion certificate or the other document that is referred to in point (c) should contain a related statement with sufficient reasoning.

FI — Revalidation and renewal

FI CERTIFICATE: REVALIDATION AND RENEWAL FORM

A. AEROPLANES

<table>
<tr><td colspan="5">INSTRUCTIONAL FLYING EXPERIENCE</td></tr>
<tr><td colspan="5">Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.</td></tr>
<tr><td colspan="2">SINGLE-ENGINE</td><td colspan="2">MULTI-ENGINE</td><td>INSTRUMENT</td></tr>
<tr><td>DAY</td><td>NIGHT</td><td>DAY</td><td>NIGHT</td><td></td></tr>
<tr><td colspan="5">Total instructional hours (preceding 36 months):</td></tr>
<tr><td colspan="5">Total instructional hours (preceding 12 months):</td></tr>
<tr><td colspan="5">FI REFRESHER SEMINAR</td></tr>
<tr><td>1</td><td colspan="4">This is to certify that the undersigned attended an FI seminar</td></tr>
<tr><td>2</td><td colspan="4">Attendee’s personal particulars:</td></tr>
<tr><td colspan="3">Name(s):</td><td colspan="2">Address:</td></tr>
<tr><td colspan="3">Licence number:</td><td colspan="2">Expiration date of FI(A) certificate</td></tr>
<tr><td>3</td><td colspan="4">Seminar particulars:</td></tr>
<tr><td colspan="3">Date(s) of seminar:</td><td colspan="2">Place:</td></tr>
<tr><td>4</td><td colspan="4">Declaration by the responsible organiser:</td></tr>
<tr><td colspan="5">I certify that the above data are correct and that the FI seminar was carried out.</td></tr>
</table>

Date of approval:	Name(s) of organiser: (capital letters)
Date and place:	Signature:

5	Declaration by the attendee:
I confirm the data under 1 through 3	
Attendee's signature:	
PROFICIENCY CHECK	
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.	

Flying time:	Aeroplane or FFS used:
Main exercise:	
Name(s) of FIE:	Licence number:
Date and place:	Signature:

B. HELICOPTERS

INSTRUCTIONAL FLYING EXPERIENCE	
Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.	
Instrument:	
Total instructional hours (preceding 36 months):	
Total instructional hours (preceding 12 months):	
FI REFRESHER SEMINAR	
1	This is to certify that the undersigned attended an FI seminar
2	Attendees personal particulars:

Name(s):	Address:

Licence number:		Expiration date of FI(H) certificate:	
3	Seminar particulars:		
Date(s) of seminar:		Place:	
4	Declaration by the responsible organiser:		
I certify that the above data are correct and that the FI seminar was carried out.			
Date of approval:		Name(s) of organiser: (capital letters)	
Date and place:		Signature:	
5	Declaration by the attendee:		
I confirm the data under 1 through 3			
Attendee's signature:			
PROFICIENCY CHECK			
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.			
Flying time:		Helicopter or FFS used:	
Main exercise:			
Name(s) of FIE:		Licence number:	
Date and place: Signature:			

C. AIRSHIPS

INSTRUCTIONAL FLYING EXPERIENCE				
Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.				
SINGLE-ENGINE		MULTI-ENGINE		INSTRUMENT
DAY	NIGHT	DAY	NIGHT	
Total instructional hours (preceding 36 months):				
Total instructional hours (preceding 12 months):				

FLIGHT INSTRUCTOR REFRESHER SEMINAR			
1	This is to certify that the undersigned attended an FI seminar		
2	Attendee's personal particulars:		
Name(s):		Address:	
Licence number:		Expiration date of FI(As) certificate:	
3	Seminar particulars:		
Date(s) of seminar:		Place:	
4	Declaration by the responsible organiser:		
I certify that the above data are correct and that the FI seminar was carried out.			
Date of approval:		Name(s) of organiser: (capital letters)	
Date and place:		Signature:	
5	Declaration by the attendee:		
I confirm the data under 1 through 3			
Attendee's signature:			
PROFICIENCY CHECK			
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.			
Flying time:		Airship or FFS used:	
Main exercise:			
Name(s) of FIE:		Licence number:	
Date and place:		Signature:	

D. SAILPLANES INSTRUCTIONAL FLYING EXPERIENCE

INSTRUCTIONAL FLYING EXPERIENCE			
Instructors applying for revalidation of the FI certificate should enter the instructional hours and take-offs flown during the preceding 36 months.			
SAILPLANE (hours and take-offs)		TMG (hours and take-offs)	
DAY	NIGHT	DAY	NIGHT

Total instructional hours (preceding 36 months):		
Total instructional hours (preceding 12 months):		
Total amount of take-offs (preceding 36 months):		
Total amount of take-offs (preceding 12 months):		
FI REFRESHER SEMINAR		
1	This is to certify that the undersigned attended an FI seminar	
2	Attendee's personal particulars:	
Name(s):		Address:
Licence number:		Expiration date of FI(S) certificate:
3	Seminar particulars:	
Date(s) of seminar:		Place:
4	Declaration by the responsible organiser:	
I certify that the above data are correct and that the FI seminar was carried out.		
Date of approval:		Name(s) of organiser: (capital letters)
Date and place:		Signature:
5	Declaration by the attendee:	
I confirm the data under 1 through 3		
Attendee's signature:		
PROFICIENCY CHECK		
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.		
Flying time:		Sailplane or TMG used:
Main exercise:		
Name(s) of FIE:		Licence number:
Date and place:		Signature:

E. BALLOONS

INSTRUCTIONAL FLYING EXPERIENCE					
Instructors applying for revalidation of the FI certificate should enter the instructional hours flown during the preceding 36 months.					
Balloons (gas)		Balloons (hot-air)		Hot-air airships	
DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
Total instructional hours (preceding 36 months):					
Total instructional hours (preceding 12 months):					

FI REFRESHER SEMINAR	
1	This is to certify that the undersigned attended an FI seminar
2	Attendee's personal particulars:

Name(s):	Address:
Licence number:	Expiration date of FI(B) certificate:

3	Seminar particulars:

Date(s) of seminar:	Place:

4	Declaration by the responsible organiser:

I certify that the above data are correct and that the FI seminar was carried out.	
Date of approval:	Name(s) of organiser: (capital letters)
Date and place:	Signature:

5	Declaration by the attendee:

I confirm the data under 1 through 3
Attendee's signature:

PROFICIENCY CHECK	
(Name(s) of applicant) has given proof of flying instructional ability during a proficiency check flight. This was done to the required standard.	
Flying time:	Balloon or hot-air airship used:
Main exercise:	
Name(s) of FIE:	Licence number:
Date and place:	Signature:

SECTION 4 – SPECIFIC REQUIREMENTS FOR THE TYPE RATING INSTRUCTOR – TRI

FCL.905.TRI TRI – Privileges and conditions

Regulation (EU) 2024/2076

(a) The privileges of a TRI are to instruct for:

(1) the revalidation and renewal of an IR, provided the TRI holds a valid IR;

(2) the issue of a TRI or SFI certificate, provided that the holder meets all of the following conditions:

(i) has at least 50 hours of instructional experience as a TRI or SFI in accordance with this Regulation or Regulation (EU) No 965/2012;

(ii) has conducted the flight instruction syllabus of the relevant part of the TRI training course in accordance with point FCL.930.TRI(ab)(3) to the satisfaction of the head of training of an ATO;

(3) in the case of the TRI for single-pilot aeroplanes:

(i) the issue, revalidation and renewal of type ratings for single-pilot high-performance complex aeroplanes provided that the applicant seeks privileges to operate in single-pilot operations.

The privileges of the TRI(SPA) may be extended to flight instruction for single-pilot high-performance complex aeroplane type ratings in multi-pilot operations, provided that the TRI meets any of the following conditions:

(A) holds or has held a TRI certificate for multi-pilot aeroplanes;

(B) has at least 500 hours on aeroplanes in multi-pilot operations and completed an MCCI training course in accordance with point FCL.930.MCCI;

(ii) the MPL course on the basic phase, provided that he or she has the privileges extended to multi-pilot operations and holds or has held an FI(A) or an IRI(A) certificate;

(4) in the case of the TRI for multi-pilot aeroplanes:

(i) the issue, revalidation and renewal of type ratings for:

(A) multi-pilot aeroplanes;

(B) single-pilot high-performance complex aeroplanes when the applicant seeks privileges to operate in multi-pilot operations;

(ii) MCC training;

(iii) the MPL course on the basic, intermediate and advanced phases, provided that, for the basic phase, he or she holds or has held an FI(A) or IRI(A) certificate;

(5) in the case of the TRI for helicopters:

(i) the issue, revalidation and renewal of helicopter type ratings;

(ii) MCC training, provided that he or she has completed 350 hours of flight time as a pilot in multi-pilot operations in any aircraft category.

(6) in the case of the TRI for powered-lift aircraft:

(i) the issue, revalidation and renewal of powered-lift type ratings;

(ii) MCC training.

(b) The privileges of a TRI include privileges to conduct EBT practical assessment at an EBT operator, provided that the instructor complies with the requirements of Annex III (Part-ORO) to Regulation (EU) No 965/2012 for EBT instructor standardisation at that EBT operator.

GM1 FCL.905.TRI(b) Privileges and conditions

ED Decision 2019/005/R

INSTRUCTORS INSTRUCTING FOR THE ISSUE OF A TRI OR SFI CERTIFICATE

Training in an aeroplane is not a requirement for the issue of an SFI or a TRI certificate. In order to deliver effective UPRT, it is beneficial for the instructor to have first-hand experience of the critical psychological and physiological human factors, which might be present during recoveries from developed upsets. These human factors (effects of unusual acceleration, such as variations from normal 1G flight, the difficulty to perform counter-intuitive actions, and the management of the associated stress response) can only be experienced during training in an aeroplane because FFSs are not capable of reproducing sustained accelerations. Completion of the advanced UPRT course in accordance with FCL.745.A would provide such experience and is therefore useful for instructors providing instruction for the issue of a TRI or an SFI certificate.

FCL.910.TRI TRI – Restricted privileges

Regulation (EU) 2024/2076

(a) General. If the TRI training is carried out in FSTDs only, the privileges of TRIs shall be restricted to training in FSTDs. This restriction shall however include the following privileges for conducting, in the aircraft:

(1) LIFUS, provided that the TRI training course has included the relevant training specified in point FCL.930.TRI(ab)(4)

(2) landing training, provided that the TRI training course has included the relevant training specified in point FCL.930.TRI(ab)(4); or

(3) the training flight specified in point FCL.060(c)(2), provided that the TRI training course has included the training referred to in points (a)(1) or (a)(2).

The restriction to FSTD shall be removed if TRIs have completed an assessment of competence in the aircraft.

(b) TRIs for aeroplanes and for powered-lift aircraft — TRI(A) and TRI(PL). The privileges of TRIs are restricted to the type of aeroplane or powered-lift aircraft in which the training and the assessment of competence were conducted. Unless otherwise determined in the OSD, to extend the privileges of TRIs to further types, TRIs shall have:

(1) completed within the 12 months preceding the application, at least 15 route sectors, including take-offs and landings on the applicable aircraft type, of which of maximum of 7 sectors may be completed in an FSTD;

(2) completed the relevant parts of the technical training and the flight instruction parts of the applicable TRI course;

(3) passed the relevant sections of the assessment of competence in accordance with point FCL.935 in order to demonstrate to an FIE or a TRE qualified in accordance with Subpart K to this Annex their ability to instruct a pilot to the level required for the issue of a type rating, including pre-flight, post-flight and theoretical knowledge instruction.

The privileges of TRIs shall be extended to further variants, provided that they comply with point FCL.710 in those other variants and, where applicable, the elements set out in the operational suitability data established in accordance with Annex I (Part 21) to Regulation (EU) No 748/2012 for those variants

(c) TRIs for helicopters — TRI(H).

(1) The privileges of TRIs(H) are restricted to the type of helicopter in which the assessment of competence for the issue of the TRI certificate was taken. Unless otherwise determined in the OSD, the privileges of the TRIs shall be extended to further types if TRIs have:

(i) completed the relevant parts of the technical training and flight instruction parts of the TRI course;

(ii) completed within the 12 months preceding the date of application, at least 10 hours on the applicable helicopter type, of which a maximum of 5 hours may be completed in an FFS or FTD 2/3; and

(iii) passed the relevant sections of the assessment of competence in accordance with point FCL.935 in order to demonstrate to an FIE or a TRE qualified in accordance with Subpart K of this Annex their ability to instruct a pilot to the level required for the issue of a type rating, including pre-flight, post-flight and theoretical knowledge instruction.

The privileges of TRIs shall be extended to further variants, provided that they comply with point FCL.710 in those other variants and, where applicable, the elements set out in the operational suitability data established in accordance with Annex I (Part 21) to Regulation (EU) No 748/2012 for those variants.

(2) In order to extend the privileges of a TRI(H) to multi-pilot operations in the same type of single-pilot helicopters, the holder shall have at least 350 hours of flight time as a pilot in multi-pilot operations in any aircraft category or have at least 100 hours of flight time as a pilot in multi-pilot operations on the specific type within the last 2 years.

(3) Before the privileges of a TRI(H) are extended from single-pilot helicopters to multi-pilot helicopters, the holder shall comply with point FCL.915.TRI(d)(3).

(d) Notwithstanding the points above, holders of a TRI certificate who received a type rating in accordance with point FCL.725(e) shall be entitled to have their TRI privileges extended to that new type of aircraft.

GM1 FCL.910.TRI TRI Restricted privileges

ED Decision 2020/005/R

(a) The restrictions of the TRI privileges are annotated on the license under 'Remarks and Restrictions' against the appropriate TRI certificate, along with the following endorsements:

(1) if the training is carried out in an FSTD: 'TRI/r' (r=restricted);

(2) if the TRI training, as specified in point FCL.910.TRI(a)(1), includes the LIFUS training: endorsement as per point (a) and 'LIFUS'; and

(3) if the landing training, as specified in point FCL.910.TRI(a)(2), is included in the TRI training course: endorsement as per point (a) and 'LT' (LT = landing training).

(b) For example a TRI restricted with LIFUS and landing training privileges will have on their license the following endorsement: 'TRI/r LIFUS LT'.

GM1 FCL.910.TRI(b)(2) TRI training for type extension

ED Decision 2020/005/R

'Relevant parts of the technical training and the flight instruction parts of the applicable TRI training course' means that the training should be relevant to its purpose, taking into consideration the experience of the individual TRI on other aircraft types that are similar to the one for which the extension of TRI privileges is applied for.

FCL.915.TRI TRI – Prerequisites

Regulation (EU) 2021/2227

An applicant for a TRI certificate shall:

(a) hold a CPL, MPL or ATPL pilot licence on the applicable aircraft category;

(b) for a TRI(MPA) certificate:

(1) have completed 1 500 hours flight time as a pilot on multi-pilot aeroplanes; and

(2) have completed, within the 12 months preceding the date of application, 30 route sectors, including take-offs and landings, as PIC or co-pilot on the applicable aeroplane type, of which 15 sectors may be completed in an FFS representing that type;

(c) for a TRI(SPA) certificate:

(1) have completed, within the 12 months preceding the date of the application, at least 30 route sectors, including take-offs and landings, as PIC on the applicable aeroplane type, of which a maximum of 15 sectors may be completed in an FSTD representing that type; and

(2) (i) have competed at least 500 hours flight time as pilot on aeroplanes, including 30 hours as PIC on the applicable type of aeroplane; or

(ii) hold or have held an FI certificate for multi-engine aeroplanes with IR(A) privileges;

(d) for TRI(H):

(1) for a TRI(H) certificate for single-pilot single-engine helicopters, either:

(i) have completed 250 hours as a pilot on helicopters; or

(ii) hold an FI(H) certificate.

(2) for a TRI(H) certificate for single-pilot multi-engine helicopters, either:

(i) have completed 500 hours as pilot of helicopters, including 100 hours as PIC in single-pilot multi-engine helicopters; or

(ii) hold an FI(H) certificate and have completed 100 hours of flight time as a pilot in multi-engine helicopters.

(3) for a TRI(H) certificate for multi-pilot helicopters, have completed 1 000 hours of flight time as a pilot on helicopters, and have either 350 hours in multi-pilot operations on any aircraft category or 100 hours of flight time as a pilot in multi-pilot operations on the type for which the TRI(H) certificate is sought;

(e) for TRI(PL):

(1) have completed 1 500 hours flight time as a pilot on multi-pilot aeroplanes, powered-lift, or multi-pilot helicopters; and

(2) have completed, within the 12 months preceding the application, 30 route sectors, including take-offs and landings, as PIC or co-pilot on the applicable powered-lift type, of which 15 sectors may be completed in an FFS representing that type.

FCL.930.TRI TRI – Training course

Regulation (EU) 2024/2076

(a) The TRI training course shall be conducted:

(1) in the case of MPA, in an FFS or a combination of FSTD(s) and FFS;

(2) in the case of type ratings for SPA and helicopters, in either of the following:

(i) an available and accessible FFS, or in a combination of such FFS and FSTD(s);

(ii) a combination of FSTD(s) and the aircraft if an FFS is not available or accessible;

(iii) the aircraft if no FSTD is available or accessible.

(aa) By way of derogation from point (a), the TRI training course:

(1) for non-complex helicopters may be conducted in a combination of FSTD(s) and the aircraft even if an FFS is available and accessible;

(2) for aircraft referred to in Section A, point 1e, of Appendix 9 may be conducted in accordance with points FCL.930.TRI(a)(2)(i), (ii) or (iii), irrespective of the availability and accessibility of FFS or FSTD.

(ab) The TRI training course shall include:

(1) 25 hours of teaching and learning;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom or simulator instructional skills;

(3) 5 hours of flight instruction on the appropriate aircraft or an FSTD representing that aircraft for single-pilot aircraft and 10 hours for multi-pilot aircraft or an FSTD representing that aircraft;

(4) if privileges for conducting LIFUS or take-off and landing training are sought, the following training, as applicable:

(i) in an FSTD and related to the relevant privileges, additional specific training which, in the case of privileges for conducting take-off and landing training, shall include training for emergency procedures related to the aircraft;

(ii) consolidation of the specific training in accordance with point (4)(i), where the applicant shall, in the aircraft, provide LIFUS or take-off and landing training, as applicable, under the supervision of a TRI that is nominated for that purpose by the ATO.

(b) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

(c) An applicant for a TRI certificate who holds an SFI certificate for the relevant type shall be fully credited towards the requirements of this paragraph for the issue of a TRI certificate restricted to flight instruction in simulators.

AMC1 FCL.930.TRI TRI Training course

ED Decision 2020/005/R

TRI TRAINING COURSE — AEROPLANES

(a) General

(1) The training course should develop safety awareness throughout by imparting knowledge, skills, and attitudes relevant to the TRI task, and should be designed to adequately train the candidate instructor in theoretical-knowledge instruction, flight instruction, and FSTD instruction to enable the candidate instructor to instruct others on an aeroplane type rating for which the candidate instructor is qualified.

(2) The TRI(A) training course should place particular emphasis on the role of the individual, human factors in the man–machine environment, and CRM.

(3) Special attention should be given to the candidate instructor's maturity and judgment including their understanding of adults, behavioural attitudes, and variable levels of learning ability. During the training course, the candidate instructor should be made aware of their own attitude towards the importance of flight safety.

(4) For a TRI(A), the amount of time for flight training should vary depending on the complexity of the aeroplane type. A similar number of hours should be allotted to the instruction on, and practice of, both preflight and postflight briefing for each exercise.

(5) The flight instruction should ensure that the candidate instructor is able to teach the air exercises safely and efficiently and should be related to the type of aeroplane on which the candidate instructor wishes to instruct. The content of the training programme should cover training exercises applicable to the aeroplane type, which are set out in the applicable type rating training courses.

(6) Airmanship is a vital element of all flight operations. Therefore, in the following exercises, the relevant aspects of airmanship should be stressed at the appropriate times during each flight.

(7) The candidate instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

(b) Content

The training course consists of three parts:

— Part 1: teaching and learning instruction in accordance with AMC1 FCL.920;

— Part 2: technical theoretical-knowledge instruction (technical training); and

— Part 3: flight instruction.

(1) Part 1 — Teaching and learning The content of the teaching and learning part of the FI training course as described in AMC1 FCL.930.FI should be used as guidance to develop the course syllabus.

(2) Part 2 — Technical theoretical-knowledge instruction syllabus

(i) If a TRI(A) certificate for MP aeroplanes is sought, particular attention should be given to MCC. If a TRI(A) certificate for SP aeroplanes is sought, particular attention should be given to the duties in SP operations.

(ii) The technical theoretical-knowledge instruction should comprise at least 10 hours of training to refresh Part-1 theoretical topics, as necessary, and aircraft technical knowledge. It should include preparation of lesson plans and development of briefing-room instructional skills. A proportion of the allotted 10 hours could be integrated into the practical flight instruction lessons of Part 3, using expanded preflight and postflight briefing sessions. Consequently, for practical purposes, Part 2 and Part 3 could be considered complementary to each other.

(iii) The type rating theoretical syllabus should be used to develop the TRI(A)'s teaching skills in relation to the type technical course syllabus. The course instructor should deliver example lectures from the applicable type technical syllabus and the candidate instructor should prepare and deliver lectures on topics that are selected by the course instructor from the type rating course.

(3) Part 3 — Flight instruction

(i) General

(A) The course should be related to the type of aeroplane on which the applicant wishes to instruct. It should consist of at least 5 hours of flight instruction for SP aeroplanes that are operated in SP operations, and at least 10 hours for MP aeroplanes or SP-certified aeroplanes that are operated in MP operations, per candidate instructor.

(B) TEM, CRM, and the appropriate use of behavioural markers should be integrated throughout.

(C) Training courses should be developed to help the candidate instructor gain experience in the training of a variety of exercises, covering both normal and abnormal operations.

(D) The syllabus should be tailored and appropriate to the aeroplane type, and the exercises used should be more demanding for each individual student.

(E) The course should cover the whole range of instructor skills to enable the candidate instructor to plan sessions, brief, train and debrief using all relevant training techniques that are appropriate to pilot training.

(ii) Use of FSTDs

(A) The applicant for a TRI(A) certificate should be instructed in using the device and made familiar with its limitations, capabilities, and safety features, including emergency evacuation.

(B) The applicant for a TRI(A) certificate should be instructed in providing and evaluating training from the instructor station and from all pilot operating positions, including demonstrations of handling exercises.

(C) The syllabus should include engine-out handling and engine-out operations in addition to representative exercises from the type rating course.

(D) Where no FSTD exists for the type of aeroplane for which the certificate is sought, or if the FSTD is not suitable to complete all the elements of the training programme for the TRI certificate, the entire course or a part of it should be conducted in the applicable aeroplane type, and the synthetic-device elements should be replaced with appropriate exercises in the aeroplane.

The assessment of competence should be performed:

— when no FSTD exists, in the aeroplane; and

— when not all elements of the training are completed in the FSTD, in both the aeroplane and the FSTD; this combined use of aeroplane and FSTD in the assessment of competence should reflect and be similar to the combined use of aeroplane and FSTD during the training course.

(F) In general, TRI training is designed to develop the competencies of a pilot to become an instructor. From this perspective, the training may be provided in several arrangements:

— the candidate instructor is seating in either pilot seat;

— the candidate instructor is seating at the IOS; or

— the candidate instructor is observing (seating as an observer).

The combination of the above-mentioned training arrangements and the allocation of time to each one of them depends on an analysis of several elements, including but not limited to the following:

— previous experience and curriculum of each candidate (e.g. previous instructor experience, experience on aeroplane type, total flight experience, etc.) in isolation and as part of the course group(s);

— specific requirements for aeroplane type and related training exercises;

— overall maturity and experience of the ATO in providing TRI training courses; and

— type, fidelity level, and reliability of the available devices.

Subject to particular training arrangements that are determined by the ATO and approved by the competent authority, a TRI may instruct in parallel two TRI candidate instructors under the following scenarios:

— one candidate is sitting at the controls (supported by a suitable pilot), while the second candidate is sitting at the IOS; this scenario may be used for demonstration of flight manoeuvres or engine out exercises; or

— both candidates receive instruction (general introduction and handling) at the IOS.

In this way, both candidates can independently develop specific competencies.

Additional TRI candidate instructors may be present as observers during such an instruction given in parallel, with no credit of hours for their TRI training.

For an initial TRI training course, such 'in parallel' instruction should be given only for a reasonable part of the overall TRI training course duration. For a TRI type extension, the amount of hours required forsuch an instruction may be increased.

In any case, the way of instruction largely depends on the experience of the TRI trainer in the various training arrangements and on the general experience of the candidate instructor.

(iii) SP MET aeroplane training for asymmetric power flight

During this part of the training, particular emphasis should be placed on:

(A) the circumstances under which the actual feathering and unfeathering is practised, e.g. safe altitude, compliance with regulations regarding minimum altitude or height for feathering, weather conditions, distance from the nearest available aerodrome;

(B) the procedure that should be used for cooperation between instructor and student, e.g. the correct use of touch drills and the prevention of misunderstandings, especially during feathering and unfeathering and when zero thrust is used for asymmetric circuits; this procedure should include a positive agreement on which engine should be shut down or restarted or set at zero thrust, as well as on identifying each control and the engine it will affect;

(C) avoiding overworking the operating engine and preventing degraded performance when operating the aeroplane in asymmetric flight; and

(D) the need to use the specific checklist for the given aeroplane type.

(iv) Long briefings on SP MET aeroplanes

Long briefings provide an essential link between academic principles and air exercises. They introduce aeronautical theory and the practical application of aeronautical principles to the student.

The instructor should ensure that the candidate instructor is able to teach all the following subjects:

(A) Asymmetric power flight:

(a) introduction to asymmetric flight;

(b) feathering the propeller: method of operation;

(c) effects on aeroplane handling at cruising speed;

(d) introduction to the effects upon aeroplane performance;

(e) identification of the foot load to maintain a constant heading (no rudder trim);

(f) feathering the propeller: regaining normal flight;

(g) finding the zero-thrust setting: comparison of foot load when the propeller is feathered and thrust is set to zero;

(h) effects and recognition of engine failure in level flight;

(i) forces and effects of yaw;

(j) types of failure:

(1) sudden or gradual, and

(2) complete or partial;

(k) yaw direction and further effects of yaw;

(l) flight instrument indications;

(m) identification of failed engine;

(n) couples and residual out-of-balance forces: resultant flight attitude;

(o) use of rudder to counteract yaw;

(p) use of aileron: dangers of misuse;

(q) use of elevator to maintain level flight;

(r) use of power to maintain safe airspeed and altitude;

(s) supplementary recovery to straight and level flight: simultaneous increase in speed and reduction in power;

(t) identification of failed engine: idle engine;

(u) use of engine instruments for identification:

(1) fuel pressure or flow;

(2) RPM gauge response effect of constant speed unit (CSU) action at lower and higher airspeed; and

(3) engine temperature gauges;

(v) confirmation of identification: closing the throttle of the identified failed engine;

(w) effects and recognition of engine failure in turns;

(x) identification and control; and

(y) side forces and effects of yaw.

(B) Turning flight:

(a) effect of 'inside' engine failure: sudden and pronounced effect;

(b) effect of 'outside' engine failure: less sudden and pronounced effect;

(c) possible confusion in identification (particularly at low power):

(1) correct use of rudder; and

(2) possible need to return to lateral level flight to confirm correct identification;

(d) visual and flight instrument indications;

(e) effect of varying speed and power;

(f) speed and thrust relationship;

(g) at normal cruising speed and cruising power: engine failure clearly recognised;

(h) at low safe speed and climb power: engine failure most likely recognised; and

(i) at high-speed descent and low power: asymmetry (engine failure) possibly not recognised.

(C) Minimum control speeds:

(a) Air speed indicator (ASI) colour coding: red radial line. Note: this exercise is intended to explore the ultimate boundaries of controllability of the aeroplane aircraft in an asymmetric state in various conditions with a steady power setting. A steady power setting is achieved by using a fixed power setting and adjusting the aircraft attitude to obtain a gradual speed reduction. The failure exercise should not be performed as a sudden and complete failure at the VMCA given in the AFM. The purpose of the exercise is to continue the gradual introduction of a student to the control of an aeroplane in asymmetric power flight in extreme or critical situations, and not to demonstrate VMCA.

(b) Techniques for assessing critical speeds at wings level, and recovery from those speeds; dangers involved when minimum control speed and stalling speed are very close: use of safe single-engine speed (Vsse).

(c) Establishing a minimum control speed for each asymmetrically disposed engine: establishing the critical engine (if applicable).

(d) Effects on minimum control speeds of:

(i) bank;

(ii) zero-thrust setting; and

(iii) take-off configuration:

(A) landing gear down and take-off flap set; and

(B) landing gear up and take-off flap set.

Note: the use of 5 ° of bank towards the operating engine results in a better climb performance than that obtained with wings level held. Manufacturers may use these conditions when determining the asymmetric climb performance of the aircraft.

Thus, the VMCA quoted in the AFM may be different from the speeds that are determined during this exercise.

(D) Feathering and unfeathering:

(a) minimum heights for practising feathering and unfeathering drills; and

(b) engine-handling precautions (overheating, icing conditions, priming, warm-up, method of simulating an engine failure: refer to the aircraft engine manual, service instructions, and bulletins).

(E) Engine failure procedure:

(a) once control is maintained, the phase of operation and the aircraft type determine in which order the procedures should be followed; and

(b) the flight phase should be:

(1) in cruising flight; or

(2) a critical phase, e.g. immediately after take-off or during approach to landing or during a go-around.

(F) Aircraft type:

Variations in the order of certain drills and checks inevitably occur due to differences between aeroplane types and perhaps between models of the same aeroplane type. The AFM should be consulted to establish the exact order of the related procedures.

For example, one AFM may call for the raising of flaps and landing gear before feathering, whereas another AFM may recommend feathering as a first step. The reason for this latter procedure may be that some engines cannot be feathered if RPM drop below a certain figure.

However, in some aeroplanes, the raising of the landing gear may create more drag during retraction due to the transient position of the landing gear doors, and as a result, retraction should be avoided until feathering is completed and propeller drag reduced.

Therefore, the order in which the drills and checks are presented under immediate and subsequent actions in this syllabus should be considered as general guidance only; the exact order of precedence is determined by reference to the AFM for the specific aeroplane type used in the course.

(G) In-flight engine failure during cruising or other flight phase not including take-off or landing:

(a) immediate actions:

(1) control of the aircraft;

(2) recognition of asymmetric condition;

(3) identification and confirmation of failed engine:

(i) idle leg = idle engine; and

(ii) closing of throttle or pulling back of power lever, as appropriate, for confirmation;

(4) identification of failure cause and fire check:

(i) typical reasons for failure; and

(ii) methods of rectification; and

(5) feathering decision and procedure:

(i) reduction of other drag;

(ii) need for speed but not haste; and

(iii) use of rudder trim;

(b) subsequent actions:

(1) operating engine:

(i) temperature, pressure, and power;

(ii) remaining services;

(iii) electrical load: assess and reduce, as necessary;

(iv) effect on power source for air-driven instruments;

(v) landing gear; and (vi) flaps and other services;

(2) replanning of the flight:

(i) ATC and weather;

(ii) terrain clearance, SE cruising speed; and

(iii) decision to divert or continue;

(3) fuel management: best use of remaining fuel;

(4) dangers of restarting damaged engine;

(5) action if unable to maintain altitude: effect of altitude on available power;

(6) effects on performance;

(7) effects on available power and required power;

(8) effects on various airframe configurations and propeller settings;

(9) use of AFM:

(i) cruising;

(ii) climbing: ASI colour coding (blue line);

(iii) descending; and (iv) turning;

(10) limitations and handling of operating engine; and

(11) control and performance of take-off and approach.

(H) Significant factors:

(a) significance of take-off safety speed:

(1) effect on aeroplane performance of landing gear, flap, feathering, take-off, trim setting, and systems for operating landing gear and flaps; and

(2) effect on aeroplane performance of mass, altitude, and temperature;

(b) significance of best SE climb speed (Vyse):

(1) accelerating to Vyse and establishing a positive climb;

(2) relationship between Vyse and normal climb speed; and

(3) action, if unable to climb; and

(c) significance of asymmetric committal height and speed: action, if baulked below asymmetric committal height.

(I) Engine failure during take-off:

(a) below VMCA or unstick speed:

(1) use AFM data, if available ; and

(2) accelerate or stop distance considerations;

(b) above VMCA or unstick speed and below safety speed;

(c) immediate relanding or use of remaining power for forced landing; and

(d) considerations:

(1) degree of engine failure;

(2) speed at the time;

(3) mass, altitude, temperature performance;

(4) configuration;

(5) length of remaining runway; and

(6) position of any obstacles ahead.

(J) Engine failure after take-off:

(a) simulated at a safe height and at or above take-off safety speed;

(b) considerations:

(1) need to maintain control;

(2) use of bank technique towards operating engine;

(3) use of available power to reach Vyse;

(4) mass, altitude, temperature performance; and

(5) effect of prevailing conditions and circumstances;

(c) immediate actions:

(1) maintaining control, including airspeed and use of power;

(2) recognition of asymmetric condition;

(3) identification and confirmation of failed engine;

(4) feathering and removal of drag (procedure for specific type); and

(5) reaching and maintaining Vyse; and

(d) subsequent actions, whilst carrying out an asymmetric power climb to the downwind position at Vyse:

(1) identification of failure and fire check;

(2) handling considerations for operating engine;

(3) remaining services;

(4) liaison with ATC; and

(5) fuel management.

Note: these procedures are dependent upon the aeroplane type concerned and actual flight situation.

(K) Asymmetric committal height

(a) Asymmetric committal height is the minimum height needed to put the aircraft into a positive climb, whilst maintaining an adequate speed to control the aircraft and reduce drag during an approach to landing.

(b) Due to the significantly reduced performance of many CS-23 aeroplanes when operating with one engine, a minimum height should be considered from which it would be safe to attempt a go-around procedure during an approach when the aeroplane must change from descent to climb in a high-drag configuration.

(c) Due to the height loss that occurs when the operating engine is turned to full power, with landing gear and flap retracted, and the aeroplane is put into a climb at Vyse, a minimum height (often referred to as 'asymmetric committal height') should be selected below which the pilot should not attempt to fly another circuit. This height should be compatible with the aeroplane type, all-up weight, altitude of the aerodrome used, air temperature, wind, height of obstructions along the climb-out path, and the pilot's competence.

(d) Circuit approach and landing with asymmetric power:

(1) definition and use of asymmetric committal height;

(2) use of standard pattern and normal procedures;

(3) action, if unable to maintain circuit height;

(4) speed and power settings required; and

(5) decision to land or execute a go-around at asymmetric committal height: factors to be considered.

(e) Undershooting: importance of maintaining an appropriate airspeed.

(L) Speed and heading control:

(a) relationship between height, speed, and power: need for minimum possible drag; and

(b) reaching a positive climb at Vyse:

(1) effect of availability of systems, and power for the flap and landing gear; and

(2) operation and rapid clean-up.

Note 1: the airspeed at which the decision is made to make a landing or execute a go-around should normally be Vyse and not lower than the safety speed.

Note 2: instrument approach 'decision height' and its associated procedures should not be confused with the selection of minimum height for initiating a go-around in asymmetric power flight.

(M) Engine failure during an all-engine approach or missed approach:

(a) use of asymmetric committal height, and speed considerations; and

(b) speed and heading control: decision to attempt a landing, go-around or forced landing depending on circumstances. Note: at least one demonstration and practice of engine failure in this situation should be performed during the course.

(N) Instrument flying with asymmetric power:

(a) considerations relating to aircraft performance during:

(1) straight and level flight;

(2) climb and descent;

(3) standard rate turns; and

(4) level, climbing, and descending turns including turns to preselected headings;

(b) availability of vacuum-operated instruments; and

(c) electrical power source.

(v) Specific trainings: LIFUS training and landing training

The applicant for a TRI(A) certificate should receive instruction in an FSTD in accordance with FCL.930.TRI(a)(4).

(A) LIFUS training: content

(a) Training in an FSTD:

(1) familiarisation as PF on both seats, as applicable, which should include at least the following:

(i) pre-flight preparation and use of checklists;

(ii) taxiing;

(iii) take-off;

(iv) rejected take-off;

(v) engine failure during take-off, after take-off decision speed (V1);

(vi) one-engine-inoperative approach and go-around;

(vii) one-engine-inoperative (critical, simulated) landing;

(viii) other emergency and abnormal operating procedures (as necessary);

(ix) emergency evacuations; and

(x) task sharing and decision-making; and

(2) aeroplane training techniques:

(i) methods of providing appropriate commentary; and

(ii) intervention strategies developed from situations that are role-played by a TRI training course instructor, taken from but not limited to:

(A) take-off:

— tail strike awareness and avoidance,

— rejected take-off,

— actual engine failure,

— take-off configuration warning, and

— overcontrolling;

(B) approach and landing:

— normal approach,

— high flare, long float, no flare,

— immediate go-around after touchdown,

— baulked landing,

— rejected landing,

— crosswind, and

— overcontrolling; and

(C) flight management:

— task sharing and handover of controls,

— effect of ATC-delaying actions on endurance,

— alternate management and diversion, and

— traffic awareness when flying in pattern.

(b) Training in aeroplane (in flight)

This training should consist of at least one route sector where the candidate instructor:

(1) either observes a TRI(A) who conducts line flying under supervision, or

(2) conducts role play line flying under supervision for a TRI(A) who is qualified for line flying under supervision.

Upon completion of the above-mentioned training, the candidate instructor should complete a route sector under the supervision and to the satisfaction of a TRI(A) who is nominated for that purpose by the ATO.

(B) Landing training: content

(a) Training in an FSTD

The training in an FSTD should be tailored and appropriate to the aeroplane type, and the exercises should be more demanding for each candidate instructor. In addition to the LIFUS training items in the FSTD (listed under (a)(1) and (a)(2) above), the landing training should comprise a variety of exercises that cover both normal and abnormal operations including the following:

(1) consideration of threats during touch-and-go:

— operating at low altitude;

— General Aviation (GA) traffic;

— increased fuel consumption;

— bird strikes;

— decision to continue touch-and-go or make a full-stop landing; and

— aspects of performance and associated risks;

(2) incorrect rudder inputs;

(3) failure of a critical engine;

(4) approach and full-stop landing in simulated engine-out flight; and

(5) go-around in simulated engine-out flight. The applicant needs to be additionally trained in other abnormal items during the training course, if required.

(b) Training in an aeroplane

(1) Upon completion of the FSTD training, the applicant should perform role-play flying for landing training under the supervision and to the satisfaction of a TRI(A) who is nominated for that purpose by the ATO.

The training should cover at least the following elements:

— take-off,

— traffic pattern,

— touch-and-go,

— go-around, and

— full-stop landing with different flap settings.

(2) In exceptional circumstances, it may be necessary to perform simulated engine-out handling and engine-out operations in an aeroplane in addition to representative exercises from the type rating course.

(vi) UPRT

Instructors should have the specific competence to provide UPRT during the type rating training course, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and of the recommendations that are developed by the original equipment manufacturers (OEMs). Therefore, during the TRI training course, the student instructor should:

(A) be able to apply the correct upset recovery techniques for the specific aeroplane type;

(B) understand the importance of applying type-specific OEM procedures for recovery manoeuvres;

(C) be able to distinguish between the applicable SOPs and OEM recommendations (if available);

(D) understand the capabilities and limitations of the FSTDs that are used for UPRT;

(E) ensure that the training remains within the FSTD training envelope to avoid the risk of negative transfer of training;

(F) understand and be able to use the IOS of the FSTD in the context of providing effective UPRT;

(G) understand and be able to use the available FSTD instructor tools to provide accurate feedback on pilot performance;

(H) understand the importance of adhering to the FSTD UPRT scenarios that are validated by the training programme developer; and

(I) understand the missing critical human factor aspects due to the limitations of the FSTD, and convey this to the student pilot(s) receiving the training.

AMC2 FCL.930.TRI TRI Training course

ED Decision 2020/005/R

HELICOPTERS

GENERAL

(a) The aim of the TRI(H) course is to train helicopter licence holders to the level of competence defined in FCL.920 and adequate for a TRI.

(b) The training course should develop safety awareness throughout by teaching the knowledge, skills and attitudes relevant to the TRI(H) task, and should be designed to give adequate training to the applicant in theoretical knowledge instruction, flight instruction and FSTD instruction to instruct for a helicopter type rating for which the applicant is qualified.

(c) The TRI(H) training course should give particular emphasis to the role of the individual in relation to the importance of human factors in the man-machine environment and the role of CRM.

(d) Special attention should be given to the applicant's maturity and judgment including an understanding of adults, their behavioural attitudes and variable levels of learning ability. During the training course the applicants should be made aware of their own attitudes to the importance of flight safety. It will be important during the course of training to aim at giving the applicant the knowledge, skills and attitudes relevant to the role of the TRI.

(e) For a TRI(H) certificate the amount of flight training will vary depending on the complexity of the helicopter type.

(f) A similar number of hours should be used for the instruction and practice of pre-flight and post flight briefing for each exercise. The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently and should be related to the type of helicopter on which the applicant wishes to instruct. The content of the training program should cover training exercises applicable to the helicopter type as set out in the applicable type rating course syllabus.

(g) A TRI(H) may instruct in a TRI(H) course once he or she has conducted a minimum of four type rating instruction courses.

CONTENT

(h) The training course consists of three parts:

(1) Part 1: teaching and learning, that should comply with AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

TECHNICAL THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The technical theoretical knowledge instruction should comprise of not less than 10 hours training to include the revision of technical knowledge, the preparation of lesson plans and the development of classroom instructional skills to enable the TRI(H) to instruct the technical theoretical knowledge syllabus.

(b) If a TRI(H) certificate for MP helicopters is sought, particular attention should be given to multi-crew cooperation.

(c) The type rating theoretical syllabus should be used to develop the TRI(H)'s teaching skills in relation to the type technical course syllabus. The course instructor should deliver example lectures from the applicable type technical syllabus and the candidate instructor should prepare and deliver lectures on topics selected by the course instructor from the subject list below:

(1) helicopter structure, transmissions, rotor and equipment, normal and abnormal operation of systems:

(i) dimensions;

(ii) engine including aux. power unit, rotors and transmissions;

(iii) fuel system;

(iv) air-conditioning;

(v) ice protection, windshield wipers and rain repellent;

(vi) hydraulic system;

(vii) landing gear;

(viii) flight controls, stability augmentation and autopilot systems;

(ix) electrical power supply;

(x) flight instruments, communication, radar and navigation equipment;

(xi) cockpit, cabin and cargo compartment;

(xii) emergency equipment.

(2) limitations:

(i) general limitations, according to the helicopter flight manual;

(ii) minimum equipment list.

(3) performance, flight planning and monitoring:

(i) performance;

(ii) light planning.

(4) load and balance and servicing:

(i) load and balance;

(ii) servicing on ground;

(5) emergency procedures;

(6) special requirements for helicopters with EFIS;

(7) optional equipment.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) The amount of flight training will vary depending on the complexity of the helicopter type. At least 5 hours flight instruction for a SP helicopter and at least 10 hours for a MP ME helicopter should be counted. A similar number of hours should be used for the instruction and practice of pre-flight and post flight briefing for each exercise. The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently and related to the type of helicopter on which the applicant wishes to instruct. The content of the training programme should only cover training exercises applicable to the helicopter type as set out in Appendix 9 to Part-FCL.

(b) If a TRI(H) certificate for MP helicopters is sought, particular attention should be given to MCC.

(c) If a TRI(H) certificate for revalidation of instrument ratings is sought, then the applicant should hold a valid instrument rating.

FLIGHT OR FSTD TRAINING

(d) The training course should be related to the type of helicopter on which the applicant wishes to instruct.

(e) For MP helicopter type ratings MCC, CRM and the appropriate use of behavioural markers should be integrated throughout.

(f) The content of the training programme should cover identified and significant exercises applicable to the helicopter type.

FSTD TRAINING

(g) The applicant for a TRI(H) certificate should be taught and made familiar with the device, its limitations, capabilities and safety features, and the instructor station.

(h) The applicant for a TRI(H) certificate should be taught and made familiar with giving instruction from the instructor station seat as well as the pilot's seats, including demonstrations of appropriate handling exercises.

(i) Training courses should be developed to give the applicant experience in training a variety of exercises, covering both normal and abnormal operations. The syllabus should be tailored appropriate to the helicopter type, using exercises considered more demanding for the student. This should include engine-out handling and engine-out operations in addition to representative exercises from the type transition course.

(j) The applicant should be required to plan, brief, train and debrief sessions using all relevant training techniques.

HELICOPTER TRAINING

(k) The applicant for a TRI(H) certificate should receive instruction in an FSTD to a satisfactory level in:

(1) left hand seat familiarisation, and in addition right hand seat familiarisation where instruction is to be given to co-pilots operating in the left hand seat, which should include at least the following as pilot flying:

(i) pre-flight preparation and use of checklists;

(ii) taxiing: ground and air;

(iii) take-off and landings;

(iv) engine failure during take-off, before DPATO;

(v) engine failure during take-off, after DPATO;

(vi) engine inoperative approach and go-around;

(vii) one engine simulated inoperative landing;

(viii) autorotation to landing or power recovery;

(ix) other emergency and abnormal operating procedures (as necessary);

(x) instrument departure, approach and go-around with one engine simulated inoperative should be covered where TRI(H) privileges include giving instrument instruction for the extension of an IR(H) to additional types.

(2) helicopter training techniques:

(i) methods for giving appropriate commentary;

(ii) instructor demonstrations of critical manoeuvres with commentary;

(iii) particularities and safety considerations associated with handling the helicopter in critical manoeuvres such as one-engine-inoperative and autorotation exercises;

(iv) where relevant, the conduct of instrument training with particular emphasis on weather restrictions, dangers of icing and limitations on the conduct of critical manoeuvres in instrument meteorological conditions;

(v) intervention strategies developed from situations role-played by a TRI(H) course instructor, taken from but not limited to:

(A) incorrect helicopter configuration;

(B) over controlling;

(C) incorrect control inputs;

(D) excessive flare close to the ground;

(E) one-engine-inoperative take-off and landings;

(F) incorrect handling of autorotation;

(G) static or dynamic rollover on take-off or landing;

(H) too high on approach with associated danger of vortex ring or settling with power;

(I) incapacitation;

(L) abnormal and emergency procedures and appropriate methods and minimum altitudes for simulating failures in the helicopter;

(M) failure of the driving engine during OEI manoeuvres.

(l) Upon successful completion of the training above, the applicant should receive sufficient training in an helicopter in-flight under the supervision of a TRI(H) to a level where the applicant is able to conduct the critical items of the type rating course to a safe standard. Of the minimum course requirements of 5 hours flight training for a SP helicopter or 10 hours for a MP helicopter, up to 3 hours of this may be conducted in an FSTD.

TRAINING WHERE NO FSTD EXISTS

(m) Where no FSTD exists for the type for which the TRI(H) certificate is sought, a similar course of training should be conducted in the applicable helicopter type. This includes all elements listed under sub paragraphs (k)(1) and (2) of this AMC, the FSTD elements being replaced with appropriate exercises in a helicopter of the applicable type, subject to any restrictions placed on the conduct of critical exercises associated with helicopter flight manual limitations and safety considerations.

FCL.935.TRI TRI – Assessment of competence

Regulation (EU) 2019/1747

(a) The assessment of competence for a TRI for MPA and PL shall be conducted in an FFS. If no FFS is available or accessible, an aircraft shall be used.

(b) The assessment of competence for a TRI for single-pilot high-performance complex aeroplanes and helicopters shall be conducted in any of the following:

(1) an available and accessible FFS;

(2) if no FFS is available or accessible, in a combination of FSTD(s) and an aircraft;

(3) if no FSTD is available or accessible, in an aircraft.

FCL.940.TRI TRI – Revalidation and renewal

Regulation (EU) 2019/1747

(a) Revalidation

(1) Aeroplanes

To revalidate a TRI(A) certificate, applicants shall, within the 12 months immediately preceding the expiry date of the certificate fulfil at least two out of the three following requirements:

(i) conduct one of the following parts of a complete type rating or recurrent training course: simulator session of at least 3 hours or one air exercise of at least 1 hour comprising a minimum of two take-offs and landings;

(ii) complete instructor refresher training as a TRI(A) at an ATO;

(iii) pass the assessment of competence in accordance with point FCL.935. Applicants who have complied with point FCL.910.TRI(b)(3) shall be deemed to comply with this requirement.

(2) Helicopters and powered lift

To revalidate a TRI (H) or TRI(PL) certificate, applicants shall, within the validity period of the TRI certificate fulfil at least two out of the three following requirements:

(i) completed at least 50 hours of flight instruction in each of the types of aircraft for which instructional privileges are held or in an FSTD representing those types, of which at least 15 hours shall be completed in the period of 12 months immediately preceding the expiry date of the TRI certificate. In the case of a TRI(PL), those hours shall be completed as a TRI or a type rating examiner (TRE), or as an SFI or a synthetic flight examiner (SFE). In the case of a TRI(H), the time flown as FIs, instrument rating instructors (IRIs), synthetic training instructors (STIs) or as any kind of examiners shall be accounted for this purpose;

(ii) complete instructor refresher training as a TRI(H) or TRI(PL), as relevant, at an ATO;

(iii) in the period of 12 months immediately preceding the expiry date of the certificate, passed an assessment of competence in accordance with points FCL.935, FCL.910.TRI(b)(3) or FCL.910.TRI(c)(3), as applicable.

(3) For at least each alternate revalidation of a TRI certificate, holders shall pass the assessment of competence in accordance with point FCL.935.

(4) If TRIs hold a certificate for more than one type of aircraft within the same category, the assessment of competence taken on one of those types of aircraft shall revalidate the TRI certificate for the other types held within the same category of aircraft, unless it is otherwise determined in the OSD.

(5) Specific requirements for the revalidation of a TRI(H) certificate

TRIs(H) holding an FI(H) certificate in the relevant type shall be deemed to comply with the requirements in point (a). In that case, the TRI(H) certificate shall be valid until the expiry date of the FI(H) certificate.

(b) Renewal

To renew a TRI certificate, applicants shall, within the 12 months immediately preceding the date of the application, have passed the assessment of competence in accordance with point FCL.935 and shall have completed the following:

(1) for aeroplanes:

(i) at least 30 route sectors, including take-offs and landings on the applicable aeroplane type, of which maximum 15 sectors may be completed in an FFS;

(ii) instructor refresher training as a TRI at an ATO which shall cover the relevant elements of the TRI training course;

(2) for helicopters and powered lift:

(i) at least 10 hours of flight time, including take-offs and landings on the applicable aircraft type, of which maximum 5 hours may be completed in an FFS or FTD 2/3;

(ii) instructor refresher training as a TRI at an ATO, which shall cover the relevant elements of the TRI training course.

(3) If applicants held a certificate for more than one type of aircraft within the same category, the assessment of competence taken on one of those types of aircraft shall renew the TRI certificate for the other types held within the same category of aircraft, unless it is otherwise determined in the OSD.

AMC1 FCL.940.TRI(a)(1)(ii), (a)(2)(ii), (b)(1)(ii), (b)(2)(ii); FCL.940.SFI(a)(2), (e)(1)

ED Decision 2020/005/R

(a) The refresher training for revalidation of the TRI and SFI certificates should be provided as a seminar. The seminar should consist of 6 hours of learning and may be held in the form of either one or more of the following: e-learning, two-way online meetings, face-to-face seminars. The content of the refresher seminar for revalidation should be selected from the following items:

(1) relevant changes to national or EU regulations;

(2) the role of the instructor;

(3) teaching and learning styles;

(4) observational skills;

(5) instructional techniques;

(6) briefing and debriefing skills;

(7) TEM;

(8) human performance and limitations;

(9) flight safety, prevention of incidents and accidents, including those specific to the ATO;

(10) significant changes in the content of the relevant part of the aviation system;

(11) legal aspects and enforcement procedures;

(12) developments in competency-based instruction;

(13) report writing; and

(14) any additional topics proposed by the competent authority.

(b) For the refresher training for renewal of the TRI and SFI certificates:

(1) the ATO should determine on a case-by-case basis the amount of refresher training needed, through an assessment of the candidate, taking into account the following factors:

(i) the experience of the applicant;

(ii) the amount of time elapsed since the expiry of the TRI or SFI certificate; and

(iii) the technical elements of the TRI or SFI training course, as determined by the assessment of the candidate by the ATO;

(2) the ATO should also consider the elements defined in point (a) above to determine the refresher training needed; and

(3) once the ATO has determined the needs of the applicant, it should develop an individual training programme that should be based on the content of the TRI or SFI training course and focus on the aspects where the applicant has the greatest needs.

(c) After successful completion of the seminar or refresher training, as applicable, the ATO should:

(1) in case of a seminar, in accordance with point (a), issue the applicant with a seminar completion certificate or another document specified by the competent authority, which describes the content of the seminar as in point (a), as well as a statement that the seminar was successfully completed; and

(2) in case of refresher training, in accordance with point (b), issue the applicant with a training completion certificate or another document specified by the competent authority, which describes the evaluation of the factors listed in point (b)(1) and the training received, as well as a statement that the training wassuccessfully completed; the training completion certificate should be presented to the examiner prior to the assessment of competence.

(d) Upon successful completion of the seminar or refresher training, as applicable, the ATO should submit the seminar or training completion certificate, or the other document specified by the competent authority, to the competent authority.

SECTION 5 – SPECIFIC REQUIREMENTS FOR THE CLASS RATING INSTRUCTOR – CRI

FCL.905.CRI CRI – Privileges and conditions

Regulation (EU) 2024/2076

(a) The privileges of a CRI are to instruct for:

(1) the issue, revalidation or renewal of a class or type rating for single-pilot aeroplanes, except for single-pilot high performance complex aeroplanes, when the privileges sought by the applicant are to fly in single-pilot operations;

(2) a towing or aerobatic rating for the aeroplane category, provided that the CRI holds the relevant rating and has demonstrated the ability to instruct for that rating to an FI qualified in accordance with point FCL.905.FI(j);

(3) extension of LAPL(A) privileges to another class or variant of aeroplane.

(b) The privileges of a CRI are restricted to the class or type of aeroplane in which the instructor assessment of competence was taken. The privileges of the CRI shall be extended to further classes or types when the CRI has completed, within the last 12 months:

(1) 15 hours flight time as PIC on aeroplanes of the applicable class or type of aeroplane;

(2) one training flight from the right hand seat under the supervision of another CRI or FI qualified for that class or type occupying the other pilot's seat.

(ba) The privileges of CRIs are to instruct for class and type ratings for single-pilot aeroplanes, except for single-pilot high-performance complex aeroplanes, in multi-pilot operations, provided that CRIs meet any of the following conditions:

(1) hold or have held a TRI certificate for multi-pilot aeroplanes;

(2) have at least 500 hours on aeroplanes in multi-pilot operations and completed an MCCI training course in accordance with point FCL.930.MCCI.

(c) Applicants for a CRI for multi-engine aeroplanes holding a CRI certificate for single-engine aeroplanes shall have fulfilled the prerequisites for a CRI established in FCL.915.CRI(a) and the requirements of FCL.930.CRI(a)(3) and FCL.935.

FCL.915.CRI CRI – Prerequisites

Regulation (EU) No 1178/2011

An applicant for a CRI certificate shall have completed at least:

(a) for multi-engine aeroplanes:

(1) 500 hours flight time as a pilot on aeroplanes;

(2) 30 hours as PIC on the applicable class or type of aeroplane;

(b) for single-engine aeroplanes:

(1) 300 hours flight time as a pilot on aeroplanes;

(2) 30 hours as PIC on the applicable class or type of aeroplane.

FCL.930.CRI CRI – Training course

Regulation (EU) 2019/1747

(a) The training course for the CRI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom/simulator instructional skills;

(3) 5 hours of flight instruction on multi-engine aeroplanes or an FSTD representing that class or type of aeroplane, including at least 3 hours on the aeroplane, or at least 3 hours of flight instruction on single-engine aeroplanes, given by an FI(A) qualified in accordance with point FCL.905.FI(j).

(b) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.CRI CRI Training course

ED Decision 2020/005/R

GENERAL

(a) The aim of the CRI training course is to train aircraft licence holders to the level of competence defined in FCL.920 and adequate to a CRI.

(b) The training course should be designed to give adequate training to the applicant in theoretical knowledge instruction, flight instruction and FSTD instruction to instruct for any class or type rating, except for single-pilot high-performance complex aeroplanes, for which the applicant is qualified.

(c) The flight training should be aimed at ensuring that the applicant is able to teach the air exercises safely and efficiently to students undergoing a course of training for the issue of a class or type rating, except for single-pilot high-performance complex aeroplanes.

(d) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(e) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

CONTENT

(f) The training course consists of three parts:

(1) Part 1: teaching and learning that should be in accordance with AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

(a) The technical theoretical-knowledge instruction should comprise at least 10 hours of training to include the revision of technical knowledge, preparation of lesson plans, and development of classroom instructional skills to enable the CRI to teach the technical theoretical-knowledge syllabus.

(b) The type or class rating theoretical syllabus should be used to develop the CRI teaching skills in relation to the type or class technical course syllabus. The course instructor should deliver example lectures from the applicable type or class technical syllabus. The candidate instructor should prepare and deliver lectures on topics that are selected by the course instructor from the type/class rating course and the generic topics listed further below.

(c) The 10 hours of technical theoretical-knowledge instruction should develop the applicant's ability to teach a student the knowledge and understanding that are required for the relevant air exercises for either SE or ME aeroplanes, depending on the privileges sought by the candidate.

(d) If CRI privileges for both SE and ME aeroplanes are sought, the applicant should complete 10 hours of technical theoretical-knowledge instruction related to SE and ME aeroplanes each.

(e) This following syllabus of general subjects concerns training only on ME aeroplanes.

GENERAL SUBJECTS

(a) Air legislation:

  (1) aeroplane performance group definitions;

  (2) methods of factoring gross performance.

(b) Asymmetric power flight;

(c) Principles of flight;

(d) The problems:

  (1) asymmetry;

  (2) control;

  (3) performance;

(e) The forces and couples:

  (1) offset thrust line;

  (2) asymmetric blade effect;

  (3) offset drag line;

  (4) failed engine propeller drag;

  (5) total drag increase;

  (6) asymmetry of lift;

  (7) uneven propeller slipstream effect;

  (8) effect of yaw in level and turning flight;

  (9) thrust and rudder side force couples;

  (10) effect on moment arms.

(f) Control in asymmetric power flight:

(1) use, misuse and limits of:

(i) rudder;

(ii) aileron;

(iii) elevators.

(2) effect of bank or sideslip and balance;

(3) decrease of aileron and rudder effectiveness;

(4) fin stall possibility;

(5) effect of IAS and thrust relationship;

(6) effect of residual unbalanced forces;

(7) foot loads and trimming.

(g) Minimum control and safety speeds:

(1) minimum control speed (v_{mc});

(2) definition;

(3) origin;

(4) factors affecting (v_{mc}):

(i) thrust;

(ii) mass and centre of gravity position;

(iii) altitude;

(iv) landing gear;

(v) flaps;

(vi) cowl flaps or cooling gills;

(vii) turbulence or gusts;

(viii) pilot reaction or competence;

(ix) banking towards the operating engine;

(x) drag;

(xi) feathering;

(xii) critical engine.

(5) take-off safety speed;

(6) definition or origin of $v_{2;}$

(7) other relevant v codes;

(h) Aeroplane performance: one engine inoperative:

(1) effect on excess power available;

(2) SE ceiling;

(3) cruising, range and endurance;

(4) acceleration and deceleration;

(5) zero thrust, definition and purpose;

(i) Propellers:

(1) variable pitch: general principles;

(2) feathering and un-feathering mechanism and limitations (for example minimum RPM);

(j) Specific aeroplane type;

(k) Aeroplane and engine systems:

(1) operation normal;

(2) operation abnormal;

(3) emergency procedures.

(l) Limitations: airframe:

(1) load factors;

(2) landing gear and flap limiting speeds (v_{lo} and v_{fe});

(3) rough air speed (v_{ra});

(4) maximum speeds (v_{no} and v_{ne}).

(m) Limitations: engine:

(1) RPM and manifold pressure;

(2) oil temperature and pressure;

(3) emergency procedures.

(n) Mass and balance:

(to be covered in conjunction with the flight manual or equivalent document (for example owner's manual or pilot's operating handbook))

(1) mass and balance documentation for aeroplane type;

(2) revision of basic principles;

(3) calculations for specific aeroplane type.

(o) Mass and performance:

(to be covered in conjunction with the flight manual or equivalent document (for example owner's manual or pilot's operating handbook))

(1) calculations for specific aeroplane type (all engines operating);

(2) take-off run;

(3) take-off distance;

(4) accelerate and stop distance;

(5) landing distance;

(6) landing run;

(7) take-off or climb out flight path;

(8) calculations for specific aeroplane type (one engine operating);

(9) climb out flight path;

(10) landing distance;

(11) landing run.

Part 3

FLIGHT INSTRUCTION SYLLABUS: NORMAL FLIGHT

(a) This part is similar to the air exercise sections of the SE FI course, including 'Introduction to instrument flying' except that the objectives, airmanship considerations and common errors are related to the operation of an ME aeroplane.

(b) The purpose of this part is to acquaint the applicant with the teaching aspects of the operational procedures and handling of an ME aeroplane with all engines functioning.

(c) The following items should be covered:

(1) aeroplane familiarisation;

(2) pre-flight preparation and aeroplane inspection;

(3) engine starting procedures;

(4) taxiing;

(5) pre take-off procedures;

(6) the take-off and initial climb:

(i) into wind;

(ii) crosswind;

(iii) short field.

(7) climbing;

(8) straight and level flight;

(9) descending (including emergency descent procedures);

(10) turning;

(11) slow flight;

(12) stalling and recoveries;

(13) instrument flight: basic;

(14) emergency drills (not including engine failure);

(15) circuit, approach and landing:

(i) into wind;

(ii) croswind;

(iii) short field;

(16) mislanding and going round again;

(17) actions after flight.

AIR EXERCISES

(d) The syllabus for CRI SE and ME training courses should comprise air exercises 1 to 4 and should not last less than 3 hours. In addition, the syllabus for a CRI ME training course should also include air exercise 5 to address asymmetric power flight and should not last less than 2 hours.

EXERCISE 1: FAMILIARISATION WITH THE AEROPLANE

(a) Long briefing objectives:

(1) introduction to the aeroplane;

(2) explanation of the cockpit layout;

(3) systems and controls;

(4) aeroplane power plant;

(5) checklists and drills;

(6) differences when occupying the instructor's seat;

(7) emergency drills:

(i) action in event of fire in the air and on the ground;

(ii) escape drills: location of exits and use of emergency equipment (for example fire extinguishers, etc.).

(8) pre-flight preparation and aeroplane inspection:

(i) aeroplane documentation;

(ii) external checks;

(iii) internal checks;

(iv) harness, seat or rudder pedal adjustment;

(9) engine starting procedures:

(i) use of checklists;

(ii) checks before starting;

(iii) checks after starting.

(b) Air exercise:

(1) external features;

(2) cockpit layout;

(3) aeroplane systems;

(4) checklists and drills;

(5) action if fire in the air and on the ground;

(i) engine;

(ii) cabin;

(iii) electrical.

(6) systems failure (as applicable to type);

(7) escape drills (location and use of emergency equipment and exits);

(8) preparation for and action after flight:

(i) flight authorisation and aeroplane acceptance;

(ii) technical log or certificate of maintenance release;

(iii) mass and balance and performance considerations;

(iv) external checks;

(v) internal checks, adjustment of harness or rudder pedals;

(vi) starting and warming up engines;

(vii) checks after starting;

(viii) radio navigation and communication checks;

(ix) altimeter checks and setting procedures;

(x) power checks;

(xi) running down and switching off engines;

(xii) completion of authorisation sheet and aeroplane serviceability documents.

EXERCISE 2: TAXIING

(a) Long briefing objectives:

(1) pre-taxiing area precautions (greater mass: greater inertia);

(2) effect of differential power;

(3) precautions on narrow taxiways;

(4) pre take-off procedures:

(i) use of checklist;

(ii) engine power checks;

(iii) pre take-off checks;

(iv) instructor's briefing to cover the procedure to be followed should an emergency occur during take-off, for example engine failure.

(5) the take-off and initial climb:

(i) ATC considerations;

(ii) factors affecting the length of the take-off run or distance;

(iii) correct lift-off speed;

(iv) importance of safety speed;

(v) crosswind take-off, considerations and procedures;

(vi) short field take-off, considerations and procedures;

(vii) engine handling after take-off: throttle, pitch and engine synchronisation.

(6) climbing:

(i) pre-climbing checks;

(ii) engine considerations (use of throttle or pitch controls);

(iii) maximum rate of climb speed;

(iv) maximum angle of climb speed;

(v) synchronising the engines.

(b) Air exercise

(1) pre-taxing checks;

(2) starting, control of speed and stopping;

(3) control of direction and turning;

(4) turning in confined spaces;

(5) leaving the parking area;

(6) freedom of rudder movement (importance of pilot ability to use full rudder travel);

(7) instrument checks;

(8) emergencies (brake or steering failure);

(9) pre take-off procedures:

(i) use of checklist;

(ii) engine power and system checks;

(iii) pre take-off checks;

(iv) instructor's briefing if emergencies during take-off.

(10) the take-off and initial climb:

(i) ATC considerations;

(ii) directional control and use of power;

(iii) lift-off speed;

(iv) crosswind effects and procedure;

(v) short field take-off and procedure.

(vi) procedures after take-off (at an appropriate stage of the course):

(A) landing gear retraction;

(B) flap retraction (as applicable);

(C) selection of manifold pressure and RPM;

(D) engine synchronisation;

(E) other procedures (as applicable).

(11) climbing:

(i) pre-climbing checks;

(ii) power selection for normal and maximum rate climb;

(iii) engine and RPM limitations;

(iv) effect of altitude on manifold pressure, full throttle;

(v) levelling off: power selection;

(vi) climbing with flaps down;

(vii) recovery to normal climb;

(viii) en-route climb (cruise climb);

(ix) maximum angle of climb;

(x) altimeter setting procedures;

(xi) prolonged climb and use of cowl flaps or cooling gills;

(xii) instrument appreciation.

EXERCISE 3: STRAIGHT AND LEVEL FLIGHT

(a) Long briefing objectives:

(1) selection of power: throttle or pitch controls;

(2) engine synchronisation;

(3) fuel consumption aspects;

(4) use of trimming controls: elevator and rudder (aileron as applicable);

(5) operation of flaps:

(i) effect on pitch attitude;

(ii) effect on air speed.

(6) operation of landing gear:

(i) effect on pitch attitude;

(ii) effect on air speed.

(7) use of mixture controls;

(8) use of alternate air or carburettor heat controls;

(9) operation of cowl flaps or cooling gills;

(10) use of cabin ventilation and heating systems;

(11) operation and use of the other systems (as applicable to type);

(12) descending:

(i) pre-descent checks;

(ii) normal descent;

(iii) selection of throttle or pitch controls;

(iv) engine cooling considerations;

(v) emergency descent procedure.

(13) turning:

(i) medium turns;

(ii) climbing and descending turns;

(iii) steep turns (45 ° of bank or more).

(b) Air exercise:

(1) at normal cruising power:

(i) selection of cruise power;

(ii) manifold pressure or RPM;

(iii) engine synchronisation;

(iv) use of trimming controls;

(v) performance considerations: range or endurance.

(2) instrument appreciation;

(3) operation of flaps (in stages):

(i) air speed below v_{fe};

(ii) effect on pitch attitude;

(iii) effect on air speed.

(4) operation of landing gear:

(i) air speed below v_{lo} / v_{le};

(ii) effect on pitch attitude;

(iii) effect on air speed.

(5) use of mixture controls;

(6) use of alternate air or carburettor control;

(7) operation of cowl flaps or cooling gills;

(8) operation of cabin ventilation or heating systems;

(9) operation and use of other systems (as applicable to type);

(10) descending;

(i) pre-descent checks;

(ii) power selection: manifold pressure or RPM;

(iii) powered descent (cruise descent);

(iv) engine cooling considerations: use of cowl flaps or cooling gills;

(v) levelling off;

(vi) descending with flaps down;

(vii) descending with landing gear down;

(viii) altimeter setting procedure;

(ix) instrument appreciation;

(x) emergency descent:

(A) as applicable to type;

(B) limitations in turbulence v_{no}.

(11) turning:

(i) medium turns;

(ii) climbing and descending turns;

(iii) steep turns: 45 ° of ban;

(iv) instrument appreciation.

EXERCISE 4: SLOW FLIGHT

(a) Long briefing objectives:

(1) aeroplane handling characteristics during slow flight: flight at v_{s1} and v_{so} +5 knots;

(2) simulated go-around from slow flight:

(i) at V_{sse} with flaps down;

(ii) note pitch trim change.

(3) stalling:

(i) power selection;

(ii) symptoms approaching the stall;

(iii) full stall characteristics;

(iv) recovery from the full stall;

(v) recovery at the incipient stall;

(vi) stalling and recovery in the landing configuration;

(vii) recovery at the incipient stage in the landing configuration.

(4) instrument flight (basic):

(i) straight and level;

(ii) climbing;

(iii) turning;

(iv) descending.

(5) emergency drills (not including engine failure), as applicable to type;

(6) circuit approach and landing:

(i) downwind leg:

(A) air speed below v_{fe};

(B) use of flaps (as applicable);

(C) pre-landing checks;

(D) position to turn onto base leg.

(ii) base leg:

(A) selection of power (throttle or pitch), flaps and trimming controls;

(B) maintenance of correct air speed.

(iii) final approach:

(A) power adjustments (early reaction to undershooting);

(B) use of additional flaps (as required);

(C) confirmation of landing gear down;

(D) selection 'touch down' point;

(E) air speed reduction to V_{at};

(F) maintenance of approach path.

(iv) landing:

(A) greater sink rate;

(B) longer landing distance and run;

(C) crosswind approach and landing;

(D) crosswind considerations;

(E) short field approach and landing;

(F) short field procedure: considerations.

(b) Air exercise

(1) safety checks;

(2) setting up and maintaining (flaps up);

(i) v_{s1} + 5 knots;

(ii) note aeroplane handling characteristics.

(3) setting up and maintaining (flaps down):

(i) v_{so} + 5 knots;

(ii) note aeroplane handling characteristics.

(4) simulated go-around from a slow flight with flaps:

(i) down and air speed not below V_{sse}, for example air speed at V_{sse} or v_{mca} + 10 knots;

(ii) increase to full power and enter a climb;

(iii) note pitch change.

(5) resume normal flight.

(6) stalling;

(i) selection of RPM;

(ii) stall symptoms;

(iii) full stall characteristics;

(iv) recovery from the full stall: care in application of power;

(v) recovery at the incipient stage;

(vi) stalling and recovery in landing configuration;

(vii) stall recovery at the incipient stage in the landing configuration.

(7) instrument flight (basic):

(i) straight and level;

(ii) climbing;

(iii) turning;

(iv) descending.

(8) emergency drills (not including engine failure), as applicable to type;

(9) circuit, approach and landing:

(i) downwind leg:

(A) control of speed (below v_{fe});

(B) flaps as applicable;

(C) pre-landing checks;

(D) control of speed and height;

(E) base leg turn.

(ii) base leg:

(A) power selection;

(B) use of flap and trimming controls;

(C) maintenance of correct air speed.

(iii) final approach:

(A) use of additional flap (as required);

(B) confirmation of landing gear down;

(C) selection of touchdown point;

(D) air speed reduction to V_{at};

(E) maintaining correct approach path: use of power.

(iv) landing:

(A) control of sink rate during flare;

(B) crosswind considerations;

(C) longer landing roll;

(D) short or soft field approach and landing;

(E) considerations and precautions.

(10) Asymmetric power flight.

During this part, special emphasis is to be placed on the:

(i) circumstances in which actual feathering and un-feathering practice will be done, for example safe altitude; compliance with regulations about minimum altitude or height for feathering practice, weather conditions, distance from nearest available aerodrome;

(ii) procedure to use for instructor and student co-operation, for example the correct use of touch drills and the prevention of misunderstandings, especially during feathering and unfeathering practice and when zero thrust is being used for asymmetric circuits. This procedure is to include positive agreement as to which engine is being shut down or re-started or set at zero thrust and identifying each control and naming the engine it is going to affect;

(iii) consideration to be given to avoid over-working the operating engine, and the degraded performance when operating the aeroplane during asymmetric flight;

(iv) need to use the specific checklist for the aeroplane type.

EXERCISE 5: FLIGHT ON ASYMMETRIC POWER

(a) Long briefing objectives:

(1) introduction to asymmetric flight:

(2) feathering the propeller: method of operation;

(3) effects on aeroplane handling at cruising speed;

(4) introduction to effects upon aeroplane performance;

(5) note foot load to maintain a constant heading (no rudder trim);

(6) un-feathering the propeller;

(7) return to normal flight finding the zero thrust setting;

(8) comparison of foot load when feathered and with zero thrust set.

(9) effects and recognition of engine failure in level flight;

(10) forces and the effects of yaw;

(11) types of failure:

(i) sudden or gradual;

(ii) complete or partial.

(12) yaw, direction and further effects of yaw;

(13) flight instrument indications;

(14) identification of failed engine;

(15) the couples and residual out of balance forces: resultant flight attitude;

(16) use of rudder to counteract yaw;

(17) use of aileron: dangers of misuse;

(18) use of elevator to maintain level flight;

(19) use of power to maintain a safe air speed and altitude;

(20) supplementary recovery to straight and level flight: simultaneous increase of speed and reduction in power;

(21) identification of failed engine: idle leg = idle engine;

(22) use of engine instruments for identification:

(i) fuel pressure or flow;

(ii) RPM gauge response effect of CSU action at lower and higher air speed;

(iii) engine temperature gauges.

(23) confirmation of identification: close the throttle of identified failed engine;

(24) effects and recognition of engine failure in turns;

(25) identification and control;

(26) side forces and effects of yaw.

(27) During turning flight:

(i) effect of 'inside' engine failure: effect sudden and pronounced;

(ii) effect of 'outside' engine failure: effect less sudden and pronounced;

(iii) the possibility of confusion in identification (particularly at low power):

(A) correct use of rudder;

(B) possible need to return to lateral level flight to confirm correct identification.

(iv) visual and flight instrument indications;

(v) effect of varying speed and power;

(vi) speed and thrust relationship;

(vii) at normal cruising speed and cruising power: engine failure clearly recognised;

(viii) at low safe speed and climb power: engine failure most positively recognised;

(ix) high speed descent and low power: possible failure to notice asymmetry (engine failure).

(28) Minimum control speeds:

(i) ASI colour coding: red radial line.

Note: this exercise is concerned with the ultimate boundaries of controllability in various conditions that a student can reach in a steady asymmetric power state, approached by a gradual speed reduction. Sudden and complete failure should not be given at the Flight Manual v_{mca}. The purpose of the exercise is to continue the gradual introduction of a student to control an aeroplane in asymmetric power flight during extreme or critical situations. It is not a demonstration of v_{mca}.

(ii) Techniques for assessing critical speeds with wings level and recovery: dangers involved when minimum control speed and the stalling speed are very close: use of $V_{sse;}$

(iii) Establish a minimum control speed for each asymmetrically disposed engine to establish critical engine (if applicable);

(iv) Effects on minimum control speeds of:

(A) bank;

(B) zero thrust setting;

(C) take-off configuration:

(a) landing gear down and take-off flap set;

(b) landing gear up and take-off flap set.

Note: it is important to appreciate that the use of 5 ° of bank towards the operating engine produces a lower v_{mca} and also a better performance than that obtained with the wings held level. It is now normal for manufacturers to use 5 ° of bank in this manner when determining the v_{mca} for the specific type. Thus, the v_{mca} quoted in the aeroplane manual will have been obtained using the technique.

(29) Feathering and un-feathering:

(i) minimum heights for practising feathering or un-feathering drills;

(ii) engine handling: precautions (overheating, icing conditions, priming, warm-up, method of simulating engine failure: reference to aircraft engine manual and service instructions and bulletins).

(30) Engine failure procedure:

(i) once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.

(ii) flight phase:

(A) in cruising flight;

(B) critical phase such as immediately after take-off or during the approach to landing or during a go-around.

(31) Aircraft type:

Variations will inevitably occur in the order of certain drills and checks due to differences between aeroplane types and perhaps between models of the same type, and the flight manual or equivalent document (for example owner's manual or pilot's operating handbook) is to be consulted to establish the exact order of these procedures.

For example, one flight manual or equivalent document (for example owner's manual or pilot's operating handbook) may call for the raising of flaps and landing gear before feathering, whilst another may recommend feathering as a first step. The reason for this latter procedure could be due to the fact that some engines cannot be feathered if the RPM drops below a certain figure.

Again, in some aeroplanes, the raising of the landing gear may create more drag during retraction due to the transient position of the landing gear doors and as a result of this retraction would best be left until feathering has been accomplished and propeller drag reduced.

Therefore, the order in which the drills and checks are shown in this syllabus under 'immediate actions' and 'subsequent actions' are to be used as a general guide only and the exact order of precedence is determined by reference to the flight manual or

equivalent document (for example owner's manual or pilot's operating handbook) for the specific aeroplane type being used on the course.

(32) In-flight engine failure in cruise or other flight phase not including take-off or landing:

(i) immediate actions:

(A) recognition of asymmetric condition and control of the aircraft;

(B) identification and confirmation of failed engine:

(a) idle leg = idle engine;

(b) closing of throttle for confirmation.

(C) cause and fire check:

(a) typical reasons for failure;

(b) methods of rectification.

(D) feathering decision and procedure:

(a) reduction of other drag;

(b) need for speed but not haste;

(c) use of rudder trim.

(ii) subsequent actions;

(A) live engine:

(a) temperature, pressures and power;

(b) remaining services;

(c) electrical load: assess and reduce as necessary;

(d) effect on power source for air driven instruments;

(e) landing gear;

(f) flaps and other services.

(B) re-plan flight:

(a) ATC and weather;

(b) terrain clearance, SE cruise speed;

(c) decision to divert or continue.

(C) fuel management: best use of remaining fuel;

(D) dangers of re-starting damaged engine;

(E) action if unable to maintain altitude: effect of altitude on power available;

(F) effects on performance;

(G) effects on power available and power required;

(H) effects on various airframe configuration and propeller settings;

(I) use of flight manual or equivalent document (for example owner's manual or pilot's operating handbook):

(a) cruising;

(b) climbing: ASI colour coding (blue line);

(c) descending;

(d) turning.

(J) 'live' engine limitations and handling;

(K) take-off and approach: control and performance.

(33) Significant factors:

(i) significance of take-off safety speed:

(A) effect of landing gear, flap, feathering, take-off, trim setting, systems for operating landing gear and flaps;

(B) effect on mass, altitude and temperature (performance).

(ii) significance of best SE climb speed (V_{yse}):

(A) acceleration to best engine climb speed and establishing a positive climb;

(B) relationship of SE climb speed to normal climb speed;

(C) action if unable to climb.

(iii) significance of asymmetric committal height and speed: action if baulked below asymmetric committal height.

(34) Engine failure during take-off:

(i) below v_{mca} or unstick speed:

(A) accelerate or stop distance considerations;

(B) prior use of flight manual data if available.

(ii) above v_{mca} or unstick speed and below safety speed;

(iii) immediate re-landing or use of remaining power to achieve forced landing;

(iv) considerations:

(A) degree of engine failure;

(B) speed at the time;

(C) mass, altitude and temperature (performance);

(D) configuration;

(E) length of runway remaining;

(F) position of any obstacles ahead.

(35) Engine failure after take-off:

(i) simulated at a safe height and at or above take-off safety speed;

(ii) considerations:

(A) need to maintain control;

(B) use of bank towards operating engine;

(C) use of available power achieving best SE climb speed;

(D) mass, altitude, temperature (performance);

(E) effect of prevailing conditions and circumstances.

(36) Immediate actions: maintenance of control, including air speed and use of power:

(i) recognition of asymmetric condition;

(ii) identification and confirmation of failed engine;

(iii) feathering and removal of drag (procedure for type);

(iv) establishing best SE climb speed.

(37) Subsequent actions: whilst carrying out an asymmetric power climb to the downwind position at SE best rate of climb speed:

(i) cause and fire check;

(ii) live engine, handling considerations;

(iii) remaining services;

(iv) ATC liaison;

(v) fuel management.

Note: these procedures are applicable to aeroplane type and flight situation.

(38) Significance of asymmetric committal height:

(i) Asymmetric committal height is the minimum height needed to establish a positive climb whilst maintaining adequate speed for control and removal of drag during an approach to a landing.

Because of the significantly reduced performance of many CS/JAR/FAR 23 aeroplanes when operating on one engine, consideration is to be given to a minimum height from which it would be safely possible to attempt a go-around procedure, during an approach when the flight path will have to be changed from a descent to a climb with the aeroplane in a high drag configuration.

Due to the height loss which will occur during the time that the operating engine is brought up to full power, landing gear and flap retracted, and the aeroplane established in a climb at v_{yse} a minimum height (often referred to as 'Asymmetric committal height') is to be selected, below which the pilot should not attempt to take the aeroplane round again for another circuit. This height will be compatible with the aeroplane type, all up weight, altitude of the aerodrome being used, air temperature, wind, the height of obstructions along the climb out path, and pilot competence.

(ii) circuit approach and landing on asymmetric power:

(A) definition and use of asymmetric committal height;

(B) use of standard pattern and normal procedures;

(C) action if unable to maintain circuit height;

(D) speed and power settings required;

(E) decision to land or go-around at asymmetric committal height: factors to be considered.

(iii) undershooting importance of maintaining correct air speed (not below v_{yse}).

(39) Speed and heading control:

(i) height, speed and power relationship: need for minimum possible drag;

(ii) establishing positive climb at best SE rate of climb speed:

(A) effect of availability of systems, power for flap and landing gear;

(B) operation and rapid clean up.

Note 1: The air speed at which the decision is made to commit the aeroplane to a landing or to go-around should normally be the best SE rate of climb speed and in any case not less than the safety speed.

Note 2: On no account should instrument approach 'decision height' and its associated procedures be confused with the selection of minimum height for initiating a go-around in asymmetric power flight.

(40) Engine failure during an all engines approach or missed approach:

(i) use of asymmetric committal height and speed considerations;

(ii) speed and heading control;

(iii) decision to attempt a landing, go-around or force land as circumstances dictate.

Note: at least one demonstration and practice of engine failure in this situation should be performed during the course.

(41) Instrument flying on asymmetric power:

(i) considerations relating to aircraft performance during:

(A) straight and level flight;

(B) climbing and descending;

(C) standard rate turns;

(D) level, climbing and descending turns including turns onto preselected headings.

(ii) availability of vacuum operated instruments;

(iii) availability of electrical power source.

(b) Air exercise

This section covers the operation of a SP ME aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Checklists should be used as applicable.

(1) introduction to asymmetric flight:

(2) close the throttle of one engine;

(3) feather its propeller;

(4) effects on aeroplane handling at cruising speed;

(5) effects on aeroplane performance for example cruising speed and rate of climb;

(6) note foot load to maintain a constant heading;

(7) un-feather the propeller;

(8) return to normal flight finding the zero thrust throttle setting;

(9) comparison of foot load when feathered and with zero thrust set.

(10) effects and recognition of engine failure in level flight with the aeroplane straight and level at cruise speed:

(i) slowly close the throttle of one engine;

(ii) note yaw, roll and spiral descent.

(11) return to normal flight:

(i) close throttle of other engine;

(ii) note same effects in opposite direction.

(12) methods of control and identification of failed engine close one throttle and maintain heading and level flight by use of:

(i) rudder to control yaw;

(ii) aileron to hold wings level;

(iii) elevators to maintain level flight;

(iv) power (as required) to maintain air speed and altitude.

(13) alternative or supplementary method of control:

(i) simultaneously;

(ii) lower aeroplane nose to increase air speed;

(iii) reduce power;

(iv) loss of altitude: inevitable.

(14) identification of failed engine: idle foot = idle engine;

(15) use of instruments for identification:

(i) fuel pressure or fuel flow;

(ii) RPM gauge or CSU action may mask identification;

(iii) engine temperature gauges.

(16) confirmation of identification: close the throttle of the identified failed engine;

(17) effects and recognition of engine failure in turns and effects of ‘inside’ engine failure:

(i) more pronounced yaw;

(ii) more pronounced roll;

(iii) more pronounced pitch down.

(18) effects of 'outside' engine failure:

(i) less pronounced yaw;

(ii) less pronounced roll;

(iii) less pronounced pitch down.

(19) possibility of confusion in identification:

(i) use of correct rudder application;

(ii) return to lateral level flight if necessary.

(20) flight instrument indications;

(21) effect of varying speed and power;

(22) failure of one engine at cruise speed and power: engine failure clearly recognised;

(23) failure of one engine at low speed and high power (not below v_{sse}): engine failure most positively recognised;

(24) failure of one engine at higher speeds and low power: possible failure to recognise engine failure;

(25) minimum control speeds;

(26) establish the v_{yse}:

(i) select maximum permitted manifold pressure and RPM;

(ii) close the throttle on one engine;

(iii) raise the aeroplane nose and reduce the air speed;

(iv) note the air speed when maximum rudder deflection is being applied and when directional control can no longer be maintained;

(v) lower the aeroplane nose and reduce power until full directional control is regained;

(vi) the lowest air speed achieved before the loss of directional control will be the Vmc for the flight condition;

(vii) repeat the procedure closing the throttle of the other engine;

(viii) the higher of these two air speeds will identify the most critical engine to fail.

Note: warning - in the above situations the recovery is to be initiated immediately before directional control is lost with full rudder applied, or when a safe margin above the stall remains, for example when the stall warning device operates, for the particular aeroplane configuration and flight conditions. On no account should the aeroplane be allowed to decelerate to a lower air speed.

(27) establish the effect of using 5° of bank at v_{mc}:

(i) close the throttle of one engine;

(ii) increase to full power on the operating engine;

(iii) using 5° of bank towards the operating engine reduce speed to the $V_{mc;}$

(iv) note lower V_{mc} when 5 ° of bank is used.

(28) 'in-flight' engine failure procedure;

(29) in cruise and other flight circumstances not including take-off and landing.

(30) Immediate actions: maintenance of control including air speed and use of power:

(i) identification and confirmation of failed engine;

(ii) failure cause and fire check;

(iii) feathering decision and implementation;

(iv) reduction of any other drag, for example flaps, cowl flaps etc.;

(v) retrim and maintain altitude.

(31) Subsequent actions:

(i) live engine:

(A) oil temperature, pressure, fuel flow and power;

(B) remaining services;

(C) electrical load: assess and reduce as necessary;

(D) effect on power source for air driven instruments;

(E) landing gear;

(F) flaps and other services.

(ii) re-plan flight:

(A) ATC and weather;

(B) terrain clearance;

(C) SE cruise speed;

(D) decision to divert or continue;

(iii) fuel management: best use of

(iv) dangers of re-starting damaged engine;

(v) action if unable to maintain altitude:

(A) adopt V_{yse};

(B) effect of altitude on power available.

(vi) effects on performance;

(vii) effects on power available and power required;

(viii) effects on various airframe configurations and propeller settings;

(ix) use of flight manual or equivalent document (for example owner's manual or pilot's operating handbook):

(A) cruising;

(B) climbing: ASI colour coding (blue line);

(C) descending;

(D) turning.

(x) 'live' engine limitations and handling;

(xi) take-off and approach: control and handling;

Note: to be done at a safe height away from the circuit;

(xii) take-off case with landing gear down and take-off flap set (if applicable);

(xiii) significance of take-off at or above safety speed (at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb);

(xiv) significance of flight below safety speed (below safety speed and above v_{mca}. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb);

(xv) significance of best SE climb speed (the ability to achieve the best rate of climb on one engine with minimum delay).

(32) Significance of asymmetric committal height:

(i) the ability to maintain or accelerate to the best SE rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away;

(ii) below this height, the aeroplane is committed to continue the approach to a landing.

(33) Engine failure during take-off run and below safety speed briefing only;

(34) Engine failure after take-off;

Note: to be initiated at a safe height and at not less than take-off safety speed with due regard to the problems of a prolonged SE climb in the prevailing conditions.

(i) immediate actions:

(A) control of direction and use of bank;

(B) control of air speed and use of power;

(C) recognition of asymmetric condition;

(D) identification and confirmation of failed engine feathering and reduction of drag (procedure for type);

(E) re-trim;

(ii) subsequent actions: whilst carrying out an asymmetric power climb to the downwind position at SE best rate of climb speed:

(A) cause and fire check;

(B) live engine, handling considerations;

(C) drills and procedures applicable to aeroplane type and flight situation;

(D) ATC liaison;

(E) fuel management.

(35) Asymmetric circuit, approach and landing;

(i) downwind and base legs:

(A) use of standard pattern;

(B) normal procedures;

(C) landing gear and flap lowering considerations;

(D) position for base leg;

(E) live engine handling;

(F) air speed and power settings;

(G) maintenance of height.

(ii) final approach:

(A) asymmetric committal height drill;

(B) control of air speed and descent rate;

(C) flap considerations.

(iii) going round again on asymmetric power (missed approach):

(A) not below asymmetric committal height;

(B) speed and heading control;

(C) reduction of drag, landing gear retraction;

(D) maintaining V_{yse};

(E) establish positive rate of climb.

(36) Engine failure during all engines approach or missed approach:

Note: to be started at not less than asymmetric committal height and speed and not more than part flap set:

(i) speed and heading control;

(ii) reduction of drag flap;

(iii) decision to attempt landing or go-around;

(iv) control of descent rate if approach is continued;

(v) if go-around is initiated, maintain vyse, flaps and landing gear retracted and establish positive rate of climb.

Note: at least one demonstration and practice of engine failure in this situation should be performed during the course.

(37) Instrument flying on asymmetric power;

(38) Flight instrument checks and services available:

(i) straight and level flight;

(ii) climbing and descending;

(iii) standard rate turns;

(iv) level, climbing and descending turns including turns onto preselected headings.

EXERCISE 5: UPRT

Instructors should have the specific competence to provide UPRT during the type rating course, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and of the recommendations that are developed by the OEMs. Therefore, during the CRI training course, the student instructor should:

(a) be able to apply the correct upset recovery techniques for the specific aeroplane type;

(b) understand the importance of applying type-specific OEM procedures for recovery manoeuvres;

(c) be able to distinguish between the applicable SOPs and OEM recommendations (if available);

(d) understand the capabilities and limitations of the FSTDs that are used for UPRT;

(e) ensure that the training remains within the FSTD training envelope to avoid the risk of negative transfer of training;

(f) understand and be able to use the IOS of the FSTD in the context of providing effective UPRT;

(g) understand and be able to use the available FSTD instructor tools to provide accurate feedback on pilot performance;

(h) understand the importance of adhering to the FSTD UPRT scenarios that are validated by the training programme developer; and

(i) understand the missing critical human factor aspects due to the limitations of the FSTD, and convey this to the student pilot(s) receiving the training.

FCL.940.CRI CRI – Revalidation and renewal

Regulation (EU) 2019/1747

(a) To revalidate a CRI certificate, applicants shall fulfil, within the validity period of the CRI certificate, at least two out of the following three requirements:

(1) conduct at least 10 hours of flight instruction as a CRI. If applicants have CRI privileges on both single-engine and multi-engine aeroplanes, those hours of flight instruction shall be equally divided between single-engine and multi-engine aeroplanes;

(2) complete a refresher training as a CRI at an ATO or at a competent authority;

(3) pass the assessment of competence in accordance with point FCL.935 for multi-engine or single-engine aeroplanes, as relevant.

(b) For at least each alternate revalidation of a CRI certificate, holders shall have complied with the requirement in point (a)(3).

(c) Renewal

If the CRI certificate has expired, it shall be renewed if the applicants in the period of 12 months before the application for the renewal:

(1) have completed a refresher training as a CRI at an ATO or at a competent authority;

(2) have completed the assessment of competence as required by point FCL.935.

AMC1 FCL.940.CRI CRI Revalidation and renewal

ED Decision 2020/005/R

REFRESHER TRAINING

(a) Paragraph (c)(1) of FCL.940.CRI determine that an applicant for renewal of a CRI certificate shall complete refresher training as a CRI at an ATO or competent authority. Paragraph (a)(2) also establishes that an applicant for revalidation of the CRI certificate that has not completed a minimum amount of instruction hours (established in paragraph (a)(1)) during the validity period of the certificate shall undertake refresher training at an ATO or competent authority for the revalidation of the certificate. The amount of refresher training needed should be determined on a case by case basis by the ATO or competent authority, taking into account the following factors:

(1) the experience of the applicant;

(2) whether the training is for revalidation or renewal;

(3) the amount of time elapsed since the last time the applicant has conducted training, in the case of revalidation, or since the certificate has lapsed, in the case of renewal. The amount of training needed to reach the desired level of competence should increase with the time elapsed.

(b) Once the ATO or competent authority has determined the needs of the applicant, it should develop an individual training programme that should be based on the CRI training course and focus on the aspects where the applicant has shown the greatest needs.

(c) After successful completion of the refresher training, as applicable, the ATO or competent authority, should, in accordance with point (b), issue the applicant with a training completion certificate or another document specified by the competent authority, which describes the evaluation of the factors listed in point (a)(1) (the experience of the applicant) and the training received, as well as a statement that the training was successfully completed. The training completion certificate should be presented to the examiner prior to the assessment of competence.

Upon successful completion of the refresher training, as applicable, the ATO should submit the training completion certificate, or the other document specified by the competent authority, to the competent authority.

SECTION 6 – SPECIFIC REQUIREMENTS FOR THE INSTRUMENT RATING INSTRUCTOR – IRI

FCL.905.IRI IRI – Privileges and conditions

Regulation (EU) 2024/2076

(a) The privileges of IRIs are to instruct for the issue, revalidation and renewal of a BIR and an IR in the appropriate aircraft category.

(b) Specific requirements for the MPL course. To instruct for the basic phase of training on an MPL course, the IRI(A) shall:

(1) hold an IR for multi-engine aeroplanes; and

(2) have completed at least 1 500 hours of flight time in multi-crew operations.

(3) In the case of IRI already qualified to instruct on ATP(A) or CPL(A)/IR integrated courses, the requirement of point FCL.905.IRI(b)(2) may be replaced by the completion of the course provided for in point FCL.905.FI(k)(3).

FCL.915.IRI IRI – Prerequisites

Regulation (EU) 2021/2227

Applicants for an IRI certificate shall:

(a) in case of an IRI(A):

(1) to provide training in FSTDs during an approved training course at an ATO, have completed at least 200 hours of flight time under IFR after the issuance of the BIR or the IR, of which at least 50 hours shall be in aeroplanes;

(2) to provide training in an aeroplane, have completed at least 800 hours of flight time under IFR, of which at least 400 hours shall be in aeroplanes;

(3) to apply for an IRI(A) for multi-engine aeroplanes, meet the requirements of points FCL.915.CRI(a), FCL.930.CRI and FCL.935;

(b) for an IRI(H):

(1) to provide training in FSTDs during an approved training course at an ATO, have completed at least 125 hours of flight time under IFR after the issuance of the IR, of which at least 65 hours shall be instrument flight time in helicopters;

(2) to provide training in a helicopter, have completed at least 500 hours of flight time under IFR, of which at least 250 hours shall be instrument flight time in helicopters; and

(3) when seeking privileges to provide training in multi-engine helicopters, meet the requirements of points FCL.910.TRI(c)(1) and FCL.915.TRI(d)(2);

(c) Applicants for an IRI(As) certificate shall have completed at least 300 hours of flight time under IFR, of which at least 100 hours shall be instrument flight time in airships.

FCL.930.IRI IRI – Training course

Regulation (EU) 2024/2076

(a) The training course for the IRI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) 10 hours of technical training, including revision of instrument theoretical knowledge, the preparation of lesson plans and the development of classroom instructional skills;

(3) (i) for the IRI(A), at least 10 hours of flight instruction on an aeroplane, FFS, FTD 2/3 or FPNT II. In the case of applicants holding an FI(A) certificate, these hours are reduced to 5;

(ii) for the IRI(H), at least 10 hours of flight instruction on a helicopter, FFS, FTD 2/3 or FNPT II/III. In the case of applicants holding an FI(H) certificate, those hours are reduced to at least 5;

(iii) for the IRI(As), at least 10 hours of flight instruction on an airship, FFS, FTD 2/3 or FNPT II.

(b) Flight instruction shall be given by an FI qualified in accordance with point FCL.905.FI(j).

(c) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.IRI IRI – Training course

ED Decision 2011/016/R

GENERAL

(a) The aim of the IRI training course is to train aircraft licence holders to the level of competence defined in FCL.920, and adequate for an IRI.

(b) The IRI training course should give particular stress to the role of the individual in relation to the importance of human factors in the manmachine environment.

(c) Special attention should be paid to the applicant's levels of maturity and judgement including an understanding of adults, their behavioural attitudes and variable levels of education.

(d) With the exception of the section on 'teaching and learning', all the subject detail contained in the theoretical and flight training syllabus is complementary to the instrument rating pilot course syllabus which should already be known by the applicant. Therefore, the objective of the course is to:

(1) refresh and bring up to date the technical knowledge of the student instructor;

(2) train pilots in accordance with the requirements of the modular instrument flying training course;

(3) enable the applicant to develop the necessary instructional techniques required for teaching of instrument flying, radio navigation and instrument procedures to the level required for the issue of an instrument rating;

(4) ensure that the student instrument rating instructor's flying is of a sufficiently high standard.

(e) In part 3 some of the air exercises of the flight instruction syllabus of this AMC may be combined in the same flight.

(f) During the training course the applicants should be made aware of their own attitudes to the important aspects of flight safety. Improving safety awareness should be a fundamental objective throughout the training course. It will be of major importance for the training course to aim at giving applicants the knowledge, skills and attitudes relevant to an instructor's task. To achieve this, the course curriculum, in terms of objectives, should comprise at least the following areas.

(g) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(h) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

CONTENT

(i) The training course consists of three parts:

(1) Part 1: teaching and learning that should follow the content of AMC1 FCL.920.

(2) Part 2: instrument technical theoretical knowledge instruction (technical training).

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The instrument theoretical knowledge instruction should comprise not less than 10 hours training to include the revision of instrument theoretical knowledge, the preparation of lesson plans and the development of classroom instructional skills to enable the IRI to instruct the instrument theoretical knowledge syllabus.

(b) All the subject detail contained in the instrument theoretical knowledge instruction syllabus and flight instruction syllabus is complementary to the instrument rating pilot course syllabus which should already be known by the applicant. Therefore, the objective of the course is to:

(1) refresh and bring up to date the technical knowledge of the student instructor;

(2) train pilots in accordance with the requirements of the modular instrument flying training course;

(3) enable the applicant to develop the necessary instructional techniques required for teaching of instrument flying, radio navigation and instrument procedures to the level required for the issue of an instrument rating; and

(4) ensure that the student instrument rating instructor's flying is of a sufficiently high standard.

(c) The theoretical subjects covered below should be used to develop the instructor's teaching skills. The items selected should relate to the student's background and should be applied to training for an IR.

GENERAL SUBJECTS

(d) Physiological and psychological factors:

(1) the senses;

(2) spatial disorientation;

(3) sensory illusions;

(4) stress.

(e) Flight instruments:

(1) air speed indicator;

(2) altimeter;

(3) vertical speed indicator;

(4) attitude indicator;

(5) heading indicator;

(6) turn and slip indicator;

(7) magnetic compass;

(8) in relation to the above instruments the following items should be covered:

(i) principles of operation;

(ii) errors and in-flight serviceability checks;

(iii) system failures.

(f) Radio navigation aids:

(1) basic radio principles;

(2) use of VHF RTF channels;

(3) the Morse code;

(4) basic principles of radio aids;

(5) use of VOR;

(6) ground and aeroplane equipment;

(7) use of NDB/ADF;

(8) ground and aeroplane equipment;

(9) use of VHF/DF;

(10) radio detection and ranging (radar);

(11) ground equipment;

(12) primary radar;

(13) secondary surveillance radar;

(14) aeroplane equipment;

(15) transponders;

(16) precision approach system;

(17) other navigational systems (as applicable) in current operational use;

(18) ground and aeroplane equipment;

(19) use of DME;

(20) ground and aeroplane equipment;

(21) marker beacons;

(22) ground and aeroplane equipment;

(23) pre-flight serviceability checks;

(24) range, accuracy and limitations of equipment.

(g) Flight planning considerations;

(h) Aeronautical information publications:

(1) the training course should cover the items listed below, but the applicant's aptitude and previous aviation experience should be taken into account when determining the amount of instructional time allotted. Although a number of items contained under this heading are complementary to those contained in the PPL/CPL/IR syllabi, the instructor should ensure that they have been covered during the applicant's training and due allowance should be made for the time needed to revise these items as necessary.

(2) AIP

(3) NOTAM class 1 and 2;

(4) AIC;

(5) information of an operational nature;

(6) the rules of the air and ATS;

(7) visual flight rules and instrument flight rules;

(8) flight plans and ATS messages;

(9) use of radar in ATS;

(10) radio failure;

(11) classification of airspace;

(12) airspace restrictions and hazards;

(13) holding and approach to land procedures;

(14) precision approaches and non precision approaches;

(15) radar approach procedures;

(16) missed approach procedures;

(17) visual manoeuvring after an instrument approach;

(18) conflict hazards in uncontrolled airspace;

(19) communications;

(20) types of services;

(21) extraction of AIP data relating to radio aids;

(22) charts available;

(23) en-route;

(24) departure and arrival;

(25) instrument approach and landing;

(26) amendments, corrections and revision service.

(i) flight planning general:

(1) the objectives of flight planning;

(2) factors affecting aeroplane and engine performance;

(3) selection of alternate(s);

(4) obtaining meteorological information;

(5) services available;

(6) meteorology briefing;

(7) telephone or electronic data processing;

(8) actual weather reports (TAFs, METARs and SIGMET messages);

(9) the route forecast;

(10) the operational significance of the meteorological information obtained (including icing, turbulence and visibility);

(11) altimeter considerations;

(12) definitions of:

(i) transition altitude;

(ii) transition level;

(iii) flight level;

(iv) QNH;

(v) regional QNH;

(vi) standard pressure setting;

(vii) QFE.

(13) altimeter setting procedures;

(14) pre-flight altimeter checks;

(15) take-off and climb;

(16) en-route;

(17) approach and landing;

(18) missed approach;

(19) terrain clearance;

(20) selection of a minimum safe en-route altitude;

(21) IFR;

(22) preparation of charts;

(23) choice of routes and flight levels;

(24) compilation of flight plan or log sheet;

(25) log sheet entries;

(26) navigation ground aids to be used;

(27) frequencies and identification;

(28) radials and bearings;

(29) tracks and fixes;

(30) safety altitude(s);

(31) fuel calculations;

(32) ATC frequencies (VHF);

(33) tower, approach, en-route, radar, FIS, ATIS, and weather reports;

(34) minimum sector altitudes at destination and alternate aerodromes;

(35) determination of minimum safe descent heights or altitudes (decision heights) at destination and alternate aerodromes.

(j) The privileges of the instrument rating:

(1) outside controlled airspace;

(2) within controlled airspace;

(3) period of validity and renewal procedures.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) An approved IRI course should comprise of at least 10 hours of flight instruction, of which a maximum of 8 hours may be conducted in an FSTD. A similar number of hours should be used for the instruction and practice of preflight and post-flight briefing for each exercise.

(b) The flight instruction should aim to ensure that the applicant is able to teach the air exercises safely and efficiently.

A. AEROPLANES

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INTRUMENT FLYING (Basic)

(for revision, as deemed necessary by the instructor)

(a) Long briefing objectives:

(1) flight instruments;

(2) physiological considerations;

(3) instrument appreciation:

(i) attitude instrument flight;

(ii) pitch indications;

(iii) bank indications;

(iv) different instrument presentations;

(v) introduction to the use of the attitude indicator;

(vi) pitch attitude;

(vii) bank attitude;

(viii) maintenance of heading and balanced flight;

(ix) instrument limitations (inclusive system failures).

(4) attitude, power and performance:

(i) attitude instrument flight;

(ii) control instruments;

(iii) performance instruments;

(iii) effect of changing power and configuration;

(iv) cross-checking the instrument indications;

(v) instrument interpretation;

(vi) direct and indirect indications (performance instruments);

(vii) instrument lag;

(viii) selective radial scan.

(5) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

(b) Air exercise:

(1) instrument flying (basic);

(i) physiological sensations;

(ii) instrument appreciation;

(iii) attitude instrument flight;

(iv) pitch attitude;

(v) bank attitude;

(vi) maintenance of heading and balanced flight;

(vii) attitude instrument flight;

(viii) effect of changing power and configuration;

(ix) cross-checking the instruments;

(x) selective radial scan;

(2) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and aeroplane configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

EXERCISE 2: INTRUMENT FLYING (Advanced)

(a) Long briefing objectives:

(1) full panel;

(2) 30 ° level turns;

(3) unusual attitudes: recoveries;

(4) transference to instruments after take-off;

(5) limited panel;

(6) basic flight manoeuvres;

(7) unusual attitudes: recoveries.

(b) Air exercise:

(1) full panel;

(2) 30 ° level turns;

(3) unusual attitudes: recoveries;

(4) limited panel;

(5) repeat of the above exercises.

EXERCISE 3: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VOR

(a) Long briefing objectives:

(1) availability of VOR stations en-route;

(2) station frequencies and identification;

(3) signal reception range;

(4) effect of altitude;

(5) VOR radials;

(6) use of OBS;

(7) to or from indicator;

(8) orientation;

(9) selecting radials;

(10) intercepting a pre-selected radial;

(11) assessment of distance to interception;

(12) effects of wind;

(13) maintaining a radial;

(14) tracking to and from a VOR station;

(15) procedure turns;

(16) station passage;

(17) use of two stations for obtaining a fix;

(18) pre-selecting fixes along a track;

(19) assessment of ground speed and timing;

(20) holding procedures;

(21) various entries;

(22) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) station selection and identification;

(2) orientation;

(3) intercepting a pre-selected radial;

(4) R/T procedures and ATC liaison;

(5) maintaining a radial inbound;

(6) recognition of station passage;

(7) maintaining a radial outbound;

(8) procedure turn;

(9) use of two stations to obtain a fix along the track;

(10) assessment of ground speed and timing;

(11) holding procedures and entries;

(12) holding at a pre-selected fix;

(13) holding at a VOR station.

EXERCISE 4: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF NDB

(a) Long briefing objectives:

(1) availability of an NDB facilities en-route;

(2) location, frequencies, tuning (as applicable) and identification codes;

(3) signal reception range;

(4) static interference;

(5) night effect;

(6) station interference;

(7) mountain effect;

(8) coastal refraction;

(9) orientation in relation to an NDB;

(10) homing;

(11) intercepting a pre-selected magnetic bearing and tracking inbound;

(12) station passage;

(13) tracking outbound;

(14) time and distance checks;

(15) use of two NDBs to obtain a fix or alternatively use of one NDB and one other navaid;

(16) holding procedures and various approved entries;

(17) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) selecting, tuning and identifying an NDB;

(2) ADF orientation;

(3) communication (R/T procedures and ATC liaison);

(4) homing;

(5) tracking inbound;

(6) station passage;

(7) tracking outbound;

(8) time and distance checks;

(9) intercepting a pre-selected magnetic bearing;

(10) determining the aeroplane's position from two NDBs or alternatively from one NDB and one other navaid;

(11) ADF holding procedures and various approved entries.

EXERCISE 5: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VHF/DF

(a) Long briefing objectives:

(1) availability of VHF/DF facilities en-route;

(2) location, frequencies, station call signs and hours of operation;

(3) signal and reception range;

(4) effect of altitude;

(5) communication (R/T procedures and ATC liaison);

(6) obtaining and using types of bearings, for example QTE, QDM and QDR;

(7) homing to a station;

(8) effect of wind;

(9) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(10) assessment of groundspeed and timing.

(b) Air exercise:

(1) establishing contact with a VHF/DF station;

(2) R/T Procedures and ATC liaison;

(3) obtaining and using a QDR and QTE;

(4) homing to a station;

(5) effect of wind;

(6) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(7) assessment of groundspeed and timing.

EXERCISE 6: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF DME

(a) Long briefing objectives:

(1) availability of DME facilities;

(2) location, frequencies and identification codes;

(3) signal reception range;

(4) slant range;

(5) use of DME to obtain distance, groundspeed and timing;

(6) use of DME to obtain a fix.

(b) Air exercise:

(1) station selection and identification;

(2) use of equipment functions;

(3) distance;

(4) groundspeed;

(5) timing;

(6) DME arc approach;

(7) DME holding.

EXERCISE 7: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF TRANSPONDERS (SSR)

(a) Long briefing objectives:

(1) operation of transponders;

(2) code selection procedure;

(3) emergency codes;

(4) precautions when using airborne equipment.

(b) Air exercise:

(1) operation of transponders;

(2) types of transponders;

(3) code selection procedure;

(4) emergency codes;

(5) precautions when selecting the required code.

EXERCISE 8: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF ENROUTE RADAR

(a) Long briefing objectives:

(1) availability of radar services;

(2) location, station frequencies, call signs and hours of operation;

(3) AIP and NOTAMs;

(4) provision of service;

(5) communication (R/T, procedures and ATC liaison);

(6) airspace radar advisory service;

(7) emergency service;

(8) aircraft separation standards.

(b) Air exercise:

(1) communication (R/T procedures and ATC liaison);

(2) establishing the service required and position reporting;

(3) method of reporting conflicting traffic;

(4) terrain clearance.

EXERCISE 9: PRE-FLIGHT AND AERODROME DEPARTURE AND ARRIVAL PROCEDURES

(a) Long briefing objectives:

(1) determining the serviceability of the aeroplane radio;

(2) navigation equipment;

(3) obtaining the departure clearance;

(4) setting up radio navaids before take-off for example VOR frequencies, required radials, etc.;

(5) aerodrome departure procedures, frequency changes;

(6) altitude and position reporting as required;

(7) SID procedures;

(8) obstacle clearance considerations.

(b) Air exercise:

(1) radio equipment serviceability checks;

(2) departure clearance;

(3) navaid selection;

(4) frequencies, radials, etc.;

(5) aerodrome departure checks, frequency changes, altitude and position reports;

(6) SID procedures.

EXERCISE 10: INSTRUMENT APPORACH: ILS APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURE

(a) Long briefing objectives:

(1) precision approach charts;

(2) approach to the initial approach fix and minimum sector altitude;

(3) navaid requirements, for example radar, ADF, etc.;

(4) communication (ATC liaison and R/T phraseology);

(5) holding procedure;

(6) the final approach track;

(7) forming a mental picture of the approach;

(8) completion of aerodrome approach checks;

(9) initial approach procedure;

(10) selection of the ILS frequency and identification;

(11) obstacle clearance altitude or height;

(12) operating minima;

(13) achieving the horizontal and vertical patterns;

(14) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(15) use of DME (as applicable);

(16) go-around and missed approach procedure;

(17) review of the published instructions;

(18) transition from instrument to visual flight (sensory illusions);

(19) visual manoeuvring after an instrument approach:

(i) circling approach;

(ii) visual approach to landing.

(b) Air exercise:

(1) initial approach to the ILS;

(2) completion of approach planning;

(3) holding procedure;

(4) frequency selection and identification of ILS;

(5) review of the published procedure and minimum sector altitude;

(6) communication (ATC liaison and R/T phraseology);

(7) determination of operating minima and altimeter setting;

(8) weather consideration, for example cloud base and visibility;

(9) availability of runway lighting;

(10) ILS entry methods;

(11) radar vectors;

(12) procedural method;

(13) assessment of approach time from the final approach fix to the aerodrome;

(14) determination of:

(i) the descent rate on final approach;

(ii) the wind velocity at the surface and the length of the landing runway;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(15) circling approach;

(16) the approach:

(i) at the final approach fix;

(ii) use of DME (as applicable);

(iii) ATC liaison;

(iv) note time and establish air speed and descent rate;

(v) maintaining the localiser and glide path;

(vi) anticipation in change of wind velocity and its effect on drift;

(vii) decision height;

(17) runway direction;

(18) overshoot and missed approach procedure;

(19) transition from instrument to visual flight;

(20) circling approach;

(21) visual approach to landing.

EXERCISE 11: INSTRUMENTS APPROACH: NDB APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) non-precision approach charts;

(2) initial approach to the initial approach fix and minimum sector altitude;

(3) ATC liaison;

(4) communication (ATC procedures and R/T phraseology);

(5) approach planning;

(6) holding procedure;

(7) the approach track;

(8) forming a mental picture of the approach;

(9) initial approach procedure;

(10) operating minima;

(11) completion of approach planning;

(12) achieving the horizontal and vertical patterns;

(13) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(14) use of DME (as applicable);

(15) go-around and missed approach procedure;

(16) review of the published instructions;

(17) transition from instrument to visual flight (sensory illusions);

(18) visual manoeuvring after an instrument approach;

(19) circling approach

(20) visual approach to landing.

(b) Air exercise:

(1) completion of approach planning including determination of:

(i) descent rate from the final approach fix;

(ii) the wind velocity at the surface and length of the landing runway;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(2) circling approach;

(3) go-around and missed approach procedure;

(4) initial approach;

(5) frequency selection and identification;

(6) review of the published procedure and minimum safe sector altitude;

(7) ATC liaison and R/T phraseology;

(8) determination of decision height and altimeter setting;

(9) weather considerations, for example cloud base and visibility;

(10) availability of runway lighting;

(11) determination of inbound track;

(12) assessment of time from final approach fix to the missed approach point;

(13) ATC liaison;

(14) the outbound procedure (inclusive completion of pre-landing checks);

(15) the inbound procedure;

(16) re-check of identification code;

(17) altimeter setting re-checked;

(18) the final approach;

(19) note time and establish air speed and descent rate

(20) maintaining the final approach track;

(21) anticipation of change in wind velocity and its effect on the drift;

(22) minimum descent altitude or height;

(23) runway direction;

(24) go-around and missed approach procedure;

(25) transition from instrument to visual flight (sensory illusions);

(26) visual approach.

EXERCISE 12: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF GNSS (to be developed)

(a) Long briefing objectives: use of GNSS.

(b) Air exercise: use of GNSS.

B. HELICOPTERS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INSTRUMENT FLYING (Basic)

(for revision as deemed necessary by the instructor)

(a) Long briefing objectives:

(1) flight instruments;

(2) physiological considerations;

(3) instrument appreciation:

(i) attitude instrument flight;

(ii) pitch indications;

(iii) bank indications;

(iv) different instrument presentations;

(v) introduction to the use of the attitude indicator;

(vi) pitch attitude;

(vii) bank attitude;

(viii) maintenance of heading and balanced flight;

(ix) instrument limitations (inc. system failures);

(4) attitude, power and performance:

(i) attitude instrument flight;

(ii) control instruments;

(iii) performance instruments;

(iv) effect of changing power;

(v) cross-checking the instrument indications;

(vi) instrument interpretation;

(vii) direct and indirect indications (performance instruments);

(viii) instrument lag;

(ix) selective radial scan;

(5) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

(b) Air exercise:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) pitch attitude;

(5) bank attitude;

(6) maintenance of heading and balanced flight;

(7) attitude instrument flight;

(8) effect of changing power;

(9) cross-checking the instruments;

(10) selective radial scan;

(11) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and helicopter configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings; (vi) manoeuvring at minimum and maximum IMC speed.

EXERCISE 2: INSTRUMENT FLYING (Advanced)

(a) Long briefing objectives:

(1) full panel;

(2) 30° level turns;

(3) unusual attitudes: recoveries;

(4) transition to instruments after take-off;

(5) limited panel;

(6) basic flight manoeuvres;

(7) unusual attitudes: recoveries.

(b) Air exercise:

(1) full panel;

(2) 30° level turns;

(3) unusual attitudes: recoveries;

(4) identification and recovery from low pitch steep bank and high pitch steep bank attitudes (at low and high power settings);

(5) limited panel;

(6) repeat of the above exercises.

EXERCISE 3: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VOR

(a) Long briefing objectives:

(1) availability of VOR stations en-route;

(2) station frequencies and identification;

(3) signal reception range;

(4) effect of altitude;

(5) VOR radials;

(6) use of OBS;

(7) to and from indicator;

(8) orientation;

(9) selecting radials;

(10) intercepting a pre-selected radial;

(11) assessment of distance to interception;

(12) effects of wind;

(13) maintaining a radial;

(14) tracking to and from a VOR station;

(15) procedure turns;

(16) station passage;

(17) use of two stations for obtaining a fix;

(18) pre-selecting fixes along a track;

(19) assessment of ground speed and timing;

(20) holding procedures;

(21) various entries;

(22) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) station selection and identification;

(2) orientation;

(3) intercepting a pre-selected radial;

(4) R/T procedures and ATC liaison;

(5) maintaining a radial inbound;

(6) recognition of station passage;

(7) maintaining a radial outbound;

(8) procedure turns;

(9) use of two stations to obtain a fix along the track;

(10) assessment of ground speed and timing;

(11) holding procedures and entries;

(12) holding at a pre-selected fix;

(13) holding at a VOR station.

EXERCISE 4: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF NDB

(a) Long briefing objectives:

(1) availability of NDB facilities en-route;

(2) location, frequencies, tuning (as applicable) and identification codes;

(3) signal reception range;

(4) static interference;

(5) night effect;

(6) station interference;

(7) mountain effect;

(8) coastal refraction;

(9) orientation in relation to an NDB;

(10) homing;

(11) intercepting a pre-selected magnetic bearing and tracking inbound;

(12) station passage;

(13) tracking outbound;

(14) time and distance checks;

(15) use of two NDBs to obtain a fix or alternatively use of one NDB and one other navaid;

(16) holding procedures;

(17) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) selecting, tuning and identifying an NDB;

(2) ADF orientation;

(3) communication (R/T procedures and ATC liaison);

(4) homing;

(5) tracking inbound;

(6) station passage;

(7) tracking outbound;

(8) time and distance checks;

(9) intercepting a pre-selected magnetic bearing;

(10) determining the helicopter's position from two NDBs or alternatively from one NDB and one other navaid;

(11) ADF holding procedures.

EXERCISE 5: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VHF/DF

(a) Long briefing objectives:

(1) availability of VHF/DF facilities en-route;

(2) location, frequencies, station call signs and hours of operation;

(3) signal and reception range;

(4) effect of altitude;

(5) communication (R/T procedures and ATC liaison);

(6) obtaining and using types of bearings, for example QTE, QDM, QDR;

(7) homing to a station;

(8) effect of wind;

(9) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(10) assessment of groundspeed and timing.

(b) Air exercise:

(1) establishing contact with a VHF/DF station;

(2) R/T procedures and ATC liaison;

(3) obtaining and using a QDR and QTE;

(4) homing to a station;

(5) effect of wind;

(6) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(7) assessment of groundspeed and timing.

EXERCISE 6: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF DME

(a) Long briefing objectives:

(1) availability of DME facilities;

(2) location, frequencies and identification codes;

(3) signal reception range;

(4) slant range;

(5) use of DME to obtain distance, groundspeed and timing;

(6) use of DME to obtain a fix;

(b) Air exercise:

(1) station selection and identification;

(2) use of equipment functions;

(3) distance;

(4) groundspeed;

(5) timing;

(6) DME arc approach;

(7) DME holding.

EXERCISE 7: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF TRANSPONDERS

(a) Long briefing objectives:

(1) operation of transponders;

(2) code selection procedure;

(3) emergency codes;

(4) precautions when using airborne equipment.

(b) Air exercise:

(1) operation of transponders;

(2) types of transponders;

(3) code selection procedure;

(4) emergency codes;

(5) precautions when selecting the required code.

EXERCISE 8: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF ENROUTE RADAR SERVICES

(a) Long briefing objectives:

(1) availability of radar services;

(2) location, station frequencies, call signs and hours of operation;

(3) AIP and NOTAMS;

(4) provision of service;

(5) communication (R/T procedures and ATC liaison);

(6) airspace radar advisory service;

(7) emergency service

(8) aircraft separation standards.

(b) Air exercise:

(1) communication (R/T procedures and ATC liaison);

(2) establishing the service required and position reporting;

(3) method of reporting conflicting traffic;

(4) terrain clearance.

EXERCISE 9: PRE-FLIGHT AND AERODROME DEPARTURE AND ARRIVAL POOCEDURES

(a) Long briefing objectives:

(1) determining the serviceability of the radio equipment;

(2) navigation equipment;

(3) obtaining the departure clearance;

(4) setting up radio navaids before take-off for example VOR frequencies, required radials, etc.;

(5) aerodrome departure procedures, frequency changes;

(6) altitude and position reporting as required;

(7) SID procedures;

(8) obstacle clearance considerations.

(b) Air exercise:

(1) radio equipment serviceability checks;

(2) departure clearance;

(3) navaid selection;

(4) frequencies, radials, etc.;

(5) aerodrome departure checks, frequency changes, altitude and position reports;

(6) SID procedures.

EXERCISE 10: INSTRUMENT APPROACH: PRECISION APPROACH AID TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) precision approach charts;

(2) approach to the initial approach fix and minimum sector altitude;

(3) navaid requirements, for example radar, ADF, etc.;

(4) communication (ATC liaison and R/T phraseology);

(5) holding procedure;

(6) the final approach track;

(7) forming a mental picture of the approach;

(8) completion of aerodrome approach checks;

(9) initial approach procedure;

(10) selection of the ILS frequency and identification;

(11) obstacle clearance altitude or height;

(12) operating minima;

(13) achieving the horizontal and vertical patterns;

(14) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(15) use of DME (as applicable);

(16) go-around and missed approach procedure;

(17) review of the published instructions;

(18) transition from instrument to visual flight (sensory illusions);

(19) visual manoeuvring after an instrument approach;

(i) circling approach;

(ii) visual approach to landing.

(b) Air exercise:

(1) initial approach to the ILS;

(2) completion of approach planning;

(3) holding procedure;

(4) frequency selection and identification of ILS;

(5) review of the published procedure and minimum sector altitude;

(6) communication (ATC liaison and R/T phraseology);

(7) determination of operating minima and altimeter setting;

(8) weather consideration, for example cloud base and visibility;

(9) availability of landing site lighting;

(10) ILS entry methods;

(11) radar vectors;

(12) procedural method;

(13) assessment of approach time from the final approach fix to the aerodrome;

(14) determination of:

(i) the descent rate on final approach;

(ii) the wind velocity at the surface and the length of the landing site;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(15) circling approach;

(16) the approach:

(i) at the final approach fix;

(ii) use of DME (as applicable);

(iii) ATC liaison;

(iv) note time and establish air speed and descent rate;

(v) maintaining the localizer and glide path;

(vi) anticipation in change of wind velocity and its effect on drift;

(vii) decision height.

(17) landing direction;

(18) go-around and missed approach procedure;

(19) transition from instrument to visual flight;

(20) circling approach;

(21) visual approach to landing.

EXERCISE 11: INSTRUMENT APPROACH: NON-PRECISION APPROACH TO SPECIFIED MINIMA AND MISSED APPROACH PROCEDURES

(a) Long briefing objectives:

(1) non-precision approach charts;

(2) initial approach to the initial approach fix and minimum sector altitude;

(3) ATC liaison;

(4) communication (ATC procedures and R/T phraseology);

(5) approach planning;

(6) holding procedure;

(7) the approach track;

(8) forming a mental picture of the approach;

(9) initial approach procedure;

(10) operating minima;

(11) completion of approach planning;

(12) achieving the horizontal and vertical patterns;

(13) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(14) use of DME (as applicable);

(15) go-around and missed approach procedure;

(16) review of the published instructions;

(17) transition from instrument to visual flight (sensory illusions);

(18) visual manoeuvring after an instrument approach;

(19) circling approach;

(20) visual approach to landing.

(b) Air exercise:

(1) completion of approach planning, including determination of:

(i) descent rate from the final approach fix;

(ii) the wind velocity at the surface and length of the landing site;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach.

(2) circling approach;

(3) go-around and missed approach procedure;

(4) initial approach;

(5) frequency selection and identification;

(6) review of the published procedure and minimum safe sector altitude;

(7) ATC liaison and R/T phraseology;

(8) determination of decision height and altimeter setting;

(9) weather considerations, for example cloud base and visibility;

(10) availability of landing site lighting;

(11) determination of inbound track;

(12) assessment of time from final approach fix to the missed approach point;

(13) ATC liaison;

(14) the outbound procedure (incl. completion of pre-landing checks);

(15) the inbound procedure;

(16) re-check of identification code;

(17) altimeter setting re-checked;

(18) the final approach;

(19) note time and establish air speed and descent rate;

(20) maintaining the final approach track;

(21) anticipation of change in wind velocity and its effect on the drift;

(22) minimum descent altitude or height;

(23) landing site direction;

(24) go-around and missed approach procedure;

(25) transition from instrument to visual flight (sensory illusions);

(26) visual approach.

EXERCISE 12: USE OF GNSS (to be developed)

(a) Long briefing objectives: use of GNSS.

(b) Air exercise: use of GNSS.

C. AIRSHIPS

LONG BRIEFINGS AND AIR EXERCISES

EXERCISE 1: INSTRUMENT FLYING (Basic)

(for revision as deemed necessary by the instructor)

(a) Long briefing objectives:

(1) flight instruments;

(2) physiological considerations;

(3) instrument appreciation:

(i) attitude instrument flight;

(ii) pitch indications;

(iii) different instrument presentations;

(iv) introduction to the use of the attitude indicator;

(v) pitch attitude;

(vi) maintenance of heading and balanced flight;

(vii) instrument limitations (inclusive system failures).

(4) attitude, power and performance:

(i) attitude instrument flight;

(ii) control instruments;

(iii) performance instruments;

(iii) effect of changing power, trim and configuration;

(iv) cross-checking the instrument indications;

(v) instrument interpretation;

(vi) direct and indirect indications (performance instruments);

(vii) instrument lag;

(viii) selective radial scan.

(5) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and airship configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

(b) Air exercise:

(1) physiological sensations;

(2) instrument appreciation;

(3) attitude instrument flight;

(4) pitch attitude;

(5) bank attitude;

(6) maintenance of heading and balanced flight;

(7) attitude instrument flight;

(8) effect of changing power and configuration;

(9) cross-checking the instruments;

(10) selective radial scan;

(11) the basic flight manoeuvres (full panel):

(i) straight and level flight at various air speeds and airship configurations;

(ii) climbing;

(iii) descending;

(iv) standard rate turns;

(v) level, climbing and descending on to pre-selected headings.

EXERCISE 2: INSTRUMENT FLYING (Advanced)

(a) Long briefing objectives:

(1) full panel;

(2) unusual attitudes: recoveries;

(3) transference to instruments after take-off;

(4) limited panel;

(5) basic flight manoeuvres;

(6) unusual attitudes: recoveries.

(b) Air exercise:

(1) full panel;

(2) unusual attitudes: recoveries;

(3) limited panel;

(4) repeat of the above exercises.

EXERCISE 3: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VOR

(a) Long briefing objectives:

(1) availability of VOR stations en-route;

(2) station frequencies and identification;

(3) signal reception range;

(4) effect of altitude;

(5) VOR radials;

(6) use of OBS;

(7) to or from indicator;

(8) orientation;

(9) selecting radials;

(10) intercepting a pre-selected radial;

(11) assessment of distance to interception;

(12) effects of wind;

(13) maintaining a radial;

(14) tracking to and from a VOR station;

(15) procedure turns;

(16) station passage;

(17) use of two stations for obtaining a fix;

(18) pre-selecting fixes along a track;

(19) assessment of ground speed and timing;

(20) holding procedures;

(21) various entries;

(22) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) station selection and identification;

(2) orientation;

(3) intercepting a pre-selected radial;

(4) R/T procedures and ATC liaison;

(5) maintaining a radial inbound;

(6) recognition of station passage;

(7) maintaining a radial outbound;

(8) procedure turns;

(9) use of two stations to obtain a fix along the track;

(10) assessment of ground speed and timing;

(11) holding procedures and entries;

(12) holding at a pre-selected fix;

(13) holding at a VOR station.

EXERCISE 4: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF ADF

(Automatic DF equipment)

(a) Long briefing objectives:

(1) availability of NDB facilities en-route;

(2) location, frequencies, tuning (as applicable) and identification codes;

(3) signal reception range;

(4) static interference;

(5) night effect;

(6) station interference;

(7) mountain effect;

(8) coastal refraction;

(9) orientation in relation to an NDB;

(10) homing;

(11) intercepting a pre-selected magnetic bearing and tracking inbound;

(12) station passage;

(13) tracking outbound;

(14) time and distance checks;

(15) use of two NDBs to obtain a fix or alternatively use of one NDB and one other navaid;

(16) holding procedures and various approved entries;

(17) communication (R/T procedures and ATC liaison).

(b) Air exercise:

(1) selecting, tuning and identifying an NDB;

(2) ADF orientation;

(3) communication (R/T procedures and ATC liaison);

(4) homing;

(5) tracking inbound;

(6) station passage;

(7) tracking outbound;

(8) time and distance checks;

(9) intercepting a pre-selected magnetic bearing;

(10) determining the airship's position from two NDBs or alternatively from one NDB and one other navaid;

(11) ADF holding procedures and various approved entries.

EXERCISE 5: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF VHF/DF

(a) Long briefing objectives:

(1) availability of VHF/DF facilities en-route;

(2) location, frequencies, station call signs and hours of operation;

(3) signal and reception range;

(4) effect of altitude;

(5) communication (R/T procedures and ATC liaison);

(6) obtaining and using types of bearings, for example QTE, QDM, QDR;

(7) homing to a station;

(8) effect of wind;

(9) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(10) assessment of groundspeed and timing.

(b) Air exercise:

(1) establishing contact with a VHF/DF station;

(2) R/T procedures and ATC liaison;

(3) obtaining and using a QDR and QTE;

(4) homing to a station;

(5) effect of wind;

(6) use of two VHF/DF stations to obtain a fix (or alternatively one VHF/DF station and one other navaid);

(7) assessment of groundspeed and timing.

EXERCISE 6: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF DME

(a) Long briefing objectives:

(1) availability of DME facilities;

(2) location, frequencies and identification codes;

(3) signal reception range;

(4) slant range;

(5) use of DME to obtain distance, groundspeed and timing;

(6) use of DME to obtain a fix.

(b) Air exercise:

(1) station selection and identification;

(2) use of equipment functions;

(3) distance;

(4) groundspeed;

(5) timing;

(6) DME arc approach;

(7) DME holding.

EXERCISE 7: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF TRANSPONDERS

(a) Long briefing objectives:

(1) operation of transponders;

(2) code selection procedure;

(3) emergency codes;

(4) precautions when using airborne equipment.

(b) Air exercise:

(1) operation of transponders;

(2) types of transponders;

(3) code selection procedure;

(4) emergency codes;

(5) precautions when selecting the required code.

EXERCISE 8: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF ENROUTE RADAR SERVICES

(a) Long briefing objectives:

(1) availability of radar services;

(2) location, station frequencies, call signs and hours of operation;

(3) AIP and NOTAMS;

(4) provision of service;

(5) communication (R/T, procedures and ATC liaison);

(6) airspace radar advisory service;

(7) emergency service;

(8) aircraft separation standards.

(b) Air exercise:

(1) communication (R/T procedures and ATC liaison);

(2) establishing the service required and position reporting;

(3) method of reporting conflicting traffic;

(4) terrain clearance.

EXERCISE 9: PRE-FLIGHT AND AERODROME DEPARTURE AND ARRIVAL PROCEDURES

(a) Long briefing objectives:

(1) determining the serviceability of the airship radio;

(2) navigation equipment;

(3) obtaining the departure clearance;

(4) setting up radio navaids before take-off for example VOR frequencies, required radials, etc.;

(5) aerodrome departure procedures, frequency changes;

(6) altitude and position reporting as required;

(7) SID procedures;

(8) obstacle clearance considerations.

(b) Air exercise:

(1) radio equipment serviceability checks;

(2) departure clearance;

(3) navaid selection;

(4) frequencies, radials, etc.;

(5) aerodrome departure checks, frequency changes, altitude and position reports;

(6) SID procedures.

EXERCISE 10: INSTRUMENT APPROACHES: ILS APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACHES PROCEDURES

(a) Long briefing objectives:

(1) precision approach charts;

(2) approach to the initial approach fix and minimum sector altitude;

(3) navaid requirements, for example radar, ADF, etc.;

(4) communication (ATC liaison and R/T phraseology);

(5) review;

(6) holding procedure;

(7) the final approach track;

(8) forming a mental picture of the approach;

(9) completion of aerodrome approach checks;

(10) initial approach procedure;

(11) selection of the ILS frequency and identification;

(12) obstacle clearance altitude or height;

(13) operating minima;

(14) achieving the horizontal and vertical patterns;

(15) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(16) use of DME (as applicable);

(17) go-around and missed approach procedure;

(18) review of the published instructions;

(19) transition from instrument to visual flight (sensory illusions);

(20) visual manoeuvring after an instrument approach;

(i) circling approach;

(ii) visual approach to landing.

(b) Air exercise:

(1) initial approach to the ILS;

(2) completion of approach planning;

(3) holding procedure;

(4) frequency selection and identification of ILS;

(5) review of the published procedure and minimum sector altitude;

(6) communication (ATC liaison and R/T phraseology);

(7) determination of operating minima and altimeter setting;

(8) weather consideration, for example cloud base and visibility;

(9) availability of runway lighting;

(10) ILS entry methods;

(11) radar vectors;

(12) procedural method;

(13) assessment of approach time from the final approach fix to the aerodrome;

(14) determination of:

(i) the descent rate on final approach;

(ii) the wind velocity at the surface (and the length of the landing runway);

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach;

(15) circling approach;

(16) the approach:

(i) at the final approach fix;

(ii) use of DME (as applicable);

(iii) ATC liaison;

(iv) note time and establish air speed and descent rate;

(v) maintaining the localiser and glide path;

(vi) anticipation in change of wind velocity and its effect on drift;

(vii) decision height;

(viii) runway direction.

(17) missed approach procedure;

(18) transition from instrument to visual flight;

(19) circling approach;

(20) visual approach to landing.

EXERCISE 11: INSTRUMENT APPROACHES: NDB APPROACHES TO SPECIFIED MINIMA AND MISSED APPROACHES PROCEDURE

(a) Long briefing objectives:

(1) non-precision approach charts;

(2) initial approach to the initial approach fix and minimum sector altitude;

(3) ATC liaison;

(4) communication (ATC procedures and R/T phraseology);

(5) approach planning:

(i) holding procedure;

(ii) the approach track;

(iii) forming a mental picture of the approach;

(iv) initial approach procedure;

(v) operating minima;

(vi) completion of approach planning.

(6) achieving the horizontal and vertical patterns;

(7) assessment of distance, groundspeed time, and rate of descent from the final approach fix to the aerodrome;

(8) use of DME (as applicable);

(9) go-around and missed approach procedure;

(10) review of the published instructions;

(11) transition from instrument to visual flight (sensory illusions);

(12) visual manoeuvring after an instrument approach;

(13) circling approach;

(14) visual approach to landing.

(b) Air exercise:

(1) completion of approach planning including;

(2) determination of:

(i) descent rate from the final approach fix;

(ii) the wind velocity at the surface and length of the landing runway;

(iii) the obstruction heights to be borne in mind during visual manoeuvring after an instrument approach.

(3) circling approach;

(4) go-around and missed approach procedure;

(5) initial approach;

(6) frequency selection and identification;

(7) review of the published procedure and minimum safe sector altitude;

(8) ATC liaison and R/T phraseology;

(9) determination of decision height and altimeter setting;

(10) weather considerations, for example cloud base and visibility;

(11) availability of runway lighting;

(12) determination of inbound track;

(13) assessment of time from final approach fix to the missed approach point;

(14) ATC liaison;

(15) the outbound procedure (inclusive completion of pre-landing checks);

(16) the inbound procedure;

(17) re-check of identification code;

(18) altimeter setting re-checked;

(19) the final approach;

(20) note time and descent rate;

(21) maintaining the final approach track;

(22) anticipation of change in wind velocity and its effect on the drift;

(23) minimum descent altitude or height;

(24) runway direction;

(25) go-around and missed approach procedure;

(26) transition from instrument to visual flight (sensory illusions);

(27) visual approach.

EXERCISE 12: RADIO NAVIGATION (APPLIED PROCEDURES): USE OF GNNS (to be developed)

(a) Long briefing objectives: use of GNSS.

(b) Air exercise: use of GNSS.

FCL.940.IRI IRI – Revalidation and renewal

Regulation (EU) No 1178/2011

For revalidation and renewal of an IRI certificate, the holder shall meet the requirements for revalidation and renewal of an FI certificate, in accordance with FCL.940.FI.

SECTION 7 – SPECIFIC REQUIREMENTS FOR THE SYNTHETIC FLIGHT INSTRUCTOR – SFI

FCL.905.SFI SFI – Privileges and conditions

Regulation (EU) 2021/2227

(a) The privileges of SFIs are to carry out synthetic flight instruction, within the relevant aircraft category, for:

(1) the revalidation and renewal of an IR, provided that they hold or have held an IR in the relevant aircraft category;

(2) the issue of an IR, provided that they hold or have held an IR in the relevant aircraft category and have completed an IRI training course.

(b) The privileges of SFIs for single-pilot aeroplanes are to carry out synthetic flight instruction for:

(1) the issue, revalidation and renewal of type ratings for single-pilot high performance complex aeroplanes, if applicants seek privileges to operate in single-pilot operations.

The privileges of SFIs for single-pilot aeroplanes may be extended to flight instruction for single-pilot high performance complex aeroplanes type ratings in multi-pilot operations, provided that they meet any of the following conditions:

(i) hold or have held a TRI certificate for multi-pilot aeroplanes;

(ii) have at least 500 hours on aeroplanes in multi-pilot operations and have completed an MCCI training course in accordance with point FCL.930.MCCI;

(2) the MCC and the MPL training courses on the basic phase, provided that the privileges of SFIs(SPA) have been extended to multi-pilot operations in accordance with point (1).

(c) The privileges of SFIs for multi-pilot aeroplanes are to carry out synthetic flight instruction for:

(1) the issue, revalidation and renewal of type ratings for multi-pilot aeroplanes and if applicants seek privileges to operate in multi-pilot operations, for single-pilot high-performance complex aeroplanes;

(2) the MCC training course;

(3) the MPL course on the basic, intermediate and advanced phases, provided that, for the basic phase, they hold or have held an FI(A) or an IRI(A) certificate;

(d) The privileges of SFIs for helicopters are to carry out synthetic flight instruction for:

(1) the issue, revalidation and renewal of helicopter type ratings;

(2) MCC training, provided that they have at least 350 hours as a pilot in multi-pilot operations in any aircraft category.

(e) The privileges of an SFI include privileges to conduct EBT practical assessment at an EBT operator, provided that the instructor complies with the requirements of Annex III (Part-ORO) to Regulation (EU) No 965/2012 for EBT instructor standardisation at that EBT operator.

FCL.910.SFI SFI – Restricted privileges

Regulation (EU) 2024/2076

The privileges of SFIs shall be restricted to the FTD 2/3 or FFS of the aircraft type in which the SFI training course was taken.

Unless otherwise specified in the operational suitability data established in accordance with Annex I (Part 21) to Regulation (EU) No 748/2012, to extend the privileges of SFIs to other FSTDs representing further types of the same category of aircraft, SFIs shall have:

(a) completed the simulator content of the relevant type rating course;

(b) completed the relevant parts of the technical training and the FSTD content of the flight instruction syllabus of the applicable TRI course;

(c) conducted on a complete type rating course at least 3 hours of flight instruction related to the duties of an SFI on the applicable type under the supervision and to the satisfaction of a TRE or an SFE qualified for this purpose.

The privileges of the SFI shall be extended to further variants in accordance with the OSD if the SFI has completed the type relevant parts of the technical training and the FSTD content of the flight instruction syllabus of the applicable TRI course.

FCL.915.SFI SFI – Prerequisites

Regulation (EU) 2021/2227

An applicant for an SFI certificate shall:

(a) hold or have held a CPL, MPL or ATPL in the appropriate aircraft category;

(b) have completed the proficiency check for the issue of the specific aircraft type rating in an FFS representing the applicable type, within the 12 months preceding the application; and

(c) additionally, for an SFI(A) for multi-pilot aeroplanes or SFI(PL), have:

  (1) at least 1 500 hours flight time as a pilot on multi-pilot aeroplanes or powered-lift, as applicable;

  (2) completed, as a pilot or as an observer, within the 12 months preceding the application, at least:

    (i) 3 route sectors on the flight deck of the applicable aircraft type; or

    (ii) 2 line-orientated flight training-based simulator sessions conducted by qualified flight crew on the flight deck of the applicable type. These simulator sessions shall include 2 flights of at least 2 hours each between 2 different aerodromes, and the associated pre-flight planning and de-briefing;

(d) additionally, for an SFI(A) for single-pilot high performance complex aeroplanes:

  (1) have completed at least 500 hours of flight time as PIC on single-pilot aeroplanes;

  (2) hold or have held a multi-engine IR(A) rating; and

  (3) have met the requirements in (c)(2);

(e) additionally, for an SFI(H), have:

  (1) completed, as a pilot or as an observer, at least 1 hour of flight time on the flight deck of the applicable type, within the 12 months preceding the application; and

(2) in the case of multi-pilot helicopters, at least 1 000 hours of flying experience as a pilot in helicopters, including at least 350 hours in multi-pilot operations in any aircraft category;

(3) in the case of single-pilot multi-engine helicopters, completed 500 hours as pilot of helicopters, including 100 hours as PIC on single-pilot multi-engine helicopters;

(4) in the case of single-pilot single-engine helicopters, completed 250 hours as a pilot on helicopters;

(5) in the case of single-pilot helicopters in multi-pilot operations, completed at least 350 hours in multi-pilot operations in any aircraft category.

FCL.930.SFI SFI – Training course

Regulation (EU) 2024/2076

(a) The training course for the SFI shall include:

(1) the FSTD content of the applicable type rating course;

(2) the relevant parts of the technical training and the FSTD content of the flight instruction syllabus of the applicable TRI training course;

(3) 25 hours of teaching and learning instruction.

(b) An applicant for an SFI certificate who:

(1) holds a TRI certificate for the relevant type shall be fully credited towards the requirements of point (a);

(2) holds or has held an instructor certificate shall be fully credited towards the requirement of point (a)(3).

FCL.940.SFI SFI – Revalidation and renewal

Regulation (EU) 2019/1747

(a) Revalidation

To revalidate an SFI certificate, applicants shall fulfil, before the expiry date of the SFI certificate, at least two out of the following three requirements:

(1) have completed at least 50 hours as instructors or examiners in FSTDs, of which at least 15 hours in the period of 12 months immediately preceding the expiry date of the SFI certificate;

(2) have completed instructor refresher training as an SFI at an ATO;

(3) have passed the relevant sections of the assessment of competence in accordance with point FCL.935.

(b) Additionally, applicants shall have completed, on an FFS, the proficiency checks for the issue of the specific aircraft type ratings representing the types for which privileges are held.

(c) For at least each alternate revalidation of an SFI certificate, holders shall comply with the requirement in point (a)(3).

(d) If an SFI holds a certificate in more than one type of aircraft within the same category, the assessment of competence taken on one of those types shall revalidate the SFI certificate for the other types held within the same category of aircraft, unless otherwise is determined in the OSD.

(e) Renewal

To renew the SFI certificate, applicants shall, within the period of 12 months immediately preceding the application for the renewal, comply with all of the following conditions:

(1) have completed instructor refresher training as an SFI at an ATO;

(2) have passed the assessment of competence in accordance with point FCL.935;

(3) have completed, on an FSTD, the skill test for the issue of the specific aircraft type ratings representing the types for which privileges are to be renewed.

SECTION 8 – SPECIFIC REQUIREMENTS FOR THE MULTI-CREW COOPERATION INSTRUCTOR – MCCI

FCL.905.MCCI MCCI – Privileges and conditions

Regulation (EU) No 1178/2011

(a) The privileges of an MCCI are to carry out flight instruction during:

(1) the practical part of MCC courses when not combined with type rating training; and

(2) in the case of MCCI(A), the basic phase of the MPL integrated training course, provided he/she holds or has held an FI(A) or an IRI(A) certificate.

FCL.910.MCCI MCCI – Restricted privileges

Regulation (EU) No 1178/2011

The privileges of the holder of an MCCI certificate shall be restricted to the FNPT II/III MCC, FTD 2/3 or FFS in which the MCCI training course was taken.

The privileges may be extended to other FSTDs representing further types of aircraft when the holder has completed the practical training of the MCCI course on that type of FNPT II/III MCC, FTD 2/3 or FFS.

FCL.915.MCCI MCCI – Prerequisites

Regulation (EU) 2021/2227

An applicant for an MCCI certificate shall:

(a) hold or have held a CPL, MPL or ATPL in the appropriate aircraft category;

(b) have at least:

(1) in the case of aeroplanes, airships and powered-lift aircraft, 1 500 hours of flying experience as a pilot in multi-pilot operations, of which at least 350 hours in the appropriate aircraft category;

(2) in the case of helicopters, 1 000 hours of flying experience as a pilot in multi-pilot operations, of which at least 350 hours in helicopters.

FCL.930.MCCI MCCI – Training course

Regulation (EU) No 1178/2011

(a) The training course for the MCCI shall include, at least:

(1) 25 hours of teaching and learning instruction;

(2) technical training related to the type of FSTD where the applicant wishes to instruct;

(3) 3 hours of practical instruction, which may be flight instruction or MCC instruction on the relevant FNPT II/III MCC, FTD 2/3 or FFS, under the supervision of a TRI, SFI or MCCI nominated by the ATO for that purpose. These hours of flight instruction under supervision shall include the assessment of the applicant's competence as described in FCL.920.

(b) Applicants holding or having held an FI, TRI, CRI, IRI or SFI certificate shall be fully credited towards the requirement of (a)(1).

AMC1 FCL.930.MCCI MCCI — Training course

ED Decision 2011/016/R

AEROPLANES

GENERAL

(a) The objective of the technical training is to apply the core instructor competencies acquired during the teaching and learning training to MCC training.

(b) During the practical training the applicant should demonstrate the ability to instruct a pilot in MCC.

(c) To supervise applicants for MCCI certificates, the adequate experience should include at least three type rating or MCC courses.

(d) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the following air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

(e) The student instructor should learn how to identify common errors and how to correct them properly, which should be emphasised at all times.

COURSE OBJECTIVE

(f) The course should be designed to give adequate training to the applicant in theoretical knowledge instruction and FSTD instruction to instruct those aspects of MCC required by an applicant for a type rating on a first MP aeroplane.

(g) Confirmation of competency of the applicant to be authorised as an MCCI(A) will be determined by the applicant conducting at least 3 hours MCC instruction to a satisfactory standard on the relevant FNPT or FFS under the supervision of a TRI(A), SFI(A) or MCCI(A) nominated by the ATO for this purpose.

(h) The course consists of three parts:

(1) Part 1: teaching and learning that should follow the content of AMC1 FCL.920;

(2) Part 2: technical theoretical knowledge instruction (technical training);

(3) Part 3: flight instruction.

Part 1

The content of the teaching and learning part of the FI training course, as established in AMC1 FCL.930.FI, should be used as guidance to develop the course syllabus.

Part 2

TECHNICAL THEORETICAL KNOWLEDGE INSTRUCTION SYLLABUS

(a) The FSTD training consists of the application of core instructor competencies to MCC training in a commercial air transport environment, including principles of threat and error management and CRM.

The content of the training programme should cover MCC course exercises in sufficient depth to meet the standard required for issue of the MCCI(A) certificate.

(b) The course should be related to the type of FSTD on which the applicant wishes to instruct. A training programme should give details of all theoretical knowledge instruction.

(c) Identification and application of human factors (as set in the ATPL syllabus 040) related to MCC aspects of the training.

Part 3

FLIGHT INSTRUCTION SYLLABUS

(a) The content of the instruction programme should cover training exercises as applicable to the MCC requirements of an applicant for a MP type rating.

(b) Training exercises:

The exercises should be accomplished as far as possible in a simulated commercial air transport environment. The instruction should cover the following areas:

(1) pre-flight preparation, including documentation, and computation of take-off performance data;

(2) pre-flight checks, including radio and navigation equipment checks and setting;

(3) before take-off checks, including powerplant checks, and take-off briefing by the PF;

(4) normal take-offs with different flap settings, tasks of PF and PNF, callouts;

(5) rejected take-offs; crosswind take-offs; take-offs at maximum takeoff mass; engine failure after v1;

(6) normal and abnormal operation of aircraft systems, use of checklists;

(7) selected emergency procedures to include engine failure and fire, smoke control and removal, windshear during take-off and landing, emergency descent, incapacitation of a flight crew member;

(8) early recognition of and reaction on approaching stall in differing aircraft configurations;

(9) instrument flight procedures, including holding procedures; precision approaches using raw navigation data, flight director and automatic pilot, one engine simulated inoperative approaches, non-precision and circling approaches, approach briefing by the PF, setting of navigation equipment, call-out procedures during approaches; computation of approach and landing data;

(10) go-arounds; normal and with one engine simulated inoperative, transition from instrument to visual flight on reaching decision height or minimum descent height or altitude;

(11) landings, normal, crosswind and with one engine simulated inoperative, transition from instrument to visual flight on reaching decision height or minimum descent height or altitude.

FCL.940.MCCI MCCI – Revalidation and renewal

Regulation (EU) No 1178/2011

(a) For revalidation of an MCCI certificate the applicant shall have completed the requirements of FCL.930.MCCI(a)(3) on the relevant type of FNPT II/III, FTD 2/3 or FFS, within the last 12 months of the validity period of the MCCI certificate.

(b) Renewal. If the MCCI certificate has lapsed, the applicant shall complete the requirements of FCL.930.MCCI(a)(2) and (3) on the relevant type of FNPT II/III MCC, FTD 2/3 or FFS.

SECTION 9 – SPECIFIC REQUIREMENTS FOR THE SYNTHETIC TRAINING INSTRUCTOR – STI

FCL.905.STI STI – Privileges and conditions

Regulation (EU) 2020/359

(a) The privileges of an STI are to carry out synthetic flight instruction in the appropriate aircraft category for:

(1) the issue of a licence;

(2) the issue, revalidation or renewal of a BIR and an IR and a class or type rating for single-pilot aircraft, except for single-pilot high-performance complex aeroplanes.

(b) Additional privileges for the STI(A). The privileges of an STI(A) shall include synthetic flight instruction during the core flying skills training of the MPL integrated training course.

FCL.910.STI STI – Restricted privileges

Regulation (EU) 2019/1747

The privileges of STIs shall be restricted to the FSTD in which the STI training course was taken.

The privileges may be extended to other FSTDs representing further types of aircraft if in the period of 12 months immediately preceding the application the holders have:

(a) completed the FSTD content of the CRI or TRI course on the class or type of aircraft for which instructional privileges are sought;

(b) passed in the FSTD on which flight instruction is to be conducted, the applicable section of the proficiency check in accordance with Appendix 9 to this Annex for the appropriate class or type of aircraft.

For STIs(A) instructing on BITD only, the proficiency check shall include only the exercises appropriate for the skill test for the issue of a PPL(A);

(c) conducted, on a CPL, an IR, a PPL or a class or type rating course, at least 3 hours of flight instruction under the supervision of an FI, a CRI(A), an IRI or a TRI nominated by the ATO for this purpose, including at least 1 hour of flight instruction that is supervised by an FIE in the appropriate aircraft category.

FCL.915.STI STI – Prerequisites

Regulation (EU) 2019/1747

(a) Applicants for the issue of an STI certificate shall:

(1) hold, or have held within the 3 years prior to the application, a pilot licence and instructional privileges appropriate to the courses on which instruction is intended;

(2) have completed in an FSTD the relevant proficiency check for the class or type rating, in the period of 12 months immediately preceding the application.

Applicants for the issue of an STI(A) wishing to instruct on BITDs only, shall complete the exercises appropriate for a skill test for the issue of a PPL(A) only;

(b) Additionally to the requirements laid down in point (a), applicants for the issue of an STI(H) certificate shall have completed at least 1 hour of flight time as an observer on the flight deck

of the applicable type of helicopter, in the period of 12 months immediately preceding the application.

FCL.930.STI STI – Training course

Regulation (EU) No 1178/2011

(a) The training course for the STI shall comprise at least 3 hours of flight instruction related to the duties of an STI in an FFS, FTD 2/3 or FNPT II/III, under the supervision of an FIE. These hours of flight instruction under supervision shall include the assessment of the applicant's competence as described in FCL.920.

Applicants for an STI(A) wishing to instruct on a BITD only, shall complete the flight instruction on a BITD.

(b) For applicants for an STI(H), the course shall also include the FFS content of the applicable TRI course.

FCL.940.STI Revalidation and renewal of the STI certificate

Regulation (EU) 2019/1747

(a) Revalidation

To revalidate an STI certificate, applicants shall, within the period of 12 months immediately preceding the expiry date of the STI certificate, comply with all of the following conditions:

(1) have conducted at least 3 hours of flight instruction in an FSTD, as part of a complete CPL, IR, PPL or class or type rating course;

(2) have passed in the FSTD on which flight instruction is conducted, the applicable sections of the proficiency check in accordance with Appendix 9 to this Annex for the appropriate class or type of aircraft.

For STIs(A) instructing on BITDs only, the proficiency check shall include the exercises appropriate for a skill test for the issue of a PPL(A) only.

(b) Renewal

To renew STI certificate, the applicants shall within the period of 12 months immediately preceding the application for the renewal:

(1) complete a refresher training as an STI at an ATO;

(2) pass in the FSTD on which flight instruction is conducted, the applicable sections of the proficiency check in accordance with Appendix 9 to this Annex for the appropriate class or type of aircraft.

For an STI(A) instructing on BITDs only, the proficiency check shall include the exercises appropriate for a skill test for the issue of a PPL(A) only;

(3) conduct, in the relevant aircraft category, on a complete CPL, IR, PPL or class or type rating course, at least 3 hours of flight instruction under the supervision of an FI, a CRI, an IRI or a TRI nominated by the ATO for this purpose, including at least 1 hour of flight instruction supervised by a flight instructor examiner (FIE).

SECTION 10 – MOUNTAIN RATING INSTRUCTOR – MI

FCL.905.MI MI – Privileges and conditions

Regulation (EU) No 1178/2011

The privileges of an MI are to carry out flight instruction for the issue of a mountain rating.

FCL.915.MI MI – Prerequisites

Regulation (EU) No 1178/2011

An applicant for an MI certificate shall:

(a) hold a, FI, CRI, or TRI certificate, with privileges for single-pilot aeroplanes;

(b) hold a mountain rating.

FCL.930.MI MI – Training course

Regulation (EU) No 1178/2011

(a) The training course for the MI shall include the assessment of the applicant's competence as described in FCL.920.

(b) Before attending the course, applicants shall have passed a pre-entry flight test with an MI holding an FI certificate to assess their experience and ability to undertake the training course.

FCL.940.MI Validity of the MI certificate

Regulation (EU) No 245/2014

The MI certificate is valid as long as the, FI, TRI or CRI certificate is valid.

SECTION 11 – SPECIFIC REQUIREMENTS FOR THE FLIGHT TEST INSTRUCTOR – FTI

FCL.905.FTI FTI – Privileges and conditions

Regulation (EU) No 1178/2011

(a) The privileges of a flight test instructor (FTI) are to instruct, within the appropriate aircraft category, for:

(1) the issue of category 1 or 2 flight test ratings, provided he/she holds the relevant category of flight test rating;

(2) the issue of an FTI certificate, within the relevant category of flight test rating, provided that the instructor has at least 2 years of experience instructing for the issue of flight test ratings.

(b) The privileges of an FTI holding a category 1 flight test rating include the provision of flight instruction also in relation to category 2 flight test ratings.

FCL.915.FTI FTI – Prerequisites

Regulation (EU) No 1178/2011

An applicant for an FTI certificate shall:

(a) hold a flight test rating issued in accordance with FCL.820;

(b) have completed at least 200 hours of category 1 or 2 flight tests.

FCL.930.FTI FTI – Training course

Regulation (EU) No 1178/2011

(a) The training course for the FTI shall include, at least:

(1) 25 hours of teaching and learning;

(2) 10 hours of technical training, including revision of technical knowledge, the preparation of lesson plans and the development of classroom/simulator instructional skills;

(3) 5 hours of practical flight instruction under the supervision of an FTI qualified in accordance with FCL.905.FTI(b). These hours of flight instruction shall include the assessment of the applicant's competence as described in FCL.920.

(b) Crediting:

(1) Applicants holding or having held an instructor certificate shall be fully credited towards the requirement of (a)(1).

(2) In addition, applicants holding or having held an FI or TRI certificate in the relevant aircraft category shall be fully credited towards the requirements of (a)(2).

FCL.940.FTI FTI – Revalidation and renewal

Regulation (EU) No 1178/2011

(a) Revalidation. For revalidation of an FTI certificate, the applicant shall, within the validity period of the FTI certificate, fulfil one of the following requirements:

(1) complete at least:

(i) 50 hours of flight tests, of which at least 15 hours shall be within the 12 months preceding the expiry date of the FTI certificate; and

(ii) 5 hours of flight test flight instruction within the 12 months preceding the expiry date of the FTI certificate; or

(2) receive refresher training as an FTI at an ATO. The refresher training shall be based on the practical flight instruction element of the FTI training course, in accordance with FCL.930.FTI(a)(3), and include at least 1 instruction flight under the supervision of an FTI qualified in accordance with FCL.905.FTI(b).

(b) Renewal. If the FTI certificate has lapsed, the applicant shall receive refresher training as an FTI at an ATO. The refresher training shall comply at least with the requirements of FCL.930.FTI(a)(3).

SUBPART K – EXAMINERS

SECTION 1 – COMMON REQUIREMENTS

FCL.1000 Examiner certificates

Regulation (EU) 2019/1747

(a) General

Holders of an examiner certificate shall:

(1) hold, unless otherwise determined in this Annex, an equivalent licence, rating or certificate to the ones for which they are authorised to conduct skill tests, proficiency checks or assessments of competence and the privilege to instruct for them;

(2) be qualified to act as PIC in the aircraft during a skill test, proficiency check or assessment of competence if conducted on the aircraft.

(b) Special conditions:

(1) The competent authority may issue a specific certificate granting privileges for the conduct of skill tests, proficiency checks and assessments of competence if compliance with the requirements established in this Subpart is not possible because of the introduction of any of the following:

(i) new aircraft in the Member States or in an operator's fleet;

(ii) new training courses in this Annex.

Such a certificate shall be limited to the skill tests, proficiency checks and assessments of competence necessary for the introduction of the new type of aircraft or the new training course and its validity shall not, in any case, exceed 1 year.

(2) Holders of a certificate issued in accordance with point (b)(1) who wish to apply for an examiner certificate shall comply with the prerequisites and revalidation requirements for that category of examiner certificate.

(3) Where no qualified examiner is available, competent authorities may, on a case-by -case basis, authorise inspectors or examiners who do not meet the relevant instructor, type or class rating requirements as specified in (a), to perform skill tests, proficiency checks and assessments of competence.

(c) Examination provided outside the territory of the Member States:

(1) By way of derogation from point (a), in the case of skill tests and proficiency checks provided outside the territory for which Member States are responsible under the Chicago Convention, the competent authority shall issue an examiner certificate to applicants holding a pilot licence that is compliant with Annex 1 to the Chicago Convention, provided that those applicants:

(i) hold at least an equivalent licence, rating, or certificate to the one for which they are authorised to conduct skill tests, proficiency checks or assessments of competence, and in any case at least a CPL;

(ii) are qualified to act as PIC in the aircraft during a skill test or proficiency check that is conducted in the aircraft;

(iii) comply with the requirements established in this Subpart for the issue of the relevant examiner certificate; and

(iv) demonstrate to the competent authority an adequate level of knowledge of European aviation safety rules to be able to exercise examiner privileges in accordance with this Annex.

(2) The certificate referred to in point (1) shall be limited to performing skill tests and proficiency checks:

(i) outside the territories for which the Member States are responsible under the Chicago Convention; and

(ii) to pilots who have sufficient knowledge of the language in which the test/check is given.

GM1 FCL.1000 Examiner certificates

ED Decision 2020/005/R

SPECIAL CONDITIONS

When new aircraft are introduced, requirements such as to hold a licence and rating equivalent to the one for which the skill test is being conducted, or to have adequate flight experience, may not be possible to comply with. In this case, to allow for the first ratings for these aircraft to be issued to applicants, competent authorities need the possibility to issue a specific certificate that does not have to comply with the requirements established in this Subpart.

The competent authority should only give these certificates to holders of other examiner certificates. As far as possible, preference should be given to persons with experience in similar types or classes of aircraft, for example, in aircraft having the same kind and number of engines or rotors and of the same order of mass or technology.

The certificate should be limited in validity to the time needed to qualify the first examiners for the new aircraft in accordance with this Subpart, but in any case, it should not exceed the 1 year established in the rule.

GM2 FCL.1000 Examiner certificates

ED Decision 2020/005/R

When examiners conduct a skill test, proficiency check or assessment of competence, in addition to a licence for the relevant aircraft category, they are required to hold the rating or certificate equivalent to the one for which they conduct the skill test, proficiency check or assessment of competence.

For example, a candidate who holds a CPL(A) may make a class rating proficiency check on an SE piston aeroplane with an examiner who holds a PPL(A) with an SE piston class rating and related examiner privileges.

FCL.1005 Limitation of privileges in case of vested interests

Regulation (EU) 2019/1747

Examiners shall not conduct:

(a) skill tests or assessments of competence of applicants for the issue of a licence, rating or certificate to whom they have provided more than 25 % of the required flight instruction for the licence, rating or certificate for which the skill test or assessment of competence is being taken; and

(b) skill tests, proficiency checks or assessments of competence whenever they feel that their objectivity may be affected.

GM1 FCL.1005(b) Limitation of privileges in case of vested interests

ED Decision 2020/005/R

Examples of a situation where the examiner should consider if their objectivity is affected are when the applicant is a relative or a friend of the examiner, or when they are linked by economic interests or political affiliations, etc.

FCL.1010 Prerequisites for examiners

Regulation (EU) No 1178/2011

Applicants for an examiner certificate shall demonstrate:

(a) relevant knowledge, background and appropriate experience related to the privileges of an examiner;

(b) that they have not been subject to any sanctions, including the suspension, limitation or revocation of any of their licences, ratings or certificates issued in accordance with this Part, for non-compliance with the Basic Regulation and its Implementing Rules during the last 3 years.

AMC1 FCL.1010 Prerequisites for examiners

ED Decision 2011/016/R

When evaluating the applicant's background, the competent authority should evaluate the personality and character of the applicant, and his/her cooperation with the competent authority.

The competent authority may also take into account whether the applicant has been convicted of any relevant criminal or other offenses, taking into account national law and principles of non-discrimination.

FCL.1015 Examiner standardisation

Regulation (EU) 2020/2193

(a) An applicant for an examiner certificate shall undertake a standardisation course which is provided by the competent authority or which is provided by an ATO and approved by the competent authority.

(b) The standardisation course shall consist of theoretical and practical instruction and shall include, at least:

(1) the conduct of 2 skill tests, proficiency checks or assessments of competences for the licences, ratings or certificates for which the applicant seeks the privilege to conduct tests and checks;

(2) instruction on the applicable requirements in this part and the applicable air operations requirements, the conduct of skill tests, proficiency checks and assessments of competence, and their documentation and reporting;

(3) a briefing on the national administrative procedures, requirements for protection of personal data, liability, accident insurance and fees.

(4) a briefing on the need to review and apply the items in (3) when conducting skill tests, proficiency checks or assessments of competence of an applicant for which the competent authority is not the same that issued the examiner's certificate; and

(5) an instruction on how to get access to these national procedures and requirements of other competent authorities when needed;

(c) Holders of an examiners certificate shall not conduct skill tests, proficiency checks or assessments of competence of an applicant for which the competent authority is not the same that issued the examiner's certificate, unless they have reviewed the latest available information containing the relevant national procedures of the applicant's competent authority.

AMC1 FCL.1015 Examiner standardisation

ED Decision 2020/005/R

GENERAL

(a) The competent authority may provide the course itself or through an arrangement with an ATO or, in the case of examiners for sailplanes and balloons, with a DTO.

This arrangement should clearly state that the ATO or the DTO is acting under the management system of the competent authority.

(b) The course should last:

(1) for the FE and FIE, at least 1 day, divided into theoretical and practical training;

(2) for other examiners, at least 3 days, divided into theoretical training (1 day) and practical training in an FFS conducting real or role-played proficiency checks, skill tests or assessments of competence (at least 2 days).

(c) The competent authority, the ATO or the DTO should determine any further training required before presenting the candidate for the examiner assessment of competence.

CONTENT

(d) The training should comprise:

(1) Theoretical training covering at least:

(i) the contents of AMC2 FCL.1015 and the FEM;

(ii) Part-FCL and related AMCs and GM relevant to their duties;

(iii) operational requirements and related AMCs and GM relevant to their duties;

(iv) national requirements relevant to their examination duties;

(v) fundamentals of human performance and limitations relevant to flight examination;

(vi) fundamentals of evaluation relevant to applicant’s performance;

(vii) the management system of ATOs and the organisational structure of DTOs;

(viii) MCC, human performance and limitations, if applicable.

(2) Examiners should also be briefed on the protection requirements for personal data, liability, accident insurance and fees, as applicable in the member state concerned.

(3) All items above are the core knowledge requirements for an examiner and are recommended as the core course material. This core course may be studied before recommended examiner training is commenced. The core course may utilise any suitable training format.

(4) Practical training consisting of at least:

(i) knowledge and management of the test for which the certificate is to be sought. These are described in the relevant modules in the FEM;

(ii) knowledge of the administrative procedures pertaining to that test or check.

(5) For an initial examiner certificate, practical training should include the examination of the test profile sought, consisting of the conduct of at least two test or check profiles in the role of examiner (these two tests or checks profiles can be performed in the same simulator session), including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. This training is conducted in the aircraft if approval for testing or checking in the aircraft is required. If examiner privileges in FSTD's are required, practical instruction in the use of FSTD(s) for testing or checking should also be completed.

(6) If examiner privileges are to include the conduct of proficiency checks for the revalidation or renewal of an instrument rating, practical instruction should include the conduct of at least four instrument check profiles in the role of examiner, including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. This training is conducted in the aircraft if approval for testing or checking in the aircraft is required. If examiner privileges in both FSTD and aircraft are required, at least one of the instrument check profiles should be conducted in an FSTD.

(7) For extension of an examiner certificate to further types (as required for TRE), further practical training on the new type may be required, consisting of the conduct of at least one test or check profile in the role of examiner on the new type, including briefing, conduct of the skill test and proficiency check, assessment of the applicant to whom the test or check is given, debriefing and recording or documentation under the supervision of an examiner of the appropriate category on the applicable type. A further examiner check on the new type may be required, which may be supervised by an inspector of the competent authority or a suitably authorised senior examiner.

AMC2 FCL.1015 Examiner standardisation

ED Decision 2020/005/R

STANDARDISATION ARRANGEMENTS FOR EXAMINERS

LIMITATIONS

(a) An examiner should allow an applicant adequate time to prepare for a test or check, normally not more than 1 hour.

(b) An examiner should plan a test or check flight so that all required exercises can be performed while allowing sufficient time for each of the exercises and with due regard to the weather conditions, traffic situation, ATC requirements and local procedures.

PURPOSE OF A TEST OR CHECK

(c) Determine through practical demonstration during a test or check that an applicant has acquired or maintained the required level of knowledge and skill or proficiency.

(d) Improve training and flight instruction in ATOs or DTOs by feedback of information from examiners about items or sections of tests or checks that are most frequently failed.

(e) Assist in maintaining and, where possible, improving air safety standards by having examiners display good airmanship and flight discipline during tests or checks.

CONDUCT OF TEST OR CHECK

(f) An examiner will ensure that an applicant completes a test or check in accordance with Part-FCL requirements and is assessed against the required test or check standards.

(g) Each item within a test or check section should be completed and assessed separately. The test or check schedule, as briefed, should not normally be altered by an examiner. A failed item is not always a failed section, for example type rating skill test where a failure of an item in a section does not fail the entire section, only the failed item is taken again.

(h) Marginal or questionable performance of a test or check item should not influence an examiner's assessment of any subsequent items.

(i) An examiner should verify the requirements and limitations of a test or check with an applicant during the pre-flight briefing.

(j) When a test or check is completed or discontinued, an examiner should debrief the applicant and give reasons for items or sections failed. In case of a failed or discontinued skill test and proficiency check, the examiner should provide appropriate advice to assist the applicant in re-tests or re-checks.

(k) Any comment on, or disagreement with, an examiner's test or check evaluation or assessment made during a debriefing will be recorded by the examiner on the test or check report, and will be signed by the examiner and countersigned by the applicant.

EXAMINER PREPARATION

(l) An examiner should supervise all aspects of the test or check flight preparation, including, where necessary, obtaining or assuring an ATC 'slot' time.

(m) An examiner will plan a test or check in accordance with Part-FCL requirements. Only the manoeuvres and procedures set out in the appropriate test or check form will be undertaken. The same examiner should not reexamine a failed applicant without the agreement of the applicant.

EXAMINER APPROACH

(n) An examiner should encourage a friendly and relaxed atmosphere to develop both before and during a test or check flight. A negative or hostile approach should not be used. During the test or check flight, the examiner should avoid negative comments or criticisms and all assessments should be reserved for the debriefing.

ASSESSMENT SYSTEM

(o) Although test or checks may specify flight test tolerances, an applicant should not be expected to achieve these at the expense of smoothness or stable flight. An examiner should make due allowance for unavoidable deviations due to turbulence, ATC instructions, etc. An examiner should terminate a test or check only when it is clear that the applicant has not been able to demonstrate the required level of knowledge, skill or proficiency and that a full re-test will be necessary or for safety reasons. An examiner will use one of the following terms for assessment:

(1) a 'pass', provided that the applicant demonstrates the required level of knowledge, skill or proficiency and, where applicable, remains within the flight test tolerances for the licence or rating;

(2) a 'fail' provided that any of the following apply:

(i) the flight test tolerances have been exceeded after the examiner has made due allowance for turbulence or ATC instructions;

(ii) the aim of the test or check is not completed;

(iii) the aim of exercise is completed but at the expense of safe flight, violation of a rule or regulation, poor airmanship or rough handling;

(iv) an acceptable level of knowledge is not demonstrated;

(v) an acceptable level of flight management is not demonstrated;

(vi) the intervention of the examiner or safety pilot is required in the interest of safety.

(3) a 'partial pass' in accordance with the criteria shown in the relevant skill test appendix of Part-FCL.

METHOD AND CONTENTS OF THE TEST OR CHECK

(p) Before undertaking a test or check, an examiner will verify that the aircraft or FSTD intended to be used is suitable and appropriately equipped for the test or check. Aircraft that fall under points (a), (b), (c), or (d) of Annex I to the Basic Regulation can be used provided that they are subject to an authorisation as per point ORA.ATO.135 or point DTO.GEN.240.

(q) A test or check flight will be conducted in accordance with the AFM and, if applicable, the AOM.

(r) A test or check flight will be conducted within the limitations contained in the operations manual of an ATO or the operator for which the applicant is flying, as applicable, or, if available, within the limitations placed by the DTO.

(s) Contents:

(1) a test or check is comprised of:

(i) oral examination on the ground (where applicable);

(ii) pre-flight briefing;

(iii) in-flight exercises;

(iv) post-flight debriefing.

(2) oral examination on the ground should include:

(i) aircraft general knowledge and performance;

(ii) planning and operational procedures;

(iii) other relevant items or sections of the test or check.

(3) pre-flight briefing should include:

(i) test or check sequence;

(ii) power setting, speeds and approach minima, if applicable;

(iii) safety considerations.

(4) in-flight exercises will include each relevant item or section of the test or check;

(5) post-flight debriefing should include:

(i) assessment or evaluation of the applicant;

(ii) documentation of the test or check with the applicant's FI present, if possible.

(t) A test or check is intended to simulate a practical flight. Thus, an examiner may set practical scenarios for an applicant while ensuring that the applicant is not confused and air safety is not compromised.

(u) When manoeuvres are to be flown by sole reference to instruments, the examiner should ensure that a suitable method of screening is used to simulate IMC.

(v) An examiner should maintain a flight log and assessment record during the test or check for reference during the post or flight debriefing.

(w) An examiner should be flexible to the possibility of changes arising to preflight briefings due to ATC instructions, or other circumstances affecting the test or check.

(x) Where changes arise to a planned test or check an examiner should be satisfied that the applicant understands and accepts the changes. Otherwise, the test or check flight should be terminated.

(y) Should an applicant choose not to continue a test or check for reasons considered inadequate by an examiner, the applicant will be assessed as having failed those items or sections not attempted. If the test or check is terminated for reasons considered adequate by the examiner, only these items or sections not completed will be tested during a subsequent test or check.

(z) An examiner may terminate a test or check at any stage, if it is considered that the applicant's competency requires a complete re-test or re-check.

GM1 FCL.1015 Examiner standardisation

ED Decision 2020/005/R

(a) An examiner should plan per day not more than:

(1) three tests or checks relating to PPL, CPL, IR or class ratings;

(2) four tests or checks relating to LAPL, SPL or BPL;

(3) two tests or checks related to MPL or ATPL;

(4) two assessments of competence related to instructor certificates;

(5) four tests or checks relating to SP type ratings.

(b) An examiner should plan at least 2 hours for a LAPL, SPL or BPL, 3 hours for a PPL, CPL, IR or class rating test or checks, and at least 4 hours for instructor certificates, MPL, ATPL or MP type rating tests or checks, including preflight briefing and preparation, conduct of the test, check or assessment of competence, de-briefing, evaluation of the applicant and documentation.

(c) For the conduct of the test, check or assessment of competence, without additional activities specified in point (b), the following values may be used as guidance:

(1) 45 minutes for a LAPL(B) or BPL and SP class ratings VFR only;

(2) 60 minutes for extension of BPL commercial privileges;

(3) 90 minutes for LAPL(A) or (H), PPL(A) or (H), and CPL(A) or (H), including the navigation section;

(4) 60 minutes for PPL(As) and CPL(As);

(5) 60 minutes for IR, EIR, instructor certificates, and SP type or class ratings; and

(6) 120 minutes for MPL, ATPL, and MP type ratings.

(d) For the LAPL(S) and SPL test or check flight the flight time must be sufficient to allow that all the items in each test or check section can be fully completed. If not all the items can be completed in one flight, additional flights have to be done.

GM1 FCL.1015(a); FCL.1025(b)(2)

ED Decision 2018/009/R

EXAMINER STANDARDISATION COURSES AT AN ATO OR A DTO

In point FCL.1015(a) (second sentence) and in point FCL.1025(b)(2) (second sentence), the word 'may' is used to indicate that completing an examiner standardisation course or an examiner refresher course at a DTO is an option which can be used by examiners for sailplanes and balloons as an alternative to completing such courses provided by the competent authority or an ATO (first sentence in both point FCL.1015(a) and point FCL.1025(b)(2)).

FCL.1020 Examiners assessment of competence

Regulation (EU) No 1178/2011

Applicants for an examiner certificate shall demonstrate their competence to an inspector from the competent authority or a senior examiner specifically authorised to do so by the competent authority responsible for the examiner's certificate through the conduct of a skill test, proficiency check or assessment of competence in the examiner role for which privileges are sought, including briefing, conduct of the skill test, proficiency check or assessment of competence, and assessment of the person to whom the test, check or assessment is given, debriefing and recording documentation.

AMC1 FCL.1020 Examiners assessment of competence

ED Decision 2011/016/R

GENERAL

(a) The competent authority may nominate either one of its inspectors or a senior examiner to assess the competence of applicants for an examiner certificate.

DEFINITIONS

(b) Definitions:

(1) 'Inspector': the inspector of the competent authority conducting the examiner competence assessment;

(2) 'Examiner applicant': the person seeking certification as an examiner;

(3) 'Candidate': the person being tested or checked by the examiner applicant. This person may be a pilot for whom the test or check would be required, or the inspector of the competent authority who is conducting the examiner certification acceptance test.

CONDUCT OF THE ASSESSMENT

(c) An inspector of the competent authority or a senior examiner will observe all examiner applicants conducting a test on a 'candidate' in an aircraft for which examiner certificate is sought. Items from the related training course and test or check schedule will be selected by the inspector for examination of the 'candidate' by the examiner applicant. Having agreed with the inspector the content of the test, the examiner applicant will be expected to manage the entire test. This will include briefing, the conduct of the flight, assessment and debriefing of the 'candidate'. The inspector will discuss the assessment with the examiner applicant before the 'candidate' is debriefed and informed of the result.

BRIEFING THE 'CANDIDATE'

(d) The 'candidate' should be given time and facilities to prepare for the test flight. The briefing should cover the following:

(1) the objective of the flight;

(2) licensing checks, as necessary;

(3) freedom for the 'candidate' to ask questions;

(4) operating procedures to be followed (for example operators manual);

(5) weather assessment;

(6) operating capacity of 'candidate' and examiner;

(7) aims to be identified by 'candidate';

(8) simulated weather assumptions (for example icing and cloud base);

(9) use of screens (if applicable);

(10) contents of exercise to be performed;

(11) agreed speed and handling parameters (for example V-speeds, bank angle, approach minima);

(12) use of R/T;

(13) respective roles of 'candidate' and examiner (for example during emergency);

(14) administrative procedures (for example submission of flight plan).

(e) The examiner applicant should maintain the necessary level of communication with the 'candidate'. The following check details should be followed by the examiner applicant:

(1) involvement of examiner in a MP operating environment;

(2) the need to give the 'candidate' precise instructions;

(3) responsibility for safe conduct of the flight;

(4) intervention by examiner, when necessary;

(5) use of screens;

(6) liaison with ATC and the need for concise, easily understood intentions;

(7) prompting the 'candidate' about required sequence of events (for example following a go-around);

(8) keeping brief, factual and unobtrusive notes.

ASSESSMENT

(f) The examiner applicant should refer to the flight test tolerances given in the relevant skill test. Attention should be paid to the following points:

(1) questions from the 'candidate';

(2) give results of the test and any sections failed;

(3) give reasons for failure.

DEBRIEFING

(g) The examiner applicant should demonstrate to the inspector the ability to conduct a fair, unbiased debriefing of the 'candidate' based on identifiable factual items. A balance between friendliness and firmness should be evident. The following points should be discussed with the 'candidate', at the applicant's discretion:

(1) advise the candidate on how to avoid or correct mistakes;

(2) mention any other points of criticism noted;

(3) give any advice considered helpful.

RECORDING OR DOCUMENTATION

(h) The examiner applicant should demonstrate to the inspector the ability to complete the relevant records correctly. These records may be:

(1) the relevant test or check form;

(2) licence entry;

(3) notification of failure form;

(4) relevant company forms where the examiner has privileges of conducting operator proficiency checks.

DEMONSTRATION OF THEORETICAL KNOWLEDGE

(i) The examiner applicant should demonstrate to the inspector a satisfactory knowledge of the regulatory requirements associated with the function of an examiner.

FCL.1025 Validity, revalidation and renewal of examiner certificates

Regulation (EU) 2020/2193

(a) Validity

An examiner certificate shall be valid for 3 years.

(b) Revalidation

To revalidate an examiner certificate, holders shall comply with all of the following conditions:

(1) before the expiry date of the certificate, have conducted at least six skill tests, proficiency checks, assessments of competence, or EBT evaluation phases during an EBT module referred to in point ORO.FC.231 of Annex III (Part-ORO) to Regulation (EU) No 965/2012;

(2) in the period of 12 months immediately preceding the expiry date of the certificate, have completed an examiner refresher course which is provided by the competent authority or which is provided by an ATO and approved by the competent authority;

(3) one of the skill tests, proficiency checks, assessments of competence or EBT evaluation phases conducted in accordance with point (1) shall take place in the period of 12 months immediately preceding the expiry date of the examiner certificate and shall:

(i) have been assessed by an inspector from the competent authority or by a senior examiner specifically authorised to do so by the competent authority responsible for the examiner certificate; or

(ii) comply with the requirements in point FCL.1020.

If applicants for the revalidation hold privileges for more than one category of examiner, all examiner privileges may be revalidated if applicants comply with the requirements laid down in points (b)(1) and (2) and point FCL.1020 for one of the categories of examiner certificates held, in agreement with the competent authority.

(c) Renewal

If the certificate has expired, before resuming the exercise of the privileges, the applicants shall comply with the requirements in point (b)(2) and point FCL.1020 in the period of 12 months immediately preceding the application for the renewal.

(d) An examiner certificate shall only be revalidated or renewed if applicants demonstrate continued compliance with the requirements laid down in points FCL.1010 and FCL.1030.

AMC1 FCL.1020; FCL.1025

ED Decision 2011/016/R

QUALIFICATION OF SENIOR EXAMINERS

(a) A senior examiner specifically tasked by the competent authority to observe skill tests or proficiency checks for the revalidation of examiner certificates should:

(1) hold a valid or current examiner certificate appropriate to the privileges being given;

(2) have examiner experience level acceptable to the competent authority;

(3) have conducted a number of skill tests or proficiency checks as a Part-FCL examiner.

(b) The competent authority may conduct a pre-assessment of the applicant or candidate carrying out a skill test and proficiency check under supervision of an inspector of the competent authority.

(c) Applicants should be required to attend a senior examiner briefing, course or seminar arranged by the competent authority. Content and duration will be determined by the competent authority and should include:

(1) pre-course self-study;

(2) legislation;

(3) the role of the senior examiner;

(4) an examiner assessment;

(5) national administrative requirements.

(d) The validity of the authorisation should not exceed the validity of the examiners certificate, and in any case should not exceed 3 years. The authorisation may be revalidated in accordance with procedures established by the competent authority.

AMC1 FCL.1025 Validity, revalidation and renewal of examiner certificates

ED Decision 2018/009/R

EXAMINER REFRESHER COURSE

The examiner refresher course should follow the content of the examiner standardisation course, included in AMC1 FCL.1015, and take into account specific contents adequate to the category of examiner affected.

GM1 FCL.1015(a); FCL.1025(b)(2)

ED Decision 2018/009/R

EXAMINER STANDARDISATION COURSES AT AN ATO OR A DTO

In point FCL.1015(a) (second sentence) and in point FCL.1025(b)(2) (second sentence), the word 'may' is used to indicate that completing an examiner standardisation course or an examiner refresher course at a DTO is an option which can be used by examiners for sailplanes and balloons as an alternative to completing such courses provided by the competent authority or an ATO (first sentence in both point FCL.1015(a) and point FCL.1025(b)(2)).

FCL.1030 Conduct of skill tests, proficiency checks and assessments of competence

Regulation (EU) No 245/2014

(a) When conducting skill tests, proficiency checks and assessments of competence, examiners shall:

(1) ensure that communication with the applicant can be established without language barriers;

(2) verify that the applicant complies with all the qualification, training and experience requirements in this Part for the issue, revalidation or renewal of the licence, rating or certificate for which the skill test, proficiency check or assessment of competence is taken;

(3) make the applicant aware of the consequences of providing incomplete, inaccurate or false information related to their training and flight experience.

(b) After completion of the skill test or proficiency check, the examiner shall:

(1) inform the applicant of the result of the test. In the event of a partial pass or fail, the examiner shall inform the applicant that he/she may not exercise the privileges of the rating until a full pass has been obtained. The examiner shall detail any further training requirement and explain the applicant's right of appeal;

(2) in the event of a pass in a proficiency check or assessment of competence for revalidation or renewal, endorse the applicant's licence or certificate with the new expiry date of the rating or certificate, if specifically authorised for that purpose by the competent authority responsible for the applicant's licence;

(3) provide the applicant with a signed report of the skill test or proficiency check and submit without delay copies of the report to the competent authority responsible for the applicant's licence, and to the competent authority that issued the examiner certificate. The report shall include:

(i) a declaration that the examiner has received information from the applicant regarding his/her experience and instruction, and found that experience and instruction complying with the applicable requirements in this Part;

(ii) confirmation that all the required manoeuvres and exercises have been completed, as well as information on the verbal theoretical knowledge examination, when applicable. If an item has been failed, the examiner shall record the reasons for this assessment;

(iii) the result of the test, check or assessment of competence;

(iv) a declaration that the examiner has reviewed and applied the national procedures and requirements of the applicant's competent authority if the competent authority responsible for the applicant's licence is not the same that issued the examiner's certificate;

(v) a copy of the examiner certificate containing the scope of his/her privileges as examiner in the case of skill tests, proficiency checks or assessments of competence of an applicant for which the competent authority is not the same that issued the examiner's certificate.

(c) Examiners shall maintain records for 5 years with details of all skill tests, proficiency checks and assessments of competence performed and their results.

(d) Upon request by the competent authority responsible for the examiner certificate, or the competent authority responsible for the applicant's licence, examiners shall submit all records and reports, and any other information, as required for oversight activities.

AMC1 FCL.1030(b)(3) Conduct of skill tests, proficiency checks and assessments of competence

ED Decision 2021/002/R

OBLIGATIONS FOR EXAMINERS APPLICATION AND REPORT FORMS

Common application and report forms can be found:

(a) For skill tests or proficiency checks for issue, revalidation or renewal of LAPL, BPL, SPL, PPL, CPL and IR in AMC1 to Appendix 7;

(b) For training, skill tests or proficiency checks for ATPL, MPL or class and type ratings, in AMC1 to Appendix 9;

(c) For EBT practical assessment, in AMC1 to Appendix 10;

(d) For assessments of competence for instructors, in AMC5 FCL.935.

GM1 FCL.1030(b)(3)(ii) Conduct of skill tests, proficiency checks and assessments of competence

ED Decision 2021/002/R

REVALIDATION OF CLASS AND TYPE RATINGS — AEROPLANES — REQUIRED MANOEUVRES AND EXERCISES IN THE CONTEXT OF APPENDIX 10 (EBT PRACTICAL ASSESSMENT)

The confirmation that all the required manoeuvres and exercises have been completed means that during the period of validity of the type rating, the applicant has completed the operator's EBT programme applicable to that period.

SECTION 2 – SPECIFIC REQUIREMENTS FOR FLIGHT EXAMINERS – FE

FCL.1005.FE FE – Privileges and conditions

Regulation (EU) 2020/359

(a) FE(A). The privileges of an FE for aeroplanes are to conduct:

(1) skill tests for the issue of the PPL(A) and skill tests and proficiency checks for associated/ single-pilot class and type ratings, except for single-pilot high performance complex aeroplanes, provided that the examiner has completed at least 1 000 hours of flight time as a pilot on aeroplanes or TMGs, including at least 250 hours of flight instruction;

(2) skill tests for the issue of the CPL(A) and skill tests and proficiency checks for the associated single-pilot class and type ratings, except for single-pilot high performance complex aeroplanes, provided that the examiner has completed at least 2 000 hours of flight time as a pilot on aeroplanes or TMGs, including at least 250 hours of flight instruction;

(3) skill tests and proficiency checks for the LAPL(A), provided that the examiner has completed at least 500 hours of flight time as a pilot on aeroplanes or TMGs, including at least 100 hours of flight instruction;

(4) skill tests for the issue of a mountain rating, provided that the examiner has completed at least 500 hours of flight time as a pilot on aeroplanes or TMGs, including at least 500 take-offs and landings of flight instruction for the mountain rating.

(5) proficiency checks for the revalidation and renewal of EIRs, provided that the FE has completed at least 1 500 hours as a pilot on aeroplanes and complies with the requirements in FCL.1010.IRE(a)(2).

(b) FE(H). The privileges of an FE for helicopters are to conduct:

(1) skill tests for the issue of the PPL(H) and skill tests and proficiency checks for single-pilot single-engine helicopter type ratings entered in a PPL(H), provided that the examiner has completed 1 000 hours of flight time as a pilot on helicopters, including at least 250 hours of flight instruction;

(2) skill tests for the issue of the CPL(H) and skill tests and proficiency checks for single-pilot single-engine helicopter type ratings entered in a CPL(H), provided the examiner has completed 2 000 hours of flight time as pilot on helicopters, including at least 250 hours of flight instruction;

(3) skill tests and proficiency checks for single-pilot multi-engine helicopter type ratings entered in a PPL(H) or a CPL(H), provided the examiner has completed the requirements in (1) or (2), as applicable, and holds a CPL(H) or ATPL(H) and, when applicable, an IR(H);

(4) skill tests and proficiency checks for the LAPL(H), provided that the examiner has completed at least 500 hours of flight time as a pilot on helicopters, including at least 150 hours of flight instruction.

(c) FE(As). The privileges of an FE for airships are to conduct skill tests for the issue of the PPL(As) and CPL(As) and skill tests and proficiency checks for the associated airship type ratings, provided that the examiner has completed 500 hours of flight time as a pilot on airships, including 100 hours of flight instruction.

FCL.1010.FE FE – Prerequisites

Regulation (EU) No 1178/2011

An applicant for an FE certificate shall hold:

an FI certificate in the appropriate aircraft category.

SECTION 3 – SPECIFIC REQUIREMENTS FOR TYPE RATING EXAMINERS – TRE

FCL.1005.TRE TRE – Privileges and conditions

Regulation (EU) 2021/2227

(a) TRE(A) and TRE(PL). The privileges of a TRE for aeroplanes or powered-lift aircraft are to conduct:

(1) skill tests for the initial issue of type ratings for aeroplanes or powered-lift aircraft, as applicable;

(2) proficiency checks for the revalidation or renewal of type ratings and IRs;

(3) skill tests for ATPL(A) issue;

(4) skill tests for MPL issue, provided that the examiner has complied with the requirements in FCL.925;

(5) assessments of competence for the issue, revalidation or renewal of a TRI or SFI certificates in the applicable aircraft category, provided that they have completed at least 3 years as a TRE and have undergone specific training for the assessment of competence in accordance with point FCL.1015 (b).

(b) TRE(H). The privileges of a TRE(H) are to conduct:

(1) skill tests and proficiency checks for the issue, revalidation or renewal of helicopter type ratings;

(2) proficiency checks for the revalidation or renewal of IRs, provided the TRE(H) holds a valid IR(H);

(3) skill tests for ATPL(H) issue;

(4) assessments of competence for the issue, revalidation or renewal of a TRI(H) or SFI(H) certificates, provided that they have completed at least 3 years as a TRE and have undergone specific training for the assessment of competence in accordance with point FCL.1015 (b).

FCL.1010.TRE TRE – Prerequisites

Regulation (EU) 2021/2227

(a) TRE(A) and TRE(PL). Applicants for a TRE certificate for aeroplanes and powered-lift aircraft shall:

(1) in the case of multi-pilot aeroplanes or powered-lift aircraft, have completed 1500 hours of flight time as a pilot of multi-pilot aeroplanes or powered-lift aircraft, as applicable, of which at least 500 hours shall be as PIC;

(2) in the case of single-pilot high performance complex aeroplanes, have completed 500 hours of flight time as a pilot of single-pilot aeroplanes, of which at least 200 hours shall be as PIC;

(3) hold a CPL or ATPL and a TRI certificate for the applicable type;

(4) for the initial issue of an TRE certificate, have completed at least 50 hours of flight instruction as a TRI, FI or SFI in the applicable type or an FSTD representing that type.

(b) TRE(H). Applicants for a TRE (H) certificate for helicopters shall:

(1) hold a TRI(H) certificate or, in the case of single-pilot single-engine helicopters, a valid FI(H) certificate, for the applicable type;

(2) for the initial issue of a TRE certificate, have completed 50 hours of flight instruction as a TRI, FI or SFI in the applicable type or an FSTD representing that type;

(3) in the case of multi-pilot helicopters, hold a CPL(H) or ATPL(H) and have completed 1500 hours of flight as a pilot on multi-pilot helicopters, of which at least 500 hours shall be as PIC;

(4) in the case of single-pilot multi-engine helicopters:

(i) have completed 1000 hours of flight as pilot on helicopters, of which at least 500 hours shall be as PIC;

(ii) hold a CPL(H) or ATPL(H) and, when applicable, a valid IR(H;

(5) in the case of single-pilot single-engine helicopters:

(i) have completed 750 hours of flight as a pilot on helicopters, of which at least 500 hours shall be as PIC;

(ii) hold a CPL(H) or ATPL(H).

(6) Before the privileges of a TRE(H) are extended from single-pilot operations to multi-pilot operations on the same type of helicopter, the holder shall have either:

(i) at least 100 hours in multi-pilot operations on this type; or

(ii) at least 350 hours in multi-pilot operations in any aircraft category.

(7) In the case of applicants for the first multi-pilot multi-engine TRE certificate, the 1500 hours of flight experience on multi-pilot helicopters required in (b)(3) may be considered to have been met if they have completed the 500 hours of flight time as PIC on a multi-pilot helicopter of the same type.

SECTION 4 – SPECIFIC REQUIREMENTS FOR CLASS RATING EXAMINER – CRE

FCL.1005.CRE CRE – Privileges

Regulation (EU) 2020/359

The privileges of a CRE are to conduct, for single-pilot aeroplanes, except for single-pilot high performance complex aeroplanes:

(a) skill tests for the issue of class and type ratings;

(b) proficiency checks for:

(1) revalidation or renewal of class and type ratings;

(2) revalidation of IRs, provided that they have completed at least 1500 hours as pilots of aeroplanes and have competed at least 450 hours of flight time under IFR;

(3) renewal of IRs, provided that they comply with the requirements laid down in point FCL.1010.IRE(a); and (4) revalidation and renewal of EIRs, provided that they have completed at least 1 500 hours as a pilot on aeroplanes and comply with the requirements laid down in point FCL.1010.IRE(a)(2).

(4) revalidation and renewal of BIRs, provided that the CRE has completed:

(i) 1 500 hours of flight time as a pilot of aeroplanes; and

(ii) 450 hours of flight time under IFR; and

(c) skill tests for the extension of LAPL(A) privileges to another class or variant of aeroplane.

FCL.1010.CRE CRE – Prerequisites

Regulation (EU) 2019/1747

Applicants for a CRE certificate shall:

(a) hold a CPL(A), MPL(A) or ATPL(A) with single-pilot privileges or have held it and hold a PPL(A);

(b) hold a CRI or FI certificate with instructional privileges for the applicable class or type;

(c) have completed 500 hours of flight time as a pilot on aeroplanes.

SECTION 5 – SPECIFIC REQUIREMENTS FOR INSTRUMENT RATING EXAMINER – IRE

FCL.1005.IRE IRE – Privileges

Regulation (EU) 2020/359

The privileges of holders of an instrument rating examiner (IRE) certificate are to conduct skill tests for the issue and proficiency checks for the revalidation or renewal of BIRs and IRs.

FCL.1010.IRE IRE – Prerequisites

Regulation (EU) 2019/1747

(a) IRE(A)

Applicants for an IRE certificate for aeroplanes shall hold an IRI(A) or an FI(A) certificate with the privilege to instruct for the IR(A) and shall have completed:

(1) 2000 hours of flight time as pilots of aeroplanes; and

(2) 450 hours of flight time under IFR, of which 250 hours shall be as an instructor.

(b) IRE(H)

Applicants for an IRE certificate for helicopters shall hold an IRI(H) or an FI(H) certificate with the privilege to instruct for the IR(H) and shall have completed:

(1) 2 000 hours of flight time as a pilot on helicopters; and

(2) 300 hours of instrument flight time on helicopters, of which 200 hours shall be as an instructor.

(c) IRE(As)

Applicants for an IRE certificate for airships shall hold an IRI(As) or an FI(As) certificate with the privilege to instruct for the IR(As) and shall have completed:

(1) 500 hours of flight time as a pilot on airships; and

(2) 100 hours of instrument flight time on airships, of which 50 hours shall be as an instructor.

SECTION 6 – SPECIFIC REQUIREMENTS FOR SYNTHETIC FLIGHT EXAMINER – SFE

FCL.1005.SFE SFE – Privileges and conditions

Regulation (EU) 2019/1747

(a) SFE for aeroplanes (SFE(A)) and SFE for powered-lift aircraft (SFE(PL))

The privileges of SFEs for aeroplanes or powered-lift aircraft are to conduct in an FFS, or for the assessments in point (5) on the applicable FSTD:

(1) skill tests and proficiency checks for the issue, revalidation or renewal of type ratings for aeroplanes or powered-lift aircraft, as applicable;

(2) proficiency checks for the revalidation or renewal of IRs if combined with the revalidation or renewal of a type rating, provided that they have passed a proficiency check for the aircraft type including the instrument rating within the last year;

(3) skill tests for ATPL(A) issue;

(4) skill tests for MPL issue, provided that they have complied with the requirements laid down in point FCL.925; and

(5) assessments of competence for the issue, revalidation or renewal of an SFI certificate in the relevant aircraft category, provided that they have completed at least 3 years as an SFE(A) and have undergone specific training for the assessment of competence in accordance with point FCL.1015(b).

(b) SFE for helicopters (SFE(H))

The privileges of an SFEs(H) are to conduct in an FFS or for the assessments in point (4) on the applicable FSTD:

(1) skill tests and proficiency checks for the issue, revalidation and renewal of type ratings;

(2) proficiency checks for the revalidation and renewal of IRs if those checks are combined with the revalidation or renewal of a type rating, provided that the SFEs have passed a proficiency check for the aircraft type including the instrument rating within the last year preceding the proficiency check;

(3) skill tests for ATPL(H) issue; and

(4) assessments of competence for the issue, revalidation or renewal of an SFI(H) certificate, provided that they have completed at least 3 years as an SFE(H) and have undergone specific training for the assessment of competence in accordance with point FCL.1015(b).

FCL.1010.SFE SFE – Prerequisites

Regulation (EU) 2021/2227

(a) SFE(A)

Applicants for an SFE(A) certificate shall comply with all of the following conditions:

(1) in the case of multi-pilot aeroplanes:

(i) hold or have held an ATPL(A) and a type rating;

(ii) hold an SFI(A) certificate for the applicable type of aeroplane; and

(iii) have at least 1 500 hours of flight time as pilots of multi-pilot aeroplanes;

(2) in the case of single-pilot high-performance complex aeroplanes:

(i) hold or have held a CPL(A) or an ATPL(A) and a type rating;

(ii) hold an SFI(A) certificate for the applicable class or type of aeroplane; and

(iii) have at least 500 hours of flight time as pilots of single-pilot aeroplanes;

(3) for the initial issue of an SFE certificate, have completed at least 50 hours of synthetic flight instruction as a TRI(A) or an SFI(A) on the applicable type.

(b) SFE(H)

Applicants for an SFE(H) certificate shall comply with all of the following conditions:

(1) hold or have held an ATPL(H), and a type rating for the applicable type of helicopter;

(2) hold an SFI(H) certificate for the applicable type of helicopter;

(3) in the case of multi-pilot helicopters, have at least 1 000 hours of flight time as pilots of multi-pilot helicopters;

(4) in the case of single-pilot helicopters in multi-pilot operations, have completed at least 350 hours in multi-pilot operations in any aircraft category;

(5) for the initial issue of an SFE certificate, have completed at least 50 hours of synthetic flight instruction as a TRI(H) or an SFI(H) on the applicable type.

SECTION 7 – SPECIFIC REQUIREMENTS FOR THE FLIGHT INSTRUCTOR EXAMINER – FIE

FCL.1005.FIE FIE – Privileges and conditions

Regulation (EU) 2020/359

(a) FIE(A). The privileges of an FIE on aeroplanes are to conduct assessments of competence for the issue, revalidation or renewal of certificates for FI(A), CRI(A), IRI(A) and TRI(A) on single-pilot aeroplanes, provided that the relevant instructor certificate is held.

(b) FIE(H). The privileges of an FIE on helicopters are to conduct assessments of competence for the issue, revalidation or renewal of certificates for FI(H), IRI(H) and TRI(H) on single-pilot helicopters, provided that the relevant instructor certificate is held.

(c) FIE(As). The privileges of an FIE on airships are to conduct assessments of competence for the issue, revalidation or renewal of instructor certificates of airships, provided that the relevant instructor certificate is held.

FCL.1010.FIE FIE – Prerequisites

Regulation (EU) 2020/359

(a) FIE(A). Applicants for an FIE certificate for aeroplanes shall:

in case of applicants wishing to conduct assessments of competence:

(1) hold the relevant instructor certificate, as applicable;

(2) have completed 2000 hours of flight time as a pilot on aeroplanes or TMGs; and

(3) have at least 100 hours of flight time instructing applicants for an instructor certificate.

(b) FIE(H). Applicants for an FIE certificate for helicopters shall:

(1) hold the relevant instructor certificate, as applicable;

(2) have completed 2000 hours of flight time as pilot on helicopters;

(3) have at least 100 hours of flight time instructing applicants for an instructor certificate.

(c) FIE(As). Applicants for an FIE certificate for airships shall:

(1) have completed 500 hours of flight time as a pilot on airships;

(2) have at least 20 hours of flight time instructing applicants for an FI(AS) certificate;

(3) hold the relevant instructor certificate.

APPENDICES TO ANNEX I

Appendix 1 – Crediting of theoretical knowledge

Regulation (EU) 2024/2076

A. CREDITING OF THEORETICAL KNOWLEDGE IN THE SAME OR ANOTHER CATEGORY OF AIRCRAFT — BRIDGE INSTRUCTION AND EXAMINATION REQUIREMENTS

1. **LAPL and PPL**

1.1. For the issue of an LAPL, the holder of an LAPL in another category of aircraft shall be fully credited towards requirements of theoretical knowledge on the common subjects established in point FCL.120(a).

1.2. For the issue of an LAPL or a PPL, holders of a PPL, CPL or ATPL in another category of aircraft shall be credited towards requirements of theoretical knowledge on the common subjects established in point FCL.215(a). This credit shall also apply to applicants for an LAPL or a PPL who hold a BPL issued in accordance with Annex III (Part-BFCL) to Regulation (EU) 2018/395 or an SPL issued in accordance with Annex III (Part-SFCL) to Implementing Regulation (EU) 2018/1976, except that the subject 'navigation' shall not be credited.

1.3. For the issue of a PPL, the holder of an LAPL in the same category of aircraft shall be fully credited towards the requirements of theoretical knowledge instruction and examination. That credit shall also apply to applicants for a PPL who have already successfully completed the theoretical knowledge examination for the LAPL in the same aircraft category, as long as it is within the validity period specified in point FCL.025(c).

1.4. By way of derogation from point 1.2, for the issue of an LAPL(A), the holder of an SPL issued in accordance with Annex III (Part-SFCL) to Implementing Regulation (EU) 2018/1976 with privileges to fly TMGs shall demonstrate an adequate level of theoretical knowledge for the SEP aeroplane-land class in accordance with point FCL.135.A(a)(2).

2. **CPL**

2.1. Applicants for the issue of a CPL holding a CPL in another category of aircraft shall have received theoretical knowledge bridge instruction at an ATO on an approved course according to the differences identified between the CPL syllabi for different aircraft categories.

2.2. Applicants shall pass theoretical knowledge examinations as set out in this Annex (Part-FCL) for the following subjects in the appropriate aircraft category:

021 — Aircraft general knowledge: airframe and systems, electrics, power plant and emergency equipment;

022 — Aircraft general knowledge: instrumentation;

032/034 — Performance aeroplanes or helicopters, as applicable;

070 — Operational procedures;

081/082 — Principles of flight for aeroplanes or helicopters, as applicable.

2.3. Applicants for the issue of a CPL having passed the relevant theoretical knowledge examinations for an IR in the same category of aircraft are credited towards the theoretical knowledge requirements in human performance and meteorology unless they have completed the IR training course in accordance with Appendix 6, Section Aa, to this Annex (Part-FCL).

2.4. Applicants for a CPL that have passed the relevant theoretical knowledge examinations for an IR in the same category of aircraft are credited towards the theoretical knowledge requirements in the communications subject.

3. **ATPL**

3.1. Applicants for the issue of an ATPL holding an ATPL in another category of aircraft shall have received theoretical knowledge bridge instruction at an ATO on an approved course according to the differences identified between the ATPL syllabi for different aircraft categories.

3.2. Applicants shall pass theoretical knowledge examinations as defined in this Annex (Part-FCL) for the following subjects in the appropriate aircraft category:

021 — Aircraft general knowledge: airframe and systems, electrics, power plant and emergency equipment;

022 — Aircraft general knowledge: instrumentation;

032/034 — Performance aeroplanes or helicopters, as applicable;

070 — Operational procedures;

081/082 — Principles of flight for aeroplanes or helicopters, as applicable.

3.3. Applicants for the issue of an ATPL(A) having passed the relevant theoretical examination for a CPL(A) are credited towards the theoretical knowledge requirements in the subject ‘communications’.

3.4. Applicants for the issue of an ATPL(H) having passed the relevant theoretical examinations for a CPL(H) are credited towards the theoretical knowledge requirements in the following subjects:

— air law;

— principles of flight (helicopter); and

— communications.

3.5. Applicants for the issue of an ATPL(A) having passed the relevant theoretical examination for an IR(A) are credited towards the theoretical knowledge requirements in the subject ‘communications’.

3.6. Applicants for the issue of an ATPL(H) with an IR(H) having passed the relevant theoretical examinations for a CPL(H) are credited towards the theoretical knowledge requirements in the following subjects:

— principles of flight (helicopter); and

— communications.

4. **IR**

4.1. Applicants for an IR, or for a BIR, who have passed the relevant theoretical examinations for a CPL in the same aircraft category, shall be credited towards the theoretical knowledge requirements in the following subjects:

— Human Performance,

— Meteorology,

— Communication.

4.2. Applicants for the issue of an IR(H) having passed the relevant theoretical examinations for an ATPL(H) VFR are required to pass the following examination subjects:

— air law;

— flight planning and flight monitoring; and

— radio navigation.

Appendix 2 – Language Proficiency Rating Scale – Expert, extended and operational level

Regulation (EU) No 1178/2011

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert (Level 6)	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.
Extended (Level 5)	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational (Level 4)	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
		unexpected circumstances, but rarely interfere with meaning.	lacking vocabulary particularly in unusual or unexpected circumstances.	not prevent effective communication. Can make limited use of discourse markers and connectors. Fillers are not distracting.	When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	adequately with apparent misunderstandings by checking, confirming, or clarifying.

Note: The initial text of Appendix 2 has been transferred to AMC, see also the Explanatory Note.

Appendix 3 – Training courses for the issue of a CPL and an ATPL

Regulation (EU) 2021/2227

1. This appendix describes the requirements for the different types of training courses for the issue of a CPL and an ATPL, with and without an IR.

2. An applicant wishing to transfer to another ATO during a training course shall apply to the competent authority for a formal assessment of the further hours of training required.

A. ATP integrated course – Aeroplanes

GENERAL

1. The aim of the ATP(A) integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine aeroplanes in commercial air transport and to obtain the CPL(A)/IR.

2. An applicant wishing to undertake an ATP(A) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(A) or PPL(H) entrant, 50% of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

4. The course shall comprise:

   (a) theoretical knowledge instruction to the ATPL(A) knowledge level;

   (b) visual and instrument flying training;

   (c) training in MCC for the operation of multi-pilot aeroplanes; and

   (d) UPRT in accordance with FCL.745.A unless applicants have already completed this training course before starting the ATP integrated course.';

5. Applicants failing or being unable to complete the entire ATP(A) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. An ATP(A) theoretical knowledge course shall comprise at least 750 hours of instruction.

7.1. The MCC course shall comprise at least 25 hours of theoretical knowledge instruction and exercises.

7.2 The theoretical knowledge instruction in UPRT shall be conducted in accordance with FCL.745.A.

THEORETICAL KNOWLEDGE EXAMINATION

8. An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL(A).

FLYING TRAINING

9. The flying training, not including type rating training, shall comprise a total of at least 195 hours, including all progress tests, of which up to 55 hours for the entire course may be instrument ground time. Within the total of 195 hours, applicants shall complete at least:

   (a) 95 hours of dual instruction, of which up to 55 hours may be instrument ground time;

(b) 70 hours as PIC, of which up to 55 hours may be SPIC. The instrument flight time as SPIC shall only be counted as PIC flight time up to a maximum of 20 hours;

(c) 50 hours of cross-country flight as PIC, including one VFR cross-country flight of at least 540 km (300 NM), in the course of which full-stop landings at two aerodromes different from the aerodrome of departure shall be made; and

(d) 5 hours of flight time at night, comprising 3 hours of dual instruction, which shall include at least:

(1) 1 hour of cross-country navigation;

(2) five solo take-offs; and

(3) five solo full-stop landings;

(e) UPRT flight instruction in accordance with FCL.745.A;

(f) 115 hours of instrument time comprising, at least:

(1) 20 hours as SPIC;

(2) 15 hours of MCC, for which an FFS or an FNPT II may be used;

(3) 50 hours of instrument flight instruction, of which up to:

(i) 25 hours may be instrument ground time in an FNPT I; or

(ii) 40 hours may be instrument ground time in an FNPT II, an FTD 2 or an FFS, of which up to 10 hours may be conducted in an FNPT I.

Applicants holding a BIR or a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited.

(g) 5 hours in an aeroplane which:

(1) is certificated for the carriage of at least 4 persons; and

(2) has a variable pitch propeller and retractable landing gear.

SKILL TEST

10. Upon completion of the related flying training, the applicant shall take the CPL(A) skill test on either a single-engine or a multi-engine aeroplane and the IR skill test on a multi-engine aeroplane.

B. ATP modular course – Aeroplanes

1. Applicants for an ATPL(A) who complete their theoretical knowledge instruction at a modular course shall:

(a) hold at least a PPL(A) issued in accordance with Annex 1 to the Chicago Convention; and complete at least the following hours of theoretical knowledge instruction:

(1) for applicants holding a PPL(A): 650 hours;

(2) for applicants holding a CPL(A): 400 hours;

(3) for applicants holding an IR(A): 500 hours;

(4) for applicants holding a CPL(A) and an IR(A): 250 hours.

The theoretical knowledge instruction shall be completed before the skill test for the ATPL(A) is taken.

C. CPL/IR integrated course – Aeroplanes

GENERAL

1. The aim of the CPL(A) and IR(A) integrated course is to train pilots to the level of proficiency necessary to operate single-pilot single-engine or multi-engine aeroplanes in commercial air transport and to obtain the CPL(A)/IR.

2. An applicant wishing to undertake a CPL(A)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(A) or PPL(H) entrant, 50% of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

4. The course shall comprise:

   (a) theoretical knowledge instruction to CPL(A) and IR knowledge level; and

   (b) visual and instrument flying training.

5. An applicant failing or unable to complete the entire CPL/IR(A) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. A CPL(A)/IR theoretical knowledge course shall comprise at least 500 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A) and an IR.

FLYING TRAINING

8. The flying training, not including type rating training, shall comprise a total of at least 180 hours, to include all progress tests, of which up to 40 hours for the entire course may be instrument ground time. Within the total of 180 hours, applicants shall complete at least:

   (a) 80 hours of dual instruction, of which up to 40 hours may be instrument ground time;

   (b) 70 hours as PIC, of which up to 55 hours may be SPIC. The instrument flight time as SPIC shall only be counted as PIC flight time up to a maximum of 20 hours;

   (c) 50 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

   (d) 5 hours flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings; and

   (e) 100 hours of instrument time comprising, at least:

      (1) 20 hours as SPIC; and

      (2) 50 hours of instrument flight instruction, of which up to:

         (i) 25 hours may be instrument ground time in an FNPT I, or

(ii) 40 hours may be instrument ground time in an FNPT II, FTD 2 or FFS, of which up to 10 hours may be conducted in an FNPT I.

Applicants holding a BIR or a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited; and

(f) 5 hours to be carried out in an aeroplane certificated for the carriage of at least 4 persons that has a variable pitch propeller and retractable landing gear.

SKILL TESTS

10. Upon completion of the related flying training the applicant shall take the CPL(A) skill test and the IR skill test on either a multi-engine aeroplane or a single-engine aeroplane.

D. CPL integrated course – Aeroplanes

GENERAL

1. The aim of the CPL(A) integrated course is to train pilots to the level of proficiency necessary for the issue of a CPL(A).

2. An applicant wishing to undertake a CPL(A) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(A) or PPL(H) entrant, 50% of the hours flown prior to the course shall be credited, up to a maximum of 40 hours flying experience, or 45 hours if an aeroplane night rating has been obtained, of which up to 20 hours may count towards the requirement for dual instruction flight time.

4. The course shall comprise:

   (a) theoretical knowledge instruction to CPL(A) knowledge level; and

   (b) visual and instrument flying training.

5. An applicant failing or unable to complete the entire CPL(A) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. A CPL(A) theoretical knowledge course shall comprise at least 350 hours of instruction.

THEORETICAL KNOWLEGDE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A).

FLYING TRAINING

8. The flying training, not including type rating training, shall comprise a total of at least 150 hours, to include all progress tests, of which up to 5 hours for the entire course may be instrument ground time. Within the total of 150 hours, applicants shall complete at least:

   (a) 80 hours of dual instruction, of which up to 5 hours may be instrument ground time;

   (b) 70 hours as PIC, of which up to 55 hours may be as SPIC;

   (c) 20 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

(d) 5 hours flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings;

(e) 10 hours of instrument flight instruction, of which up to 5 hours may be instrument ground time in an FNPT I, FTD 2, FNPT II or FFS. Applicants holding a BIR or a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

(f) 5 hours to be carried out in an aeroplane certificated for the carriage of at least four persons that has a variable pitch propeller and retractable landing gear.

SKILL TEST

9. Upon completion of the flying training the applicant shall take the CPL(A) skill test on a single-engine or a multi-engine aeroplane.

E. CPL modular course – Aeroplanes

GENERAL

1. The aim of the CPL(A) modular course is to train PPL(A) holders to the level of proficiency necessary for the issue of a CPL(A).

2. Before commencing a CPL(A) modular course an applicant shall be the holder of a PPL(A) issued in accordance with Annex 1 to the Chicago Convention.

3. Before commencing the flight training the applicant shall:

(a) have completed 150 hours flight time; including 50 hours as PIC on aeroplanes of which 10 hours shall be cross-country.

Except for the requirement of 50 hours as PIC in aeroplanes, hours as PIC in other categories of aircraft may account for the 150 hours of aeroplane flight time in any of the following cases:

(1) 20 hours in helicopters, if applicants hold a PPL(H);

(2) 50 hours in helicopters, if applicants hold a CPL(H);

(3) 10 hours in TMGs or sailplanes;

(4) 20 hours in airships, if applicants hold a PPL(As);

(5) 50 hours in airships, if applicants hold a CPL(As).

(b) have complied with the prerequisites for the issue of a class or type rating for multi-engine aeroplanes in accordance with Subpart H, if a multi-engine aeroplane is to be used on the skill test.

4. An applicant wishing to undertake a modular CPL(A) course shall complete all the flight instructional stages in one continuous course of training as arranged by an ATO. The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only.

5. The course shall comprise:

(a) theoretical knowledge instruction to CPL(A) knowledge level; and

(b) visual and instrument flying training.

THEORETICAL KNOWLEDGE

6. An approved CPL(A) theoretical knowledge course shall comprise at least 250 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(A).

FLYING TRAINING

8. Applicants without an IR shall be given at least 25 hours dual flight instruction, including 10 hours of instrument instruction of which up to 5 hours may be instrument ground time in a BITD, an FNPT I or II, an FTD 2 or an FFS.

9. Applicants holding a valid IR(A) shall be credited towards the dual instrument instruction time. Applicants holding a valid IR(H) shall be credited up to 5 hours of the dual instrument instruction time, in which case at least 5 hours dual instrument instruction time shall be given in an aeroplane. Applicants holding a BIR or a Course Completion Certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time.

10. (a) Applicants with a valid IR shall be given at least 15 hours dual visual flight instruction.

    (b) Applicants without a night rating aeroplane shall be given additionally at least 5 hours night flight instruction, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings.

11. At least 5 hours of the flight instruction shall be carried out in an aeroplane certificated for the carriage of at least 4 persons and have a variable pitch propeller and retractable landing gear.

EXPERIENCE

12. The applicant for a CPL(A) shall have completed at least 200 hours flight time, including at least:

    (a) 100 hours as PIC, of which 20 hours of cross-country flight as PIC, which shall include a VFR cross-country flight of at least 540 km (300 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made;

    (b) 5 hours of flight time shall be completed at night, comprising 3 hours of dual instruction, which shall include at least 1 hour of cross-country navigation and 5 solo take-offs and 5 solo full stop landings; and

    (c) 10 hours of instrument flight instruction, of which up to 5 hours may be instrument ground time in an FNPT I, or FNPT II or FFS. Applicants holding a BIR or a course completion certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours towards the required instrument instruction time. Hours done in a BITD shall not be credited;

    (d) 6 hours of flight time shall be completed in a multi-engine aeroplane, if a multi-engine aeroplane is used for the skill test.

    (e) Hours as PIC of other categories of aircraft may count towards the 200 hours flight time, in the following cases:

        (i) 30 hours in helicopter, if the applicant holds a PPL(H); or

        (ii) 100 hours in helicopters, if the applicant holds a CPL(H); or

        (iii) 30 hours in TMGs or sailplanes; or

(iv) 30 hours in airships, if the applicant holds a PPL(As); or

(v) 60 hours in airships, if the applicant holds a CPL(As).

SKILL TEST

13. Upon completion of the flying training and relevant experience requirements the applicant shall take the CPL(A) skill test on either a single-engine or a multi-engine aeroplane.

F. ATP/IR integrated course – Helicopters

GENERAL

1. The aim of the ATP(H)/IR integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine helicopters in commercial air transport and to obtain the CPL(H)/IR.

2. An applicant wishing to undertake an ATP(H)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(H) entrant, 50% of the relevant experience shall be credited, up to a maximum of:

(a) 40 hours, of which up to 20 hours may be dual instruction; or

(b) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

4. The course shall comprise:

(a) theoretical knowledge instruction to the ATPL(H) and IR knowledge level;

(b) visual and instrument flying training; and

(c) training in MCC for the operation of multi-pilot helicopters.

5. An applicant failing or unable to complete the entire ATP(H) /IR course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. An ATP(H)/IR theoretical knowledge course shall comprise at least 750 hours of instruction.

7. The MCC course shall comprise at least 25 hours of theoretical knowledge instruction exercises.

THEORETICAL KNOWLEDGE EXAMINATION

8. An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL(H) and an IR.

FLYING TRAINING

9. The flying training shall comprise a total of at least 195 hours, to include all progress tests. Within the total of 195 hours, applicants shall complete at least:

(a) 140 hours of dual instruction, of which:

(1) 75 hours visual instruction may include:

(i) 30 hours in a helicopter FFS, level C/D, or

(ii) 25 hours in a FTD 2,3, or

(iii) 20 hours in a helicopter FNPT II/III, or

(iv) 20 hours in an aeroplane or TMG;

(2) 50 hours instrument instruction may include:

(i) up to 20 hours in a helicopter FFS or FTD 2,3 or FNPT II/III, or

(ii) 10 hours in at least a helicopter FNPT 1 or an aeroplane;

(3) 15 hours MCC, for which a helicopter FFS or helicopter FTD 2,3(MCC) or FNPT II/III(MCC) may be used.

If the helicopter used for the flying training is of a different type from the helicopter FFS used for the visual training, the maximum credit shall be limited to that allocated for the helicopter FNPT II/III.

(b) 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made.

(c) 50 hours of cross-country flight, including at least 10 hours of cross-country flight as SPIC including a VFR cross-country flight of at least 185 km (100 NM) in the course of which landings at two different aerodromes from the aerodrome of departure shall be made;

(d) 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

(e) 50 hours of dual instrument time comprising:

(i) 10 hours basic instrument instruction time, and

(ii) 40 hours IR Training, which shall include at least 10 hours in a multi-engine IFR-certificated helicopter.

SKILL TESTS

10. Upon completion of the related flying training, the applicant shall take the CPL(H) skill test on a multi-engine helicopter and the IR skill test on an IFR certificated multi-engine helicopter and shall comply with the requirements for MCC training.

G. ATP integrated course – Helicopters

GENERAL

1. The aim of the ATP(H) integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot on multi-pilot multi-engine helicopters limited to VFR privileges in commercial air transport and to obtain the CPL(H).

2. An applicant wishing to undertake an ATP(H) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of a PPL(H) entrant, 50% of the relevant experience shall be credited, up to a maximum of:

(a) 40 hours, of which up to 20 hours may be dual instruction; or

(b) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

4. The course shall comprise:

   (a) theoretical knowledge instruction to the ATPL(H) knowledge level;

   (b) visual and basic instrument flying training; and

   (c) training in MCC for the operation of multi-pilot helicopters.

5. An applicant failing or unable to complete the entire ATP(H) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. An ATP(H) theoretical knowledge course shall comprise at least 650 hours of instruction.

7. The MCC course shall comprise at least 20 hours of theoretical knowledge instruction exercises.

THEORETICAL KNOWLEDGE EXAMINATION

8. An applicant shall demonstrate the level of knowledge appropriate to the privileges granted to the holder of an ATPL (H).

FLYING TRAINING

9. The flying training shall comprise a total of at least 150 hours, to include all progress tests. Within the total of 150 hours, applicants shall complete at least:

   (a) 95 hours of dual instruction, of which:

      (i) 75 hours visual instruction may include:

         (1) 30 hours in a helicopter FFS level C/D, or

         (2) 25 hours in a helicopter FTD 2,3, or

         (3) 20 hours in a helicopter FNPT II/III, or

         (4) 20 hours in an aeroplane or TMG;

      (ii) 10 hours basic instrument instruction may include 5 hours in at least a helicopter FNPT I or an aeroplane;

      (iii) 10 hours MCC, for which a helicopter: helicopter FFS or FTD 2,3(MCC) or FNPT II/III(MCC) may be used.

      If the helicopter used for the flying training is of a different type from the helicopter FFS used for the visual training, the maximum credit shall be limited to that allocated for the helicopter FNPT II/III.

   (b) 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

   (c) 50 hours of cross-country flight, including at least 10 hours of cross-country flight as SPIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which landings at two different aerodromes from the aerodrome of departure shall be made;

   (d) 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

SKILL TESTS

10. Upon completion of the related flying training the applicant shall take the CPL(H) skill test on a multi-engine helicopter and comply with MCC requirements.

H. ATP modular course – Helicopters

1. Applicants for an ATPL(H) who complete their theoretical knowledge instruction at a modular course shall hold at least a PPL(H) and complete at least the following hours of instruction within a period of 18 months:

   (a) for applicants holding a PPL(H) issued in accordance with Annex 1 to the Chicago Convention: 550 hours;

   (b) for applicants holding a CPL(H): 300 hours.

2. Applicants for an ATPL(H)/IR who complete their theoretical knowledge instruction at a modular course shall hold at least a PPL(H) and complete at least the following hours of instruction:

   (a) for applicants holding a PPL(H): 650 hours;

   (b) for applicants holding a CPL(H): 400 hours;

   (c) for applicants holding an IR(H): 500 hours;

   (d) for applicants holding a CPL(H) and an IR(H): 250 hours.

I. CPL/IR integrated course – Helicopters

GENERAL

1. The aim of the CPL(H)/IR integrated course is to train pilots to the level of proficiency necessary to operate single-pilot multi-engine helicopters and to obtain the CPL(H)/IR multi-engine helicopter.

2. An applicant wishing to undertake a CPL(H)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(H), 50% of the relevant experience shall be credited, up to a maximum of:

   (a) 40 hours, of which up to 20 hours may be dual instruction; or

   (b) 50 hours, of which up to 25 hours may be dual instruction, if a helicopter night rating has been obtained.

4. The course shall comprise:

   (a) theoretical knowledge instruction to CPL(H) and IR knowledge level, and the initial multi-engine helicopter type rating; and

   (b) visual and instrument flying training.

5. An applicant failing or unable to complete the entire CPL(H)/IR course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. A CPL(H)/IR theoretical knowledge course shall comprise at least 500 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H) and an IR.

FLYING TRAINING

8. The flying training shall comprise a total of at least 180 hours including all progress tests. Within the 180 hours, applicants shall complete at least:

(a) 125 hours of dual instruction, of which:

(i) 75 hours visual instruction, which may include:

(1) 30 hours in a helicopter FFS level C/D, or

(2) 25 hours in a helicopter FTD 2,3, or

(3) 20 hours in a helicopter FNPT II/III, or

(4) 20 hours in an aeroplane or TMG;

(ii) 50 hours instrument instruction which may include:

(1) up to 20 hours in a helicopter FFS or FTD 2,3, or FNPT II,III, or

(2) 10 hours in at least a helicopter FNPT I or an aeroplane.

If the helicopter used for the flying training is of a different type from the FFS used for the visual training, the maximum credit shall be limited to that allocated for the FNPT II/III.

(b) 55 hours as PIC, of which 40 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

(c) 10 hours dual cross-country flying;

(d) 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which full stop landings at two different aerodromes from the aerodrome of departure shall be made;

(e) 5 hours of flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

(f) 50 hours of dual instrument time comprising:

(i) 10 hours basic instrument instruction time; and

(ii) 40 hours IR Training, which shall include at least 10 hours in a multi-engine IFR-certificated helicopter.

SKILL TEST

9. Upon completion of the related flying training, the applicant shall take the CPL(H) skill test on either a multi-engine or a single-engine helicopter and the IR skill test on an IFR-certificated helicopter.

J. CPL integrated course – Helicopters

GENERAL

1. The aim of the CPL(H) integrated course is to train pilots to the level of proficiency necessary for the issue of a CPL(H).

2. An applicant wishing to undertake a CPL(H) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(H), 50% of the relevant experience shall be credited, up to a maximum of:

   (a) 40 hours, of which up to 20 hours may be dual instruction; or

   (b) 50 hours, of which up to 25 hours may be dual instruction if a helicopter night rating has been obtained.

4. The course shall comprise:

   (a) theoretical knowledge instruction to CPL(H) knowledge level; and

   (b) visual and instrument flying training.

5. An applicant failing or unable to complete the entire CPL(H) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. An approved CPL(H) theoretical knowledge course shall comprise at least 350 hours of instruction or 200 hours if the applicant is the holder of a PPL.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H).

FLYING TRAINING

8. The flying training shall comprise a total of at least 135 hours, to include all progress tests, of which up to 5 hours may be instrument ground time. Within the 135 hours total, applicants shall complete at least:

   (a) 85 hours of dual instruction, of which:

      (i) up to 75 hours may be visual instruction, and may include:

         (1) 30 hours in a helicopter FFS level C/D, or

         (2) 25 hours in a helicopter FTD 2,3, or

         (3) 20 hours in a helicopter FNPT II/III, or

         (4) 20 hours in an aeroplane or TMG.

      (ii) up to 10 hours may be instrument instruction, and may include 5 hours in at least a helicopter FNPT I or an aeroplane.

      If the helicopter used for the flying training is of a different type from the FFS used for the visual training, the maximum credit shall be limited to that allocated for the FNPT II/III.

   (b) 50 hours as PIC, of which 35 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

   (c) 10 hours dual cross-country flying;

   (d) 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM) in the course of which full stop landings at two different aerodromes from the aerodrome of departure shall be made;

(e) 5 hours flight time in helicopters shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing;

(f) 10 hours of instrument dual instruction time, including at least 5 hours in a helicopter.

SKILL TEST

9. Upon completion of the related flying training, the applicant shall take the CPL(H) skill test.

K. CPL modular course – Helicopters

GENERAL

1. The aim of the CPL(H) modular course is to train PPL(H) holders to the level of proficiency necessary for the issue of a CPL(H).

2. Before commencing a CPL(H) modular course an applicant shall be the holder of a PPL(H) issued in accordance with Annex 1 to the Chicago Convention.

3. Before commencing the flight training the applicant shall:

(a) have completed 155 hours flight time, including 50 hours as PIC in helicopters of which 10 hours shall be cross- country.

Except for the requirement of 50 hours as PIC in helicopters, hours as PIC in other categories of aircraft may account for the 155 hours of helicopter flight time in any of the following cases:

(1) 20 hours in aeroplanes if applicants hold a PPL(A);

(2) 50 hours in aeroplanes if applicants hold a CPL(A);

(3) 10 hours in TMGs or sailplanes;

(4) 20 hours in airships if applicants hold a PPL(As);

(5) 50 hours in airships if applicants hold a CPL(As);

(b) have complied with FCL.725 and FCL.720.H if a multi-engine helicopter is to be used on the skill test.

4. An applicant wishing to undertake a modular CPL(H) course shall complete all the flight instructional stages in one continuous course of training as arranged by an ATO. The theoretical knowledge instruction may be given at an ATO that conducts theoretical knowledge instruction only.

5. The course shall comprise:

(a) theoretical knowledge instruction to CPL(H) knowledge level; and

(b) visual and instrument flying training.

THEORETICAL KNOWLEDGE

6. An approved CPL(H) theoretical knowledge course shall comprise at least 250 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(H).

FLYING TRAINING

8. Applicants without an IR shall be given at least 30 hours dual flight instruction, of which:

   (a) 20 hours visual instruction, which may include 5 hours in a helicopter FFS or FTD 2,3 or FNPT II,III; and

   (b) 10 hours instrument instruction, which may include 5 hours in at least a helicopter FTD 1 or FNPT I or aeroplane.

9. Applicants holding a valid IR(H) shall be fully credited towards the dual instrument instruction time. Applicants holding a valid IR(A) shall complete at least 5 hours of the dual instrument instruction time in a helicopter.

10. Applicants without a night rating helicopter shall be given additionally at least 5 hours night flight instruction comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

EXPERIENCE

11. The applicant for a CPL(H) shall have completed at least 185 hours flight time, including 50 hours as PIC, of which 10 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 185 km (100 NM), in the course of which full stop landings at two aerodromes different from the aerodrome of departure shall be made.

    Hours as pilot-in-command of other categories of aircraft may count towards the 185 hours flight time, in the following cases:

    (a) 20 hours in aeroplanes, if the applicant holds a PPL(A); or

    (b) 50 hours in aeroplanes, if the applicant holds a CPL(A); or

    (c) 10 hours in TMGs or sailplanes; or

    (d) 20 hours in airships, if the applicant holds a PPL(As); or

    (e) 50 hours in airships, if the applicant holds a CPL(As).

SKILL TEST

12. Upon completion of the related flying training and relevant experience, the applicant shall take the CPL(H) skill test.

L. CPL/IR integrated course – Airships

1. The aim of the CPL(As)/IR integrated course is to train pilots to the level of proficiency necessary to operate airships and to obtain the CPL(As)/IR.

2. An applicant wishing to undertake a CPL(As)/IR integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.

3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(As), PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(As), PPL(A) or PPL(H) shall be credited up to a maximum of:

   (a) 10 hours, of which up to 5 hours may be dual instruction; or

   (b) 15 hours, of which up to 7 hours may be dual instruction, if an airship night rating has been obtained.

4. The course shall comprise:

(a) theoretical knowledge instruction to CPL(As) and IR knowledge level, and the initial airship type rating; and

(b) visual and instrument flying training.

5. An applicant failing or unable to complete the entire CPL/IR(As) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. A CPL(As)/IR theoretical knowledge course shall comprise at least 500 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(As) and an IR.

FLYING TRAINING

8. The flying training shall comprise a total of at least 80 hours including all progress tests. Within the 80 hours, applicants shall complete at least:

(a) 60 hours of dual instruction, of which:

(i) 30 hours visual instruction, which may include:

(1) 12 hours in an airship FFS, or

(2) 10 hours in an airship FTD, or

(3) 8 hours in an airship FNPT II/III, or

(4) 8 hours in an aeroplane, helicopter or TMG;

(ii) 30 hours instrument instruction which may include:

(1) up to 12 hours in an airship FFS or FTD or FNPT II,III, or

(2) 6 hours in at least a airship FTD 1 or FNPT I or aeroplane.

If the airship used for the flying training is of a different type from the FFS used for the visual training, the maximum credit shall be limited to 8 hours.

(b) 20 hours as PIC, of which 5 hours may be as SPIC. At least 14 hours solo day and 1 hour solo night shall be made;

(c) 5 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 90 km (50 NM) in the course of which two full stop landings at the destination aerodrome shall be made;

(d) 5 hours flight time in airships shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include take-off and landing;

(e) 30 hours of dual instrument time comprising:

(i) 10 hours basic instrument instruction time; and

(ii) 20 hours IR Training, which shall include at least 10 hours in a multi-engine IFR-certificated airship.

SKILL TEST

9. Upon completion of the related flying training, the applicant shall take the CPL(As) skill test on either a multi-engine or a single-engine airship and the IR skill test on an IFR-certificated multi-engine airship.

M. CPL integrated course – Airships

GENERAL

1. The aim of the CPL(As) integrated course is to train pilots to the level of proficiency necessary for the issue of a CPL(AS).
2. An applicant wishing to undertake a CPL(As) integrated course shall complete all the instructional stages in one continuous course of training as arranged by an ATO.
3. An applicant may be admitted to training either as an ab-initio entrant, or as a holder of a PPL(As), PPL(A) or PPL(H) issued in accordance with Annex 1 to the Chicago Convention. In the case of an entrant holding a PPL(As), PPL(A) or PPL(H) shall be credited up to a maximum of:
   (a) 10 hours, of which up to 5 hours may be dual instruction; or
   (b) 15 hours, of which up to 7 hours may be dual instruction if a airship night rating has been obtained.
4. The course shall comprise:
   (a) theoretical knowledge instruction to CPL(As) knowledge level; and
   (b) visual and instrument flying training.
5. An applicant failing or unable to complete the entire CPL(As) course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

6. An approved CPL(As) theoretical knowledge course shall comprise at least 350 hours of instruction or 200 hours if the applicant is a PPL holder.

THEORETICAL KNOWLEDGE EXAMINATION

7. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(As).

FLYING TRAINING

8. The flying training shall comprise a total of at least 50 hours, to include all progress tests, of which up to 5 hours may be instrument ground time. Within the 50 hours total, applicants shall complete at least:
   (a) 30 hours of dual instruction, of which up to 5 hours may be instrument ground time;
   (b) 20 hours as PIC;
   (c) 5 hours dual cross-country flying;
   (d) 5 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 90 km (50 NM) in the course of which two full stop landings at the destination aerodrome shall be made;
   (e) 5 hours flight time in airships shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include take-off and landing;

(f) 10 hours of instrument dual instruction time, including at least 5 hours in an airship.

SKILL TEST

9. Upon completion of the related flying training, the applicant shall take the CPL(As) skill test.

N. CPL modular course – Airships

GENERAL

1. The aim of the CPL(As) modular course is to train PPL(As) holders to the level of proficiency necessary for the issue of a CPL(As).

2. Before commencing a CPL(As) modular course an applicant shall:

(a) hold a PPL(As) issued in accordance with Annex 1 to the Chicago Convention;

(b) have completed 200 hours flight time as a pilot on airships, including 100 hours as PIC, of which 50 hours shall be cross-country.

3. An applicant wishing to undertake a modular CPL(As) course shall complete all the flight instructional stages in one continuous course of training as arranged by an ATO. The theoretical knowledge instruction may be given at an ATO that conducts theoretical knowledge instruction only.

4. The course shall comprise:

(a) theoretical knowledge instruction to CPL(As) knowledge level; and

(b) visual and instrument flying training.

THEORETICAL KNOWLEDGE

5. An approved CPL(As) theoretical knowledge course shall comprise at least 250 hours of instruction.

THEORETICAL KNOWLEDGE EXAMINATION

6. An applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a CPL(As).

FLYING TRAINING

7. Applicants without an IR shall be given at least 20 hours dual flight instruction, of which:

— 10 hours visual instruction, which may include 5 hours in an airship FFS or FTD 2,3 or FNPT II,III; and

— 10 hours instrument instruction, which may include 5 hours in at least an airship FTD 1 or FNPT I or aeroplane.

8. Applicants holding a valid IR(As) shall be fully credited towards the dual instrument instruction time. Applicants holding a valid IR in another category of aircraft shall complete at least 5 hours of the dual instrument instruction time in an airship.

9. Applicants without a night rating airship shall be given additionally at least 5 hours night flight instruction comprising 3 hours of dual instruction including at least 1 hour of cross-country navigation and 5 solo night circuits. Each circuit shall include a take-off and a landing.

EXPERIENCE

10. The applicant for a CPL(As) shall have completed at least 250 hours flight time in airships, including 125 hours as PIC, of which 50 hours of cross-country flight as PIC, including a VFR cross-country flight of at least 90 km (50 NM), in the course of which a full stop landing at destination aerodrome.

    Hours as PIC of other categories of aircraft may count towards the 185 hours flight time, in the following cases;

    (a) 30 hours in aeroplanes or helicopters, if the applicant holds a PPL(A) or PPL(H) respectively; or

    (b) 60 hours in aeroplanes or helicopters, if the applicant holds a CPL(A) or CPL(H) respectively; or

    (c) 10 hours in TMGs or sailplanes; or

    (d) 10 hours in balloons.

SKILL TEST

11. Upon completion of the related flying training and relevant experience, the applicant shall take the CPL(As) skill test.

AMC1 to Appendix 3 Training courses for the issue of a CPL and an ATPL

ED Decision 2020/005/R

GENERAL

(a) When ensuring that the applicant complies with the prerequisites for the course, in accordance with ORA.ATO.145, the ATO should check that the applicant has enough knowledge of mathematics, physics and English to facilitate the understanding of the theoretical knowledge instruction content of the course.

(b) Whenever reference is made to a certain amount of hours of training, this means a full hour. Time not directly assigned to training (such as breaks, etc.) is not to be counted towards the total amount of time that is required.

(c) The UPRT elements and components specified in AMC2 to Appendix 3; AMC1 to Appendix 5 point (a) should be integrated into the flying training phases or modules.

(d) The flight instruction syllabus should take into account the principles of TEM.

A. ATP integrated course: aeroplanes

(a) The ATP integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for previous experience given to an applicant who already holds a PPL should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in a helicopter or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 750 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 750 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	35 hours
(2)	Aircraft general knowledge	100 hours
(3)	Flight performance and planning	120 hours
(4)	Human performance and limitations	35 hours
(5)	Meteorology	60 hours
(6)	Navigation	90 hours
(7)	Operational procedures	25 hours
(8)	Principles of flight	55 hours
(9)	Communications	20 hours

Other subdivisions of hours may be agreed upon between the competent authority and the ATO.

FLYING TRAINING

(d) The flying instruction is divided into six phases:

(1) Phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references;

(iv) normal take-offs and landings;

(v) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) simulated engine failure.

(2) Phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) takeoffs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180 ° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes;

(v) crosswind take-offs and landings;

(vi) abnormal and emergency procedures and manoeuvres, including simulated aeroplane equipment malfunctions;

(vii) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(viii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) Phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 5 hours of dual instruction and at least 40 hours as PIC.

The dual instruction and testing up to the VFR navigation progress test should comprise:

(i) repetition of exercises of phases 1 and 2;

(ii) VFR navigation progress test conducted by an FI not connected with the applicant's training;

(iii) dual night flight instruction.

(4) Phase 4:

Exercises up to the instrument rating skill test comprise:

(i) at least 55 hours instrument flight, which may contain up to 25 hours of instrument ground time in an FNPT I or up to 40 hours in an FNPT II or FFS which should be conducted by an FI or an authorised SFI;

(ii) 20 hours instrument time flown as SPIC;

(iii) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(iv) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedures;

(G) landings from instrument approaches, including circling;

(v) in-flight manoeuvres and specific flight characteristics and the basic UPRT exercises as specified in Sections A, B, C and D of Table 2 in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) operation of an ME aeroplane in the exercises of (iv), including operation of the aeroplane solely by reference to instruments with one engine simulated inoperative, and engine shut-down and restart (the latter training should be conducted at a safe altitude unless carried out in an FSTD);

(vii) after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC at night.

(5) Phase 5: Advanced UPRT in accordance with point FCL.745.A;

(6) Phase 6:

(i) instruction and testing in MCC comprising the relevant training requirements;

(ii) if a type rating for single-pilot aeroplanes in multi-pilot operations, or multi-pilot aeroplanes is not required on completion of this phase, the applicant should be issued with a certificate of course completion for MCC training.

B. ATP modular theoretical knowledge course: aeroplanes

(a) The aim of this course is to train pilots who have not received the theoretical knowledge instruction during an integrated course to the level of theoretical knowledge required for the ATPL.

(b) An approved course may contain in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (b)(9).

(c) The ATP modular course should be completed within 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

C. CPL/IR integrated course: aeroplanes

(a) The CPL/IR integrated course should last between 9 and 30 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for previous experience given to an applicant who already holds a PPL should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in a helicopter or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 500 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 500 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	25 hours
(2)	Aircraft general knowledge	75 hours
(3)	Flight performance and planning	80 hours
(4)	Human performance and limitations	20 hours
(5)	Meteorology	40 hours

(6)	Navigation	55 hours
(7)	Operational procedures	15 hours
(8)	Principles of flight	35 hours
(9)	Communications	15 hours

Other subdivisions of hours may be agreed upon between the competent authority and the ATO.

FLYING TRAINING

(d) The flying instruction is divided into four phases:

(1) Phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane, including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references;

(iv) normal take-offs and landings;

(v) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) simulated engine failure.

(2) Phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) take-offs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes;

(v) crosswind take-offs and landings;

(vi) abnormal and emergency operations and manoeuvres, including simulated aeroplane equipment malfunctions;

(vii) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(viii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) Phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 5 hours of instruction and at least 40 hours as PIC.

The dual instruction and testing up to the VFR navigation progress test and the skill test should contain the following:

(i) repetition of exercises of phases 1 and 2;

(ii) VFR navigation progress test conducted by an FI not connected with the applicant's training;

(iii) dual night flight instruction.

(4) Phase 4:

Exercises up to the instrument rating skill test comprise:

(i) at least 55 hours instrument time, which may contain up to 25 hours of instrument ground time in an FNPT I or up to 40 hours in an FNPT II or FFS which should be conducted by an FI or SFI;

(ii) 20 hours instrument time flown as SPIC;

(iii) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(iv) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedures;

(G) landings from instrument approaches, including circling.

(v) in-flight manoeuvres and particular flight characteristics and the basic UPRT exercises as specified in Sections A, B, C and D of Table 2 in paragraph (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) operation of either an SE or an ME aeroplane in the exercises of (iv), including in the case of an ME aeroplane operation of the aeroplane solely by reference to instruments with one engine simulated inoperative and engine shut-down and restart. The latter exercise is to be conducted at a safe altitude unless carried out in an FSTD;

(vii) after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC at night.

D. CPL integrated course: aeroplanes

(a) The CPL integrated course should last between 9 and 24 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In the case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in a helicopter or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 350 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

FLYING TRAINING

(d) The flying instruction is divided into four phases:

(1) Phase 1:

Exercises up to the first solo flight comprise a total of at least 10 hours dual flight instruction on an SE aeroplane, including:

(i) pre-flight operations, mass and balance determination, aeroplane inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and precautions;

(iii) control of the aeroplane by external visual references;

(iv) normal take-offs and landings;

(v) the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(vi) simulated engine failure.

(2) Phase 2:

Exercises up to the first solo cross-country flight comprise a total of at least 10 hours of dual flight instruction and at least 10 hours solo flight including:

(i) maximum performance (short field and obstacle clearance) take-offs and short-field landings;

(ii) flight by reference solely to instruments, including the completion of a 180° turn;

(iii) dual cross-country flying using external visual references, DR and radio navigation aids, diversion procedures;

(iv) aerodrome and traffic pattern operations at different aerodromes;

(v) crosswind take-offs and landings;

(vi) abnormal and emergency procedures and manoeuvres, including simulated aeroplane equipment malfunctions;

(vii) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(viii) knowledge of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS.

(3) Phase 3:

Exercises up to the VFR navigation progress test comprise a total of at least 30 hours instruction and at least 58 hours as PIC, including:

(i) at least 10 hours instrument time, which may contain 5 hours of instrument ground time in an FNPT or an FFS and should be conducted by an FI or SFI;

(ii) repetition of exercises of phases 1 and 2, which should include at least 5 hours in an aeroplane certificated for the carriage of at least four persons and have a variable pitch propeller and retractable landing gear;

(iii) night flight time including, g, after completion of instrument training that is equivalent to the basic instrument flight module set out in AMC2 to Appendix 6, take-offs and landings as PIC.

(4) Phase 4:

The dual instruction and testing up to the CPL(A) skill test contain the following:

(i) up to 30 hours instruction which may be allocated to specialised aerial work training;

(ii) repetition of exercises in Phase 3, as required;

(iii) in-flight manoeuvres and particular flight characteristics including the basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5;

(iv) ME training.

If required, operation of an ME aeroplane including operation of the aeroplane with one engine simulated inoperative, and engine shutdown and restart (the latter exercise at a safe altitude unless carried out in an FSTD).

E. CPL modular course: aeroplanes

(a) The CPL modular course should tbe completed within 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

CREDITING

Applicants with prior experience as PIC may be credited with an amount of hours to meet the requirement of 150 hours of flight time of Appendix 3, Part E, point (3)(a). The amount of credited hours should be decided by the ATO where the applicant takes the training course on the basis of a pre-entry flight test, but in any case, should have been completed only in one aircraft category other than aeroplane.

THEORETICAL KNOWLEDGE

(b) The 250 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodromes or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (b)(9).

FLYING TRAINING

(c) The following flight time is suggested for the flying training:

(1) visual flight training:		suggested flight time
	(i) Exercise 1: pre-flight operations: mass and balance determination, aeroplane inspection and servicing.	
	(ii) Exercise 2: take-off, traffic pattern, approach and landing, use of checklist, collision avoidance and checking procedures.	0:45 hours

(iii) Exercise 3:
traffic patterns: simulated engine failure during and after take-off. 0:45 hours

(iv) Exercise 4:
maximum performance (short field and obstacle clearance) take-offs and short-field landings. 1:00 hours

(v) Exercise 5:
crosswind take-offs, landings and go-arounds. 1:00 hours

(vi) Exercise 6:
Arresting divergence of the aeroplane from intended flight path, Preventing flight at airspeeds inappropriate for the (intended flight) conditions, High airspeed (including flight at relatively high airspeed), Steep turns Nose-low attitudes at various bank angles (including spiral dive). 0:45 hours

(vii) Exercise 7:
Arresting divergence of the aeroplane from intended flight path, Preventing flight at airspeeds inappropriate for the (intended flight) conditions, slow flight, nose-high attitudes at various bank angles, spin avoidance, stall events in the following configurations: 0:45 hours

— take-off configuration,
— clean configuration, and
— landing configuration.

(viii) Exercise 8:
cross-country flying using DR and radio navigation aids; flight planning by the applicant; filing of ATC flight plan; evaluation of weather briefing documentation, NOTAM, etc.; R/T procedures and phraseology; positioning by radio navigation aids; operation to, from and transiting controlled 10:00 hours

aerodromes, compliance with ATS procedures
for VFR flights, simulated radio communication
failure, weather deterioration, diversion procedures;
simulated engine failure during cruise flight;
selection of an emergency landing strip.

(2) instrument flight training:

(i) This module's content is identical to that of the 10-hour basic instrument flight module as set out in AMC2 to Appendix 6. This module is focused on the basics of flying by sole reference to instruments, including limited panel and basic UPRT exercises as specified in Sections A, B and C of Table 2 in point (b) of AMC2 Appendix 3; AMC1 Appendix 5.

(ii) All exercises may be performed in an FNPT I or II or an FFS. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used.

(iii) A BITD may be used for the following exercises: (9), (10), (11) and (14).

(iv) The use of the BITD is subject to the following:

(A) the training is complemented by exercises in an aeroplane;

(B) the record of the parameters of the flight is available;

(C) an FI(A) or IRI(A) conducts the instruction.

(v) Exercise 9:

Basic instrument flying without external visual cues; horizontal flight; power changes for acceleration or deceleration, maintaining straight and level flight; turns in level flight with 15° and 25° bank, left and right; roll-out onto predetermined headings.	0:30 hours

(vi) Exercise 10:

Repetition of exercise 9; additionally climbing and descending, maintaining heading and speed, transition to horizontal flight; climbing and descending turns.	0:45 hours

(vii) Exercise 11:

Instrument pattern: 0:45 hours

(1) start exercise, decelerate to approach speed, flaps into approach configuration;

(2) initiate standard turn (left or right);

(3) roll out on opposite heading, maintain new heading for 1 minute;

(4) standard turn, gear down, descend 500 ft/min;

(5) roll out on initial heading, maintain descent (500 ft/min) and new heading for 1 minute;

(6) transition to horizontal flight, 1.000 ft below initial flight level;

(7) initiate go-around;

(8) climb at best rate of climb speed.

(viii) Exercise 12:

Repetition of exercise 9 and steep turns with 45° bank; recovery from unusual attitudes. 0:45 hours

(ix) Exercise 13:

Repetition of exercise 12 0:45 hours

(x) Exercise 14:

Radio navigation using VOR, NDB or, if available, VDF; interception of predetermined QDM and QDR. 0:45 hours

(xi) Exercise 15:

Repetition of exercise 9 and recovery from nose-high attitudes at various bank angles, recovery from nose-low attitudes at various bank angles 0:45 hours

(xii) Exercise 16:

Repetition of exercise 9, turns and level change and recovery from nose-high attitudes at various bank angles, recovery from nose-low attitudes at various bank angles with simulated failure of the artificial horizon or directional gyro. 0:45 hours

(xiii) Exercise 17:

Basic UPRT exercises as specified in point (b) of AMC2 to Appendix 3; AMC1 to Appendix 5, excluding those manoeuvres which have already been completed during exercises 15 and 16	0:45 hours

(xiv) Exercise 18:

Repetition of exercises (14), (16) and (17).	3:00 hours

(3) ME training

If required, operation of an ME aeroplane in the exercises 1 through 17, including operation of the aeroplane with one engine simulated inoperative, and engine shutdown and restart. Before commencing training, the applicant should have complied with the type and class ratings requirements as appropriate to the aeroplane used for the test.

(4) Applicants who need to complete night training in accordance with point 10(b) of Section E of Appendix 3 to Part-FCL should perform take-offs and landings as PIC at night only after having completed the instrument flight training specified in point (2)(i) of 'FLYING TRAINING' of Section E of this AMC.

F. ATP/IR integrated course: helicopters

(a) The ATP/IR integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in an aeroplane or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 750 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress test, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 750 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	35 hours
(2)	Aircraft general knowledge	100 hours
(3)	Flight performance and planning	120 hours
(4)	Human performance and limitations	35 hours
(5)	Meteorology	60 hours
(6)	Navigation	90 hours
(7)	Operational procedures	25 hours
(8)	Principles of flight	55 hours
(9)	Communications	20 hours

Other subdivisions of hours may be agreed upon between the competent authority and the ATO.

(d) The flight instruction is divided into four phases:

(1) phase 1:

Flight exercises up to the first solo flight comprise a total of not less than 12 hours dual flight instruction on a helicopter, including:

(1) pre-flight operations, mass and balance determination, helicopter inspection and servicing;

(2) aerodrome and traffic pattern operations, collision avoidance and procedures;

(3) control of the helicopter by external visual reference;

(4) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(5) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check, and basic instrument flying progress check. This phase comprises a total flight time of not less than 128 hours including 73 hours of dual flight instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as student PIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) advanced/touchdown auto-rotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of a 180 ° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes; compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to Part-FCL, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Flight exercises up to IR skill test. This part comprises a total of 40 hours dual instrument flight time, including 10 hours of an ME IFR certificated helicopter.

The instruction and testing should contain the following:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(ii) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedure;

(G) landings from instrument approaches;

(H) in-flight manoeuvres and particular flight characteristics;

(I) instrument exercises with one engine simulated inoperative.

(4) phase 4:

Instruction in MCC should comprise the relevant training set out in FCL.735.H and AMC1 FCL.735.A, FCL.735.H and FCL.735.As.

If a type rating for MP helicopter is not required on completion of this part, the applicant should be provided with a certificate of course completion for MCC training.

G. ATP integrated course: helicopters

(a) The ATP integrated course should last between 12 and 36 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in an aeroplane or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 650 hours of instruction, which also cover the area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 650 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	30 hours
(2)	Aircraft general knowledge	90 hours
(3)	Flight performance and planning	90 hours
(4)	Human performance and limitations	30 hours
(5)	Meteorology	50 hours
(6)	Navigation	70 hours
(7)	Operational procedures	20 hours
(8)	Principles of flight	45 hours
(9)	Communications	15 hours

Other subdivisions of hours may be agreed upon between the competent authority and the ATO.

(d) The flight instruction is divided into three phases:

(1) phase 1:

Flight exercises up to the first solo flight comprise a total of not less than 12 hours dual flight instruction on a helicopter, including:

(i) pre-flight operations, mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress and basic instrument flying progress check conducted by an FI not connected with the applicant's training. This phase comprises a total flight time of not less than 128 hours, including 73 hours of dual instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as student PIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including low level operations to and from unprepared sites;

(vii) 10 hours flight by sole reference to basic flight instruments, including completion of a 180 ° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to Part-FCL, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Instruction in MCC comprises the relevant training set out in FCL.735.H and AMC1 FCL.735.A, FCL.735.H and FCL.735.As.

If a type rating for MP helicopter is not required on completion of this part, the applicant should be provided with a certificate of course completion for MCC training.

H. ATP modular theoretical knowledge course: helicopters

(a) The aim of this course is to train pilots who have not received the theoretical knowledge instruction during an integrated course to the level of theoretical knowledge required for the ATPL.

(b) An approved course, which also covers the area 100 KSA, may contain in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (b)(9).

(c) The ATP modular course should be completed within 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

I. CPL/IR integrated course: helicopters

(a) The CPL/IR integrated course should last between 9 and 30 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in an aeroplane or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 500 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 500 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	25 hours
(2)	Aircraft general knowledge	75 hours
(3)	Flight performance and planning	80 hours
(4)	Human performance and limitations	20 hours
(5)	Meteorology	40 hours
(6)	Navigation	55 hours
(7)	Operational procedures	15 hours
(8)	Principles of flight	35 hours
(9)	Communications	15 hours

Other subdivision of hours may be agreed upon between the competent authority and the ATO.

FLYING TRAINING

(d) The flight instruction is divided into three phases:

(1) phase 1:

Flight exercises up to the first solo flight. This part comprises a total of at least 12 hours dual flight instruction on a helicopter including:

(i) pre-flight operations: mass and balance determination, helicopter inspection and servicing;

(ii) aerodrome and traffic pattern operations, collision avoidance and procedures;

(iii) control of the helicopter by external visual reference;

(iv) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(v) emergency procedures, basic auto-rotation, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check conducted by an FI not connected with the applicant's training, and basic instrument progress check. This part comprises a total flight time of not less than 128 hours, including 73 hours of dual instruction flight time and including at least 5 hours VFR conversion training on an ME helicopter, 15 hours of solo flight and 40 hours flown as SPIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotation and simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including selection of and low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of 180 degree turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids and diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to Part-FCL, conducted by an FI not connected with the applicant's training.

(3) phase 3:

Flight exercises up to IR skill test. This part comprises a total of 40 hours dual instrument flight time, including 10 hours of an ME IFR certificated helicopter.

The instruction and testing should contain the following:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate ATS documents in the preparation of an IFR flight plan;

(ii) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

(A) transition from visual to instrument flight on take-off;

(B) SIDs and arrivals;

(C) en-route IFR procedures;

(D) holding procedures;

(E) instrument approaches to specified minima;

(F) missed approach procedure;

(G) landings from instrument approaches;

(H) in-flight manoeuvres and particular flight characteristics;

(I) instrument exercises with one engine simulated inoperative.

J. CPL integrated course: helicopters

(a) The CPL integrated course should last between 9 and 24 months. This period may be extended where additional flying training or ground instruction is provided by the ATO.

CREDITING

(b) Credit for the hours flown should be entered into the applicant's training record. In case of a student pilot who does not hold a pilot licence and with the approval of the competent authority, an ATO may designate certain dual exercises to be flown in an aeroplane or a TMG up to a maximum of 20 hours.

THEORETICAL KNOWLEDGE

(c) The 350 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

The 350 hours of instruction should be divided in such a way that in each subject the minimum hours are:

(1)	Air law	15 hours
(2)	Aircraft general knowledge	40 hours
(3)	Flight performance and planning	35 hours
(4)	Human performance and limitations	10 hours
(5)	Meteorology	30 hours
(6)	Navigation	35 hours
(7)	Operational procedures	10 hours
(8)	Principles of flight	30 hours
(9)	Communications	10 hours

Other subdivisions of hours may be agreed upon between the competent authority and the ATO.

FLYING TRAINING

(d) The flight instruction is divided into two phases:

(1) phase 1:

Flight exercises up to the first solo flight. This part comprises a total of not less than 12 hours dual flight instruction on a helicopter, including:

(1) pre-flight operations: mass and balance determination, helicopter inspection and servicing;

(2) aerodrome and traffic pattern operations, collision avoidance and procedures;

(3) control of the helicopter by external visual reference;

(4) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover;

(5) emergency procedures, basic auto-rotations, simulated engine failure, ground resonance recovery if relevant to type.

(2) phase 2:

Flight exercises until general handling and day VFR navigation progress check conducted by an FI not connected with the applicant's training, and basic instrument progress check. This part comprises a total flight time of not less than 123 hours, including 73 hours of dual instruction flight time, 15 hours of solo flight and 35 hours flown as SPIC. The instruction and testing contain the following:

(i) sideways and backwards flight, turns on the spot;

(ii) incipient vortex ring recovery;

(iii) touchdown or advanced auto-rotations and simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits;

(iv) steep turns;

(v) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs;

(vi) limited power and confined area operations, including selection of and low level operations to and from unprepared sites;

(vii) flight by sole reference to basic flight instruments, including completion of a 180° turn and recovery from unusual attitudes to simulate inadvertent entry into cloud;

(viii) cross-country flying by external visual reference, DR and radio navigation aids, diversion procedures;

(ix) aerodrome and traffic pattern operations at different aerodromes;

(x) operations to, from and transiting controlled aerodromes, compliance with ATS procedures, R/T procedures and phraseology;

(xi) application of meteorological briefing arrangements, evaluation of weather conditions for flight and use of AIS;

(xii) night flight, including take-offs and landings as PIC;

(xiii) general handling, day VFR navigation and basic instrument flying progress checks in accordance with Appendix 4 to Part-FCL, conducted by an FI not connected with the applicant's training.

K. CPL modular course: helicopters

(a) The CPL modular course should be completed within 18 months. This period may be extended where additional training is provided by the ATO. The flight instruction and skill test need to be completed within the period of validity of the pass in the theoretical examinations.

CREDITING

Applicants with prior experience as PIC may be credited with an amount of hours to meet the requirement of 150 hours of flight time of Appendix 3, Part K, point (3)(a).

The amount of credited hours should be decided by the ATO where the applicant takes the training course on the basis of a pre-entry flight test, but in any case, should have been completed only in one aircraft category other than helicopter, and not be a combination of hours in more than two different aircraft categories.

THEORETICAL KNOWLEDGE

(b) The 250 hours of instruction, which also covers the Area 100 KSA may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (b)(9).

FLYING TRAINING

(c) The flying instruction comprises the following items. The flight time allocated to each exercise is at the discretion of the FI, provided that at least 5 hours flight time is allocated to cross-country flying.

VISUAL INSTRUCTION

(d) Within the total of dual flight instruction time, the applicant may have completed during the visual phase up to 5 hours in a helicopter FFS or FTD 2, 3 or FNPT II, III.

(1) pre-flight operations: mass and balance calculations, helicopter inspection and servicing;

(2) level flight speed changes, climbing, descending, turns, basic autorotations, use of checklist, collision avoidance and checking procedures;

(3) take-offs and landings, traffic pattern, approach, simulated engine failures in the traffic pattern. Sideways and backwards flight and spot turns in the hover;

(4) recovery from incipient vortex ring condition;

(5) advanced auto-rotations covering the speed range from low speed to maximum range and manoeuvre in auto-rotations (180°, 360° and 'S' turns) and simulated engine-off landings;

(6) selection of emergency landing areas, auto-rotations following simulated emergencies to given areas and steep turns at 30° and 45° bank;

(7) manoeuvres at low level and quick-stops;

(8) landings, take-offs and transitions to and from the hover when heading out of wind;

(9) landings and take-offs from sloping or uneven ground;

(10) landings and take-offs with limited power;

(11) low level operations into and out of confined landing sites;

(12) cross-country flying using dead reckoning and radio navigation aids, flight planning by the applicant, filing of ATC flight plan, evaluation of weather briefing documentation, NOTAM, etc., R/T procedures and phraseology, positioning by radio navigation aids; operation to, from and transiting controlled aerodromes, compliance with ATS procedures for VFR flights, simulated radio communication failure, weather deterioration, diversion procedures; location of an off airfield landing site and simulated approach.

BASIC INSTRUMENT INSTRUCTION

(e) A maximum of 5 hours of the following exercises may be performed in an FFS or FTD or FNPT. Flight training should be carried out in VMC using a suitable means of simulating IMC for the student.

(1) Exercise 1:

Instrument flying without external visual cues. Level flight performing speed changes, maintaining flight altitude (level, heading) turns in level flight at rate 1 and 30° bank, left and right; roll-out on predetermined headings;

(2) Exercise 2:

repetition of exercise 1; additionally climbing and descending, maintaining heading and speed, transition to horizontal flight; climbing and descending turns;

(3) Exercise 3:

repetition of exercise 1; and recovery from unusual attitudes;

(4) Exercise 4:

radio navigation;

(5) Exercise 5:

repetition of exercise 1; and turns using standby magnetic compass and standby artificial horizon (if fitted).

AMC2 to Appendix 3; AMC1 to Appendix 5

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BASIC UPRT FOR AEROPLANE ATP INTEGRATED, CPL/IR INTEGRATED, CPL INTEGRATED AND CPL MODULAR COURSES AS WELL AS MPL COURSE PHASES 1 TO 3

(a) BASIC UPRT ELEMENTS AND COMPONENTS

In order for student pilots to develop the competencies to prevent and recover from aeroplane upsets, the basic UPRT elements and respective components in the following Table 1 should be integrated into the flying training modules and phases, such that all the elements are covered.

Table 1: Basic UPRT elements and components		Pre-flight briefing	Flying training
A.	**Aerodynamics**		
1.	General aerodynamic characteristics	•	•
2.	Aeroplane certification and limitations	•	•
4.	Aerodynamics (high and low altitude)	•	
5.	Aeroplane performance (high and low altitude)	•	
6.	AoA and stall awareness	•	•
7.	Aeroplane stability	•	•
8.	Control surface fundamentals	•	•
9.	Use of trim	•	•
10.	Icing and contamination effects	•	•
11.	Propeller slipstream (as applicable)	•	•
B.	**Causes of and contributing factors to upsets**		
1.	Environmental	•	
2.	Pilot-induced	•	

Table 1: Basic UPRT elements and components		Pre-flight briefing	Flying training
3.	Mechanical (aeroplane systems)	•	
C.	**Safety review of accidents and incidents relating to aeroplane upsets**		
1.	Safety review of accidents and incidents relating to aeroplane upsets	•	
D.	**G-load awareness and management**		
1.	Positive/negative/increasing/decreasing G-loads	•	•
2.	Lateral G awareness (sideslip)	•	•
3.	G-load management	•	•
E.	**Energy management**		
1.	Kinetic energy vs potential energy vs chemical energy (power)	•	•
F.	**Flight path management**		
1.	Relationship between pitch, power and performance	•	•
2.	Performance and effects of differing power plants	•	•
3.	Manual and automation inputs for guidance and control (if applicable)	•	•
4.	Class-specific characteristics of flight path management	•	•
5.	Management of go-arounds from various stages during the approach	•	•
6.	Automation management (if applicable)	•	•
7.	Proper use of rudder	•	•
G.	**Recognition**		
1.	Class-specific examples of physiological, visual and instrument clues during developing and developed upset	•	•
2.	Pitch/power/roll/yaw	•	•
3.	Effective scanning (effective monitoring)	•	•
4.	Stall protection systems and cues	•	•
5.	Criteria for identifying stalls and upsets	•	•
H.	**System malfunction** (including immediate handling and subsequent operational considerations, as applicable)		
1.	Flight control defects	•	•
2.	Engine failure (partial or full)	•	•
3.	Instrument failures	•	•
4.	Loss of reliable airspeed (training elements as per point (lb) of AMC2 ORA.ATO.125[1]).	•	•
5.	Automation failures	•	•
6.	Stall protection system failures, including icing alerting systems	•	•

(b) MANOEUVRE-BASED UPRT EXERCISES

The following Table 2 contains manoeuvre-based basic UPRT exercises.

Table 2: Manoeuvre-based basic UPRT exercises		Pre-flight briefing	Flying training
A.	**Timely and appropriate intervention**		

[1] Please refer to ED Decision 2012/007/R.

1.	Arresting divergence of the aeroplane from intended flight path	•	•
2.	Preventing flight at airspeeds inappropriate for the (intended flight) condition	•	•
3.	Avoiding spins	•	•
B.	**Flight path management**		
1.	Steep turns	•	•
2.	Slow flight (including flight at critically low airspeed)	•	•
3.	High airspeed (including flight at relatively high airspeed)	•	•
C.	**Application of OEM recommendations (if applicable) during developing upsets**		
1.	Nose-high attitudes at various bank angles	•	•
2.	Nose-low attitudes at various bank angles (including spiral dive)	•	•
D.	**Stall events in the following configurations**		
1.	Take-off configuration	•	•
2.	Clean configuration	•	•
3.	Landing configuration	•	•

(c) INTEGRATION OF TEM, PILOT CORE COMPETENCIES, AND HUMAN FACTORS

Threat and Error Management (TEM), pilot competencies and human factors, as shown in the following Table 3 below, should be integrated into the flying training modules and phases as appropriate.

Table 3: Core elements and components of TEM, pilot competencies and human factors		Pre-flight briefing	Flying training
A.	**TEM**		
1.	TEM framework	•	•
2.	Recognition of threats and errors	•	•
3.	Management of threats and errors	•	•
4.	Countermeasures against threats and errors to prevent undesired aircraft states, including early intervention and, when necessary to prevent upsets, timely application of countermeasures to manage undesired aircraft states	•	•
B.	**Pilot Competencies, including CRM**		
1.	All elements listed in Table 1 of GM2 FCL.735.A	•	•
C.	**Human factors**		
1.	Instrument interpretation, active monitoring, checking	•	•
2.	Distraction, inattention, fixation, fatigue	•	•
3.	Human information processing, cognitive effects	•	•
4.	Perceptual illusions (visual or physiological) and spatial disorientation, effects of G-loads	•	•
5.	Stress, startle and surprise effect	•	•
6.	Intuitive and counter-intuitive behaviour	•	•

GM1 to Appendix 3; Appendix 5

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BASIC UPRT EXERCISES

(a) GENERAL

The training objective of the basic UPRT exercises is for the student to achieve competence in applying prevention and recovery techniques. In order to meet the training objectives, some UPRT exercises will involve operation at altitudes, speeds and g-loadings that are not required for other parts of the training course. When designing training courses, ATOs should ensure that the aircraft used for these exercises will allow the training objectives to be achieved while maintaining a margin of safety to aircraft limitations in accordance with the training envelope, as determined by the ATO (see GM1 ORA.ATO.125 point (f)).

(b) UPRT WITH REFERENCE TO INSTRUMENTS

Basic UPRT exercises completed by reference to instruments (i.e. in simulated instrument meteorological conditions (IMC)) should involve only moderate excursions from the speeds and attitudes used in normal instrument flight. Exercises conducted in IMC should not be planned to involve 'unusual attitudes'.

(c) INSTRUCTORS DELIVERING BASIC UPRT

Instructors conducting basic UPRT training during the CPL or ATP course do not require any additional qualifications. It is the responsibility of the ATO to ensure that instructors are competent to deliver effective training on all parts of the course and also that they are competent to recover the aircraft in the event that a student erroneously conducts any UPRT exercise.

(d) APPLICATION OF OEM RECOMMENDATIONS DURING DEVELOPING UPSETS

Stall recovery training exercises as well as nose-high and nose-low prevention training exercises use the recovery strategies recommended by the OEMs contained in Tables 1, 2 and 3 below.

Note: As OEM procedures always take precedence over the general strategies as recommended by the OEMs, ATOs should consult the OEM on whether any approved specific procedures are available prior to using the templates.

Refer to revision 3 of the Airplane Upset Prevention and Recovery Training Aid (AUPRTA) for a detailed explanation and rationale of nose-high and nose-low recovery strategies as recommended by the OEMs.

Table 1: Stall event recovery template

	Pilot Flying (PF) Immediately do the following at first indication of a stall (aerodynamic buffeting, reduced roll stability and aileron effectiveness, visual or aural cues and warnings, reduced elevator (pitch) authority, inability to maintain altitude or arrest rate of descent, stick shaker activation (if installed)) during any flight phases except at lift-off.	
1.	**AUTOPILOT — DISCONNECT (IF APPLICABLE)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	
2.	**AUTOTHROTTLE — OFF (IF APPLICABLE)**	
3.	**(a) NOSE-DOWN PITCH CONTROL** apply until stall warning is eliminated **(b) NOSE-DOWN PITCH TRIM** (as needed) (Reduce the AoA whilst accepting the resulting altitude loss.)	
4.	**BANK — WINGS LEVEL**	

5.	**POWER — ADJUST** (as needed) (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)	
6.	**SPEEDBRAKES/SPOILERS — RETRACT**	
7.	When airspeed is sufficiently increasing — **RECOVER** to level flight (Avoid the secondary	

Table 2: Nose-high recovery strategy template		
Recognise and confirm the developing situation by announcing **'nose high'**		
Pilot Flying (PF)		
1.	**AUTOPILOT — DISCONNECT (if applicable)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	
2.	**AUTOTHROTTLE — OFF** (if applicable)	
3.	**APPLY** as much nose-down control input as required to obtain a nose-down pitch rate	
4.	**POWER — ADJUST** (if required)	
5.	**ROLL — ADJUST** (if required) (Avoid exceeding 60-degree bank)	
6.	When airspeed is sufficiently increasing — **RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)	
NOTE: (1) Recovery to level flight may require use of pitch trim. (2) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.		

Table 3: Nose-low recovery strategy template		
Recognise and confirm the developing situation by announcing **'nose low'** (If the autopilot or autothrottle is responding correctly, it may not be appropriate to decrease the level of automation while assessing if the divergence is being stopped)		
Pilot Flying (PF)		
1.	**AUTOPILOT — DISCONNECT (if applicable)** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	
2.	**AUTOTHROTTLE — OFF** (if applicable)	
3.	**RECOVERY** from stall (if required)	
4.	**ROLL** in the shortest direction to wings level (It may be necessary to reduce the G-loading by applying forward control pressure to improve roll effectiveness)	
5.	**POWER** and **DRAG — ADJUST** (if required)	
6.	**RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)	
NOTE: (1) Recovery to level flight may require use of pitch trim. (2) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.		

ADDITIONAL GUIDANCE

(e) Specific guidance on UPRT is available in the latest revision of ICAO Doc 10011 'Manual on Aeroplane Upset Prevention and Recovery Training'.

GM1 to Appendix 3; Appendix 6; FCL.735.H

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OVERVIEW OF FSTD TRAINING CREDITS FOR DUAL INSTRUCTION IN HELICOPTER FLYING TRAINING COURSES

		ATPL(H)/IR integrated			FSTD credits
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual, including ME T/R training	75 hrs	15 hrs	40 hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	20 hrs FFS or FTD 2, 3 or FNPT II/III
Instrument rating training	40 hrs	-		40 hrs	or 10 hrs in at least an FNPT I
MCC	15 hrs	-	-	15 hrs	15 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
Total	140 hrs	55 hrs		195 hrs	Note 2

		ATPL(H)/VFR integrated			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual including ME T/R training	75 hrs	15 hrs	40 hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
MCC / VFR	10 hrs	-	-	10 hrs	10 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
Total	95 hrs	55 hrs		150 hrs	Note 2

		CPL(H)/IR integrated			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual including ME T/R training	75 hrs	15 hrs	40hrs	130 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	20 hrs FFS or FTD 2, 3 or FNPT II/III
Instrument rating training	40 hrs	-		40 hrs	or 10 hrs in at least an FNPT I
Total	125 hrs	55 hrs		180 hrs	Note 2

		CPL(H) Integrated			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual	75 hrs	15 hrs	35 hrs	125 hrs	30 hrs FFS C/D level or 25 hrs FTD 2, 3 or 20 hrs FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
Total	85 hrs	50 hrs		135 hrs	Note 2

		CPL(H) modular			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
Visual	20 hrs	-	-	20 hrs	5 hrs FFS or FTD 2, 3 or FNPT II/III
Basic instrument	10 hrs	-	-	10 hrs	5 hrs in at least an FNPT I
Total	30 hrs	-	-	30 hrs	Note 2

		IR(H) modular			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
SE	50 hrs	-	-	50 hrs	35 hrs FFS or FTD 2, 3 or FNPT II/III or 20 hrs FNPT I (H) or (A)
ME	55 hrs	-	-	55 hrs	40 hrs FFS; FTD 2, 3 FNPT II/III or 20 hrs FNPT I (H) or (A)

		MCC(H)			
	Dual	Solo	SPIC	Total	FFS; FTD; FNPT
MCC / IR	20 hrs	-	-	20 hrs	20 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
MCC / VFR	15 hrs	-	-	15 hrs	15 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)
MCC / IR for MCC/VFR holders	5 hrs	-	-	5 hrs	5 hrs FFS or FTD 2, 3 (MCC) or FNPT II/III (MCC)

Note 1: In this matrix, FSTD credits refer to helicopter FSTDs, if not mentioned otherwise.

Note 2: Total credits for the FSTDs used in the course are not provided in the tables as the FSTDs may be used in various combinations. The FSTD credits provided in the tables for the separate phases of the course are the maximum FSTD credits available for each phase.

GM1 to Appendix 3 Example of a grading system for practical flight training during ATP, CPL and MPL courses grading system

ED Decision 2019/005/R

An ATPL/CPL/MPL grading system may be developed by using the grading system in GM3 FCL.735.A.

Appendix 4 – Skill test for the issue of a CPL

Regulation (EU) 2024/2076

A. General

1. An applicant for a skill test for the CPL shall have received instruction on the same class or type of aircraft to be used in the test.

2. An applicant shall pass all the relevant sections of the skill test. If any item in a section is failed, that section is failed. Failure in more than one section will require the applicant to take the entire test again. An applicant failing only in one section shall only repeat the failed section. Failure in any section of the retest, including those sections that have been passed on a previous attempt, will require the applicant to take the entire test again. All relevant sections of the skill test shall be completed within 6 months. Failure to achieve a pass in all relevant sections of the test in two attempts will require further training.

3. Further training may be required following any failed skill test. There is no limit to the number of skill tests that may be attempted.

CONDUCT OF THE TEST

4. Should the applicant choose to terminate a skill test for reasons considered inadequate by the Flight Examiner (FE), the applicant shall retake the entire skill test. If the test is terminated for reasons considered adequate by the FE, only those sections not completed shall be tested in a further flight.

5. At the discretion of the FE, any manoeuvre or procedure of the test may be repeated once by the applicant. The FE may stop the test at any stage if it is considered that the applicant's demonstration of flying skills requires a complete re-test.

6. An applicant shall be required to fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if no other crew member is present. Responsibility for the flight shall be allocated in accordance with national regulations.

7. An applicant shall indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the checklist for the aircraft on which the test is being taken. During pre-flight preparation for the test, the applicant is required to determine power settings and speeds. Performance data for take-off, approach and landing shall be calculated by the applicant in compliance with the operations manual or flight manual for the aircraft used.

8. The FE shall take no part in the operation of the aircraft except where intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic.

B. Content of the skill test for the issue of a CPL – Aeroplanes

1. The aeroplane used for the skill test shall meet the requirements for training aeroplanes, and shall be certificated for the carriage of at least four persons, have a variable pitch propeller and retractable landing gear.

2. The route to be flown shall be chosen by the FE and the destination shall be a controlled aerodrome. The applicant shall be responsible for the flight planning and shall ensure that all equipment and documentation for the execution of the flight are on board. The duration of the flight shall be at least 90 minutes.

3. The applicant shall demonstrate the ability to:

(a) operate the aeroplane within its limitations,

(b) complete all manoeuvres with smoothness and accuracy,

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge; and

(e) maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

FLIGHT TEST TOLERANCES

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used.

— Height

— normal flight ±100 feet

— with simulated engine failure ±150 feet

— Tracking on radio aids ±5°

— Heading

— normal flight ±10°

— with simulated engine failure ±15°

— Speed

— take-off and approach ±5 knots

— all other flight regimes ±10 knots

CONTENT OF THE TEST

5. Items in Section 2(c) and (e)(iv), Section 3(g), and the whole of Sections 5 and 6 may be performed in an FNPT II or an FFS. The examiner may decide not to perform items in Section 6(d).

Use of the aeroplane checklists, airmanship, control of the aeroplane by external visual reference, anti-icing/de-icing procedures and principles of threat and error management apply in all sections.

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE	
a	Pre-flight, including: Flight planning, Documentation, Mass and balance determination, Weather brief, NOTAMS
b	Aeroplane inspection and servicing
c	Taxiing and take-off
d	Performance considerations and trim
e	Aerodrome and traffic pattern operations
f	Departure procedure, altimeter setting, collision avoidance (lookout)
g	ATC liaison – compliance, R/T procedures
SECTION 2 GENERAL AIRWORK	
a	Control of the aeroplane by external visual reference, including straight and level, climb, descent, lookout
b	Flight at critically low airspeeds including recognition of and recovery from incipient and full stalls

c	Turns, including turns in landing configuration. Steep turns 45°
d	Flight at critically high airspeeds, including recognition of and recovery from spiral dives
e	Flight by reference solely to instruments, including: (i) level flight, cruise configuration, control of heading, altitude and airspeed (ii) climbing and descending turns with 10°–30° bank (iii) recoveries from unusual attitudes (iv) limited panel instruments
f	ATC liaison – compliance, R/T procedures
SECTION 3 — EN-ROUTE PROCEDURES	
a	Control of aeroplane by external visual reference, including cruise configuration Range/Endurance considerations
b	Orientation, map reading
c	Altitude, speed, heading control, lookout
d	Altimeter setting. ATC liaison – compliance, R/T procedures
e	Monitoring of flight progress, flight log, fuel usage, assessment of track error and re-establishment of correct tracking
f	Observation of weather conditions, assessment of trends, diversion planning
g	Tracking, positioning (NDB, VOR, or track between waypoints), identification of facilities (instrument flight).
h	Implementation of diversion plan to alternate aerodrome (visual flight)
SECTION 4 — APPROACH AND LANDING PROCEDURES	
a	Arrival procedures, altimeter setting, checks, lookout
b	ATC liaison - compliance, R/T procedures
c	Go-around action from low height
d	Normal landing, crosswind landing (if suitable conditions)
e	Short field landing
f	Approach and landing with idle power (single-engine only)
g	Landing without use of flaps
h	Post flight actions
SECTION 5 — ABNORMAL AND EMERGENCY PROCEDURES	
This section may be combined with sections 1 through 4	
a	Simulated engine failure after take-off (at a safe altitude), fire drill
b	Equipment malfunctions including alternative landing gear extension, electrical and brake failure
c	Forced landing (simulated)
d	ATC liaison - compliance, R/T procedures
e	Oral questions
SECTION 6 — SIMULATED ASYMMETRIC FLIGHT AND RELEVANT CLASS OR TYPE ITEMS	
This section may be combined with sections 1 through 5	
a	Simulated engine failure during take-off (at a safe altitude unless carried out in an FFS)
b	Asymmetric approach and go-around
c	Asymmetric approach and full stop landing
d	Engine shut-down and restart (if selected by the examiner)
e	ATC liaison – compliance, R/T procedures, Airmanship
f	As determined by the FE — any relevant items of the class or type rating skill test to include, if applicable: (i) aeroplane systems including handling of autopilot (ii) operation of pressurisation system

	(iii) use of de-icing and anti-icing system
g	Oral questions

C. Content of the skill test for the issue of the CPL – Helicopters

1. The helicopter used for the skill test shall meet the requirements for training helicopters.

2. The area and route to be flown shall be chosen by the FE and all low level and hover work shall be at an approved aerodrome/site. Routes used for section 3 may end at the aerodrome of departure or at another aerodrome and one destination shall be a controlled aerodrome. The skill test may be conducted in 2 flights. The total duration of the flight(s) shall be at least 90 minutes.

3. The applicant shall demonstrate the ability to:

   (a) operate the helicopter within its limitations;

   (b) complete all manoeuvres with smoothness and accuracy;

   (c) exercise good judgement and airmanship;

   (d) apply aeronautical knowledge; and

   (e) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

FLIGHT TEST TOLERANCES

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the helicopter used.

- Height
  - normal flight ±100 feet
  - simulated major emergency ±150 feet
  - Tracking on radio aids ±10°
- Heading
  - normal flight ±10°
  - simulated major emergency ±15°
- Speed
  - take-off and approach multi-engine ±5 knots
  - all other flight regimes ±10 knots
- Ground drift
  - T.O. hover I.G.E. ±3 feet
  - landing no sideways or backwards movement

CONTENT OF THE TEST

5. Items in section 4 may be performed in a helicopter FNPT or a helicopter FFS. Use of helicopter checklists, airmanship, control of helicopter by external visual reference, anti-icing procedures, and principles of threat and error management apply in all sections.

SECTION 1 — PRE-FLIGHT/POST-FLIGHT CHECKS AND PROCEDURES	
a	Helicopter knowledge (e.g. technical log, fuel, mass and balance, performance), flight planning, documentation, NOTAMS, weather
b	Pre-flight inspection/action, location of parts and purpose
c	Cockpit inspection, starting procedure
d	Communication and navigation equipment checks, selecting and setting frequencies
e	Pre-take-off procedure, R/T procedure, ATC liaison-compliance
f	Parking, shutdown and post-flight procedure
SECTION 2 — Hover manoeuvres, advanced handling and confined areas	
a	Take-off and landing (lift-off and touchdown)
b	Taxi, hover taxi
c	Stationary hover with head/cross/tail wind
d	Stationary hover turns, 360° left and right (spot turns)
e	Forward, sideways and backwards hover manoeuvring
f	Simulated engine failure from the hover
g	Quick stops into and downwind
h	Sloping ground/unprepared sites landings and take-offs
i	Take-offs (various profiles)
j	Crosswind, downwind take-off (if practicable)
k	Take-off at maximum take-off mass (actual or simulated)
l	Approaches (various profiles)
m	Limited power take-off and landing
n	Autorotations (FE to select two items from — Basic, range, low speed, and 360° turns)
o	Autorotative landing
p	Practice forced landing with power recovery
q	Power checks, reconnaissance technique, approach and departure technique
SECTION 3 — NAVIGATION — EN-ROUTE PROCEDURES	
a	Navigation and orientation at various altitudes/heights, map reading
b	Altitude/height, speed, heading control, observation of airspace, altimeter setting
c	Monitoring of flight progress, flight log, fuel usage, endurance, ETA, assessment of track error and re-establishment of correct track, instrument monitoring
d	Observation of weather conditions, diversion planning
e	Tracking, positioning (NDB and/or VOR), identification of facilities
f	ATC liaison and observance of regulations, etc.
SECTION 4 — FLIGHT PROCEDURES AND MANOEUVRES BY SOLE REFERENCE TO INSTRUMENTS	
a	Level flight, control of heading, altitude/height and speed
b	Rate 1 level turns onto specified headings, 180°to 360°left and right
c	Climbing and descending, including turns at rate 1 onto specified headings
d	Recovery from unusual attitudes
e	Turns with 30° bank, turning up to 90° left and right
SECTION 5 — Abnormal and Emergency procedures (simulated where appropriate)	

Note (1): Where the test is conducted on a multi-engine helicopter a simulated engine failure drill, including a single-engine approach and landing, shall be included in the test.	
Note (2): The FE shall select 4 items from the following:	
a	Engine malfunctions, including governor failure, carburettor/engine icing, oil system, as appropriate
b	Fuel system malfunction
c	Electrical system malfunction
d	Hydraulic system malfunction, including approach and landing without hydraulics, as applicable
e	Main rotor and/or anti-torque system malfunction (FFS or discussion only)
f	Fire drills, including smoke control and removal, as applicable
g	Other abnormal and emergency procedures as outlined in appropriate flight manual, including for multi-engine helicopters: Simulated engine failure at take-off: rejected take-off at or before TDP or safe forced landing at or before DPATO, shortly after TDP or DPATO. Landing with simulated engine failure: landing or go-around following engine failure before LDP or DPBL, following engine failure after LDP or safe forced landing after DPBL.

D. Content of the skill test for the issue of a CPL — Airships

1. The airship used for the skill test shall meet the requirements for training airships.

2. The area and route to be flown shall be chosen by the FE. Routes used for section 3 may end at the aerodrome of departure or at another aerodrome and one destination shall be a controlled aerodrome. The skill test may be conducted in 2 flights. The total duration of the flight(s) shall be at least 60 minutes.

3. The applicant shall demonstrate the ability to:

   (a) operate the airship within its limitations;

   (b) complete all manoeuvres with smoothness and accuracy;

   (c) exercise good judgement and airmanship;

   (d) apply aeronautical knowledge; and

   (e) maintain control of the airship at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

FLIGHT TEST TOLERANCES

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the airship used.

   — Height

      — normal flight ±100 feet

      — simulated major emergency ±150 feet

      — Tracking on radio aids ±10°

   — Heading

      — normal flight ±10°

      — simulated major emergency ±15°

CONTENT OF THE TEST

5. Items in sections 5 and 6 may be performed in an Airship FNPT or an airship FFS. Use of airship checklists, airmanship, control of airship by external visual reference, anti-icing procedures, and principles of threat and error management apply in all sections.

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE	
a	Pre-flight, including: Flight planning, Documentation, Mass and Balance determination, Weather brief, NOTAMS
b	Airship inspection and servicing
c	Off-mast procedure, ground manoeuvring and take-off
d	Performance considerations and trim
e	Aerodrome and traffic pattern operations
f	Departure procedure, altimeter setting, collision avoidance (lookout)
g	ATC liaison – compliance, R/T procedures
SECTION 2 — GENERAL AIRWORK	
a	Control of the airship by external visual reference, including straight and level, climb, descent, lookout
b	Flight at pressure height
c	Turns
d	Steep descents and climbs
e	Flight by reference solely to instruments, including: (i) level flight, control of heading, altitude and airspeed (ii) climbing and descending turns (iii) recoveries from unusual attitudes (iv) limited panel instruments
f	ATC liaison – compliance, R/T procedures
SECTION 3 — EN-ROUTE PROCEDURES	
a	Control of airship by external visual reference, Range/Endurance considerations
b	Orientation, map reading
c	Altitude, speed, heading control, lookout
d	Altimeter setting, ATC liaison – compliance, R/T procedures
e	Monitoring of flight progress, flight log, fuel usage, assessment of track error and re-establishment of correct tracking
f	Observation of weather conditions, assessment of trends, diversion planning
g	Tracking, positioning (NDB or VOR), identification of facilities (instrument flight). Implementation of diversion plan to alternate aerodrome (visual flight)
SECTION 4 — APPROACH AND LANDING PROCEDURES	
a	Arrival procedures, altimeter setting, checks, lookout
b	ATC liaison – compliance, R/T procedures
c	Go-around action from low height
d	Normal landing
e	Short field landing
f	Approach and landing with idle power (single-engine only)
g	Landing without use of flaps
h	Post-flight actions
SECTION 5 — ABNORMAL AND EMERGENCY PROCEDURES	
This section may be combined with sections 1 through 4	
a	Simulated engine failure after take-off (at a safe altitude), fire drill

b	Equipment malfunctions
c	Forced landing (simulated)
d	ATC liaison – compliance, R/T procedures
e	Oral questions
SECTION 6 — RELEVANT CLASS OR TYPE ITEMS	
This section may be combined with sections 1 through 5	
a	Simulated engine failure during take-off (at a safe altitude unless carried out in an FFS)
b	Approach and go-around with failed engine(s)
c	Approach and full stop landing with failed engine(s)
d	Malfunctions in the envelope pressure system
e	ATC liaison – compliance, R/T procedures, Airmanship
f	As determined by the FE – any relevant items of the class or type rating skill test to include, if applicable: (i) airship systems (ii) operation of envelope pressure system
g	Oral questions

Appendix 5 – Integrated MPL training course

Regulation (EU) 2018/1974

GENERAL

1. The aim of the MPL integrated course is to train pilots to the level of proficiency necessary to enable them to operate as co-pilot of a multi-engine multi-pilot turbine-powered air transport aeroplane under VFR and IFR and to obtain an MPL.

2. Approval for an MPL training course shall only be given to an ATO that is part of a commercial air transport operator certificated in accordance with Part-ORO or having a specific arrangement with such an operator.

3. An applicant wishing to undertake an MPL integrated course shall complete all the instructional stages in one continuous course of training at an ATO. The training shall be competency based and conducted in a multi-crew operational environment.

4. Only ab-initio applicants shall be admitted to the course.

5. The course shall comprise:

   (a) theoretical knowledge instruction to the ATPL(A) knowledge level;

   (b) visual and instrument flying training;

   (c) training in MCC for the operation of multi-pilot aeroplanes; and

   (d) type rating training.

6. An applicant failing or unable to complete the entire MPL course may apply to the competent authority for the theoretical knowledge examination and skill test for a licence with lower privileges and an IR, if the applicable requirements are met.

THEORETICAL KNOWLEDGE

7. An approved MPL theoretical knowledge course shall comprise at least 750 hours of instruction for the ATPL(A) knowledge level, as well as the hours required for:

   (a) theoretical knowledge instruction for the relevant type rating, in accordance with Subpart H; and

   (b) UPRT theoretical knowledge instruction in accordance with FCL.745.A.

FLYING TRAINING

8. The flying training shall comprise a total of at least 240 hours, composed of hours as PF and PM, in actual and simulated flight, and covering the following four phases of training:

   (a) Phase 1 — Core flying skills

   Specific basic single-pilot training in an aeroplane

   (b) Phase 2 — Basic

   Introduction of multi-crew operations and instrument flight

   (c) Phase 3 — Intermediate

   Application of multi-crew operations to a multi-engine turbine aeroplane certified as a high-performance aeroplane in accordance with Annex I (Part-21) to Regulation (EU) No 748/2012

(d) Phase 4 — Advanced

Type rating training within an airline-oriented environment.

MCC requirements shall be incorporated into the relevant phases above.

Training in asymmetric flight shall be given either in an aeroplane or an FFS.

8a. Flight experience in actual flight shall include:

(a) all the experience requirements of Subpart H;

(b) UPRT flight instruction in accordance with FCL.745.A;

(c) aeroplane UPRT exercises related to the specificities of the relevant type in accordance with FCL.725.A(c);

(d) night flying;

(e) flight solely by reference to instruments; and

(f) the experience required to achieve the relevant airmanship.

9. Each phase of training in the flight instruction syllabus shall be composed of both instruction in the underpinning knowledge and in practical training segments.

10. The training course shall include a continuous evaluation process of the training syllabus and a continuous assessment of the students following the syllabus. Evaluation shall ensure that:

(a) the competencies and related assessment are relevant to the task of a co-pilot of a multi-pilot aeroplane; and

(b) the students acquire the necessary competencies in a progressive and satisfactory manner.

11. The training course shall include at least 12 take-offs and landings to ensure competency. Those take-offs and landings may be reduced to at least six, provided that prior to delivering the training, the ATO and the operator ensure that:

(a) a procedure is in place to assess the required level of competency of the student pilot; and

(b) a process is in place to ensure that corrective action is taken if in-training evaluation indicates the need to do so.

Those take-offs and landings shall be performed under the supervision of an instructor in an aeroplane for which the type rating shall be issued.

ASSESSMENT LEVEL

12. The applicant for the MPL shall have demonstrated performance in all 9 competency units specified in paragraph 13 below, at the advanced level of competency required to operate and interact as a co-pilot in a turbine-powered multi-pilot aeroplane, under visual and instrument conditions. Assessment shall confirm that control of the aeroplane or situation is maintained at all times, to ensure the successful outcome of a procedure or manoeuvre. The applicant shall consistently demonstrate the knowledge, skills and attitudes required for the safe operation of the applicable aeroplane type, in accordance with the MPL performance criteria.

COMPETENCY UNITS

13. The applicant shall demonstrate competency in the following 9 competency units:

(1) apply human performance principles, including principles of threat and error management;

(2) perform aeroplane ground operations;

(3) perform take-off;

(4) perform climb;

(5) perform cruise;

(6) perform descent;

(7) perform approach;

(8) perform landing; and

(9) perform after landing and aeroplane post-flight operations.

SIMULATED FLIGHT

14. Minimum requirements for FSTDs:

(a) Phase 1 — Core flying skills

E-training and part tasking devices approved by the competent authority that have the following characteristics:

— involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a side-stick controller, or an FMS keypad; and

— involve psychomotor activity with appropriate application of force and timing of responses.

(b) Phase 2 — Basic

An FNPT II MCC that represents a generic multi-engine turbine-powered aeroplane.

(c) Phase 3 — Intermediate

An FSTD that represents a multi-engine turbine-powered aeroplane required to be operated with a co-pilot and qualified to an equivalent standard to level B, additionally including:

— a daylight/twilight/night visual system continuous cross-cockpit minimum collimated visual field of view providing each pilot with 180° horizontal and 40° vertical field of view, and

— ATC environment simulation.

(d) Phase 4 — Advanced

An FFS which is fully equivalent to level D or level C with an enhanced daylight visual system, including ATC environment simulation.

GM1 to Appendix 5 Integrated MPL training course

ED Decision 2019/005/R

GENERAL

(a) In broad terms, the MPL holder is expected to be able to complete the airline operators' conversion course with a high probability of success and within the time frame normally allowed for this phase. The standard is equivalent to what is currently expected from graduates of the ATP(A) integrated course who have completed type rating training.

(b) The general approach is to use the existing ATP(A) integrated training course as a reference and to implement progressively the MPL integrated training course and specifically the transfer from actual flight to simulated flight.

(c) This transfer should be organised in a way that is similar to the approach used for ETOPS. Successive evolutions of the training syllabus introduce progressively a higher level of simulated flight and a reduction of actual flight. Change from one version to the next should only take place after enough experience has been gained and once its results, including those of airline operator conversion courses, have been analysed and taken into account.

MPL TRAINING SCHEME

(d) The specific arrangement, pursuant to ORA.GEN.205, between an approved training organisation (ATO) and an operator for the multi-pilot licence (MPL) training should cover at least the following points:

(1) pre-entry requirements (including screening and selection);

(2) provision of the relevant documentation (operations manuals (OMs) and training manuals);

(3) design of the training programme;

(4) content of the operator conversion course;

(5) training effectiveness (e.g. continuous monitoring system, progress checks, etc.);

(6) provision of base training;

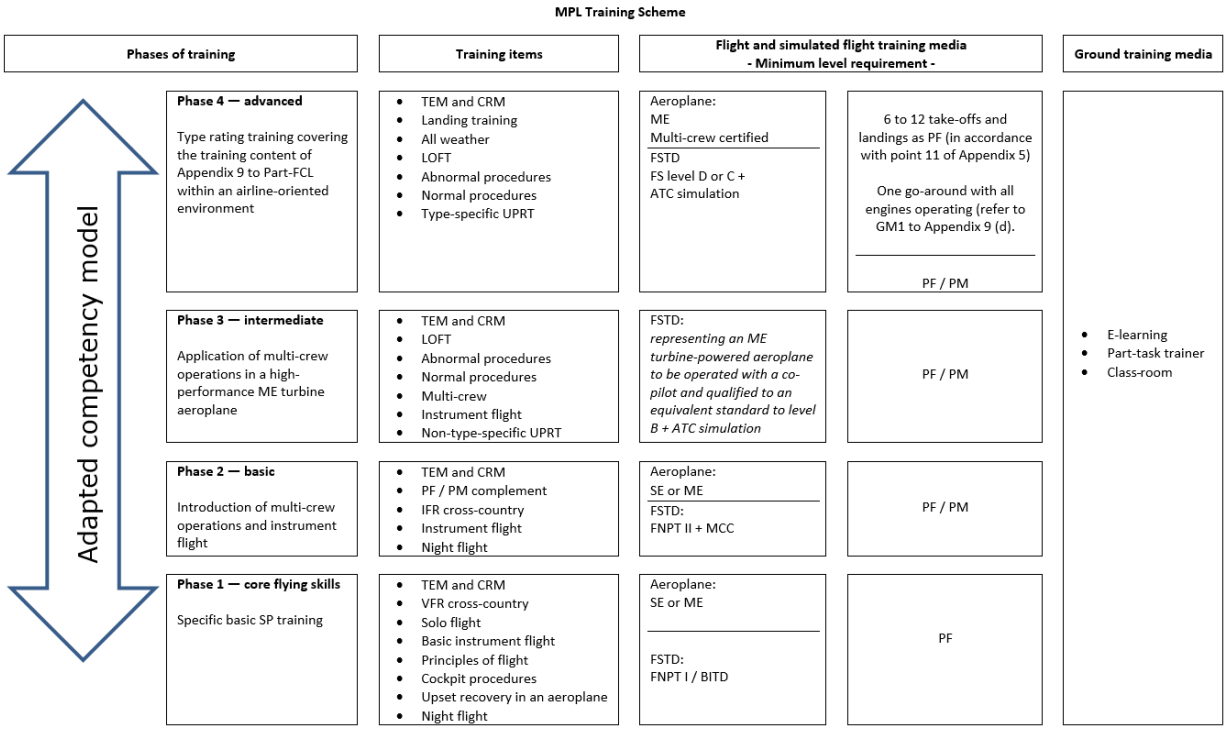
(7) graduate performance data feedback from the operator to the ATO;

(8) course evaluation and improvement; and

(9) alignment of the grading and assessment criteria.

The ATO and operator may use their OMs and training manuals to identify additional areas to be covered by the specific arrangement.

The following scheme should be applied:



THEORETICAL KNOWLEDGE INSTRUCTION

(e) The 750 hours of instruction, which also cover the Area 100 KSA, may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests, Area 100 KSA assessments and mental maths test(s); and

(11) other training methods, media and tools approved by the competent authority.

COMPETENCY UNITS, COMPETENCY ELEMENTS AND PERFORMANCE CRITERIA

(f) Apply human performance principles, including principles of threat and error management:

(1) cooperation;

(2) leadership and managerial skills;

(3) situation awareness;

(4) decision making.

These behaviour categories are intended to help in the effective utilisation of all available resources to achieve safe and efficient operations.

These behaviour categories may be adapted and extended to incorporate issues like communication and use of automation if it is considered to be relevant to the development of the curriculum.

(g) Perform Aircraft Ground and Pre-Flight Operations

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;

Duty Observation and assessment

Satisfactory (S)

Unsatisfactory (U)

(2) perform dispatch duties: (S) or (U)

(i) verifies technical condition of the a/c, including adequate use of MEL; PF/PNF

(ii) checks technical bulletins and notices; PF/PNF

(iii) determines operational environment and pertinent weather; PF/PNF

(iv) determines impact of weather on aircraft performance; PF/PNF

(v) applies flight planning and load procedures; PF/PNF

(vi) determines fuel requirement; PF/PNF

(vii) files an ATS flight plan (if required) PF/PNF

(3) provide flight crew and cabin crew briefings; (S) or (U)

(i) briefed flight crew in all relevant matters; PF

(ii) briefed cabin crew in all relevant matters. PF

(4) perform pre-flight checks and cockpit preparation: (S) or (U)

(i) ensures the airworthiness of the aircraft; PF

(ii) performs the cockpit preparation and briefings; PF/PNF

(iii) performs FMS initialisation, data insertion and confirmation; PF/PNF

(iv) optimises and checks take-off performance and take-off data calculation. PF/PNF

(5) perform engine start: (S) or (U)

(i) asks for, receives acknowledges and checks ATC clearance; PNF

(ii) performs engine start procedure; PF/PNF

(iii) uses standard communication procedures with ground crew and ATC. PF/PNF

(6)	perform taxi out:		(S) or (U)
	(i)	receives, checks and adheres to taxi clearance;	PNF
	(ii)	taxis the aircraft, including use of exterior lighting;	PF
	(iii)	complies to taxi clearance;	PF/PNF
	(iv)	maintains look-out for conflicting traffic and obstacles;	PF/PNF
	(v)	operates thrust, brakes and steering;	PF
	(vi)	conducts relevant briefings;	PF
	(vii)	uses standard communication procedures with crew and ATC;	PNF
	(viii)	completes standard operating procedures and checklists;	PF/PNF
	(ix)	updates and confirms FMS data;	PF/PNF
	(x)	manages changes in performance and departure route;	PF/PNF
	(xi)	completes de or anti-ice procedures.	PF/PNF
(7)	manage abnormal and emergency situations:		(S) or (U)
	(i)	identifies the abnormal condition;	PF/PNF
	(ii)	interprets the abnormal condition;	PF/PNF
	(iii)	performs the procedure for the abnormal condition.	PF/PNF
(8)	communicate with cabin crew, passengers and company:		(S) or (U)
	(i)	communicates relevant information with cabin crew;	PF
	(ii)	communicates relevant information with company;	PF/PNF
	(iii)	makes passenger announcements when appropriate.	PF/PNF

(h) Perform take-off

List of competency elements and performance criteria:

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of including recognising flight, and managing potential		
(2)	perform pre threats and errors. -take-off and predeparture preparation:		(S) or (U)
	(i)	checks and acknowledges line up clearance;	PF/PNF
	(ii)	checks correct runway selection;	PF/PNF
	(iii)	confirms validity of performance data;	PF/PNF
	(iv)	checks approach sector and runway are clear;	PF/PNF
	(v)	confirms all checklists and take-off preparations completed;	PF/PNF
	(vi)	lines up the aircraft on centreline without losing distance;	PF
	(vii)	checks weather on departure sector;	PF/PNF

	(viii) checks runway status and wind.	PF/PNF	
(3)	perform take-off roll:		(S) or (U)
	(i) applies take-off thrust;	PF	
	(ii) checks engine parameters;	PNF	
	(iii) checks air speed indicators;	PF/PNF	
	(iv) stays on runway centreline.	PF	
(4)	perform transition to instrument flight rules:		(S) or (U)
	(i) applies v1 procedures;	PF/PNF	
	(ii) rotates at vr to initial pitch attitude;	PF	
	(iii) establishes initial wings level attitude;	PF	
	(iv) retracts landing gear;	PNF	
	(v) maintains climb out speed.	PF	
(5)	perform initial climb to flap retraction altitude:		(S) or (U)
	(i) sets climb power;	PF	
	(ii) adjusts attitude for acceleration;	PF	
	(iii) selects flaps according flap speed schedule;	PF/PNF	
	(iv) observes speed restrictions;	PF	
	(v) completes relevant checklists.	PF/PNF	
(6)	perform rejected take-off:		(S) or (U)
	(i) recognises the requirement to abort the take-off;	PF	
	(ii) applies the rejected take-off procedure;	PF	
	(iii) assesses the need to evacuate the aircraft.	PF/PNF	
(7)	perform navigation:		(S) or (U)
	(i) complies to departure clearance;	PF	
	(ii) complies with published departure procedures, for example speeds;	PF	
	(iii) monitors navigation accuracy;	PF/PNF	
	(iv) communicates and coordinates with ATC.	PNF	
(8)	manage abnormal and emergency situations:		(S) or (U)
	(i) identifies the abnormal condition;	PF/PNF	
	(ii) interprets the abnormal condition;	PF/PNF	
	(iii) performs the procedure for the abnormal condition.	PF/PNF	

(i) Perform climb

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;

(2)	perform SID or en-route navigation:		(S) or (U)
	(i)	complies with departure clearance and procedures;	PF
	(ii)	demonstrates terrain awareness;	PF/PNF
	(iii)	monitors navigation accuracy;	PF/PNF
	(iv)	adjusts flight to weather and traffic conditions;	PF
	(v)	communicates and coordinates with ATC;	PNF
	(vi)	observes minimum altitudes;	PF/PNF
	(vii)	selects appropriate level of automation;	PF
	(viii)	complies with altimeter setting procedures.	PF/PNF
(3)	complete climb procedures and checklists:		(S) or (U)
	(i)	performs the after take-off items;	PF/PNF
	(ii)	confirms and checks according checklists.	PF/PNF
(4)	modify climb speeds, rate of climb and cruise altitude:		(S) or (U)
	(i)	recognises the need to change speed, Rate of climb or cruise altitude;	PF
	(ii)	selects and maintains the appropriate climb speed or rate of climb;	PF
	(iii)	selects optimum cruise flight level.	PF/PNF
(5)	perform systems operations and procedures:		(S) or (U)
	(i)	monitors operation of all systems;	PF/PNF
	(ii)	operates systems as required.	PF/PNF
6)	manage abnormal and emergency situations:		(S) or (U)
	(i)	identifies the abnormal condition;	PF/PNF
	(ii)	interprets the abnormal condition;	PF/PNF
	(iii)	performs the procedure for the abnormal condition.	PF/PNF
(7)	communicate with cabin crew, passengers and company:		(S) or (U)
	(i)	communicates relevant information with cabin crew;	PF
	(ii)	communicates relevant information with company;	PF/PNF
	(iii)	makes passenger announcements when appropriate.	PF

(j) Perform cruise

List of competency elements and performance criteria.

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;		
(2)	monitor navigation accuracy:		(S) or (U)
	(i) demonstrates adequate area knowledge;	PF/PNF	
	(ii) demonstrates adequate route knowledge;	PF/PNF	
	(iii) navigates according to flight plan and clearance;	PF	
	(iv) adjusts flight to weather and traffic conditions;	PF	
	(v) communicates and coordinates with ATC;	PNF	
	(vi) observes minimum altitudes;	PF/PNF	
	(vii) uses all means of automation.	PF	
(3)	monitor flight progress:		(S) or (U)
	(i) selects optimum speed;	PF	
	(ii) selects optimum cruise flight level;	PF	
	(iii) monitors and controls fuel status;	PF/PNF	
	(iv) recognises the need for a possible diversion;	PF/PNF	
	(v) creates a diversion contingency plan if required.	PF/PNF	
(4)	perform descent and approach planning:		(S) or (U)
	(i) checks weather of destination and alternate airport;	PF/PNF	
	(ii) checks runway in use and approach procedure;	PF/PNF	
	(iii) sets the FMS accordingly;	PNF	
	(iv) checks landing weight and landing distance required;	PNF	
	(v) checks MEA, MGA and MSA;	PF/PNF	
	(vi) identifies top of descent point.	PF	
(5)	perform systems operations and procedures:		(S) or (U)
	(i) monitors operation of all systems;	PF/PNF	
	(ii) operates systems as required.	PNF	
(6)	manage abnormal and emergency situations:		(S) or (U)
	(i) identifies the abnormal condition;	PF/PNF	
	(ii) interprets the abnormal condition;	PF/PNF	
	(iii) performs the procedure for the abnormal condition.	PF/PNF	

(7) communicate with cabin crew, passengers and company: (S) or (U)

(i) communicates relevant information with cabin crew; PF

(ii) communicates relevant information with company; PF/PNF

(iii) makes passenger announcements when appropriate. PF

(k) Perform descent

List of competency elements and performance criteria:

(1) Demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;

(2) initiate and manage descent: (S) or (U)

(i) starts descent according to ATC clearance or optimum descent point; PF

(ii) selects optimum speed and descent rate; PF

(iii) adjusts speed to existing environmental conditions; PF

(iv) recognises the need to adjust the descent path; PF

(v) adjusts the flight path as required; PF

(vi) utilises all means of FMS descent information. PF

(3) monitor and perform en route and descent navigation: (S) or (U)

(i) complies with arrival clearance and procedures; PF

(ii) demonstrates terrain awareness; PF/PNF

(iii) monitors navigation accuracy; PF/PNF

(iv) adjusts flight to weather and traffic conditions; PF

(v) communicates and coordinates with ATC; PNF

(vi) observes minimum altitudes; PF/PNF

(vii) selects appropriate level or mode of automation; PF

(viii) complies with altimeter setting procedures. PF/PNF

(4) re-planning and update of approach briefing: (S) or (U)

(i) re-checks destination weather and runway in use; PNF

(ii) briefs or re-briefs about instrument approach and landing as required; PF

(iii) reprograms the FMS as required; PNF

(iv) re-checks fuel status. PF/PNF

(5) perform holding: (S) or (U)

(i) identifies holding requirement; PF/PNF

(ii) programs FMS for holding pattern; PNF

(iii) enters and monitors holding pattern; PF

(iv)	assesses fuel requirements and determines max holding time;	PF/PNF	
(v)	reviews the need for a diversion;	PF/PNF	
(vi)	initiates diversion.	PF	
(6)	perform systems operations and procedures:		(S) or (U)
(i)	monitors operation of all systems;	PF/PNF	
(ii)	operates systems as required.	PF/PNF	
(7)	manage abnormal and emergency situations:		
(i)	identifies the abnormal condition;	PF/PNF	
(ii)	interprets the abnormal condition;	PF/PNF	
(iii)	performs the procedure for the abnormal condition.	PF/PNF	
(8)	communicate with cabin crew, passengers and company:		(S) or (U)
(i)	communicates relevant information with cabin crew;	PF	
(ii)	communicates relevant information with company;	PF/PNF	
(iii)	makes passenger announcements when appropriate;	PF	

(l) Perform approach

List of competency elements and performance criteria:

(1)	demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;		
(2)	perform approach in general:		(S) or (U)
(i)	executes approach according to procedures and situation;	PF	
(ii)	selects appropriate level or mode of automation;	PF	
(iii)	selects optimum approach path;	PF	
(iv)	operates controls smooth and coordinated;	PF	
(v)	performs speed reduction and flap extension;	PF/PNF	
(vi)	performs relevant checklists;	PF/PNF	
(vii)	initiates final descent;	PF	
(viii)	achieves stabilised approach criteria;	PF	
(ix)	ensures adherence to minima;	PF/PNF	
(x)	initiates go-around if required;	PF	
(xi)	masters transition to visual segment.	PF	
(3)	perform precision approach:		(S) or (U)
(i)	performs ILS approach;	PF	
(ii)	performs MLS approach.	PF	

(4)	perform non-precision approach:		(S) or (U)
	(i) performs VOR approach;	PF	
	(ii) performs NDB approach;	PF	
	(iii) performs SRE approach;	PF	
	(iv) performs GNSS approach;	PF	
	(v) performs ILS loc approach;	PF	
	(vi) performs ILS back beam approach.	PF	
(5)	perform approach with visual reference to ground:		(S) or (U)
	(i) performs standard visual approach;	PF	
	(ii) performs circling approach.	PF	
(6)	monitor the flight progress:		(S) or (U)
	(i) insures navigation accuracy;	PF/PNF	
	(ii) communicates with ATC and crew members;	PNF	
	(iii) monitors fuel status.	PF/PNF	
(7)	perform systems operations and procedures:		
	(i) monitors operation of all systems;	PF	
	(ii) operates systems as required.	PF	
(8)	manage abnormal and emergency situations:		(S) or (U)
	(i) identifies the abnormal condition;	PF/PNF	
	(ii) interprets the abnormal condition;	PF/PNF	
	(iii) performs the procedure for the abnormal condition.	PF/PNF	
(9)	perform missed approach and goaround:		(S) or (U)
	(i) initiates go-around procedure;	PF	
	(ii) navigates according to missed approach procedure;	PF	
	(iii) completes the relevant checklists;	PF/PNF	
	(iv) initiates approach or diversion after the go-around;	PF	
	(v) communicates with ATC and crew members.	PNF	
(10)	communicate with cabin crew, passengers and company:		(S) or (U)
	(i) communicates relevant information with cabin crew;	PF	
	(ii) communicates relevant information with company;	PF/PNF	
	(iii) makes passenger announcements when appropriate;	PF	
	(iv) initiates go-around procedure.	PF	

(m) Perform landing

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;

(2) land the aircraft; (S) or (U)

(i)	maintains a stabilised approach path during visual segment;	PF
(ii)	recognises and acts on changing conditions for windshift or wind shear segment;	PF
(iii)	initiates flare;	PF
(iv)	controls thrust;	PF
(v)	achieves touchdown in touchdown zone on centreline;	PF
(vi)	lowers nose wheel;	PF
(vii)	maintains centreline;	PF
(viii)	performs after-touchdown procedures;	PF
(ix)	makes use of appropriate braking and reverse thrust;	PF
(x)	vacates runway with taxi speed.	PF

(3) perform systems operations and procedures: (S) or (U)

(i)	monitors operation of all systems;	PF
(ii)	operates systems as required.	PF

(4) manage abnormal and emergency situations: (S) or (U)

(i)	identifies the abnormal condition;	PF/PNF
(ii)	interprets the abnormal condition;	PF/PNF
(iii)	performs the procedure for the abnormal condition.	PF/PNF

(n) Perform after landing and post flight operations

List of competency elements and performance criteria:

(1) demonstrate attitudes and behaviours appropriate to the safe conduct of flight, including recognising and managing potential threats and errors;

(2) perform taxiing and parking: (S) or (U)

(i)	receives, checks and adheres to taxi clearance;	PNF
(ii)	taxies the aircraft including use of exterior lighting;	PF
(iii)	controls taxi speed;	PF/PNF
(iv)	maintains centreline;	PF
(v)	maintains look-out for conflicting traffic and obstacles;	PF
(vi)	identifies parking position;	PF/PNF
(vii)	complies with marshalling or stand guidance;	PF/PNF

(viii)	applies parking and engine shut down procedures;	PF	
(ix)	completes with relevant checklists.	PF/PNF	
(3)	perform aircraft post-flight operations:		(S) or (U)
(i)	communicates to ground personnel and crew;	PF	
(ii)	completes all required flight documentation;	PF/PNF	
(iii)	ensures securing of the aircraft;	PF	
(iv)	conducts the debriefings.	PF	
(4)	perform systems operations and procedures:		(S) or (U)
(i)	monitors operation of all systems;	PF/PNF	
(ii)	operates systems as required.	PF/PNF	
(5)	manage abnormal and emergency situations:		(S) or (U)
(i)	identifies the abnormal condition;	PF/PNF	
(ii)	interprets the abnormal condition;	PF/PNF	
(iii)	performs the procedure for the abnormal condition.	PF/PNF	
(6)	communicate with cabin crew, passengers and company:		(S) or (U)
(i)	communicates relevant information with cabin crew;	PF	
(ii)	communicates relevant information with company;	PF/PNF	
(iii)	makes passenger announcements when appropriate.	PF	

PRINCIPLES OF THREAT AND ERROR MANAGEMENT

(o) One model that explains the principles of threat and error management is the TEM model.

(1) The components of the TEM model:

There are three basic components in the TEM model, from the perspective of flight crews: threats, errors and undesired aircraft states. The model proposes that threats and errors are part of everyday aviation operations that must be managed by flight crews, since both threats and errors carry the potential to generate undesired aircraft states. Flight crews must also manage undesired aircraft states, since they carry the potential for unsafe outcomes. Undesired state management is an essential component of the TEM model, as important as threat and error management. Undesired aircraft state management largely represents the last opportunity to avoid an unsafe outcome and thus maintain safety margins in flight operations.

(2) Threats:

(i) Threats are defined as events or errors that occur beyond the influence of the flight crew, increase operational complexity, and which must be managed to maintain the margins of safety. During typical flight operations, flight crews have to manage various contextual complexities. Such complexities would include, for example, dealing with adverse meteorological conditions, airports surrounded by high mountains, congested airspace, aircraft malfunctions, errors committed by other people outside of the cockpit, such as air traffic controllers, flight attendants or maintenance workers, and so forth. The TEM model considers these complexities

as threats because they all have the potential to negatively affect flight operations by reducing margins of safety;

(ii) Some threats can be anticipated, since they are expected or known to the flight crew. For example, flight crews can anticipate the consequences of a thunderstorm by briefing their response in advance, or prepare for a congested airport by making sure they keep a watchful eye on other aircraft as they execute the approach;

(iii) Some threats can occur unexpectedly, such as an in-flight aircraft malfunction that happens suddenly and without warning. In this case, flight crews must apply skills and knowledge acquired through training and operational experience;

(iv) Lastly, some threats may not be directly obvious to, or observable by, flight crews immersed in the operational context, and may need to be uncovered by safety analysis. These are considered latent threats. Examples of latent threats include equipment design issues, optical illusions, or shortened turnaround schedules;

(v) Regardless of whether threats are expected, unexpected, or latent, one measure of the effectiveness of a flight crew's ability to manage threats is whether threats are detected with the necessary anticipation to enable the flight crew to respond to them through deployment of appropriate countermeasures;

(vi) Threat management is a building block to error management and undesired aircraft state management. Although the threat-error linkage is not necessarily straightforward, and although it may not be always possible to establish a linear relationship, or one-to-one mapping between threats, errors and undesired states, archival data demonstrates that mismanaged threats are normally linked to flight crew errors, which in turn are often linked to undesired aircraft states. Threat management provides the most proactive option to maintain margins of safety in flight operations, by voiding safety-compromising situations at their roots. As threat managers, flight crews are the last line of defence to keep threats from impacting flight operations;

(vii) Table 1 presents examples of threats, grouped under two basic categories derived from the TEM Model. Environmental threats occur due to the environment in which flight operations take place. Some environmental threats can be planned for and some will arise spontaneously, but they all have to be managed by flight crews in real time. Organisational threats, on the other hand, can be controlled (for example removed or, at least, minimised) at source by aviation organisations. Organisational threats are usually latent in nature. Flight crews still remain the last line of defence, but there are earlier opportunities for these threats to be mitigated by aviation organisations themselves.

Environmental threats	Organisational threats
(A) weather: thunderstorms, turbulence, icing, wind shear, cross or tailwind, very low or high temperatures;	(A) operational pressure: delays, late arrivals or equipment changes;
(B) ATC: traffic congestion, ACAS RA/TA, ATC command, ATC error, ATC language difficulty, ATC non-standard phraseology, ATC runway change, ATIS communication or units of measurement (QFE/meters);	(B) aircraft: aircraft malfunction, automation event or anomaly, MEL/CDL;
(C) airport: contaminated or short runway; contaminated taxiway, lack of, confusing, faded signage, markings, birds, aids unserviceable, complex surface navigation procedures or airport constructions;	(C) cabin: flight attendant error, cabin event distraction, interruption, cabin door security;
(D) terrain: high ground, slope, lack of references or 'black hole';	(D) maintenance: maintenance event or error;
(E) other: similar call-signs.	(E) ground: ground-handling event, de-icing or ground crew error;
	(F) dispatch: dispatch paperwork event or error;
	(G) documentation: manual error or chart error;
	(H) other: crew scheduling event.

Table 1. Examples of threats (list is not exhaustive)

(3) Errors:

(i) Errors are defined actions or inactions by the flight crew that lead to deviations from organisational or flight crew intentions or expectations. Unmanaged or mismanaged errors frequently lead to undesired aircraft states. Errors in the operational context thus tend to reduce the margins of safety and increase the probability of adverse events;

(ii) Errors can be spontaneous (for example without direct linkage to specific, obvious threats), linked to threats, or part of an error chain. Examples of errors would include the inability to maintain stabilised approach parameters, executing a wrong automation mode, failing to give a required callout, or misinterpreting an ATC clearance;

(iii) Regardless of the type of error, an error's effect on safety depends on whether the flight crew detects and responds to the error before it leads to an undesired aircraft state and to a potential unsafe outcome. This is why one of the objectives of TEM is to understand error management (for example detection and response), rather than to solely focus on error causality (for example causation and commission). From the safety perspective, operational errors that are timely detected and promptly responded to (for example properly managed), errors that do not lead to undesired aircraft states, do not reduce margins of safety in flight operations, and thus become operationally inconsequential. In addition to its safety value, proper error management represents an example of successful human performance, presenting both learning and training value;

(iv) Capturing how errors are managed is then as important, if not more, as capturing the prevalence of different types of error. It is of interest to capture if and when errors are detected and by whom, the response(s) upon detecting errors, and the outcome of errors. Some errors are quickly detected and resolved, thus becoming operationally inconsequential, while others go undetected or are mismanaged. A mismanaged error is defined as an error that is linked to or induces an additional error or undesired aircraft state;

(v) Table 2 presents examples of errors, grouped under three basic categories derived from the TEM model. In the TEM concept, errors have to be 'observable' and therefore, the TEM model uses the 'primary interaction' as the point of reference for defining the error categories;

(vi) The TEM model classifies errors based upon the primary interaction of the pilot or flight crew at the moment the error is committed. Thus, in order to be classified as aircraft handling error, the pilot or flight crew must be interacting with the aircraft (for example through its controls, automation or systems). In order to be classified as procedural error, the pilot or flight crew must be interacting with a procedure (for example checklists; SOPs; etc.). In order to be classified as communication error, the pilot or flight crew must be interacting with people (ATC, ground crew, other crewmembers, etc.);

(vii) Aircraft handling errors, procedural errors and communication errors may be unintentional or involve intentional non-compliance. Similarly, proficiency considerations (for example skill or knowledge deficiencies, training system deficiencies) may underlie all three categories of error. In order to keep the approach simple and avoid confusion, the TEM model does not consider intentional noncompliance and proficiency as separate categories of error, but rather as sub-sets of the three major categories of error.

Aircraft handling errors	(A)	manual handling, flight controls: vertical, lateral or speed deviations, incorrect flaps or speed brakes, thrust reverser or power settings;
	(B)	automation: incorrect altitude, speed, heading, auto throttle settings, incorrect mode executed or incorrect entries;
	(C)	systems, radio, instruments: incorrect packs, incorrect anti-icing, incorrect altimeter, incorrect fuel switches settings, incorrect speed bug or incorrect radio frequency dialled;
	(D)	ground navigation: attempting to turn down wrong taxiway or runway, taxi too fast, failure to hold short or missed taxiway or runway.
Procedural errors	(A)	SOPs: failure to cross-verify automation inputs;
	(B)	checklists: wrong challenge and response; items missed, checklist performed late or at the wrong time;
	(C)	callouts: omitted or incorrect callouts;
	(D)	briefings: omitted briefings; items missed;
	(E)	documentation: wrong weight and balance, fuel information, ATIS, or clearance information recorded, misinterpreted items on paperwork; incorrect logbook entries or incorrect application of MEL procedures.
Communication errors	(A)	crew to external: missed calls, misinterpretations of instructions, incorrect read-back, wrong clearance, taxiway, gate or runway communicated;
	(B)	pilot to pilot: within crew miscommunication or mis-interpretation.

Table 2. Examples of errors (list is not exhaustive)

(4) Undesired aircraft states:

(i) Undesired aircraft states are flight crew-induced aircraft position or speed deviations, misapplication of flight controls, or incorrect systems configuration, associated with a reduction in margins of safety. Undesired aircraft states that result from ineffective threat or error management may lead to compromising situations and reduce margins of safety in flight operations. Often considered at the cusp of becoming an incident or accident, undesired aircraft states must be managed by flight crews;

(ii) Examples of undesired aircraft states would include lining up for the incorrect runway during approach to landing, exceeding ATC speed restrictions during an approach, or landing long on a short runway requiring maximum braking. Events such as equipment malfunctions or ATC controller errors can also reduce margins of safety in flight operations, but these would be considered threats;

(iii) Undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident, or accident;

(iv) Table 3 presents examples of undesired aircraft states, grouped under three basic categories derived from the TEM model;

Aircraft handling	(A)	aircraft control (attitude);
	(B)	vertical, lateral or speed deviations;
	(C)	unnecessary weather penetration;
	(D)	unauthorised airspace penetration;
	(E)	operation outside aircraft limitations;
	(F)	unstable approach;
	(G)	continued landing after unstable approach;
	(H)	long, floated, firm or off-centreline landing.
Ground navigation	(A)	proceeding towards wrong taxiway or runway;
	(B)	Wrong taxiway, ramp, gate or hold spot.
Incorrect aircraft configurations	(A)	incorrect systems configuration;
	(B)	incorrect flight controls configuration;
	(C)	incorrect automation configuration;
	(D)	incorrect engine configuration;
	(E)	incorrect weight and balance configuration.

Table 3. Examples of undesired aircraft states (list is not exhaustive)

(v) An important learning and training point for flight crews is the timely switching from error management to undesired aircraft state management. An example would be as follows: a flight crew selects a wrong approach in the FMC. The flight crew subsequently identifies the error during a cross-check prior to the FAF. However, instead of using a basic mode (for example heading) or manually flying the desired track, both flight crew members become involved in attempting to reprogram the correct approach prior to reaching the FAF. As a result, the aircraft 'stitches' through the localiser, descends late, and goes into an unstable approach. This would be an example of the flight crew getting 'locked in' to error management, rather than switching to undesired aircraft state management. The use of the TEM model assists in educating flight crews that, when the aircraft is in an undesired state, the basic task of the flight crew is undesired aircraft state management instead of error management. It also illustrates how easy it is to get locked in to the error management phase;

(vi) Also from a learning and training perspective, it is important to establish a clear differentiation between undesired aircraft states and outcomes. Undesired aircraft states are transitional states between a normal operational state (for example a stabilised approach) and an outcome. Outcomes, on the other hand, are end states, most notably, reportable occurrences (for example incidents and accidents). An example would be as follows: a stabilised approach (normal operational state) turns into an unstabilised approach (undesired aircraft state) that results in a runway excursion (outcome);

(vii) The training and remedial implications of this differentiation are of significance. While at the undesired aircraft state stage, the flight crew has the possibility, through appropriate

TEM, of recovering the situation, returning to a normal operational state, thus restoring margins of safety. Once the undesired aircraft state becomes an outcome, recovery of the situation, return to a normal operational state, and restoration of margins of safety is not possible.

(5) Countermeasures:

(i) Flight crews must, as part of the normal discharge of their operational duties, employ countermeasures to keep threats, errors and undesired aircraft states from reducing margins of safety in flight operations. Examples of countermeasures would include checklists, briefings, call-outs and SOPs, as well as personal strategies and tactics. Flight crews dedicate significant amounts of time and energies to the application of countermeasures to ensure margins of safety during flight operations. Empirical observations during training and checking suggest that as much as 70 % of flight crew activities may be countermeasures-related activities.

(ii) All countermeasures are necessarily flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crews employ build upon 'hard' resources provided by the aviation system. These resources are already in place in the system before flight crews report for duty, and are therefore considered as systemic-based countermeasures. The following would be examples of 'hard' resources that flight crews employ as systemic-based countermeasures:

(A) ACAS;

(B) TAWS;

(C) SOPs;

(D) checklists;

(E) briefings;

(F) training;

(G) etc.

(iii) Other countermeasures are more directly related to the human contribution to the safety of flight operations. These are personal strategies and tactics, individual and team countermeasures that typically include canvassed skills, knowledge and attitudes developed by human performance training, most notably, by CRM training. There are basically three categories of individual and team countermeasures:

(A) planning countermeasures: essential for managing anticipated and unexpected threats;

(B) execution countermeasures: essential for error detection and error response;

(C) review countermeasures: essential for managing the changing conditions of a flight.

(iv) Enhanced TEM is the product of the combined use of systemic based and individual and team countermeasures. Table 4 presents detailed examples of individual and team countermeasures. Further guidance on countermeasures can be found in the sample assessment guides for terminal training objectives (PANS-TRG, Chapter 3, Attachment B) as well as in the ICAO manual, Line Operations Safety Audit (LOSA) (Doc 9803).

Planning countermeasures		
SOP briefing	The required briefing was interactive and operationally thorough	(A) Concise, not rushed, and met SOP requirements; (B) Bottom lines were established
Plans stated	Operational plans and decisions were communicated and acknowledged	Shared understanding about plans: 'Everybody on the same page'
Workload assignment	Roles and responsibilities were defined for normal and non-normal situations	Workload assignments were communicated and acknowledged
Contingency management	Crew members developed effective strategies to manage threats to safety	(A) Threats and their consequences were anticipated; (B) Used all available resources to manage threats
Execution countermeasures		
Monitor and cross-check	Crew members actively monitored and cross-checked systems and other crew members	Aircraft position, settings, and crew actions were verified
Workload management	Operational tasks were prioritised and properly managed to handle primary flight duties	(A) Avoided task fixation; (B) Did not allow work overload
Automation management	Automation was properly managed to balance situational and workload requirements	(A) Automation setup was briefed to other members (B) Effective recovery techniques from automation anomalies
Review countermeasures		
Evaluation and modification of plans	Existing plans were reviewed and modified when necessary	Crew decisions and actions were openly analysed to make sure the existing plan was the best plan
Inquiry	Crew members asked questions to investigate and/or clarify current plans of action	Crew members not afraid to express a lack of knowledge: 'Nothing taken for granted' attitude
Assertiveness	Crew members stated critical information or solutions with appropriate persistence	Crew members spoke up without hesitation

Table 4. Examples of individual and team countermeasures

GM2 FCL.015(a) Application and issue, revalidation and renewal of licences, ratings and certificates

ED Decision 2018/011/R

The required level of competency of a student pilot is assessed by observing the following:

(a) application of knowledge;

(b) application of regulations and procedures;

(c) communication;

(d) aeroplane flight path management – automation;

(e) aeroplane flight path management – manual control;

(f) leadership and teamwork;

(g) problem-solving and decision-making;

(h) situational awareness (SA) and information management; and

(i) workload management.

The competencies referred to in points (b) and (e) are particularly relevant during the training. This means that the focus is on observing the student pilot performing take-offs and landings in accordance with the standard operating procedures (SOPs) and recommended techniques of the original equipment manufacturer (OEM).

The competency elements and sub-elements stipulated in GM1 to Appendix 5 for take-off and landing provide additional guidance for instructors and student pilots.

Consistency and repeatability of all the competencies above is achieved if the student pilot is able to perform at least three successive take-offs and landings demonstrating the required observable behaviours.

The take-off and landing training in an aeroplane should include at least one go-around. Due consideration should be given to environmental conditions when evaluating competency.

Appendix 6 – Modular training courses for the IR

Regulation (EU) 2021/2227

A. IR(A) — Modular flying training course

GENERAL

1. The aim of the IR(A) modular flying training course is to train pilots to the level of proficiency necessary to operate aeroplanes under IFR and in IMC. The course consists of two modules, which may be taken separately or combined:

   (a) Basic Instrument Flight Module

   This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in a BITD, FNPT I or II, or an FFS. Upon completion of the Basic Instrument Flight Module, the candidate shall be issued a Course Completion Certificate.

   (b) Procedural Instrument Flight Module

   This comprises the remainder of the training syllabus for the IR(A), 40 hours single-engine or 45 hours multi-engine instrument time under instruction, and the theoretical knowledge course for the IR(A).

2. Applicants for a modular IR(A) course shall be the holder of a PPL(A) or a CPL(A). Applicants for the Procedural Instrument Flight Module, who do not hold a CPL(A), shall be a holder of a BIR or of a Course Completion Certificate for the Basic Instrument Flight Module.

   The ATO shall ensure that the applicant for a multi-engine IR(A) course who has not held a multi-engine aeroplane class or type rating has received the multi-engine training specified in Subpart H prior to commencing the flight training for the IR(A) course.

3. An applicant wishing to undertake the Procedural Instrument Flight Module of a modular IR(A) course shall be required to complete all the instructional stages in one continuous approved course of training. Prior to commencing the Procedural Instrument Flight Module, the ATO shall ensure the competence of the applicant in basic instrument flying skills. Refresher training shall be given as required.

4. The course of theoretical instruction shall be completed within 18 months. The Procedural Instrument Flight Module and the skill test shall be completed within the period of validity of the pass in theoretical examinations.

5. The course shall comprise:

   (a) theoretical knowledge instruction to the IR knowledge level;

   (b) instrument flight instruction.

THEORETICAL KNOWLEDGE

6. An approved modular IR(A) course shall comprise at least 150 hours of theoretical knowledge instruction.

FLYING TRAINING

7. A single-engine IR(A) course shall comprise at least 50 hours instrument time under instruction of which up to 20 hours may be instrument ground time in an FNPT I, or up to 35 hours in an FFS or FNPT II. A maximum of 10 hours of FNPT II or an FFS instrument ground time may be conducted in an FNPT I.

8. A multi-engine IR(A) course shall comprise at least 55 hours instrument time under instruction, of which up to 25 hours may be instrument ground time in an FNPT I, or up to 40 hours in an

FFS or FNPT II. A maximum of 10 hours of FNPT II or an FFS instrument ground time may be conducted in an FNPT I. The remaining instrument flight instruction shall include at least 15 hours in multi-engine aeroplanes.

9. The holder of a single-engine IR(A) who also holds a multi-engine class or type rating wishing to obtain a multi-engine IR(A) for the first time shall complete a course at an ATO comprising at least 5 hours instruction in instrument flying in multi-engine aeroplanes, of which 3 hours may be in an FFS or FNPT II.

10.1 Holders of a CPL(A), of a BIR, or of a Course Completion Certificate for the Basic Instrument Flight Module shall be credited with up to 10 hours in regard of the total amount of training required in paragraphs 7 or 8 above.

10.2 The holder of an IR(H) may have the total amount of training required in paragraphs 7 or 8 above reduced to 10 hours.

10.3 The total instrument flight instruction in aeroplane shall comply with paragraph 7 or 8, as appropriate.

11. The flying exercises up to the IR(A) skill test shall comprise:

(a) Basic Instrument Flight Module: Procedure and manoeuvre for basic instrument flight covering at least:

basic instrument flight without external visual cues:

— horizontal flight,

— climbing,

— descent,

— turns in level flight, climbing, descent;

instrument pattern;

steep turn;

radio navigation;

recovery from unusual attitudes;

limited panel;

recognition and recovery from incipient and full stalls;

(b) Procedural Instrument Flight Module:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents in the preparation of an IFR flight plan;

(ii) procedure and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

— transition from visual to instrument flight on take-off,

— standard instrument departures and arrivals,

— en-route IFR procedures,

— holding procedures,

— instrument approaches to specified minima,

— missed approach procedures,

— landings from instrument approaches, including circling;

(iii) in-flight manoeuvres and particular flight characteristics;

(iv) if required, operation of a multi-engine aeroplane in the above exercises, including operation of the aeroplane solely by reference to instruments with one engine simulated inoperative and engine shutdown and restart (the latter exercise to be carried out at a safe altitude unless carried out in an FFS or FNPT II).

Aa. IR(A) — Competency-based modular flying training course

GENERAL

1. The aim of the competency-based modular flying training course is to train PPL or CPL holders for the instrument rating, taking into account prior instrument flight instruction and experience. It is designed to provide the level of proficiency needed to operate aeroplanes under IFR and in IMC. The course shall be taken within an ATO or consist of a combination of instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR and flight instruction within an ATO.

2. An applicant for such a competency-based modular IR(A) shall be the holder of a PPL(A) or CPL(A).

3. The course of theoretical instruction shall be completed within 18 months. The instrument flight instruction and the skill test shall be completed within the period of validity of the pass of the theoretical knowledge examinations.

4. The course shall comprise:

(a) theoretical knowledge instruction to the IR(A) knowledge level;

(b) instrument flight instruction.

THEORETICAL KNOWLEDGE

5. An approved competency-based modular IR(A) course shall comprise at least 80 hours of theoretical knowledge instruction. The theoretical knowledge course may contain computer-based training and e- learning elements. A minimum amount of classroom teaching as required by ORA.ATO.305 has to be provided.

FLYING TRAINING

6. The method of attaining an IR(A) following this modular course is competency-based. However, the minimum requirements below shall be completed by the applicant. Additional training may be required to reach required competencies.

(a) A single-engine competency-based modular IR(A) course shall include at least 40 hours of instrument time under instruction, of which up to 10 hours may be instrument ground time in an FNPT I, or up to 25 hours in an FFS or FNPT II. A maximum of 5 hours of FNPT II or FFS instrument ground time may be conducted in an FNPT I.

(i) When the applicant has:

(A) completed instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR; or

(B) prior experience of instrument flight time as PIC on aeroplanes, under a rating providing the privileges to fly under IFR and in IMC,

these hours may be credited towards the 40 hours above up to maximum of 30 hours,

(ii) When the applicant has prior instrument flight time under instruction other than specified in point (a)(i), these hours may be credited towards the required 40 hours up to a maximum of 15 hours.

(iii) In any case, the flying training shall include at least 10 hours of instrument flight time under instruction in an aeroplane at an ATO.

(iv) The total amount of dual instrument instruction shall not be less than 25 hours.

(b) A multi-engine competency-based modular IR(A) course shall include at least 45 hours instrument time under instruction, of which up to 10 hours may be instrument ground time in an FNPT I, or up to 30 hours in an FFS or FNPT II. A maximum of 5 hours of FNPT II or FFS instrument ground time may be conducted in an FNPT I.

(i) When the applicant has:

(A) completed instrument flight instruction provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR; or

(B) prior experience of instrument flight time as PIC on aeroplanes, under a rating giving the privileges to fly under IFR and in IMC

these hours may be credited towards the 45 hours above up to a maximum of 35 hours.

(ii) When the applicant has prior instrument flight time under instruction other than specified in point (b)(i), these hours may be credited towards the required 45 hours up to a maximum of 15 hours.

(iii) In any case, the flying training shall include at least 10 hours of instrument flight time under instruction in a multi-engine aeroplane at an ATO.

(iv) The total amount of dual instrument instruction shall not be less than 25 hours, of which at least 15 hours shall be completed in a multi-engine aeroplane.

(c) To determine the amount of hours credited and to establish the training needs, the applicant shall complete a pre-entry assessment at an ATO.

(d) The completion of the instrument flight instruction provided by an IRI(A) or FI(A) in accordance with point (a)(i) or (b)(i) shall be documented in a specific training record and signed by the instructor.

7. The flight instruction for the competency-based modular IR(A) shall comprise:

(a) procedures and manoeuvres for basic instrument flight covering at least:

(i) basic instrument flight without external visual cues;

(ii) horizontal flight;

(iii) climbing;

(iv) descent;

(v) turns in level flight, climbing and descent;

(vi) instrument pattern;

(vii) steep turn;

(viii) radio navigation;

(ix) recovery from unusual attitudes;

(x) limited panel; and

(xi) recognition and recovery from incipient and full stall;

(b) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents for the preparation of an IFR flight plan;

(c) procedure and manoeuvres for IFR operation under normal, abnormal, and emergency conditions covering at least:

(i) transition from visual to instrument flight on take-off;

(ii) standard instrument departures and arrivals;

(iii) en route IFR procedures;

(iv) holding procedures;

(v) instrument approaches to specified minima;

(vi) missed approach procedures; and

(vii) landings from instrument approaches, including circling;

(d) in-flight manoeuvres and particular flight characteristics;

(e) if required, operation of a multi-engine aeroplane in the above exercises, including:

(i) operation of the aeroplane solely by reference to instruments with one engine simulated inoperative;

(ii) engine shutdown and restart (to be carried out at a safe altitude unless carried out in an FFS or FNPT II).

8. Applicants for the competency-based modular IR(A) holding a Part-FCL PPL or CPL and a valid IR(A) issued in compliance with the requirements of Annex 1 to the Chicago Convention by a third country may be credited in full towards the training course mentioned in paragraph 4. In order to be issued the IR(A), the applicant shall:

(a) successfully complete the skill test for the IR(A) in accordance with Appendix 7;

(b) demonstrate to the examiner during the skill test that he/she has acquired an adequate level of theoretical knowledge of air law, meteorology and flight planning and performance (IR); and

(c) have a minimum experience of at least 50 hours of flight time under IFR as PIC on aeroplanes.

9. Applicants for the competency-based modular IR(A) who hold a BIR in accordance with point FCL.835 and who have received at least 10 hours of instrument flight time under instruction at an ATO may be credited towards the training course referred to in paragraph 4, provided that all competency-based instrument rating topics have been included in that BIR training, and assessed by the ATO that provides the competency-based modular flying training course.

10. Applicants for the competency-based modular IR(A) who hold a BIR and have experience of at least 50 hours of flight time under IFR as PIC on aeroplanes, shall:

(a) at an ATO:

(i) be assessed as having an acceptable standard of competency-based instrument rating theoretical knowledge;

(ii) receive appropriate flight training to extend IFR privileges in accordance with FCL.605.IR(a);

(b) after completion of (a);

(i) successfully complete the skill test for the IR(A) in accordance with Appendix 7;

(ii) demonstrate orally to the examiner during the skill test that they have acquired an adequate level of theoretical knowledge of air law, meteorology, and flight planning and performance.

PRE-ENTRY ASSESSMENT

11. The content and duration of the pre-entry assessment shall be determined by the ATO based on the prior instrument experience of the applicant.

MULTI-ENGINE

12. The holder of a single-engine IR(A) who also holds a multi-engine class or type rating wishing to obtain a multi-engine IR(A) for the first time shall complete a course at an ATO comprising at least 5 hours instrument time under instruction in multi-engine aeroplanes, of which 3 hours may be in an FFS or FNPT II and shall pass a skill test.

B. IR(H) — Modular flying training course

1. The aim of the IR(H) modular flying training course is to train pilots to the level of proficiency necessary to operate helicopters under IFR and in IMC.

2. An applicant for a modular IR(H) course shall be the holder of a PPL(H), or a CPL(H) or an ATPL(H). Prior to commencing the aircraft instruction phase of the IR(H) course, the applicant shall be the holder of the helicopter type rating used for the IR(H) skill test, or have completed approved type rating training on that type. The applicant shall hold a certificate of satisfactory completion of MCC if the skill test is to be conducted in Multi- Pilot conditions.

3. An applicant wishing to undertake a modular IR(H) course shall be required to complete all the instructional stages in one continuous approved course of training.

4. The course of theoretical instruction shall be completed within 18 months. The flight instruction and the skill test shall be completed within the period of validity of the pass in the theoretical examinations.

5. The course shall comprise:

(a) theoretical knowledge instruction to the IR knowledge level;

(b) instrument flight instruction.

THEORETICAL KNOWLEDGE

6. An approved modular IR(H) course shall comprise at least 150 hours of instruction.

FLYING TRAINING

7. An IR(H) course shall comprise at least 55 hours instrument time under instruction, of which:

(a) up to 20 hours may be instrument ground time in an FNPT I (H) or (A). These 20 hours instruction time in FNPT I (H) or (A) may be substituted by 20 hours instruction time for IR(H) in an aeroplane, approved for this course; or

(b) up to 40 hours may be instrument ground time in a helicopter FTD 2/3, FNPT II/III or FFS.

The instrument flight instruction shall include at least 10 hours in an IFR-certificated helicopter.

8.1 Holders of an ATPL(H) shall have the theoretical knowledge instruction hours reduced by 50 hours.

8.2 The holder of an IR(A) may have the amount of training required reduced to 10 hours.

8.3. The holder of a PPL(H) with a helicopter night rating or a CPL(H) may have the total amount of instrument time under instruction required reduced by 5 hours.

9. The flying exercises up to the IR(H) skill test shall comprise:

(a) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents in the preparation of an IFR flight plan;

(b) procedure and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

— transition from visual to instrument flight on take-off,

— standard instrument departures and arrivals,

— en-route IFR procedures,

— holding procedures,

— instrument approaches to specified minima,

— missed approach procedures,

— landings from instrument approaches, including circling;

(c) in-flight manoeuvres and particular flight characteristics;

(d) if required, operation of a multi-engine helicopter in the above exercises, including operation of the helicopter solely by reference to instruments with one engine simulated inoperative and engine shutdown and restart (the latter exercise to be carried out in an FFS or FNPT II or FTD 2/3).

C. IR(As) — Modular flying training course

GENERAL

1. The aim of the IR(As) modular flying training course is to train pilots to the level of proficiency necessary to operate airships under IFR and in IMC. The course consists of two modules, which may be taken separately or combined:

(a) Basic Instrument Flight Module

This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in a BITD, FNPT I or II, or an FFS. Upon completion of the Basic Instrument Flight Module, the candidate shall be issued a Course Completion Certificate.

(b) Procedural Instrument Flight Module

This comprises the remainder of the training syllabus for the IR(As), 25 hours instrument time under instruction, and the theoretical knowledge course for the IR(As).

2. An applicant for a modular IR(As) course shall be the holder of a PPL(As) including the privileges to fly at night or a CPL(As). An applicant for the Procedural Instrument Flight Module, who does not hold a CPL(As), shall be holder of a Course Completion Certificate for the Basic Instrument Flight Module.

3. An applicant wishing to undertake the Procedural Instrument Flight Module of a modular IR(As) course shall be required to complete all the instructional stages in one continuous approved course of training. Prior to commencing the Procedural Instrument Flight Module, the ATO shall ensure the competence of the applicant in basic instrument flying skills. Refresher training shall be given as required.

4. The course of theoretical instruction shall be completed within 18 months. The Procedural Instrument Flight Module and the skill test shall be completed within the period of validity of the pass in theoretical examinations.

5. The course shall comprise:

(a) theoretical knowledge instruction to the IR knowledge level;

(b) instrument flight instruction.

THEORETICAL KNOWLEDGE

6. An approved modular IR(As) course shall comprise at least 150 hours of theoretical knowledge instruction.

FLYING TRAINING

7. An IR(As) course shall comprise at least 35 hours instrument time under instruction of which up to 15 hours may be instrument ground time in an FNPT I, or up to 20 hours in an FFS or FNPT II. A maximum of 5 hours of FNPT II or FFS instrument ground time may be conducted in an FNPT I.

8. The holder of a CPL(As) or of a Course Completion Certificate for the Basic Instrument Flight Module may have the total amount of training required in paragraph 7 reduced by 10 hours. The total instrument flight instruction in airship shall comply with paragraph 7.

9. If the applicant is the holder of an IR in another category of aircraft the total amount of flight instruction required may be reduced to 10 hours on airships.

10. The flying exercises up to the IR(As) skill test shall comprise:

(a) Basic Instrument Flight Module:

Procedure and manoeuvre for basic instrument flight covering at least:

basic instrument flight without external visual cues:

— horizontal flight,

— climbing,

— descent,

— turns in level flight, climbing, descent;

instrument pattern;

radionavigation;

recovery from unusual attitudes;

limited panel;

(b) Procedural Instrument Flight Module:

(i) pre-flight procedures for IFR flights, including the use of the flight manual and appropriate air traffic services documents in the preparation of an IFR flight plan;

(ii) procedure and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

— transition from visual to instrument flight on take-off,

— standard instrument departures and arrivals,

— en-route IFR procedures,

— holding procedures,

— instrument approaches to specified minima,

— missed approach procedures,

— landings from instrument approaches, including circling;

(iii) inflight manoeuvres and particular flight characteristics;

(iv) operation of airship in the above exercises, including operation of the airship solely by reference to instruments with one engine simulated inoperative and engine shut-down and restart (the latter exercise to be carried out at a safe altitude unless carried out in an FFS or FNPT II).

AMC1 to Appendix 6 'Modular training course for the IR'

ED Decision 2019/017/R

ALL MODULAR FLYING TRAINING COURSES FOR THE IR, EXCEPT COMPETENCYBASED MODULAR FLYING TRAINING COURSE

(a) The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only, in which case the head of training (HT) of that organisation should supervise that part of the course.

(b) The 150 hours of instruction, which include the application of threat and error management (TEM), may include in suitable proportions:

(1) classroom work;

(2) lessons;

(3) tutorials;

(4) demonstrations, including those supported by demonstration equipment;

(5) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(6) exercises that use demonstration equipment or training devices;

(7) directed study including workbook exercises or assignments;

(8) aerodrome or aviation industry field trips;

(9) computer-based training and e-learning elements;

(10) progress tests; and

(11) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (b)(9).

AMC2 to Appendix 6 Modular training course for the IR

ED Decision 2014/022/R

SECTION A IR(A) - MODULAR FLYING TRAINING COURSE

Basic Instrument Flight Module Training Course

(a) This 10 hours module is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitude recovery.

(b) All exercises may be performed in an FNPT I or II or an FFS, for a maximum of 5 hours. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used.

(c) A BITD may be used for the exercises 1, 2, 3, 4, 6, and 8.

(d) The use of the BITD is subject to the following:

(1) the training should be complemented by exercises on an aeroplane;

(2) the record of the parameters of the flight must be available;

(3) an FI(A) or IRI(A) should conduct the instruction.

EXERCISES

(e) Exercise 1:

(1) basic instrument flying without external visual cues; 0:30 hours

(2) horizontal flight; power changes for acceleration or deceleration;

(3) maintaining straight and level flight;

(4) turns in level flight with 15 ° and 25 ° bank, left and right;

(5) roll-out onto predetermined headings.

(f) Exercise 2:

(1) repetition of exercise 1; 0:45 hours

(2) additionally climbing, descending, maintaining heading and speed, transition to horizontal flight;

(3) climbing and descending turns.

(g) Exercise 3:

Instrument pattern: 0:45 hours

(1) start exercise, decelerate to approach speed, flaps into approach configuration;

(2) initiate standard turn (left or right);

(3) roll out on opposite heading, maintain new heading for 1 minute

(4) standard turn, gear down, descend 500 ft/min;

(5) roll out on initial heading, maintain descent (500 ft/min) and new heading for 1 minute;

(6) transition to horizontal flight, 1000 ft below initial flight level;

(7) initiate go-around;

(8) climb at best rate of climb speed.

(h) Exercise 4:

Repetition of exercise 1 and 0:45 hours

steep turns with 45° bank;

recovery from unusual attitudes.

(i) Exercise 5:

Repetition of exercise 4. 0:45 hours

(j) Exercise 6:

(1) radio navigation using VOR, NDB 0:45 hours

or, if available, VDF;

(2) interception of predetermined QDM, QDR.

(k) Exercise 7:

Repetition of exercise 1 and 0:45hours

recovery from unusual attitudes.

(l) Exercise 8:

(1) Repetition of exercise 1; 0:45 hours

(2) turns, level change and recovery from unusual attitudes with simulated failure of the artificial horizon or directional gyro.

(m) Exercise 9:

Recognition of, and recovery from, 0:45 hours

incipient and full stalls.

(n) Exercise 10: Repetition of exercises 6, 8 3:30 hours and 9.

CERTIFICATE OF COMPLETION OF BASIC INSTRUMENT FLIGHT MODULE

CERTIFICATE OF COMPLETION OF BASIC INSTRUMENT FLIGHT MODULE				
Pilot's last name(s):		First name(s):		
Type of licence:		Number:		State:
Flight training hours performed on SE aeroplane:		OR	Flight training hours performed on ME aeroplane:	
Flight training hours performed in an FSTD (maximum 5 hours):				
	Signature of applicant:			

The satisfactory completion of basic instrument flight module according to requirements is certified below:

TRAINING			
Basic instrument flight module training received during period:			
from:	to:	at:	ATO
Location and date:		Signature of head of training:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

AMC3 to Appendix 6 'Modular training courses for the IR'

ED Decision 2019/017/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE

(a) THEORETICAL KNOWLEDGE INSTRUCTION

(1) The theoretical knowledge instruction may be given at an ATO conducting theoretical knowledge instruction only, in which case the HT of that ATO should supervise that part of the course.

(2) The hours required for the theoretical knowledge instruction for the IR following the competency-based training route should be divided between the subjects and include the application of threat and error management (TEM) as based on the ATO's systems course design and agreed upon between the competent authority and the ATO.

An approved course, which includes the application of threat and error management, may contain in suitable proportions:

(i) classroom work;

(ii) lessons;

(iii) tutorials;

(iv) demonstrations, including those supported by demonstration equipment;

(v) exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations and projects;

(vi) exercises that use demonstration equipment or training devices;

(vii) directed study including workbook exercises or assignments;

(viii) aerodrome or aviation industry field trips;

(ix) computer-based training and e-learning elements;

(x) progress tests; and

(xi) other training methods, media and tools approved by the competent authority.

Approved distance-learning (correspondence) courses may also be offered as part of the course. The minimum amount of classroom instruction, as required by ORA.ATO.305, may include all of the above except item (a)(2)(ix).'

(b) THEORETICAL KNOWLEDGE EXAMINATION

The applicant for the IR following the competency-based training route should pass an examination to demonstrate a level of theoretical knowledge appropriate to the privileges granted in the subjects further detailed in FCL.615(b). The number of questions per subject, the distribution of questions and the time allocated to each subject is detailed in AMC1 ARA.FCL.300(b).

AMC4 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE FLYING TRAINING

(a) The instrument flight instruction outside an ATO provided by an IRI(A) or an FI(A) holding the privilege to provide training for the IR in accordance with Appendix 6 Section Aa (6)(a)(i)(A) may consist of instrument flight time under instruction or instrument ground time or a combination thereof.

TRAINING AIRCRAFT

(b) The aeroplane used for the instrument flight training provided outside an ATO by an IRI(A) or FI(A) should be:

(1) fitted with primary flight controls that are instantly accessible by both the student and the instructor (for example dual flight controls or a centre control stick). Swing-over flight controls should not be used; and

(2) suitably equipped to simulate instrument meteorological conditions (IMC) and for the instrument flight training required.

(c) The FSTD used for the instrument flight instruction provided outside an ATO by an IRI(A) or FI(A) should be suitably equipped to simulate instrument meteorological conditions (IMC) and for the instrument flight training required

AMC5 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE
(6)(a)(i)(B); (6)(b)(i)(B)

PRIOR EXPERIENCE OF FLIGHT TIME UNDER IFR AS PIC

A rating giving privileges to fly under IFR and in IMC referred to in (6)(a)(i)(B) and (6)(b)(i)(B) may be any of the following:

(a) an EIR rating issued by a competent authority of a Member State; or

(b) a national instrument rating issued by a Member State prior to the application of Commission Regulation (EU) No 1178/2011; or

(c) an instrument rating issued in compliance with the requirements of Annex 1 to the Chicago Convention by a third country; or

(d) an authorisation issued by a Member State under Article 4(8) of Commission Regulation (EU) No 1178/2011.

The amount of credit given should not exceed the amount of hours completed as instrument flight time.

AMC6 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE
(6)(a)(ii); (6)(b)(ii)

PRIOR INSTRUMENT FLIGHT TIME UNDER INSTRUCTION

Prior instrument flight time under instruction on aeroplanes, as referred in (6)(a)(ii) and (6)(b)(ii), may be instrument flight time completed for the issue of:

(a) an EIR rating issued by a competent authority of a Member State; or

(b) a national instrument rating prior to the application of Commission Regulation (EU) No 1178/2011; or

(c) an instrument rating in compliance with the requirements of Annex 1 to the Chicago Convention by a third country; or

(d) an authorisation issued by a Member State under Article 4(8) of Commission Regulation (EU) No 1178/2011.

AMC7 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE
(6)(c); (6)(d)

PRE-ENTRY ASSESSMENT AND TRAINING RECORD

(a) PRE-ENTRY ASSESSMENT

The assessment to establish the amount of training to be credited and to identify the training needs should be based on the training syllabus established in Appendix 6 Aa.

(b) TRAINING RECORD

(1) Before initiating the assessment the applicant should provide to an ATO a training record containing the details of the previous flight instruction provided by the IRI(A) or the FI(A). This training record should at least specify the aircraft type and registration used for the training, the number of flights and the total amount of instrument time under instruction. It should also specify all the exercises completed during the training by using the syllabus contained in Appendix 6 Aa.

(2) The instructor having provided the training should keep the training records containing all the details of the flight training given for a period of at least 5 years after the completion of the training.

AMC8 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

SECTION Aa IR(A) – COMPETENCY-BASED MODULAR FLYING TRAINING COURSE
(8)

In order to be credited in full towards the multi-engine IR(A) training course requirements, the applicant should

(a) hold a multi-engine IR(A), issued in accordance with the requirements of Annex 1 to the Chicago Convention by a third country;

(b) have the minimum experience required in Appendix 6 Aa paragraph 8(c), of which at least 15 hours should be completed in a multi-engine aeroplane.

AMC9 to Appendix 6 Modular training courses for the IR

ED Decision 2014/022/R

AIRSHIPS

Basic Instrument Flight Module Training Course

(a) This 10 hours module is focused on the basics of flying by sole reference to instruments, including limited panel and unusual attitude recovery.

(b) All exercises may be performed in an FNPT I or II or an FFS, for a maximum of 5 hours. If instrument flight training is in VMC, a suitable means of simulating IMC for the student should be used.

(c) A BITD may be used for the exercises 1, 2, 3, 4, 6 and 8.

(d) The use of the BITD is subject to the following:

(1) the training should be complemented by exercises on an airship;

(2) the record of the parameters of the flight must be available;

(3) an FI(As) or IRI(As) should conduct the instruction.

EXERCISES

(e) Exercise 1:

(1) basic instrument flying without external visual cues; — 0:30 hours

(2) horizontal flight;

(3) maintaining straight and level flight;

(4) turns in level flight, left and right;

(5) rollout onto predetermined headings.

(f) Exercise 2:

(1) Repetition of exercise 1; additionally climbing and descending — 0:45 hours

(2) maintaining heading and speed;

(3) transition to horizontal flight;

(4) climbing and descending turns.

(g) Exercise 3:

Instrument pattern: — 0:45 hours

(1) start exercise, decelerate to approach speed, approach configuration;

(2) initiate standard turn (left or right);

(3) rollout on opposite heading, maintain new heading for 1 minute;

(4) standard turn, descend with given rate (for example 500 ft/min);

(5) rollout on initial heading, maintain descent (for example 500 ft/min) and new heading for 1 minute;

(6) transition to horizontal flight (for example 1 000 ft below initial level);

(7) initiate go-around;

(8) climb at best rate of climb speed.

(h) Exercise 4:

(1) repetition of exercise 1; 0:45 hours

(2) recovery from unusual attitudes.

(i) Exercise 5

Repetition of exercise 4. 0:45 hours

(j) Exercise 6

(1) radio navigation using VOR, NDB 0:45 hours or, if available, VDF;

(2) interception of predetermined QDM, QDR.

(k) Exercise 7

(1) repetition of exercise 1; 0:45 hours

(2) recovery from unusual attitudes.

(l) Exercise 8

(1) repetition of exercise 1; 0:45 hours

(2) turns, level change and recovery from unusual attitudes with simulated failure of the artificial horizon or directional gyro.

(m) Exercise 9

Repetition of exercises (6) and (8). 4:15 hours

CERTIFICATE OF COMPLETION OF BASIC INSTRUMENT FLIGHT MODULE

CERTIFICATE OF COMPLETION OF BASIC INSTRUMENT FLIGHT MODULE			
Pilot's last name(s):		First name(s):	
Type of licence:		Number:	State:
Flight training hours performed on airship:			
Flight training hours performed in an FSTD (maximum 5 hours):			
	Signature of applicant:		

The satisfactory completion of basic instrument flight module according to requirements is certified below:

TRAINING			
Basic instrument flight module training received during period:			
from:	to:	at:	ATO
Location and date:		Signature of head of training:	
Type and number of licence and state of issue:		Name(s) in capital letters of authorised instructor:	

GM1 to Appendix 6 Modular training courses for the IR

ED Decision 2017/022/R

Aa. IR(A)(8)

The following elements may be used by the examiner for the applicant's verbal demonstration of knowledge:

(a) AIR LAW:

(1) explain the requirements for plus validity and privileges of instrument ratings;

(2) explain why a time check has to be completed before flight;

(3) describe the necessary action when an aircraft experiences a failure in communications;

(4) state the responsibility of the operator when unable to utilise the published departure procedures;

(5) explain when the omnidirectional method is used for departure;

(6) describe the solutions when omnidirectional procedures are not possible;

(7) justify the establishment of aircraft categories for the approach;

(8) state the minimum obstacle clearance provided by the minimum sector altitudes (MSAs) established for an aerodrome;

(9) describe the point of origin, shape, size, and subdivisions of the area used for MSAs;

(10) explain why a pilot should not descend below obstacle clearance altitude/height (OCA/H) without visual reference, which is established for precision approach procedures, non-precision approach procedures and visual (circling) procedures;

(11) translate the following acronyms into plain language: decision altitude (DA), decision height (DH), obstacle clearance altitude (OCA), obstacle clearance height (OCH), minimum decision altitude (MDA), minimum decision height (MDH), minimum obstacle

clearance (MOC), decision altitude/height (DA/H), obstacle clearance altitude/height (OCA/H) and minimum decision altitude/height (MDA/H);

(12) explain the relationship between the following: DA, DH, OCA, OCH, MDA, MDH, MOC, DA/H, OCA/H and MDA/H;

(13) define the following terms: initial approach fix (IAF), intermediate fix (IF), final approach fix (FAF), missed approach point (MAPt) and turning point;

(14) state the accuracy of facilities providing track (omnidirectional radio range (VOR), instrument landing system (ILS), non-directional beacon (NDB));

(15) state the optimum descent gradient (preferred for a precision approach) in degrees and per cent;

(16) name the five standard segments of an instrument approach procedure and state the beginning and end for each of them;

(17) describe where an arrival (ARR) route normally ends;

(18) state whether or not omnidirectional or sector ARRs are possible to be made;

(19) explain the main task of the initial approach segment;

(20) describe the main task of the intermediate approach segment;

(21) state the main task of the final approach segment;

(22) name the two possible aims of a final approach;

(23) explain the term ‘final approach point’ in case of an ILS approach;

(24) state what happens if an ILS glide path (GP) becomes inoperative during approach;

(25) describe the main task of a missed approach procedure;

(26) define ‘MAPt’;

(27) state the pilot’s reaction if upon reaching the MAPt, the required visual reference is not established;

(28) describe what a pilot is expected to do in the event that a missed approach is initiated prior to arriving at the MAPt (a missed approach, after an approach flown as CDFA, should be made when reaching the MAPt or DA/H, whichever occurs first);

(29) state whether the pilot is obliged to cross the MAPt at the A/H required by the procedure or whether they are allowed to cross the MAPt at an A/H greater than that required by the procedure;

(30) describe what is meant by ‘visual manoeuvring (circling)’;

(31) state the conditions to be fulfilled before descending below MDA/H in a visual manoeuvring (circling) approach;

(32) state how the pilot is expected to behave after initial visual contact during a visual manoeuvring (circling);

(33) describe what the pilot is expected to do if visual reference is lost while circling to land from an instrument approach;

(34) describe the shape and terminology associated with the holding pattern;

(35) state the bank angle and rate of turn to be used whilst flying in a holding pattern;

(36) explain why pilots in a holding pattern should attempt to maintain tracks and how this is achieved;

(37) describe where outbound timing begins in a holding pattern;

(38) state where the outbound leg in a holding pattern terminates if the outbound leg is based on distance-measuring equipment (DME);

(39) describe the three entry headings for entries into a holding pattern;

(40) define the terms 'parallel entry', 'offset entry', and 'direct entry';

(41) determine the correct entry procedure for a given holding pattern;

(42) state the still-air time for flying on the outbound entry heading with or without DME;

(43) define the following Q codes: 'QNH' and 'QFE';

(44) define 'flight level' (FL);

(45) state the intervals by which consecutive FLs should be separated;

(46) describe how FLs are numbered;

(47) define the term 'transition altitude';

(48) define the term 'transition level';

(49) state how the vertical position of the aircraft should be expressed at or below the transition altitude and transition level;

(50) define the term 'transition layer';

(51) state when the QNH altimeter setting should be made available to departing aircraft;

(52) state how a QNH altimeter setting should be made available to aircraft approaching a controlled aerodrome for landing;

(53) state where during the climb, the altimeter setting should be changed from QNH to 1013.2 hPa;

(54) describe when a pilot of an aircraft intending to land at an aerodrome should obtain the transition level;

(55) describe when a pilot of an aircraft intending to land at an aerodrome should obtain the actual QNH altimeter setting;

(56) state where the altimeter settings should be changed from 1013.2 hPa to QNH during descent for landing;

(57) state the modes and codes that the pilot should operate in the absence of any air traffic control (ATC) directions or regional air navigation agreements;

(58) state when the pilot should 'squawk ident';

(59) state the transponder mode and code to indicate: a state of emergency, a failure in communications, an unlawful interference;

(60) describe the consequences of an in-flight transponder failure;

(61) state the primary action of the pilot in the case of an unserviceable transponder before departure when no repair or replacement at that aerodrome is possible;

(62) understand the various rules and services that apply to the various classes of airspace;

(63) describe the aim of clearances issued by the ATC with regard to instrument flight rules (IFR), visual flight rules (VFR) or special VFR flights, and refer to the different airspaces;

(64) explain what is meant by the expression 'clearance limit';

(65) explain the meaning of the phrases 'cleared via flight planned route', 'cleared via (designation) departure' and 'cleared via (designation) ARR' in an ATC clearance;

(66) list which items of an ATC clearance should always be read back by the flight crew;

(67) justify the speed control by the ATC;

(68) explain how the change from IFR to VFR may be initiated by the pilot in command (PIC);

(69) define the following terms: 'transition level', 'transition layer', and 'transition altitude';

(70) indicate how the vertical position of an aircraft in the vicinity of an aerodrome should be expressed at or below the transition altitude, at or above the transition level, and while climbing or descending through the transition layer;

(71) list the six items that are normally included in a voice position report;

(72) name the item of a position report which must be forwarded to the ATC with the initial call after changing to a new frequency;

(73) understand the difference among the types of separation within the various classes of airspace and among the various types of flight;

(74) state who is responsible for the avoidance of collision with other aircraft when operating in visual meteorological conditions (VMC);

(75) explain the term 'expected approach time' and the procedures for its use;

(76) state the reasons which may probably lead to the decision to use another take-off or landing direction than the one into the wind;

(77) define the term 'radar vectoring';

(78) explain the procedures for the conduct of surveillance radar approaches (SRAs);

(79) state the mode and code of secondary surveillance radar (SSR) equipment that a pilot may operate in a (general) state of emergency, or (specifically) in case the aircraft is subject to unlawful interference;

(80) describe the expected action of the aircraft after receiving a broadcast from air traffic services (ATS) concerning the emergency descent of another aircraft;

(81) name the colours used for the various markings (runway (RWY), taxiway (TWY), aircraft stands, apron safety lines);

(82) describe the application and characteristics of RWY centre line markings and threshold markings;

(83) describe the wing bars of a precision approach path indicator (PAPI) and an abbreviated precision approach path indicator (A-PAPI); and

(84) interpret what the pilot sees during approach, using a PAPI, an APAPI, a T visual approach slope indicating system (TVASIS), and an abbreviated T visual approach slope indicator system (ATVASIS);

(b) FLIGHT PLANNING AND FLIGHT MONITORING:

(1) select the preferred airway(s) or route(s) considering:

(i) altitudes and FLs,

(ii) standard routes,

(iii) ATC restrictions,

(iv) the shortest distance,

(v) obstacles, and

(vi) any other relevant data;

(2) determine courses and distances from en route charts;

(3) determine bearings and distances of waypoints based on radio navigation aids on en route charts;

(4) define the following altitudes:

(i) minimum en route altitude (MEA),

(ii) minimum obstacle clearance altitude (MOCA),

(iii) minimum off-route altitude (MORA),

(iv) grid minimum off-route altitude (Grid MORA),

(v) maximum authorised altitude (MAA),

(vi) minimum crossing altitude (MCA), and

(vii) minimum holding altitude (MHA);

(5) extract the following altitudes from the chart(s):

(i) MEA,

(ii) MOCA,

(iii) MORA,

(iv) Grid MORA,

(v) MAA,

(vi) MCA, and

(vii) MHA;

(6) explain the reasons for studying standard instrument departure (SID) and standard ARR (STAR) charts;

(7) state the reasons why the SID and STAR charts show procedures only in a pictorial presentation style which is not to scale;

(8) interpret all data and information represented on SID and STAR charts, particularly:

(i) routings,

(ii) distances,

(iii) courses,

(iv) radials,

(v) altitudes/levels,

(vi) frequencies, and

(vii) restrictions;

(9) identify SIDs and STARs which may be relevant to a planned flight;

(10) state the reasons why it is imperative to be familiar with instrument approach procedures and appropriate data for departure, destination, and alternate airfields prior to departure;

(11) select instrument approach procedures appropriate for departure, destination, and alternate airfields;

(12) interpret all procedures, data and information represented on instrument approach charts, particularly:

(i) courses and radials,

(ii) distances,

(iii) altitudes, levels or heights,

(iv) restrictions,

(v) obstructions,

(vi) frequencies,

(vii) speeds and times,

(viii) DA/Hs and MDA/H,

(ix) visibility and runway visual ranges (RVRs), and

(x) approach light systems;

(13) find communications (COM) frequencies and call signs for the following:

(i) control agencies, service facilities, and flight information services (FISs),

(ii) weather information stations, and

(iii) automatic terminal information service (ATIS);

(14) find the frequency and/or identifiers of radio navigation aids;

(15) complete the navigation plan with the courses, distances, and frequencies taken from charts;

(16) find standard instrument departure and ARR routes to be flown or to be expected;

(17) determine the position of top of climb (TOC) and top of descent (TOD), considering appropriate data;

(18) determine variation and calculate magnetic/true courses;

(19) calculate true airspeed (TAS) according to given aircraft performance data, altitude, and outside air temperature (OAT);

(20) calculate wind correction angles (WCA)/drift and ground speeds (GSs);

(21) determine all relevant altitudes/levels, particularly MEA, MOCA, MORA, MAA, MCA, MRA, and MSA;

(22) calculate individual and accumulated times for each leg until destination and alternate airfields;

(23) convert between volume, mass, and density given in different units commonly used in aviation;

(24) determine relevant data from the flight manual, such as fuel capacity, fuel flow/consumption at different power/thrust settings, altitudes, and atmospheric conditions;

(25) calculate attainable flight time/range considering fuel flow/consumption and available amount of fuel;

(26) calculate the required fuel considering fuel flow/consumption and required time/range to be flown;

(27) calculate the required fuel for an IFR flight considering expected meteorological conditions and expected delays under defined conditions;

(28) find and analyse the latest state at the departure, destination, and alternate aerodromes, in particular with regard to:

(i) opening hours,

(ii) work in progress (WIP),

(iii) special procedures due to WIP,

(iv) obstructions, and

(v) changes of frequencies for COM, navigation aids, and facilities;

(29) find and analyse the latest en route state with regard to:

(i) airway(s) or route(s),

(ii) restricted, dangerous, and prohibited areas, and

(iii) changes of frequencies for COM, navigation aids, and facilities;

(30) state the reasons for a fixed format of an International Civil Aviation Organization (ICAO) air traffic services flight plan (ATS FPL);

(31) determine the correct entries to complete an FPL, as well as decode and interpret the entries in a completed FPL, particularly as regards the following:

(i) aircraft identification (Item 7),

(ii) flight rules and type of flight (Item 8),

(iii) number and type of aircraft and wake turbulence category (Item 9),

(iv) equipment (Item 10),

(v) departure aerodrome and time (Item 13),

(vi) route (Item 15),

(vii) destination aerodrome, total estimated elapsed time, and alternate aerodrome (Item 16),

(viii) other information (Item 18), and

(ix) supplementary information (Item 19);

(32) complete the FPL using information from the following:

(i) navigation plan,

(ii) fuel plan, and

(iii) operator's records on basic aircraft information;

(33) explain the requirements for the submission of an ATS FPL;

(34) explain the action to be taken in case of FPL changes;

(35) state the action to be taken in case of inadvertent changes to track, TAS, and time estimate, affecting the current FPL; and

(36) explain the procedures for closing an FPL;

(c) METEOROLOGY:

(1) describe qualitatively and quantitatively the temperature lapse rates of the troposphere (mean value of 0.65 °C/100 m or 2 °C/1 000 ft and actual values);

(2) explain the characteristics of inversions and of an isothermal layer;

(3) explain the cooling and warming of the air on the earth or sea surfaces;

(4) describe qualitatively the influence of the clouds on the cooling and warming of the earth or sea surfaces as well as of the air near those surfaces;

(5) explain the influence of the wind on the cooling and warming of the air near the earth or sea surfaces;

(6) define 'atmospheric pressure';

(7) list the units of measurement of atmospheric pressure used in aviation (hPa, in.);

(8) describe isobars on the surface weather charts;

(9) explain the pressure variation with height;

(10) describe qualitatively the variation of the barometric lapse rate (note: the average value for the barometric lapse rate near mean sea level is 27 ft (8 m) per 1 hPa, whereas at about 5 500 m above mean sea level (AMSL) is 50 ft (15 m) per 1 hPa;

(11) describe and interpret contour lines (isohypses) on a constant pressure chart;

(12) describe the relationship between pressure, temperature, and density;

(13) describe the vertical variation of the air density in the atmosphere;

(14) describe the effect of humidity changes on the air density;

(15) explain the use of standardised values for the international standard atmosphere (ISA);

(16) list the main values of ISA (mean sea level pressure, mean sea level temperature, a vertical temperature lapse rate up to 20 km, as well as height and temperature of the tropopause);

(17) calculate the standard temperature in Celsius degrees for a given FL;

(18) determine a standard temperature deviation based on the difference between the given OAT and the standard temperature;

(19) define the following terms and acronyms and explain how they are related to each other: H, A, pressure A, FL, pressure level, true A, true H, elevation, QNH, QFE, and standard altimeter setting;

(20) describe the following terms: transition A, transition level, transition layer, terrain clearance, and lowest usable FL;

(21) calculate the different readings on the altimeter when the pilot changes the altimeter setting;

(22) illustrate with a numbered example the changes of the altimeter setting and the associated changes in reading when the pilot climbs through the transition altitude or descends through the transition level;

(23) derive the reading of the altimeter of an aircraft on the ground when the pilot uses different settings;

(24) explain the influence of the air temperature on the distance between the ground and the level reading on the altimeter as well as between two FLs;

(25) explain the influence of pressure areas on the true altitude;

(26) determine the true A/H for a given A/H and a given ISA temperature deviation;

(27) describe why and how the wind changes direction and speed with H in the friction layer in the northern and southern hemisphere (rule of thumb);

(28) describe and explain the origin and formation of mountain waves;

(29) explain how mountain waves may be identified through their associated meteorological phenomena;

(30) describe turbulence and gustiness;

(31) list common types of turbulence (convective, mechanical, orographic, frontal, and clear-air turbulence);

(32) indicate the sources of atmospheric humidity;

(33) define ‘dew point’;

(34) define ‘relative humidity’;

(35) describe the relationship between temperature and dew point;

(36) estimate the relative humidity of the air based on the difference between dew point and temperature;

(37) explain the influence of relative humidity on the H of the cloud base;

(38) list cloud types typical for stable and unstable air conditions;

(39) identify by shape cirriform, cumuliform, and stratiform clouds;

(40) explain the influence of inversions on vertical movements in the atmosphere;

(41) name the factors contributing in general to the formation of fog and mist;

(42) name the factors contributing to the formation of haze;

(43) describe significant characteristics of orographic fog;

(44) summarise the conditions for the dissipation of orographic fog;

(45) list and describe the types of precipitation given in the aerodrome forecast (TAF) and aerodrome routine meteorological report (METAR) codes (drizzle, rain, snow, snow grains, ice pellets, hail, small hail, snow pellets, ice crystals, freezing drizzle, and freezing rain);

(46) assign typical precipitation types and intensities to different clouds;

(47) describe the boundaries between air masses (fronts);

(48) define 'front' and 'frontal surface' ('frontal zone');

(49) define 'warm front';

(50) describe the cloud, weather, ground visibility, and aviation hazards at a warm front depending on the stability of the warm air;

(51) explain the seasonal differences in the weather at warm fronts;

(52) describe the structure, slope, and dimensions of a warm front;

(53) define 'cold front';

(54) explain the seasonal differences in the weather at cold fronts;

(55) describe the structure, slope, and dimensions of a cold front;

(56) describe the cloud, weather, ground visibility, and aviation hazards in a warm sector;

(57) describe the cloud, weather, ground visibility, and aviation hazards behind the cold front;

(58) define the term 'occlusion';

(59) identify the typical flat pressure pattern on a surface weather chart;

(60) describe the weather associated with a flat pressure pattern;

(61) explain the general weather conditions under which ice accretion on airframe occurs;

(62) indicate in which circumstances ice may form on an aircraft on the ground: air temperature, humidity, precipitation;

(63) explain in which circumstances ice may form on an aircraft in flight: inside clouds, in precipitation, outside clouds, and in the absence of precipitation;

(64) describe the different factors influencing the intensity of icing: air temperature, amount of supercooled water in a cloud or in precipitation, amount of ice crystals in the air, speed of the aircraft, shape (thickness) of the airframe parts (wings, antennas, etc.);

(65) define 'clear ice';

(66) define 'rime ice';

(67) define 'hoar frost';

(68) state the ICAO qualifying terms for the intensity of icing;

(69) describe in general the hazards of icing;

(70) assess the dangers of the different types of ice accretion;

(71) state the ICAO qualifying terms for the intensity of turbulence;

(72) describe the effects of turbulence on an aircraft in flight;

(73) indicate the possibilities of avoiding turbulence

(i) in the flight planning: weather briefing, choice of track, and altitude, and

(ii) during flight: choice of appropriate track and altitude;

(74) define 'wind shear' (vertical and horizontal);

(75) describe the conditions in which wind shear forms and how it forms (e.g. thunderstorms, squall lines, fronts, inversions, land and sea breeze, friction layer, and relief);

(76) describe the effects of wind shear on flight;

(77) indicate the possibilities of avoiding wind shear in flight:

(i) in the flight planning, and

(ii) during flight;

(78) name the cloud types which indicate the development of thunderstorms;

(79) describe the different types of thunderstorms, their location, the conditions for and the process of their development, and list their properties (air mass thunderstorms, frontal thunderstorms, squall lines, supercell storms, orographic thunderstorms);

(80) assess the average duration of thunderstorms and their different stages;

(81) summarise the flight hazards of a fully developed thunderstorm;

(82) describe and assess 'St. Elmo's fire';

(83) describe the effect of lightning strike on aircraft and flight execution;

(84) describe practical examples of flight techniques used to avoid the hazards of thunderstorms;

(85) describe the influence of a mountainous terrain on cloud and precipitation;

(86) describe the effects of the foehn;

(87) describe the influence of a mountainous area on a frontal passage;

(88) indicate the turbulent zones (mountain waves, rotors) on a sketch of a mountain chain;

(89) describe the reduction of visibility caused by precipitation (drizzle, rain, and snow);

(90) describe the differences between ground visibility, flight visibility, slant visibility, and vertical visibility when an aircraft is above or within a layer of haze or fog;

(91) define 'ground visibility';

(92) list the units used for visibility (m, km);

(93) define 'RVR';

(94) list the units used for RVR (m);

(95) compare visibility and RVR;

(96) define 'ceiling';

(97) name the unit and the reference level used for information about the cloud base (ft);

(98) define 'vertical visibility';

(99) name the unit used for vertical visibility (ft);

(100) interpret ground-weather radar images;

(101) describe the basic principle of airborne weather radars as well as the type of information they provide;

(102) describe the limits and errors of airborne weather radar information;

(103) interpret typical airborne weather radar images;

(104) decode and interpret significant weather charts (low-, medium-, and high-level charts);

(105) describe the flight conditions at designated locations or along a defined flight route at a given FL, based on a significant weather chart;

(106) describe, decode (by using a code table), and interpret the following aviation weather messages (given in written or graphical format):

(i) METAR;

(ii) aerodrome special meteorological reports (SPECI);

(iii) trend forecast (TREND);

(iv) TAF;

(v) information concerning en route weather phenomena which may affect the safety of aircraft operations (SIGMET);

(vi) information concerning en route weather phenomena which may affect the safety of low-level aircraft operations (AIRMET);

(vii) area forecast for low-level flights (GAMET);

(viii) automatic terminal information service (ATIS);

(ix) meteorological information for aircraft in flight (VOLMET);

(x) special air-report, and

(xi) volcanic-ash advisory information;

(107) list in general the cases where a SIGMET and an AIRMET are issued; and

(108) describe, decode (by using a code table), and interpret the following messages: runway state message (as written in a METAR) and general aviation forecast (GAFOR).

Appendix 7 – BIR and IR skill test

Regulation (EU) 2020/359

1. Applicants shall have received instruction on the same class or type of aircraft to be used in the test which shall be appropriately equipped for the training and testing purposes.

2. An applicant shall pass all the relevant sections of the skill test. If any item in a section is failed, that section is failed. Failure in more than one section will require the applicant to take the entire test again. An applicant failing only one section shall only repeat the failed section. Failure in any section of the retest, including those sections that have been passed on a previous attempt, will require the applicant to take the entire test again. All relevant sections of the skill test shall be completed within 6 months. Failure to achieve a pass in all relevant sections of the test in two attempts will require further training.

3. Further training may be required following a failed skill test. There is no limit to the number of skill tests that may be attempted.

CONDUCT OF THE TEST

4. The test is intended to simulate a practical flight. The route to be flown shall be chosen by the examiner. An essential element is the ability of the applicant to plan and conduct the flight from routine briefing material. The applicant shall undertake the flight planning and shall ensure that all equipment and documentation for the execution of the flight are on board. The duration of the flight shall be at least 1 hour.

5. Should the applicant choose to terminate a skill test for reasons considered inadequate by the examiner, the applicant shall retake the entire skill test. If the test is terminated for reasons considered adequate by the examiner, only those sections not completed shall be tested in a further flight.

6. At the discretion of the examiner, any manoeuvre or procedure of the test may be repeated once by the applicant. The examiner may stop the test at any stage if it is considered that the applicant's demonstration of flying skill requires a complete retest.

7. An applicant shall fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if there is no other crew member. The examiner shall take no part in the operation of the aircraft, except when intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic. Responsibility for the flight shall be allocated in accordance with national regulations.

8. Decision heights/altitude, minimum descent heights/altitudes and missed approach point shall be determined by the applicant and agreed by the examiner.

9. Applicants shall indicate to the examiner the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the authorised checklist for the aircraft on which the test is being taken. During pre-flight preparation for the test applicants shall determine power settings and speeds. The applicants shall calculate performance data for take-off, approach and landing in compliance with the operations manual or flight manual for the aircraft used.

FLIGHT TEST TOLERANCES

10. The applicant shall demonstrate the ability to:

operate the aircraft within its limitations;

complete all manoeuvres with smoothness and accuracy;

exercise good judgment and airmanship;

apply aeronautical knowledge; and

maintain control of the aircraft at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

11. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aircraft used.

Height

Generally	±100 feet
Starting a go-around at decision height/altitude	+50 feet/–0 feet
Minimum descent height/MAP/altitude	+50 feet/–0 feet

Tracking

On radio aids	±5°
For angular deviations	Half scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS)
2D (LNAV) and 3D (LNAV/VNAV) “linear” lateral deviations	cross-track error/deviation shall normally be limited to ± ½ the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of 1 time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 feet below the vertical profile at any time, and not more than + 75 feet above the vertical profile at or below 1 000 feet above aerodrome level.

Heading

all engines operating	±5°
with simulated engine failure	±10°

Speed

all engines operating	±5 knots
with simulated engine failure	+10 knots/–5 knots

CONTENT OF THE TEST

Aeroplanes

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections	
a	Use of flight manual (or equivalent) especially a/c performance calculation, mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required navaids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather Minima
g	Taxiing
h	PBN departure (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, Take-off
j(°)	Transition to instrument flight
k(°)	Instrument departure procedures, including PBN departures, and altimeter setting
l(°)	ATC liaison — compliance, R/T procedures
SECTION 2 — GENERAL HANDLING(°)	
a	Control of the aeroplane by reference solely to instruments, including: level flight at various speeds, trim
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 45° bank turns and steep descending turns
d(*)	Recovery from approach to stall in level flight, climbing/descending turns and in landing configuration
e	Limited panel: stabilised climb or descent, level turns at Rate 1 onto given headings, recovery from unusual attitudes
SECTION 3 — EN-ROUTE IFR PROCEDURES(°)	
a	Tracking, including interception, e.g. NDB, VOR, or track between waypoints
b	Use of navigation system and radio aids
c	Level flight, control of heading, altitude and airspeed, power setting, trim technique
d	Altimeter settings
e	Timing and revision of ETAs (en-route hold, if required)
f	Monitoring of flight progress, flight log, fuel usage, systems' management
g	Ice protection procedures, simulated if necessary
h	ATC liaison - compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, and identification of cacilities, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the arrival chart.
SECTION 4(°) — 3D Operations(+)	
a	Setting and checking of navigational aids

	Check Vertical Path angle For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks, including identification of facilities
c(+)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed heading control (stabilised approach)
g(+)	Go-around action
h(+)	Missed approach procedure/landing
i	ATC liaison – compliance, R/T procedures
SECTION 5(°) – 2D OPERATIONS(++)	
a	Setting and checking of navigational aids For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks, including identification of facilities
c(+)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude/Distance to MAPT, speed, heading control (stabilised approach), Stop Down Fixes (SDF(s)), if applicable
g(+)	Go-around action
h(+)	Missed approach procedure/landing
i	ATC liaison – compliance, R/T procedures
SECTION 6 — FLIGHT WITH ONE ENGINE INOPERATIVE (multi-engine aeroplanes only) (°)	
a	Simulated engine failure after take-off or on go-around
b	Approach, go-around and procedural missed approach with one engine inoperative
c	Approach and landing with one engine inoperative
d	ATC liaison – compliance, R/T procedures

(°) Must be performed by sole reference to instruments.

(*) May be performed in an FFS, FTD 2/3 or FNPT II.

(+) May be performed in either Section 4 or Section 5.

(++) To establish PBN privileges, one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

Helicopters

SECTION 1 — DEPARTURE Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections	
a	Use of flight manual (or equivalent) especially aircraft performance calculation; mass and balance
b	Use of Air Traffic Services document, weather document

c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required navaids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather minima
g	Taxiing/Air taxy in compliance with ATC or instructions of instructor
h	PBN departure (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, procedures and checks
j	Transition to instrument flight
k	Instrument departure procedures, including PBN prodecures
SECTION 2 — GENERAL HANDLING	
a	Control of the helicopter by reference solely to instruments, including:
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 30° bank turns and steep descending turns
SECTION 3 — EN-ROUTE IFR PROCEDURES	
a	Tracking, including interception, e.g. NDB, VOR, RNAV
b	Use of radio aids
c	Level flight, control of heading, altitude and airspeed, power setting
d	Altimeter settings
e	Timing and revision of ETAs
f	Monitoring of flight progress, flight log, fuel usage, systems management
g	Ice protection procedures, simulated if necessary and if applicable
h	ATC liaison – compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable) — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the arrival chart.
SECTION 4 — 3D OPERATIONS(+)	
a	Setting and checking of navigational aids Check Vertical Path angle For RNP APCH: (a) Check that the correct procedure has been loaded in the navigation system; and (b) Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks
c(*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised approach)
g(*)	Go-around action
h(*)	Missed approach procedure/landing
i	ATC liaison – compliance, R/T procedures
SECTION 5 — 2D OPERATIONS(+)	
a	Setting and checking of navigational aids For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and

	— Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks and identification of facilities
c(*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised aproach)
g(*)	Go-around action
h(*)	Missed approach procedure(*)/landing
i	ATC liaison – compliance, R/T procedures
SECTION 6 — ABNORMAL AND EMERGENCY PROCEDURES This section may be combined with sections 1 through 5. The test shall have regard to control of the helicopter, identification of the failed engine, immediate actions (touch drills), follow-up actions and checks and flying accuracy, in the following situations:	
a	Simulated engine failure after take-off and on/during approach(**) (at a safe altitude unless carried out in an FFS or FNPT II/III, FTD 2,3)
b	Failure of stability augmentation devices/hydraulic system (if applicable)
c	Limited panel
d	Autorotation and recovery to a pre-set altitude
e	3D operations manually without flight director(***) 3D operations manually with flight director(***)

(+) To establish PBN privileges, one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

(*) To be performed in Section 4 or Section 5.

(**) Multi-engine helicopter only.

(***) Only one item to be tested

Airships

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE Use of checklist, airmanship, ATC liaison compliance, R/T procedures, apply in all sections	
a	Use of flight manual (or equivalent) especially a/c performance calculation, mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Pre-flight inspection
e	Weather minima
f	Pre-take-off briefing, off mast procedure, manoeuvring on ground
g	Take-off
h	Transition to instrument flight
i	Instrument departure procedures, altimeter setting
j	ATC liaison - compliance, R/T procedures
SECTION 2 — GENERAL HANDLING	
a	Control of the airship by reference solely to instruments
b	Climbing and descending turns with sustained rate of turn
c	Recoveries from unusual attitudes

d	Limited panel
SECTION 3 — EN-ROUTE IFR PROCEDURES	
a	Tracking, including interception, e.g. NDB, VOR, RNAV
b	Use of radio aids
c	Level flight, control of heading, altitude and airspeed, power setting, trim technique
d	Altimeter settings
e	Timing and revision of ETAs
f	Monitoring of flight progress, flight log, fuel usage, systems' management
g	ATC liaison – compliance, R/T procedures
SECTION 4 — PRECISION APPROACH PROCEDURES	
a	Setting and checking of navigational aids, identification of facilities
b	Arrival procedures, altimeter checks
c	Approach and landing briefing, including descent/approach/landing checks
d(+)	Holding procedure
e	Compliance with published approach procedure
f	Approach timing
g	Stabilised approach (altitude, speed and heading control)
h(+)	Go-around action
i(+)	Missed approach procedure/landing
j	ATC liaison – compliance, R/T procedures
SECTION 5 — NON-PRECISION APPROACH PROCEDURES	
a	Setting and checking of navigational aids, identification of facilities
b	Arrival procedures, altimeter settings
c	Approach and landing briefing, including descent/approach/landing checks
d(+)	Holding procedure
e	Compliance with published approach procedure
f	Approach timing
g	Stabilised approach (altitude, speed and heading control)
h(+)	Go-around action
i(+)	Missed approach procedure/landing
j	ATC liaison – compliance, R/T procedures
SECTION 6 — FLIGHT WITH ONE ENGINE INOPERATIVE This section may be combined with sections 1 through 5. The test shall have regard to control of the airship, identification of the failed engine, immediate actions, follow-up actions, checks and flying accuracy in the following situations:	
a	Simulated engine failure after take-off or on go-around
b	Approach and procedural go-around with one engine inoperative
c	Approach and landing, missed approach procedure, with one engine inoperative
d	ATC liaison – compliance, R/T procedures

(+) May be performed in either section 4 or section 5.

AMC1 to Appendix 7 IR skill test

ED Decision 2011/016/R

LAPL, BPL, SPL, PPL, CPL, IR SKILL TEST AND PROFICIENCY CHECK APPLICATION AND REPORT FORM

APPLICATION AND REPORT FORM **LAPL, BPL, SPL, PPL, CPL, IR SKILL TEST AND PROFICIENCY CHECK**	
Applicant's last name(s):	
Applicant's first name(s):	LAPL:A ☐ H ☐ B ☐ S ☐
Signature of applicant:	BPL: ☐ SPL: ☐
Type of licence*:	PPL: A ☒ ☐ As ☐
Licence number*:	CPL: A ☒ ☐ As ☐
State:	IR: A ☒ ☐ As ☐

1	**Details of the flight**		
Group, class, type of aircraft:		Registration:	
Aerodrome or site:	Take-off time:	Landing time:	Flight time:
			Total flight time:

2	**Result of the test**	
Skill test details:		
Pass ☐	Fail ☐	Partial pass ☐

3	**Remarks**
Location and date:	

Examiner's certificate number *:	Type and number of licence:
Signature of examiner:	Name(s) in capital letters:

** if applicable*

Appendix 8 – Cross-crediting of the IR part of a class or type rating proficiency check or EBT practical assessment

Regulation (EU) 2024/2076

A. Aeroplanes

Credits shall be granted only if holders are revalidating or renewing IR privileges for single-pilot single-engine and single-pilot multi-engine aeroplanes, as appropriate.

If a skill test, proficiency check or EBT practical assessment including IR is performed, and holders have a valid:	Credit is valid towards the IR part in proficiency check for:
MPA type rating; single-pilot high-performance complex aeroplane type rating	SE class rating (*), and SE type rating (*), and SP ME class or type rating except for high-performance complex type ratings, only credits for Section 3B of the proficiency check in point B.5 of Appendix 9 (*)
SP ME aeroplane class or type rating except for high- performance complex aeroplane type ratings, operated as single-pilot	SE class rating, and SE type rating, and SP ME class or type rating except for high-performance complex aeroplane type ratings
SP ME aeroplane class or type rating except for high- performance complex aeroplane type ratings, restricted to MP operations	SE class rating (*) , and SE type rating (*) , and SP ME class or type rating except for high-performance complex aeroplane type ratings (*)
SP SE aeroplane class or type rating	SE class rating, and SE type rating

* Provided that within the preceding 12 months the applicants have flown at least three IFR departures and approaches exercising PBN privileges, including at least one RNP APCH approach on an SP class or type of aeroplane in SP operations, or, for multi-engine, other than HP complex aeroplanes, the applicants have passed Section 6 of the skill test for SP, other than HP complex aeroplanes flown solely by reference to instruments in SP operations.

B. Helicopters

Credits shall be granted only if holders are revalidating or renewing IR privileges for single-pilot helicopters, as appropriate.

If a skill test or a proficiency check, including IR, is performed and the holders have a valid:	Credit is valid towards the IR part in a proficiency check for:
Multi-pilot helicopter (MPH) type rating	Single-pilot helicopter (SPH) of the same type, including privileges for single-pilot operations (*[1])
Single-pilot helicopter (SPH) type rating, in multi-pilot operations	Privileges for single-pilot operations in the same type (*[1])

*[1] Provided that within the preceding 12 months at least three IFR departures and approaches exercising PBN privileges, including one RNP APCH approach (which may be a Point in Space (PinS) approach), have been performed on a SP type of helicopter in SP operations.

Appendix 9 – Training, skill test and proficiency check for the MPL, and the ATPL, and for type and class ratings, and proficiency checks for the BIR and the IR

Regulation (EU) 2024/2076

A. General

1. Applicants for a skill test shall have received instruction in the same class or type of aircraft to be used in the test.

1a. Training in FFS in accordance with points 1b and 1c of this Section shall be complemented with take- off and landing training in a single-pilot aircraft operated in single-pilot or multi-pilot operations, or in a multi-pilot aircraft, as applicable, in accordance with point 17 of this Section, unless the training is completed in accordance with point FCL.730.A or constitutes training for cruise relief co-pilots in accordance with Section B, point 6(i), of this Appendix.

1b. The training for MPA and PL type ratings shall be conducted in an FFS or in a combination of FSTD(s) and FFS. The skill test or proficiency check for MPA and PL type ratings and the issue of an ATPL and an MPL, shall be conducted in an FFS, if available.

1c. The training, skill test or proficiency check for class or type ratings for SPA and helicopters shall be conducted in either of the following:

(a) an available and accessible FFS, or in a combination of such FFS and FSTD(s);

(b) a combination of FSTD(s) and the aircraft if an FFS is not available or accessible;

(c) the aircraft if no FSTD is available or accessible.

1d. By way of derogation from point 1c, the training, skill test or proficiency check for class or type ratings for non-complex SPA and for non-complex helicopters may be conducted in a combination of FSTD(s) and the aircraft even if an FFS is available and accessible.

1e. By way of derogation from point 1c, the training, skill test or proficiency check for any of the following may be conducted in accordance with points 1c(a), (b) or (c), irrespective of the availability and accessibility of FFS or FSTD:

(a) non-complex non-high-performance single-pilot aeroplanes;

(b) TMGs;

(c) non-complex helicopters for which the maximum certified seat configuration does not exceed five seats.

1f. If FSTDs are used during training, testing or checking, the suitability of the FSTDs used shall be verified against the applicable 'Table of functions and subjective tests' and the applicable 'Table of FSTD validation tests' contained in the primary reference document applicable for the device used. All restrictions and limitations indicated on the device's qualification certificate shall be considered.

2. Failure to achieve a pass in all sections of the test in two attempts will require further training.

3. There is no limit to the number of skill tests that may be attempted.

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

4. Unless otherwise determined in the operational suitability data established in accordance with Annex I (Part-21) to Regulation (EU) No 748/2012 (OSD), the syllabus of flight instruction, the skill test and the proficiency check shall comply with this Appendix. The syllabus, skill test and

proficiency check may be reduced to give credit for previous experience on similar aircraft types, as determined in the OSD.

5. Except in the case of skill tests for the issue of an ATPL, when so defined in the OSD for the specific aircraft, credit may be given for skill test items common to other types or variants where the pilots are qualified.

CONDUCT OF THE TEST/CHECK

6. The examiner may choose between different skill test or proficiency check scenarios containing simulated relevant operations. Full-flight simulators and other training devices shall be used, as established in this Annex (Part-FCL).

7. During the proficiency check, the examiner shall verify that holders of the class or type rating maintain an adequate level of theoretical knowledge.

8. Should applicants choose to terminate a skill test for reasons considered inadequate by the examiner, they shall retake the entire skill test. If the test is terminated for reasons considered adequate by the examiner, only those sections not completed shall be tested in a further flight.

9. At the discretion of the examiner, any manoeuvre or procedure of the test may be repeated once by the applicants. The examiner may stop the test at any stage if it is considered that the applicants' demonstration of flying skill requires a complete retest.

10. Applicants shall be required to fly the aircraft from a position where the PIC or co-pilot functions, as relevant, can be performed. Under single-pilot conditions, the test shall be performed as if there was no other crew member present.

11. During preflight preparation for the test, applicants are required to determine power settings and speeds. Applicants shall indicate to the examiner the checks and duties carried out, including the identification of radio facilities. Checks shall be completed in accordance with the checklist for the aircraft on which the test is being taken and, if applicable, with the MCC concept. Performance data for take-off, approach and landing shall be calculated by applicants in compliance with the operations manual or flight manual for the aircraft used. Decision heights/altitudes, minimum descent heights/altitudes and missed approach point shall be agreed upon with the examiner.

12. The examiner shall take no part in the operation of the aircraft except where intervention is necessary in the interests of safety or to avoid unacceptable delay to other traffic.

SPECIFIC REQUIREMENTS FOR THE TRAINING, SKILL TEST AND PROFICIENCY CHECK FOR TYPE RATINGS FOR MULTI-PILOT AIRCRAFT, FOR SINGLE-PILOT AIRCRAFT WHEN OPERATED IN MULTI- PILOT OPERATIONS, FOR THE MPL AND FOR THE ATPL

13. The skill test for a multi-pilot aircraft or a single-pilot aircraft when operated in multi-pilot operations shall be performed in a multi-crew environment. Another applicant or another type rated qualified pilot may function as the second pilot. If an aircraft is used, the second pilot shall be the examiner or an instructor.

14. Applicants shall operate as PF during all sections of the skill test, except for abnormal and emergency procedures, which may be conducted as PF or PM in accordance with MCC. Applicants for the initial issue of a multi-pilot aircraft type rating or ATPL shall also demonstrate the ability to act as PM. Applicants may choose either the left-hand or the right-hand seat for the skill test if all items can be executed from the selected seat.

15. The following matters shall be specifically checked by the examiner for applicants for the ATPL or a type rating for multi-pilot aircraft or for multi-pilot operations in a single-pilot aircraft extending to the duties of a PIC, irrespective of whether the applicants act as PF or PM:

(a) managing crew cooperation;

(b) maintaining a general survey of the aircraft operation by appropriate supervision; and

(c) setting priorities and making decisions in accordance with safety aspects and relevant rules and regulations appropriate to the operational situation, including emergencies.

16. The test or check should be accomplished under IFR, if the IR rating is included, and as far as possible be accomplished in a simulated commercial air transport environment. An essential element to be checked is the ability to plan and conduct the flight from routine briefing material.

17. When their type rating course has included less than 2 hours of flight training in the aircraft, applicants shall, before or after the skill test, complete flight training in the aircraft.

Such approved flight training shall include take-off and landing manoeuvres and shall be performed by a qualified instructor under the responsibility of:

(a) an ATO; or

(b) an organisation holding an AOC issued in accordance with Annex III (Part-ORO) to Regulation (EU) No 965/2012 and specifically approved for such training; or

(c) the instructor, in cases where no aircraft flight training for SP aircraft at an ATO or AOC holder is approved, and the aircraft flight training was approved by the applicants' competent authority.

A certificate of completion of the type rating course including the flight training in the aircraft shall be forwarded to the competent authority before the new type rating is entered in the applicants' licence.

18. For the upset recovery training, ‘stall event’ means either an approach-to-stall or a stall. An FFS can be used by the ATO to either train recovery from a stall or demonstrate the type-specific characteristics of a stall, or both, provided that:

(a) the FFS has been qualified in accordance with the special evaluation requirements in CS-FSTD(A); and

(b) the ATO has successfully demonstrated to the competent authority that any negative transfer of training is mitigated.

B. Specific requirements for the aeroplane category

PASS MARKS

1. In the case of single-pilot aeroplanes, with the exception of single-pilot high-performance complex aeroplanes, applicants shall pass all sections of the skill test or proficiency check. Failure in any item of a section will cause applicants to fail the entire section. If they fail only one section, they shall repeat only that section. Failure in more than one section will require applicants to repeat the entire test or check. Failure in any section in the case of a retest or recheck, including those sections that have been passed on a previous attempt, will require applicants to repeat the entire test or check again. For single-pilot multi-engine aeroplanes, Section 6 of the relevant test or check, addressing asymmetric flight, shall be passed.

2. In the case of multi-pilot and single-pilot high-performance complex aeroplanes, applicants shall pass all sections of the skill test or proficiency check. Failure in more than five items will require applicants to take the entire test or check again. Applicants failing five or fewer items shall take the failed items again. Failure in any item on the retest or recheck, including those items that have been passed on a previous attempt, will require applicants to repeat the entire check or test again.

FLIGHT TEST TOLERANCE

3. Applicants shall demonstrate the ability to:

(a) operate the aeroplane within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge;

(e) maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;

(f) understand and apply crew coordination and incapacitation procedures, if applicable; and

(g) communicate effectively with the other crew members, if applicable.

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used:

Height	
Generally	± 100 ft
Starting a go-around at decision height/altitude	+ 50 ft/– 0 ft
Minimum descent height/MAPt/altitude	+ 50 ft/– 0 ft
Tracking	
On radio aids	±5°
For ‘angular’ deviations	Half-scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS)
2D (LNAV) and 3D (LNAV/VNAV) ‘linear’ lateral deviations	cross-track error/deviation shall normally be limited to ± ½ of the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of one time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 ft below the vertical profile at any time, and not more than + 75 ft above the vertical profile at or below 1 000 ft above aerodrome level.
Heading	
all engines operating	± 5°
with simulated engine failure	± 10°
Speed	
all engines operating	± 5 knots
with simulated engine failure	+ 10 knots/– 5 knots

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

5. Single-pilot aeroplanes, except for high performance complex aeroplanes

(a) The following symbols mean:

P = Trained as PIC or co-pilot and as PF and PM

OTD = Other training devices may be used for this exercise

X = An FFS shall be used for this exercise; otherwise, an aeroplane shall be used if appropriate for the manoeuvre or procedure

P# = The training shall be complemented by supervised aeroplane inspection

(b) The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted on any higher level of equipment shown by the arrow (---->).

The following abbreviations are used to indicate the training equipment used:

A = aeroplane

FFS = full-flight simulator

FSTD = flight simulation training device

(c) The starred (*) items of Section 3B and, for multi-engine, Section 6, shall be flown solely by reference to instruments if revalidation/renewal of an IR is included in the skill test or proficiency check. If the starred (*) items are not flown solely by reference to instruments during the skill test or proficiency check, and when there is no crediting of IR privileges, the class or type rating will be restricted to VFR only.

(d) Section 3A shall be completed to revalidate a type or multi-engine class rating, VFR only, where the required experience of 10 route sectors within the previous 12 months has not been completed. Section 3A is not required if Section 3B is completed.

(e) Where the letter 'M' appears in the skill test or proficiency check column, this will indicate a mandatory exercise or a choice where more than one exercise appears.

(f) An FSTD shall be used for practical training for type or ME class ratings if they form part of an approved class or type rating course. The following considerations will apply to the approval of the course:

(i) the qualification of the FSTD as set out in the relevant requirements of Annex VI (Part-ARA) and Annex VII (Part-ORA);

(ii) the qualifications of the instructors;

(iii) the amount of FSTD training provided on the course; and

(iv) the qualifications and previous experience on similar types of the pilots under training.

(g) To exercise the privileges of a class or type rating in multi-pilot operations in accordance with point FCL.725(d) or (da), pilots that are already entitled to operate the relevant class or type of aeroplane in single-pilot operations shall meet the following conditions:

(1) complete a bridge course containing manoeuvres and procedures including MCC as well as the exercises of Section 7 using threat and error management (TEM), CRM and human factors at an organisation that is specified in point FCL.725(d)(1)(i);

(2) pass a proficiency check in multi-pilot operations.

(h) To exercise the privileges of a type rating in single-pilot operations in accordance with point FCL.725(d), pilots that are already entitled to operate the relevant type of aeroplane in multi-pilot operations shall be trained at an organisation that is specified in point FCL.725(d) (1)(i) and checked for the following additional manoeuvres and procedures in single-pilot operations:

(i) for SE aeroplanes, 1.6, 4.5, 4.6, 5.2 and, if applicable, one approach from Section 3.B;

(ii) for ME aeroplanes, 1.6, Section 6 and, if applicable, one approach from Section 3.B.

(i) Pilots that are entitled to exercise the privileges of a class or type rating in both single-pilot and multi-pilot operations in accordance with points (g) and (h) may maintain privileges for both forms of operation by completing either of the following:

(i) two proficiency checks, one in single-pilot operations and one in multi-pilot operations;

(ii) a proficiency check in multi-pilot operations in addition to the exercises referred to in points (h)(i) or (h)(ii), as applicable, in single-pilot operations.

Proficiency checks for the revalidation or renewal of class ratings shall always include the exercises referred to in points (h)(i) or (h)(ii), as applicable, in single-pilot operations.

(j) To remove a restriction to multi-pilot operations from a single-pilot aeroplane type rating in accordance with point FCL.725(d)(2), pilots shall comply with point (h).

(k) The training, testing and checking shall follow the table mentioned below.

(1) Training at an ATO, testing and checking requirements for single-pilot privileges

(2) Training at an ATO, testing and checking requirements for multi-pilot privileges

(3) Training at an ATO, testing and checking requirements for pilots holding single-pilot privileges seeking multi-pilot privileges for the first time (bridge course)

(4) Training at an ATO, testing and checking requirements for pilots holding multi-pilot privileges seeking single-pilot privileges for the first time (bridge course)

(5) Training at an ATO and checking requirements for combined revalidation and renewal of single and multi-pilot privileges

	(1)		(2)		(3)		(4)		(5)	
	Type of operation									
Type of aircraft	**SP**		**MP**		**SP → MP (initial)**		**MP → SP (initial)**		**SP + MP**	
	Training	***Testing/ checking***	***Training***	***Testing/ checking***	***Training***	***Testing/ checking***	***Training, testing and checking (SE aeroplanes)***	***Training, testing and checking (ME aeroplanes***	***SE aeroplanes***	***ME aeroplanes***
Initial issue										
All (except SP complex)	Sections 1-6	Sections 1-6	MCC CRM Human factors TEM Sections 1-7	Sections 1-6	MCC CRM Human factors TEM Section 7	Sections 1-6	1.6, 4.5, 4.6, 5.2 and, if applicable, one approach from Section 3.B	1.6, Section 6 and, if applicable, one approach from Section 3.B		
SP complex	1-7	1-6								
Revalidation										
All	n/a	Sections 1-6	n/a	Sections 1-6	n/a	n/a	n/a	n/a	MPO: Sections 1-7 (training) Section 1-6 (checking) SPO: 1.6, 4.5, 4.6, 5.2 and, if applicable, one approach	MPO: Sections 1-7 (training) Sections 1-6 (checking) SPO: 1.6, Section 6 and, if applicable, one

									from Section 3.B	approach from Section 3.B
Renewal										
All	FCL.740	Sections 1-6	FCL.740	Sections 1-6	n/a	n/a	n/a	n/a	Training: FCL.740 Check: as for the revalidation	Training: FCL.740 Check: as for the revalidation

(l) To establish or maintain PBN privileges, one approach shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

By way of derogation from the first paragraph, in cases where a proficiency check for revalidation of PBN privileges is performed in an aircraft or an FSTD representing that aircraft, which are not equipped for RNP APCH manoeuvres, the proficiency check may not include RNP APCH exercises. In such cases, the PBN privileges of the pilot shall not include RNP APCH. The restriction shall be lifted if the pilot has completed a proficiency check including an RNP APCH exercise for the relevant class or type.

TMGs AND SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
SECTION 1						
1 1.1	Departure Preflight including: – documentation; – mass and balance; – weather briefing; and – NOTAM.	OTD				
1.2	Pre-start checks					
1.2.1	External	OTD P#	P		M	
1.2.2	Internal	OTD P#	P		M	
1.3	Engine starting: normal malfunctions	P---->	---->		M	
1.4	Taxiing	P---->	---->		M	
1.5	Pre-departure checks: engine run-up (if applicable)	P---->	---->		M	
1.6	Take-off procedure: – normal with flight manual flap settings; and – crosswind (if conditions are available).	P---->	---->		M	
1.7	Climbing: – Vx/Vy – turns onto headings; and – level off.	P---->	---->		M	
1.8	ATC liaison – compliance, R/T procedures	P---->			M	
SECTION 2						
2 2.1	Airwork (visual meteorological conditions (VMC)) Straight and level flight at various airspeeds including flight at critically low airspeed with and without flaps (including	P---->	---->			

TMGs AND SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
	approach to V V_{mca} when applicable)					
2.2	Steep turns (360° left and right at 45° bank)	P---->	---->		M	
2.3	Stalls and recovery: (i) clean stall; (ii) approach to stall in descending turn with bank with approach configuration and power; (iii) approach to stall in landing configuration and power; and (iv) approach to stall, climbing turn with take-off flap and climb power (single-engine aeroplanes only)	P---->	---->		M	
2.4	Handling using autopilot and flight director (may be conducted in Section 3), if applicable	P---->	---->		M	
2.5	ATC liaison – Compliance, R/T procedures	P---->	---->		M	
SECTION 3A						
3A 3A.1	En route procedures VFR (see B.5 (c) and (d)) Flight plan, dead reckoning and map reading	P---->	---->			
3A.2	Maintenance of altitude, heading and speed	P---->	---->			
3A.3	Orientation, timing and revision of ETAs	P---->	---->			
3A.4	Use of radio navigation aids (if applicable)	P---->	---->			
3A.5	Flight management (flight log, routine checks including fuel, systems and icing)	P---->	---->			
3A.6	ATC liaison – compliance, R/T procedure	P---->	---->			
SECTION 3B						
3B 3B.1*	Instrument flight Departure IFR	P---->	---->		M	
3B.2*	En route IFR	P---->	---->		M	
3B.3*	Holding procedures	P---->	---->		M	

TMGs AND SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
3B.4*	3D operations to decision height/altitude (DH/A) of 200 ft (60 m) or to higher minima if required by the approach procedure (autopilot may be used to the final approach segment vertical path intercept)	P---->	---->		M	
3B.5*	2D operations to minimum descent height/altitude (MDH/A)	P---->	---->		M	
3B.6*	Flight exercises including simulated failure of the compass and attitude indicator: – rate 1 turns; and – recoveries from unusual attitudes.	P---->	---->		M	
3B.7*	Failure of localiser or glideslope	P---->	---->			
3B.8*	ATC liaison – compliance, R/T procedures	P---->	---->		M	
	Intentionally left blank					
SECTION 4						
4 4.1	Arrival and landings Aerodrome arrival procedure	P---->	---->		M	
4.2	Normal landing	P---->	---->		M	
4.3	Flapless landing	P---->	---->		M	
4.4	Crosswind landing (if suitable conditions)	P---->	---->			
4.5	Approach and landing with idle power from up to 2 000 ft above the runway (single-engine aeroplanes only)	P---->	---->			
4.6	Go-around from minimum height	P---->	---->		M	
4.7	Night go-around and landing (if applicable)	P---->	---->			
4.8	ATC liaison – compliance, R/T procedures	P---->	---->		M	
SECTION 5						
5	Abnormal and emergency procedures (This section may be combined with Sections 1 through 4.)					
5.1	Rejected take-off at a reasonable speed	P---->	---->		M	

TMGs AND SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
5.2	Simulated engine failure after take-off (single-engine aeroplanes only)		P		M	
5.3	Simulated forced landing without power (single-engine aeroplanes only)		P		M	
5.4	Simulated emergencies: (i) fire or smoke in flight; and (ii) systems' malfunctions as appropriate	P---->	---->			
5.5	ME aeroplanes and TMG training only: engine shutdown and restart (at a safe altitude if performed in the aircraft)	P---->	---->			
5.6	ATC liaison – compliance, R/T procedure					
SECTION 6						
6 6.1*	Simulated asymmetric flight (This section may be combined with Sections 1 through 5.) Simulated engine failure during take-off (at a safe altitude unless carried out in an FFS or an FNPT II)	P---->	---->X		M	
6.2*	Asymmetric approach and go-around	P---->	---->		M	
6.3*	Asymmetric approach and full-stop landing	P---->	---->		M	
6.4	ATC liaison – compliance, R/T procedures	P---->	---->		M	
SECTION 7						
7	UPRT					
7.1	Flight manoeuvres and procedures					
7.1.1	Manual flight with and without flight directors (no autopilot, no autothrust/autothrottle, and at different control laws, where applicable)	P---->	---->			
7.1.1.1	At different speeds (including slow flight) and altitudes within the FSTD training envelope.	P---->	---->			
7.1.1.2	Steep turns using 45° bank, 180° to 360° left and right	P---->	---->			

TMGs AND SINGLE-PILOT AEROPLANES, EXCEPT FOR HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			CLASS OR TYPE RATING SKILL TEST/PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
7.1.1.3	Turns with and without spoilers	P---->	---->			
7.1.1.4	Procedural instrument flying and manoeuvring including instrument departure and arrival, and visual approach	P---->	---->			
7.2 7.2.1	Upset recovery training Recovery from stall events in: – take-off configuration; – clean configuration at low altitude; – clean configuration near maximum operating altitude; and – landing configuration	P---->	---->			
7.2.2	The following upset exercises: – recovery from nose-high at various bank angles; and – recovery from nose-low at various bank angles.	P	X An aeroplane shall not be used for this exercise			
7.3	Go-around with all engines operating* from various stages during an instrument approach	P---->	---->			
7.4	Rejected landing with all engines operating: – from various heights below DH/MDH 15 m (50 ft) above the runway threshold – after touchdown (baulked landing) – In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the rejected landing with all engines operating shall be initiated below MDH/A or after touchdown.	P---->	---->			

6. Multi-pilot aeroplanes and single-pilot high-performance complex aeroplanes

(a) The following symbols mean:

P = Trained as PIC or co-pilot and as PF and PM for the issue of a type rating as applicable.

OTD = Other training devices may be used for this exercise.

X = An FFS shall be used for this exercise; otherwise an aeroplane shall be used if appropriate for the manoeuvre or procedure.

P# = The training shall be complemented by supervised aeroplane inspection.

(b) The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (---->).

The following abbreviations are used to indicate the training equipment used:

A = aeroplane

FFS = full-flight simulator

FSTD = flight simulator training device

(c) The starred items (*) shall be flown solely by reference to instruments.

(d) Where the letter 'M' appears in the skill test or proficiency check column, this will indicate a mandatory exercise or a choice where more than one exercise appears.

(e) An FFS shall be used for practical training and testing if the FFS forms part of an approved type rating course. The following considerations will apply to the approval of the course:

(i) the qualifications of the instructors;

(ii) the qualification and the amount of training provided on the course in an FSTD; and

(iii) the qualifications and previous experience on similar types of the pilots under training.

(f) Manoeuvres and procedures shall include MCC for multi-pilot aeroplane and for single-pilot high-performance complex aeroplanes in multi-pilot operations.

(g) Manoeuvres and procedures shall be conducted in single-pilot role for single-pilot high-performance complex aeroplanes in single-pilot operations.

(h) To remove a restriction to multi-pilot operations in accordance with point FCL.725(d)(2) from a single-pilot high-performance complex aeroplane type rating, pilots shall complete the manoeuvres/procedures in 2.5, 3.8.3.4, 4.4, 5.5 and at least one manoeuvre/procedure from Section 3.4 in single-pilot operation.

(i) Applicants for and holders of a restricted type rating issued in accordance with point FCL.720.A(c) shall complete training, skill tests and proficiency checks in accordance with this Appendix. However, unless they undergo a skill test in accordance with point FCL.720.A(c)(3), they shall, during a skill test or a proficiency check, perform at least the landing manoeuvres in the role of the pilot monitoring but shall not be required to perform the following:

(i) take-off manoeuvres;

(ii) landing manoeuvres in the role of the pilot flying.

(j) To establish or maintain PBN privileges, one approach shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

By way of derogation from the first paragraph, in cases where a proficiency check for revalidation of PBN privileges is performed in an aircraft or an FSTD representing that aircraft, which are not equipped for RNP APCH manoeuvres, the proficiency check may not include RNP APCH exercises. In such cases, the PBN privileges of the pilot shall not include RNP APCH. The restriction shall be lifted if the pilot has completed a proficiency check including an RNP APCH exercise for the relevant class or type.

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
SECTION 1						
1 1.1	Flight preparation Performance calculation	OTD P				
1.2	Aeroplane external visual inspection; location of each item and purpose of inspection	OTD P#	P			
1.3	Cockpit inspection	P---->	---->			
1.4	Use of checklist prior to starting engines, starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies	P---->	---->		M	
1.5	Taxiing in compliance with ATC instructions or instructions of instructor	P---->	---->			
1.6	Before take-off checks	P---->	---->		M	
SECTION 2						
2 2.1	Take-offs Normal take-offs with different flap settings, including expedited take-off	P---->	---->			
2.2*	Instrument take-off; transition to instrument flight is required during rotation or immediately after becoming airborne	P---->	---->			
2.3	Crosswind take-off	P---->	---->			
2.4	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)	P---->	---->			
2.5 2.5.1*	Take-offs with simulated engine failure: shortly after reaching V2	P---->	---->			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
	(In aeroplanes which are not certificated as transport category or commuter category aeroplanes, the engine failure shall not be simulated until reaching a minimum height of 500 ft above the runway end. In aeroplanes having the same performance as a transport category aeroplane regarding take-off mass and density altitude, the instructor may simulate the engine failure shortly after reaching V2)					
2.5.2*	between V1 and V2	P	X		M FFS only	
2.6	Rejected take-off at a reasonable speed before reaching V1	P---->	---->		M	
SECTION 3						
3 3.1	Flight manoeuvres and procedures Manual flight with and without flight directors (no autopilot, no autothrust/autothrottle, and at different control laws, where applicable)	P---->	---->			
3.1.1	At different speeds (including slow flight) and altitudes within the FSTD training envelope	P---->	---->			
3.1.2	Steep turns using 45° bank, 180° to 360° left and right	P---->	---->			
3.1.3	Turns with and without spoilers	P---->	---->			
3.1.4	Procedural instrument flying and manoeuvring including instrument departure and arrival, and visual approach	P---->	---->			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
3.2	Tuck under and Mach buffets (if applicable), and other specific flight characteristics of the aeroplane (e.g. Dutch Roll)	P---->	---->X An aero-plane shall not be used for this exercise		FFS only	
3.3	Normal operation of systems and controls engineer's panel (if applicable)	OTD P---->	---->			
3.4	Normal and abnormal operations of following systems:				M	A mandatory minimum of 3 abnormal items shall be selected from 3.4.0 to 3.4.14 inclusive
3.4.0	Engine (if necessary propeller)	OTD P---->	---->			
3.4.1	Pressurisation and air conditioning	OTD P---->	---->			
3.4.2	Pitot/static system	OTD P---->	---->			
3.4.3	Fuel system	OTD P---->	---->			
3.4.4	Electrical system	OTD P---->	---->			
3.4.5	Hydraulic system	OTD P---->	---->			
3.4.6	Flight control and trim system	OTD P---->	---->			
3.4.7	Anti-icing/de-icing system, glare shield heating	OTD P---->				
3.4.8	Autopilot/flight director	OTD P---->			M (single pilot only)	
3.4.9	Stall warning devices or stall avoidance devices, and stability augmentation devices	OTD P---->				
3.4.10	Ground proximity warning system, weather radar, radio altimeter, transponder	P---->				

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
3.4.11	Radios, navigation equipment, instruments, FMS	OTD P---->				
3.4.12	Landing gear and brake	OTD P---->	---->			
3.4.13	Slat and flap system	OTD	---->			
3.4.14	Auxiliary power unit (APU)	OTD P---->	---->			
	Intentionally left blank					
3.6	Abnormal and emergency procedures:				M	A mandatory minimum of 3 items shall be selected from 3.6.1 to 3.6.9 inclusive
3.6.1	Fire drills, e.g. engine, APU, cabin, cargo compartment, flight deck, wing and electrical fires including evacuation	P---->	---->			
3.6.2	Smoke control and removal	P---->	---->			
3.6.3	Engine failures, shutdown and restart at a safe height	P---->	---->			
3.6.4	Fuel dumping (simulated)	P---->	---->			
3.6.5	Wind shear at take-off/landing	P	X		FFS only	
3.6.6	Simulated cabin pressure failure/emergency descent	P---->	---->			
3.6.7	Incapacitation of flight crew member	P---->	---->			
3.6.8	Other emergency procedures as outlined in the appropriate aeroplane flight manual (AFM)	P---->	---->			
3.6.9	TCAS event	OTD P---->	An aero-plane shall not be used		FFS only	
3.7 3.7.1	Upset recovery training Recovery from stall events in: – take-off configuration; – clean configuration at low altitude;	P FFS qualified for the training task only	X An aero-plane shall not be used for			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
	– clean configuration near maximum operating altitude; and – landing configuration.		this exercise			
3.7.2	The following upset exercises: – recovery from nose-high at various bank angles; and – recovery from nose-low at various bank angles	P FFS qualified for the training task only	X An aero-plane shall not be used for this exercise		FFS only	
3.8	Instrument flight procedures					
3.8.1*	Adherence to departure and arrival routes and ATC instructions	P---->	---->		M	
3.8.2*	Holding procedures	P---->	---->			
3.8.3*	3D operations to DH/A of 200 ft (60 m) or to higher minima if required by the approach procedure					
Note: According to the AFM, RNP APCH procedures may require the use of autopilot or flight director. The procedure to be flown manually shall be chosen taking into account such limitations (for example, choose an ILS for 3.8.3.1 in the case of such AFM limitation).						
3.8.3.1*	Manually, without flight director	P---->	---->		M (skill test only)	
3.8.3.2*	Manually, with flight director	P---->	---->			
3.8.3.3*	With autopilot	P---->	---->			
3.8.3.4*	Manually, with one engine simulated inoperative during final approach, either until touchdown or through the complete missed approach procedure (as applicable), starting: (i) before passing 1 000 ft above aerodrome level; and (ii) after passing 1 000 ft above aerodrome level.	P---->	---->		M	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
	In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the approach with simulated engine failure and the ensuing go-around shall be initiated in conjunction with the 2D approach in accordance with 3.8.4. The go-around shall be initiated when reaching the published obstacle clearance height/altitude (OCH/A); however, not later than reaching an MDH/A of 500 ft above the runway threshold elevation. In aeroplanes having the same performance as a transport category aeroplane regarding take-off mass and density altitude, the instructor may simulate the engine failure in accordance with exercise 3.8.3.4.					
3.8.4*	2D operations down to the MDH/A	P*---->	---->		M	
3.8.5	Circling approach under the following conditions: (a)*approach to the authorised minimum circling approach altitude at the aerodrome in question in accordance with the local instrument approach facilities in simulated instrument flight conditions; followed by: (b) circling approach to another runway at least 90° off centreline from the final approach used in item (a), at the authorised minimum circling approach altitude. Remark: If (a) and (b) are not possible due to ATC reasons, a simulated low visibility pattern may be performed.	P*---->	---->			

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
3.8.6	Visual approaches	P---->	---->			
SECTION 4						
4	Missed approach procedures	P*---->	---->			
4.1.	Go-around with all engines operating* during a 3D operation on reaching decision height	P*---->	---->			
4.2.	Go-around with all engines operating* from various stages during an instrument approach	P*---->	---->			
4.3.	Other missed approach procedures	P*---->	---->			
4.4*	Manual go-around with the critical engine simulated inoperative after an instrument approach on reaching DH, MDH or MAPt	P*---->	---->		M	
4.5.	Rejected landing with all engines operating: – from various heights below DH/MDH; – after touchdown (baulked landing) In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the rejected landing with all engines operating shall be initiated below MDH/A or after touchdown.	P---->	---->			
SECTION 5						
5 5.1.	Landings Normal landings* with visual reference established when reaching DA/H following an instrument approach operation	P				
5.2.	Landing with simulated jammed horizontal stabiliser in any out-of-trim position	P---->	An aero-plane shall not be used for		FFS only	

MULTI-PILOT AEROPLANES AND SINGLE-PILOT HIGH-PERFORMANCE COMPLEX AEROPLANES		PRACTICAL TRAINING			ATPL/MPL/TYPE RATING SKILL TEST OR PROF. CHECK	
Manoeuvres/Procedures		FSTD	A	Instructor initials when training completed	Tested or checked in FSTD or A	Examiner initials when test or check completed
			this exercise			
5.3.	Crosswind landings (aircraft, if practicable)	P---->	---->			
5.4.	Traffic pattern and landing without extended or with partly extended flaps and slats	P---->	---->			
5.5.	Landing with critical engine simulated inoperative	P---->	---->		M	
5.6.	Landing with two engines inoperative: – aeroplanes with three engines: the centre engine and one outboard engine as far as practicable according to data of the AFM; and – aeroplanes with four engines: two engines at one side	P	X		M FFS only (skill test only)	

7. Class ratings – sea

Section 6 shall be completed to revalidate a multi-engine class rating sea, VFR only, where the required experience of 10 route sectors within the previous 12 months has not been completed.

CLASS RATING SEA	PRACTICAL TRAINING	CLASS RATING SKILL TEST OR PROFICIENCY CHECK
Manoeuvres/Procedures	Instructor's initials when training completed	Examiner's initials when test completed
SECTION 1		
1 Departure Preflight including: – documentation; – mass and balance; – weather briefing; and – NOTAM.		
1.2 Pre-start checks External/internal		
1.3 Engine start-up and shutdown Normal malfunctions		
1.4 Taxiing		

CLASS RATING SEA	PRACTICAL TRAINING	CLASS RATING SKILL TEST OR PROFICIENCY CHECK
Manoeuvres/Procedures	**Instructor's initials when training completed**	**Examiner's initials when test completed**
1.5 Step taxiing		
1.6 Mooring: Beach Jetty pier Buoy		
1.7 Engine-off sailing		
1.8 Pre-departure checks: Engine run-up (if applicable)		
1.9 Take-off procedure: – normal with flight manual flap settings; and – crosswind (if conditions are available).		
1.10 Climbing: – turns onto headings – level off		
1.11 ATC liaison – Compliance, R/T procedures		
SECTION 2		
2 Airwork (VFR) 2.1 Straight and level flight at various airspeeds including flight at critically low airspeed with and without flaps (including approach to VMCA when applicable)		
2.2 Steep turns (360° left and right at 45° bank)		
2.3. Stalls and recovery: (i) clean stall; (ii) approach to stall in descending turn with bank with approach configuration and power; (iii) approach to stall in landing configuration and power; and (iv) approach to stall, climbing turn with take-off flap and climb power (single-engine aeroplanes only).		
2.4 ATC liaison – Compliance, R/T procedures		
SECTION 3		
3 En-route procedures VFR 3.1 Flight plan, dead reckoning and map reading		
3.2 Maintenance of altitude, heading and speed		
3.3 Orientation, timing and revision of ETAs		
3.4 Use of radio navigation aids (if applicable)		
3.5 Flight management (flight log, routine checks including fuel, systems and icing)		
3.6 ATC liaison – Compliance, R/T procedures		
SECTION 4		
4 Arrivals and landings 4.1 Aerodrome arrival procedure (amphibians only)		
4.2 Normal landing		
4.3 Flapless landing		

CLASS RATING SEA	PRACTICAL TRAINING	CLASS RATING SKILL TEST OR PROFICIENCY CHECK
Manoeuvres/Procedures	**Instructor's initials when training completed**	**Examiner's initials when test completed**
4.4 Crosswind landing (if suitable conditions)		
4.5 Approach and landing with idle power from up to 2000´ above the water (single-engine aeroplane only)		
4.6 Go-around from minimum height		
Glassy water landing Rough water landing		
4.8 ATC liaison – Compliance, R/T procedure,		
SECTION 5		
5 Abnormal and emergency procedures (This section may be combined with sections 1 through 4) 5.1 Rejected take-off at a reasonable speed		
5.2 Simulated engine failure after take-off (single-engine aeroplane only)		
5.3 Simulated forced landing without power (single-engine aeroplane only)		
5.4 Simulated emergencies: (i) fire or smoke in flight (ii) systems' malfunctions as appropriate		
5.5 ATC liaison – Compliance, R/T procedures		
SECTION 6		
6 Simulated asymmetric flight (This section may be combined with sections 1 through 5) 6.1 Simulated engine failure during take-off (at a safe altitude unless carried out in FFS and FNPT II)		
6.2 Engine shutdown and restart (ME skill test only)		
6.3 Asymmetric approach and go-around		
6.4 Asymmetric approach and full-stop landing		
6.5 ATC liaison – Compliance, R/T procedures		

C. Specific requirements for the helicopter category

1. In the case of skill test or proficiency check for type ratings and the ATPL, applicants shall pass Sections 1 to 4 and 6 (as applicable) of the skill test or proficiency check. Failure in more than five items will require applicants to repeat the entire test or check. Applicants failing not more than five items shall repeat the failed items. Failure in any item in the case of a retest or a recheck or failure in any other items already passed will require the applicants to repeat the entire test or check again. All sections of the skill test or proficiency check shall be completed within 6 months.

2. In the case of proficiency check for an IR, applicants shall pass Section 5 of the proficiency check. Failure in more than 3 items will require applicants to repeat the entire Section 5. Applicants failing not more than 3 items shall repeat the failed items. Failure in any item in the case of a

recheck or failure in any other items of Section 5 already passed will require applicants to repeat the entire check.

FLIGHT TEST TOLERANCE

3. The applicant shall demonstrate the ability to:

(a) operate the helicopter within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge;

(e) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;

(f) understand and apply crew coordination and incapacitation procedures, if applicable; and

(g) communicate effectively with the other crew members, if applicable.

4. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the helicopter used.

(a) IFR flight limits

Height	
Generally	±100 ft
Starting a go-around at decision height/altitude	+50 ft/–0 ft
Minimum descent height/MAP/altitude	+50 ft/–0 ft
Tracking	
On radio aids	±5°
For “angular” deviations	Half-scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS)
2D (LNAV) and 3D (LNAV/VNAV) “linear” lateral deviations	cross-track error/deviation shall normally be limited to ± ½ of the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of one time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 ft below the vertical profile at any time, and not more than + 75 ft above the vertical profile at or below 1 000 ft above aerodrome level.
Heading	
all engines operating	±5°
with simulated engine failure	±10°

Speed	
all engines operating	±5 knots
with simulated engine failure	+10 knots/–5 knots

(b) VFR flight limits

Height:	
Generally	±100 ft
Heading:	
Normal operations	±5°
Abnormal operations/emergencies	±10°
Speed:	
Generally	±10 knots
With simulated engine failure	+10 knots/-5 knots
Ground drift:	
T.O. hover I.G.E.	±3 ft
Landing	±2 ft (with 0 ft rearward or lateral flight)

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

GENERAL

5. The following symbols mean:

   P = Trained as PIC for the issue of a type rating for single-pilot helicopters (SPH) or trained as PIC or co-pilot and as PF and PM for the issue of a type rating for multi pilot helicopters (MPH).

6. The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (---->).

   The following abbreviations are used to indicate the training equipment used:

   FFS = full-flight simulator

   FTD = flight training device

   H = helicopter

7. The starred items (*) shall be flown in actual or simulated IMC, only by applicants wishing to renew or revalidate an IR(H) or extend the privileges of that rating to another type.

8. Instrument flight procedures (Section 5) shall be performed only by applicants wishing to renew or revalidate an IR(H) or extend the privileges of that rating to another type. An FFS or an FTD 2/3 may be used for this purpose.

8a. To establish or maintain PBN privileges, one approach shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

   By way of derogation from subparagraph above, in cases where a proficiency check for revalidation of PBN privileges does not include an RNP APCH exercise, the PBN privileges of the

pilot shall not include RNP APCH. The restriction shall be lifted if the pilot has completed a proficiency check including an RNP APCH exercise.

9. Where the letter 'M' appears in the skill test or proficiency check column, this will indicate a mandatory exercise.

10. An FSTD shall be used for practical training and testing if the FSTD forms part of a type rating course. The following considerations will apply to the course:

(a) the qualification of the FSTD as set out in the relevant requirements of Annex VI (Part-ARA) and Annex VII (Part-ORA);

(b) the qualifications of the instructor and examiner;

(c) the amount of FSTD training provided on the course;

(d) the qualifications and previous experience in similar types of the pilots under training; and

(e) the amount of supervised flying experience provided after the issue of the new type rating.

MULTI-PILOT HELICOPTERS

11. Applicants for the skill test for the issue of the multi-pilot helicopter type rating and ATPL(H) shall pass only Sections 1 to 4 and, if applicable, Section 6.

12. Applicants for the revalidation or renewal of the multi-pilot helicopter type rating proficiency check shall pass only Sections 1 to 4 and, if applicable, Section 6.

SINGLE/MULTI-PILOT HELICOPTERS		PRACTICAL TRAINING			SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		FSTD	H	Instructor initials when training completed	Checked in FSTD or H	Examiner initials when test completed
SECTION 1 – Preflight preparations and checks						
1.1	Helicopter exterior visual inspection; location of each item and purpose of inspection		P		M (if performed in the helicopter)	
1.2	Cockpit inspection	P	---->		M	
1.3	Starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies	P	---->		M	
1.4	Taxiing/air taxiing in compliance with ATC instructions or with instructions of an instructor	P	---->		M	
1.5	Pre-take-off procedures and checks	P	---->		M	
SECTION 2 – Flight manoeuvres and procedures						
2.1	Take-offs (various profiles)	P	---->		M	
2.2	Sloping ground or crosswind take-offs & landings	P	---->			

SINGLE/MULTI-PILOT HELICOPTERS		PRACTICAL TRAINING			SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		FSTD	H	Instructor initials when training completed	Checked in FSTD or H	Examiner initials when test completed
2.3	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)	P	---->			
2.4	Take-off with simulated engine failure shortly before reaching TDP or DPATO	P	---->		M	
2.4.1	Take-off with simulated engine failure shortly after reaching TDP or DPATO	P	---->		M	
2.5	Climbing and descending turns to specified headings	P	---->		M	
2.5.1	Turns with 30° bank, 180° to 360° left and right, by sole reference to instruments	P	---->		M	
2.6	Autorotative descent	P	---->		M	
2.6.1	For single-engine helicopters (SEH): — autorotative landing; or — power recovery, provided that applicants, in the preceding year, completed training that included an autorotative landing and that training was entered and signed in the applicants' logbook by the instructor. For multi-engine helicopters (MEH): power recovery.	P	---->		M	
2.7	Landings, various profiles	P	---->		M	
2.7.1	Go-around or landing following simulated engine failure before LDP or DPBL	P	---->		M	
2.7.2	Landing following simulated engine failure after LDP or DPBL	P	---->		M	
SECTION 3 – Normal and abnormal operations of the following systems and procedures						
3	Normal and abnormal operations of the following systems and procedures:				M	A mandatory minimum of 3 items shall be selected from this section
3.1	Engine	P	---->			
3.2	Air conditioning (heating, ventilation)	P	---->			
3.3	Pitot/static system	P	---->			

SINGLE/MULTI-PILOT HELICOPTERS		PRACTICAL TRAINING			SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		FSTD	H	Instructor initials when training completed	Checked in FSTD or H	Examiner initials when test completed
3.4	Fuel System	P	---->			
3.5	Electrical system	P	---->			
3.6	Hydraulic system	P	---->			
3.7	Flight control and trim system	P	---->			
3.8	Anti-icing and de-icing system	P	---->			
3.9	Autopilot/Flight director	P	--->			
3.10	Stability augmentation devices	P	---->			
3.11	Weather radar, radio altimeter, transponder	P	---->			
3.12	Area navigation system	P	---->			
3.13	Landing gear system	P	----->			
3.14	APU	P	---->			
3.15	Radio, navigation equipment, instruments and FMS	P	---->			
SECTION 4 – Abnormal and emergency procedures						
4	Abnormal and emergency procedures				M	A mandatory minimum of 3 items shall be selected from this section
4.1	Fire drills (including evacuation if applicable)	P	---->			
4.2	Smoke control and removal	P	---->			
4.3	Engine failures, shutdown and restart at a safe height	P	---->			
4.4	Fuel dumping (simulated)	P	---->			
4.5	Tail rotor control failure (if applicable)	P	---->			
4.5.1	Tail rotor loss (if applicable)	P	A helicopter shall not be used for this exercise			
4.6	Incapacitation of crew member – MPH only	P	---->			
4.7	Transmission malfunctions	P	---->			
4.8	Other emergency procedures as outlined in the appropriate flight manual	P	---->			

SINGLE/MULTI-PILOT HELICOPTERS		PRACTICAL TRAINING			SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		FSTD	H	Instructor initials when training completed	Checked in FSTD or H	Examiner initials when test completed
SECTION 5 – Instrument flight procedures (to be performed in IMC or simulated IMC)						
5.1	Instrument take-off: transition to instrument flight is required as soon as possible after becoming airborne	P*	---->*			
5.1.1	Simulated engine failure during departure	P*	---->*		M*	
5.2	Adherence to departure and arrival routes and ATC instructions	P*	---->*		M*	
5.3	Holding procedures	P*	---->*			
5.4	3D operations to DH/A of 200 ft (60 m) or to higher minima if required by the approach procedure	P*	---->*			
5.4.1	Manually, without flight director. Note: According to the AFM, RNP APCH procedures may require the use of autopilot or flight director. The procedure to be flown manually shall be chosen taken into account such limitations (for example, choose an ILS for 5.4.1 in the case of such AFM limitation).	P*	---->*		M* (unless Exercise 5.4.2 is completed)	
5.4.2	Manually, with flight director	P*	---->*		M* (unless Exercise 5.4.1 is completed)	
5.4.3	With coupled autopilot	P*	---->*			
5.4.4	Manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing 1 000 ft above aerodrome level until touchdown or until completion of the missed approach procedure	P*	---->*		M*	
5.5	2D operations down to the MDA/H	P*	---->*		M*	
5.6	Go-around with all engines operating on reaching DA/H or MDA/MDH	P*	---->*			

SINGLE/MULTI-PILOT HELICOPTERS		PRACTICAL TRAINING			SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		FSTD	H	Instructor initials when training completed	Checked in FSTD or H	Examiner initials when test completed
5.6.1	Other missed approach procedures	P*	---->*			
5.6.2	Go-around with one engine simulated inoperative on reaching DA/H or MDA/MDH	P*	---->*		M*	
5.7	IMC autorotation with power recovery	P*	---->*		M*	
5.8	Recovery from unusual attitudes	P*	---->*		M*	
SECTION 6 — Use of optional equipment						
6	Use of optional equipment	P	---->			

SINGLE-PILOT HELICOPTERS

13. To exercise the privileges of the type rating in accordance with point FCL.725(d), applicants for the issue, revalidation or renewal of a single-pilot helicopter type rating shall:

(a) for single-pilot operations, complete the skill test or proficiency check in single-pilot operations;

(b) in multi-pilot operations, complete the skill test or proficiency check in multi-pilot operations;

(c) for both single-pilot and multi-pilot operations, complete the skill test or proficiency check in multi-pilot operations and, additionally, the following manoeuvres and procedures in single-pilot operations:

(1) for single-engine helicopters: 2.1 take-off and 2.6 and 2.6.1 autorotative descent and autorotative landing;

(2) for multi-engine helicopters: 2.1 take-off and 2.4 and 2.4.1 engine failures shortly before and shortly after reaching TDP;

(3) for IR privileges, in addition to point (1) or (2), as applicable, one approach of Section 5, unless the criteria of Appendix 8 are met;

(d) in order to remove a restriction to multi-pilot operations from a single-pilot helicopter type rating in accordance with point FCL.725(d)(2), complete a proficiency check that includes the manoeuvres and procedures referred to in points (c)(1) or (c)(2), as applicable.

D. Specific requirements for the powered-lift aircraft category

1. In the case of skill tests or proficiency checks for powered-lift aircraft type ratings, applicants shall pass Sections 1 to 5 and 6 (as applicable) of the skill test or proficiency check. Failure in more than five items will require applicants to repeat the entire test or check. Applicants failing not more than five items shall repeat the failed items. Failure in any item in the case of a retest or a recheck or failure in any other items already passed will require applicants to repeat the

entire test or check. All sections of the skill test or proficiency check shall be completed within 6 months.

FLIGHT TEST TOLERANCE

2. Applicants shall demonstrate the ability to:

(a) operate the powered-lift aircraft within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge;

(e) maintain control of the powered-lift aircraft at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;

(f) understand and apply crew coordination and incapacitation procedures; and

(g) communicate effectively with the other crew members.

3. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the powered-lift aircraft used.

(a) **IFR flight limits:**

Height	
Generally	±100 ft
Starting a go-around at decision height/altitude	+50 ft/-0 ft
Minimum descent height/altitude	+50 ft/-0 ft
Tracking	
On radio aids	±5°
Precision approach	half scale deflection, azimuth and glide path
Heading	
Normal operations	±5°
Abnormal operations/emergencies	±10°
Speed	
Generally	±10 knots
With simulated engine failure	+10 knots/-5 knots

(b) VFR flight limits:

Height	
Generally	±100 ft
Heading:	
Normal operations	±5°
Abnormal operations/emergencies	±10°
Speed	
Generally	±10 knots

With simulated engine failure	+10 knots/-5 knots
Ground drift	
T.O. hover I.G.E.	±3 ft
Landing	±2 ft (with 0 ft rearward or lateral flight)

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

4. The following symbol means:

P= Trained as PIC or co-pilot and as PF and PM for the issue of a type rating as applicable

5. The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (---->).

6. The following abbreviations are used to indicate the training equipment used:

FFS = full-flight simulator

FTD = flight training device

OTD = other training device

PL = powered-lift aircraft

6a. The starred items (*) shall be flown solely by reference to instruments. If this condition is not met during the skill test or proficiency check, the type rating will be restricted to VFR only.

7. Where the letter 'M' appears in the skill test or proficiency check column, this will indicate a mandatory exercise.

8. FSTDs shall be used for practical training and testing if they form part of an approved type rating course. The following considerations will apply to the approval of the course:

(a) the qualification of the FSTDs as set out in the relevant requirements of Annex VI (Part-ARA) and Annex VII (Part-ORA); and

(b) the qualifications of the instructor.

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
SECTION 1 – Preflight preparations and checks								
1.1	Powered-lift aircraft exterior visual inspection; location of each item and purpose of inspection				P			
1.2	Cockpit inspection	P	---->	---->	---->			
1.3	Starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies	P	---->	---->	---->		M	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
1.4	Taxiing in compliance with ATC instructions or with instructions of an instructor		P	---->	---->			
1.5	Pre-take-off procedures and checks including power check	P	---->	---->	---->		M	
SECTION 2 – Flight manoeuvres and procedures								
2.1	Normal VFR take-off profiles: Runway operations (short take-off and landing (STOL) and vertical take-off and landing (VTOL)) including crosswind Elevated heliports Ground level heliports		P	---->	---->		M	
2.2	Take-off at maximum take-off mass (actual or simulated maximum take-off mass)		P	---->				
2.3.1	Rejected take-off: – during runway operations; – during elevated heliport operations; and – during ground level operations.		P	---->			M	
2.3.2	Take-off with simulated engine failure after passing decision point: during runway operations; during elevated heliport operations; and during ground level operations.		P	---->			M	
2.4	Autorotative descent in helicopter mode to ground (an aircraft shall not be used for this exercise)	P	---->	---->			M FFS only	
2.4.1	Windmill descent in aeroplane mode (an aircraft shall not be used for this exercise)		P	---->			M FFS only	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
2.5	Normal VFR landing profiles: runway operations (STOL and VTOL) elevated heliports ground level heliports		P	---->	---->		M	
2.5.1	Landing with simulated engine failure after reaching decision point: – during runway operations; – during elevated heliport operations; and – during ground level operations.							
2.6	Go-around or landing following simulated engine failure before decision point		P	---->			M	
SECTION 3 – Normal and abnormal operations of the following systems and procedures:								
3	Normal and abnormal operations of the following systems and procedures (may be completed in an FSTD if qualified for the exercise):						M	A mandatory minimum of 3 items shall be selected from this section
3.1	Engine	P	---->	---->				
3.2	Pressurisation and air conditioning (heating, ventilation)	P	---->	---->				
3.3	Pitot/static system	P	---->	---->				
3.4	Fuel System	P	---->	---->				
3.5	Electrical system	P	---->	---->				
3.6	Hydraulic system	P	---->	---->				
3.7	Flight control and trim system	P	---->	---->				
3.8	Anti-icing and de-icing system, glare shield heating (if fitted)	P	---->	---->				
3.9	Autopilot/Flight director	P	--->	--->				
3.10	Stall warning devices or stall avoidance devices and stability augmentation devices	P	---->	---->				

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
3.11	Weather radar, radio altimeter, transponder, ground proximity warning system (if fitted)	P	---->	---->				
3.12	Landing gear system	P	----->	----->				
3.13	APU	P	---->	---->				
3.14	Radio, navigation equipment, instruments and FMS	P	---->	---->				
3.15	Flap system	P	---->	---->				
SECTION 4 – Abnormal and emergency procedures								
4	Abnormal and emergency procedures (may be completed in an FSTD if qualified for the exercise)						M	A mandatory minimum of 3 items shall be selected from this section
4.1	Fire drills, engine, APU, cargo compartment, flight deck and electrical fires including evacuation if applicable	P	---->	---->				
4.2	Smoke control and removal	P	---->	---->				
4.3	Engine failures, shutdown and restart (an aircraft shall not be used for this exercise) including one engine inoperative conversion from helicopter to aeroplane modes and vice versa	P	---->	---->			FFS only	
4.4	Fuel dumping (simulated, if fitted)	P	---->	---->				
4.5	Wind shear at take-off and landing (an aircraft shall not be used for this exercise)			P			FFS only	
4.6	Simulated cabin pressure failure/emergency descent (an aircraft shall not be used for this exercise)	P	---->	---->			FFS only	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
4.7	ACAS event (an aircraft shall not be used for this exercise)	P	---->	---->			FFS only	
4.8	Incapacitation of crew member	P	---->	---->				
4.9	Transmission malfunctions	P	---->	---->			FFS only	
4.10	Recovery from a full stall (power on and off) or after activation of stall warning devices in climb, cruise and approach configurations (an aircraft shall not be used for this exercise)	P	---->	---->			FFS only	
4.11	Other emergency procedures as detailed in the appropriate flight manual	P	---->	---->				
SECTION 5 — Instrument flight procedures (to be performed in IMC or simulated IMC)								
5.1	Instrument take-off: transition to instrument flight is required as soon as possible after becoming airborne	P*	---->*	---->*				
5.1.1	Simulated engine failure during departure after decision point	P*	---->*	---->*			M*	
5.2	Adherence to departure and arrival routes and ATC instructions	P*	---->*	---->*			M*	
5.3	Holding procedures	P*	---->*	---->*				
5.4	Precision approach down to a decision height not less than 60 m (200 ft)	P*	---->*	---->*				
5.4.1	Manually, without flight director	P*	---->*	---->*			M* (Skill test only)	
5.4.2	Manually, with flight director	P*	---->*	---->*				
5.4.3	With use of autopilot	P*	---->*	---->*				
5.4.4	Manually, with one engine simulated inoperative; engine failure has to be simulated during final	P*	---->*	---->*			M*	

POWERED-LIFT AIRCRAFT CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	PL	Instructor's initials when training completed	Checked in FFS PL	Examiner's initials when test completed
	approach before passing the OM and continued either to touchdown or until completion of the missed approach procedure							
5.5	Non-precision approach down to the MDA/H	P*	---->*	---->*			M*	
5.6	Go-around with all engines operating on reaching DA/H or MDA/MDH	P*	---->*	---->*				
5.6.1	Other missed approach procedures	P*	---->*	---->*				
5.6.2	Go-around with one engine simulated inoperative on reaching DA/H or MDA/MDH	P*					M*	
5.7	IMC autorotation with power recovery to land on runway in helicopter mode only (an aircraft shall not be used for this exercise)	P*	---->*	---->*			M* FFS only	
5.8	Recovery from unusual attitudes (this one depends on the quality of the FFS)	P*	---->*	---->*			M*	
SECTION 6 — Optional equipment								
6	Use of optional equipment		P	---->	---->			

E. Specific requirements for the airship category

1. In the case of skill tests or proficiency checks for airship type ratings, applicants shall pass Sections 1 to 5 and 6 (as applicable) of the skill test or proficiency check. Failure in more than five items will require applicants to repeat the entire test or check. Applicants failing not more than five items shall take the failed items again. Failure in any item in the case of a retest or a recheck, or failure in any other items already passed will require applicants to repeat the entire test or check again. All sections of the skill test or proficiency check shall be completed within 6 months.

FLIGHT TEST TOLERANCE

2. Applicants shall demonstrate the ability to:

   (a) operate the airship within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge;

(e) maintain control of the airship at all times in such a manner that the successful outcome of a procedure or manoeuvre is never in doubt;

(f) understand and apply crew coordination and incapacitation procedures; and

(g) communicate effectively with the other crew members.

3. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the airship used.

(a) **IFR flight limits:**

Height	
Generally	±100 ft
Starting a go-around at decision height/altitude	+50 ft/-0 ft
Minimum descent height/altitude	+50 ft/-0 ft
Tracking	
On radio aids	±5°
Precision approach	half-scale deflection, azimuth and glide path
Heading	
Normal operations	±5°
Abnormal operations/emergencies	±10°

(b) VFR flight limits:

Height	
Generally	±100 ft
Heading	
Normal operations	±5°
Abnormal operations/emergencies	±10°

CONTENT OF THE TRAINING/SKILL TEST/PROFICIENCY CHECK

4. The following symbol means:

P = Trained as PIC or co-pilot and as PF and PM for the issue of a type rating as applicable.

5. The practical training shall be conducted at least at the training equipment level shown as (P), or may be conducted up to any higher equipment level shown by the arrow (---->).

6 The following abbreviations are used to indicate the training equipment used:

FFS = full-flight simulator

FTD = flight training device

OTD = other training device

As = airship

6a. The starred items (*) shall be flown solely by reference to instruments. If this condition is not met during the skill test or proficiency check, the type rating will be restricted to VFR only.

7. Where the letter 'M' appears in the skill test or proficiency check column, this will indicate a mandatory exercise.

8. FSTDs shall be used for practical training and testing if they form part of a type rating course. The following considerations will apply to the course:

(a) the qualification of the FSTDs as set out in the relevant requirements of Annex VI (Part-ARA) and Annex VII (Part-ORA); and

(b) the qualifications of the instructor.

AIRSHIP CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	As	Instructor's initials when training completed	Checked in FFS As	Examiner's initials when test completed
SECTION 1 – Preflight preparations and checks								
1.1	Preflight inspection				P			
1.2	Cockpit inspection	P	---->	---->	---->			
1.3	Starting procedures, radio and navigation equipment check, selection and setting of navigation and communication frequencies		P	---->	---->		M	
1.4	Off-mast procedure and ground manoeuvring			P	---->		M	
1.5	Pre-take-off procedures and checks	P	---->	---->	---->		M	
SECTION 2 – Flight manoeuvres and procedures								
2.1	Normal VFR take-off profile			P	---->		M	
2.2	Take-off with simulated engine failure			P	---->		M	
2.3	Take-off with heaviness > 0 (Heavy T/O)			P	---->			
2.4	Take-off with heaviness < 0 (Light/TO)			P	---->			
2.5	Normal climb procedure			P	---->			
2.6	Climb to Pressure Height			P	---->			
2.7	Recognising of pressure height			P	---->			
2.8	Flight at or close to pressure height			P	---->		M	
2.9	Normal descent and approach			P	---->			
2.10	Normal VFR landing profile			P	---->		M	

AIRSHIP CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	As	Instructor's initials when training completed	Checked in FFS As	Examiner's initials when test completed
2.11	Landing with heaviness > 0 (Heavy Ldg.)			P	---->		M	
2.12	Landing with heaviness < 0 (Light Ldg.)			P	---->		M	
	Intentionally left blank							
SECTION 3 – Normal and abnormal operations of the following systems and procedures								
3	Normal and abnormal operations of the following systems and procedures (may be completed in an FSTD if qualified for the exercise):						M	A mandatory minimum of 3 items shall be selected from this section
3.1	Engine	P	---->	---->	---->			
3.2	Envelope pressurisation	P	---->	---->	---->			
3.3	Pitot/static system	P	---->	---->	---->			
3.4	Fuel system	P	---->	---->	---->			
3.5	Electrical system	P	---->	---->	---->			
3.6	Hydraulic system	P	---->	---->	---->			
3.7	Flight control and trim system	P	---->	---->	---->			
3.8	Ballonet system	P	---->	---->	---->			
3.9	Autopilot/flight director	P	--->	--->	---->			
3.10	Stability augmentation devices	P	---->	---->	---->			
3.11	Weather radar, radio altimeter, transponder, ground proximity warning system (if fitted)	P	---->	---->	---->			
3.12	Landing gear system	P	----->	----->	---->			
3.13	APU	P	---->	---->	---->			
3.14	Radio, navigation equipment, instruments and FMS	P	---->	---->	---->			
	Intentionally left blank							
SECTION 4 – Abnormal and emergency procedures								
4	Abnormal and emergency procedures (may be completed in an FSTD if qualified for the exercise)						M	A mandatory minimum of three items shall be selected

AIRSHIP CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	As	Instructor's initials when training completed	Checked in FFS As	Examiner's initials when test completed
								from this section
4.1	Fire drills, engine, APU, cargo compartment, flight deck and electrical fires, including evacuation if applicable	P	---->	---->	---->			
4.2	Smoke control and removal	P	---->	---->	---->			
4.3	Engine failures, shutdown and restart: in particular phases of flight, inclusive multiple engine failure	P	---->	---->	---->			
4.4	Incapacitation of crew member	P	---->	---->	---->			
4.5	Transmission/gearbox malfunctions	P	---->	---->	---->		FFS only	
4.6	Other emergency procedures as outlined in the appropriate flight manual	P	---->	---->	---->			
SECTION 5 – Instrument Flight Procedures (to be performed in IMC or simulated IMC)								
5.1	Instrument take-off: transition to instrument flight is required as soon as possible after becoming airborne	P*	---->*	---->*	---->*			
5.1.1	Simulated engine failure during departure	P*	---->*	---->*	---->*		M*	
5.2	Adherence to departure and arrival routes and ATC instructions	P*	---->*	---->*	---->*		M*	
5.3	Holding procedures	P*	---->*	---->*	---->*			
5.4	Precision approach down to a decision height not less than 60 m (200 ft)	P*	---->*	---->*	---->*			
5.4.1	Manually, without flight director	P*	---->*	---->*	---->*		M* (Skill test only)	

AIRSHIP CATEGORY		PRACTICAL TRAINING					SKILL TEST OR PROFICIENCY CHECK	
Manoeuvres/Procedures		OTD	FTD	FFS	As	Instructor's initials when training completed	Checked in FFS As	Examiner's initials when test completed
5.4.2	Manually, with flight director	P*	---->*	---->*	---->*			
5.4.3	With use of autopilot	P*	---->*	---->*	---->*			
5.4.4	Manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing the OM and continued to touchdown or until completion of the missed approach procedure	P*	---->*	---->*	---->*		M*	
5.5	Non-precision approach down to the MDA/H	P*	---->*	---->*	---->*		M*	
5.6	Go-around with all engines operating on reaching DA/H or MDA/MDH	P*	---->*	---->*	---->*			
5.6.1	Other missed approach procedures	P*	---->*	---->*	---->*			
5.6.2	Go-around with one engine simulated inoperative on reaching DA/H or MDA/MDH	P*					M*	
5.7	Recovery from unusual attitudes (this one depends on the quality of the FFS)	P*	---->*	---->*	---->*		M*	
SECTION 6 – Optional equipment								
6	Use of optional equipment		P	---->				

AMC1 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

ED Decision 2011/016/R

APPLICATION AND REPORT FORM

If applicable, this form is also the certificate of completion of the type rating course for ZFTT.

APPLICATION AND REPORT FORM ATPL, MPL, TYPE RATING, TRAINING, SKILL TEST AND PROFICIENCY CHECK AEROPLANES (A) AND HELICOPTERS (H)				
Applicant's last name(s):	**Aircraft:**	**SE-SP: A ☐ H ☐**	**ME-SP: A ☐ H ☐**	
Applicant's first name(s):		**SE-MP: A ☐ H ☐**	**ME-MP: A ☐ H ☐**	
Signature of applicant:	**Operations:**	**SP ☐ MP ☐**		
Type of licence held:	**Checklist:**	**Training record: ☐**	**Type rating: ☐**	
Licence number:		**Skill test: ☐**	**Class rating: ☐**	
		IR: ☐		
State of licence issue:		**Proficiency check: ☐**	**ATPL: ☐**	**MPL: ☐**

1	**Theoretical training for the issue of a type or class rating performed during period**		
From:	**To:**	**At:**	
Mark obtained:	**% (Pass mark 75%):**	**Type and number of licence:**	
Signature of HT:		**Name(s) in capital letters:**	

2	**FSTD**		
FSTD (aircraft type):	**Three or more axes: Yes ☐ No ☐**		**Ready for service and used:**
FSTD manufacturer:	**Motion or system:**		**Visual aid: Yes ☐ No ☐**
FSTD operator:			**FSTD ID code:**

Total training time at the controls:	**Instrument approaches at aerodromes to a decision altitude or height of:**
Location, date and time:	**Type and number of licence:**
Type rating instructor ☐ Class rating instructor ☐ ..... instructor ☐	
Signature of instructor:	**Name(s) in capital letters:**

3	**Flight training: in the aircraft**		**in the FSTD (for ZFTT)**		
Type of aircraft:	**Registration:**	**Flight time at the controls:**			
Take-offs:	**Landings:**	**Training aerodromes or sites (take-offs, approaches and landings):**			

Take-off time:				**Landing time:**	
Location and date:				**Type and number of licence held:**	
Type rating instructor ☐ **Class rating instructor** ☐					
Signature of instructor:				**Name(s) in capital letters:**	
4	**Skill test**		**Proficiency check**		
Skill test and proficiency check details:					
Aerodrome or site:				**Total flight time:**	
Take-off time:				**Landing time:**	
Pass ☐	**Fail** ☐			**Reason(s) why, if failed:**	
Location and date:				**SIM or aircraft registration:**	
Examiner's certificate number (if applicable):				**Type and number of licence:**	
Signature of examiner:				**Name(s) in capital letters:**	

AMC2 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

ED Decision 2011/016/R

TRAINING, SKILL TEST AND PROFICIENCY CHECK: SP AEROPLANES

Section 3.B of the training and skill test and proficiency check content for SP aeroplanes included in Appendix 9.B should include training on a circling approach, after an IFR approach.

GM1 to Appendix 9 Training, skill test and proficiency check for MPL, ATPL, type and class ratings, and proficiency check for IRs

ED Decision 2019/005/R

TYPE SPECIFIC UPRT AND GO-AROUND TRAINING IN FSTD

(a) General

(1) The upset recovery training exercises should be mainly manoeuvre-based but may include some scenario-based training elements. The manoeuvre-based training enables type rating applicants to apply their handling skills and recovery strategy whilst leveraging CRM principles to return the aeroplane from an upset condition to a stabilised flight path.

(2) If training is conducted in an FSTD, it is important that applicants understand the limitations of the FSTD in replicating the physiological and psychological aspects of upset recovery exercises.

Note: In order to avoid negative training and negative transfer of training, the ATO should ensure that the selected upset recovery exercises take into consideration the limitations of the FFS.

(b) Stall event recovery in FSTD (Appendix 9, Section B(5) exercise 7.2.1; Section B(6) exercise 3.7.1)

(1) It is of utmost importance that stall event recovery training takes into account the capabilities of the FFS used. To deliver stall event recovery training, the FFS should be qualified against the relevant UPRT elements of CS-FSTD Issue 2. Stall event recovery training should include training up to the stall (approach-to-stall). Post-stall training may be delivered provided the device has been qualified against the relevant optional elements of CS-FSTD Issue 2 and the operator demonstrates that negative training or negative transfer of training is avoided. A 'stall event' is defined as an occurrence whereby the aeroplane experiences one or more conditions associated with an approach-to-stall or a post stall.

(2) Stall event recovery training should emphasise the requirement to reduce the AoA whilst accepting the resulting altitude loss. High-altitude stall event training should be included so that flight crew experience the aeroplane control response, the significant altitude loss during the recovery, and the increased time required to recover. The training should also emphasise the risk of triggering a secondary stall event during the recovery.

(3) Recovery from a stall event should always be conducted in accordance with the stall event recovery procedures of the OEMs.

Note: If an OEM-approved recovery procedure does not exist, ATOs should develop and train the aeroplane-specific stall recovery procedure based on the template in Table 1 below. Refer to Revision 3 of the Airplane Upset Prevention and Recovery Training Aid (AUPRTA) for a detailed explanation and rationale of the stall event recovery template as recommended by the OEMs.

Table 1: Recommended stall event recovery template

Stall event recovery template		
Pilot Flying (PF) Immediately do the following at first indication of a stall (aerodynamic buffeting, reduced roll stability and aileron effectiveness, visual or aural cues and warnings, reduced elevator (pitch) authority, inability to maintain altitude or arrest rate of descent, stick shaker activation (if installed)) during any flight phases *except at lift-off.*		**Pilot Monitoring (PM)**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** airspeed and attitude throughout the recovery and **ANNOUNCE** any continued divergence
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	**(a) NOSE-DOWN PITCH CONTROL** apply until stall warning is eliminated **(b) NOSE-DOWN PITCH TRIM** (as needed) (Reduce the AoA whilst accepting the resulting altitude loss.)	
4.	**BANK — WINGS LEVEL**	
5.	**THRUST — ADJUST** (as needed) (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)	
6.	**SPEEDBRAKES/SPOILERS — RETRACT**	
7.	When airspeed is sufficiently increasing — **RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)	

(c) Nose-high and nose-low recovery exercises (Appendix 9, Section B(5) exercise 7.2.2; B(6) exercise 3.7.2)

Nose-high and nose-low recovery exercises should be conducted in accordance with the strategies recommended by the OEMs contained in Tables 2 and 3 below.

Note: As the OEM procedures always take precedence over the recommendations, ATOs should consult the OEM on whether any approved type-specific recovery procedures are available prior to using the templates.

Refer to Revision 3 of the Airplane Upset Prevention and Recovery Training Aid (AUPRTA) for a detailed explanation and rationale of nose-high and nose-low recovery strategies as recommended by the OEMs.

Table 2: Recommended nose-high recovery strategy template

Nose-high recovery strategy template		
Either pilot — Recognise and confirm the developing situation by announcing **'nose high'**		
	PF	**PM**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** airspeed and attitude throughout the recovery and **ANNOUNCE** any continued divergence
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	APPLY as much nose-down control input as required to obtain a nose-down pitch rate	
4.	**THRUST — ADJUST** (if required) (Thrust reduction for aeroplanes with underwing-mounted engines may be needed)	
5.	**ROLL — ADJUST** (if required) (Avoid exceeding 60-degree bank)	
6.	When airspeed is sufficiently increasing — **RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)	
NOTE: (1) Recovery to level flight may require use of pitch trim. (2) If necessary, consider reducing thrust in aeroplanes with underwing-mounted engines to aid in achieving nose-down pitch rate. (3) **WARNING**: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.		

Table 3: Recommended nose-low recovery strategy template

Nose-low recovery strategy template		
Either pilot — Recognise and confirm the developing situation by announcing **'nose low'** (If the autopilot or autothrust/autothrottle is responding correctly, it may not be appropriate to decrease the level of automation while assessing if the divergence is being stopped)		
	PF	**PM**
1.	**AUTOPILOT — DISCONNECT** (A large out-of-trim condition could be encountered when the autopilot is disconnected)	**MONITOR** airspeed and attitude throughout the recovery and **ANNOUNCE**
2.	**AUTOTHRUST/AUTOTHROTTLE — OFF**	
3.	**RECOVERY** from stall if required	
4.	**ROLL** in the shortest direction to wings level (It may be necessary to reduce the G-loading by applying forward control pressure to improve roll effectiveness)	

5.	**THRUST** and **DRAG — ADJUST** (if required)	any continued divergence
6.	**RECOVER** to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading.)	

NOTE:
(1) Recovery to level flight may require use of pitch trim.
(2) **WARNING**: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.

(d) Go-around with all engines operating from various stages during an instrument approach (Appendix 9, Section B(5) exercise 7.3; B(6) exercise 4.1.)

(1) The objective of the go-around exercises is to expose the student pilot to the physiological effects caused by a go-around. The instructor should ensure that student pilots understand the objective of the exercises and provide students with appropriate coping strategies, including TEM. Due consideration should be given to environmental conditions when evaluating the demonstration of task proficiency and related criteria.

(2) A go-around may be commenced at any time during an approach, including before the aeroplane is in the landing configuration. Historically, most go-around training has been conducted when the aeroplane is in the landing configuration prior to commencing the go-around. Students must be prepared to adapt the go-around manoeuvre if the go-around is commenced prior to the point where the aeroplane is fully configured for landing. Situation awareness in relation to flap and gear configuration, aeroplane speed and missed approach altitude is important.

(3) Unanticipated go-arounds may startle the students (e.g. unexpected ATC constraints, automation malfunction, adverse weather, etc.). Students may find themselves faced with a situation where they have to perform a large number of critical actions under a high workload (e.g. setting thrust, landing gear retraction, flight path management). The instructor should explain that there is also a possibility of disorientation during a go-around because of the somatogravic effect produced by large longitudinal acceleration felt by the inner-ear as the aeroplane speed increases. This effect cannot be reproduced in an FSTD.

(4) It is vital that the correct pitch attitude is selected and maintained, while the aeroplane is kept in trim as it accelerates (depending on the aeroplane type). On some aeroplane types with under-slung engines the pitch response with all engines functioning may be amplified due to the relatively low gross weight towards the end of a flight and the high thrust available from modern aeroplane engines. It is particularly important that trim changes are anticipated on such aeroplanes.

(5) ATOs should develop scenarios for go-around training containing different take-off and approach stall situations that also involve surprise and startle effects and include:

(i) a go-around from the non-landing configuration;

(ii) a go-around at low gross weight using maximum go-around thrust;

(iii) a go-around from the outer marker or equivalent point;

(iv) a go-around below 500 ft using, as applicable/permitted, reduced go-around thrust;

(v) a go-around initiated above the published missed approach altitude; and

(vi) a normal go-around from the landing configuration using reduced go-around thrust (if available / type-specific).

(6) Training should also incorporate topics such as flight path management (manual and automatic), application of procedures, startle factors, communication, workload management and situation awareness. The objective of this training is to highlight:

(i) differences to procedures when the aircraft is in the non-landing configuration;

(ii) differences in handling characteristics at low gross weights and high thrust settings;

(iii) the threat associated with go-arounds close to the published missed approach altitudes;

(iv) startle and surprise associated with an unplanned go-around (ATC, blocked runway, etc.);

(v) the importance of effective communication between flight crew;

(vi) the requirement to be aware of the aircraft energy state during a go-around; and

(vii) the importance of engaging the autopilot or flight director in the correct modes during a go-around.

(7) Go-around training should not be limited to addressing the somatogravic effects caused by a go-around. Training should also cover topics such as flight path management (manual and automatic), application of procedures, startle factor, communication, workload management and situation awareness. Flight path management training should address:

(i) the handling differences of a lighter than normal aircraft which may differ to handling experienced during take-off when the aircraft is much heavier;

(ii) the different reaction of the aeroplane (pitch and vertical speed) comparing a go-around performed with reduced G/A thrust (if the function is available) and a go-around performed with full G/A thrust (a different weight).

(8) The importance of correct selection of TO/GA modes by the PF should also be emphasised (pushing TO/GA, selected the correct thrust lever detent, etc.)

(9) The importance of the PM role in the go-around manoeuvre should also be highlighted. The PM usually has higher workload as they need to reconfigure the aircraft, engage FMA modes, communicate with ATC and monitor the actions of the PF. This excessive workload for the PM may lead him or her to prioritise actions to the detriment of monitoring activities. The phenomenon of attentional tunnelling may also need to be addressed. This happens when one pilot, or both, focus exclusively on a problem at the expense of general monitoring of the flight parameters.

Appendix 10 – Revalidation and renewal of type ratings, and revalidation and renewal of IRs when combined with the revalidation or renewal of type ratings – EBT practical assessment

Regulation (EU) 2020/2193

A – General

1. The revalidation and renewal of type ratings as well as the revalidation and renewal of IRs when combined with the revalidation or renewal of type ratings in accordance with this Appendix shall be completed only at EBT operators which comply with all of the following:

   (a) they have established an EBT programme relevant for the applicable type rating or the IR in accordance with point ORO.FC.231 of Annex III (Part-ORO) to Regulation (EU) No 965/2012;

   (b) they have an experience of at least 3 years in conducting a mixed EBT programme;

   (c) for each type rating within the EBT programme, the organisation has appointed an EBT manager. EBT managers shall comply with all of the following:

      (i) they shall hold examiner privileges for the relevant type rating;

      (ii) they shall have extensive experience in training as an instructor for the relevant type rating;

      (iii) they shall either be the person nominated in accordance with point ORO.AOC.135(a)(2) of Annex III (Part-ORO) to Regulation (EU) No 965/2012 or a deputy of that person.

2. The EBT manager responsible for the relevant type rating shall ensure that the applicant complies with all qualification, training and experience requirements of this Annex for the revalidation or the renewal of the relevant rating.

3. Applicants who wish to revalidate or renew a rating in accordance with this Appendix shall comply with all of the following:

   (a) they shall be enrolled in the operator's EBT programme;

   (b) in the case of revalidation of a rating, they shall complete the operator's EBT programme within the period of validity of the relevant rating;

   (c) in the case of renewal of a rating, they shall comply with procedures developed by the EBT operator in accordance with point ORO.FC.231(a)(5) of Annex III (Part-ORO) to Regulation (EU) No 965/2012.

4. The revalidation or renewal of a rating in accordance with this Appendix shall comprise all of the following:

   (a) continuous EBT practical assessment within an EBT programme;

   (b) demonstration of an acceptable level of performance in all competencies;

   (c) the administrative action of licence revalidation or renewal for which the EBT manager responsible for the relevant type rating shall do all of the following:

      (1) ensure that the requirements of point FCL.1030 are complied with;

      (2) when acting in accordance with point FCL.1030(b)(2), endorse the applicant's licence with the new expiry date of the rating. That endorsement may be completed by another person on behalf of the EBT manager, if that person received

a delegation from the EBT manager to do so in accordance with the procedures established in the EBT programme.

B – Conduct of the EBT practical assessment

The EBT practical assessment shall be conducted in accordance with the operator's EBT programme.

AMC1 to Appendix 10 Revalidation and renewal of type ratings, and revalidation and renewal of IRs when combined with the revalidation or renewal of type ratings – EBT practical assessment

ED Decision 2021/002/R

APPLICATION AND REPORT FORM — ADMINISTRATIVE PROCEDURES RELATED TO TYPE RATINGS

(a) Minimum information provided in the form for Appendix 10.

Applicant's last name(s):		Applicant's first name(s):
Signature of applicant:		State of licence issue:
Type of licence held:		Licence number:
Type rating:		FSTD (aircraft type):
EBT module 1	Session 1……..Name of the instructor: _____ Type and number of licence: _____ Location, date and time: _____ FSTD ID code:_____	
	Session 2……..Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	
	Session X……Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	
	Completion of the module: ☐	_____ date / signature (EBT manager)
EBT module 2	Session 1……..Name of the instructor: _____ Type and number of licence: _____ Location, date and time: _____ FSTD ID code:_____	
	Session 2……..Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	
	Session X……Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	
	Completion of the module: ☐	_____ date / signature (EBT manager)
	(…)	
EBT module X	Session 1……..Name of the instructor: _____ Type and number of licence: _____ Location, date and time: _____ FSTD ID code:_____	
	Session 2……..Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	
	Session X……Name of the instructor:_____ Type and number of licence:_____ Location, date and time:_____ FSTD ID code:_____	

	Completion of the module: ☐	_____ date / signature (EBT manager)
Completion of the operator's EBT programme from____(date) to ____(date) ☐		_____ date / signature (EBT manager)
Name(s) in capital letters: Type and number of licence: Examiner certificate number:		Signature of examiner (EBT manager) _____ Date of applicant's licence endorsement: _____
Delegation of signature for licence endorsement (instructor)		
Name: Position in the operator: Date:		Signature

(b) AOC declaration for revalidation and renewal under the EBT programme for the purpose of AMC1 ARA.GEN.315(a) point (d) and for the purpose of point 1(a) of Appendix 10.

I confirm all of the following:

The EBT manager holds a current type rating examiner certificate in the type rating filled in in Appendix 10 (copy to be attached);	YES ☐
The instructor(s) that conducted the training to the applicant has (have) been standardised.	YES ☐
The EBT operator has performed a verification of the grading system at least once in the last 3 years.	YES ☐
The integrity of the applicant training data is ensured.	YES ☐

Signature of the training manager or EBT manager_____

(c) In order for the EBT manager to delegate their signature in accordance with point 4(c)(2) of Appendix 10 to another person to endorse the licence of the applicant, the following should apply:

(1) the person signing the licence should be nominated,

(2) the person signing the licence should hold or have held an instructor certificate,

(3) the approved procedure for delegation of signature should include procedures to prevent the person who received the delegation from signing the licence when the EBT programme applicable to the validity period has not been completed.

(d) The authority may customise the form above by requesting additional information or changing the order of the elements of the form.

GM1 to Appendix 10 — Revalidation and renewal of type ratings, and revalidation and renewal of IRs when combined with the revalidation or renewal of type ratings — EBT practical assessment

ED Decision 2022/014/R

REVALIDATION AND RENEWAL OF TYPE RATING — ADMINISTRATIVE PROCEDURES

(a) The operator may nominate several deputy EBT managers to ensure the availability of at least one examiner for each fleet, in the context of workload to manage the EBT programme, several locations of the training facilities, or bases, etc.

(b) For the first revalidation of type rating after the transition from mixed EBT, the examiner may use mixed EBT module(s) in addition to the other EBT module(s) as a means to revalidate the type rating.

(c) In accordance with the approved procedure in Appendix 10, 4. (c)(2), and as provided in AMC1 to Appendix 10 point (c), the EBT manager may nominate the EBT instructor who completed the EBT module as the person to whom the signature of the examiner is delegated. A stamp or electronic signature may exclusively be given from the EBT manager to the EBT instructor, in order to document the delegation in a transparent and secure manner. Following that process, EBT instructors on behalf of the EBT manager can endorse an applicant's licence.

(d) The EBT programme is included in the operations manual and, in accordance with ORO.FC.145 of Regulation (EU) No 965/2012, for CAT it is subject to prior approval including any changes, its syllabi and the use of individual FSTD.

(e) The requirements for completion of the operator's EBT programme (see the form set out in AMC1 to Appendix 10) can be found in point ORO.FC.231(a)(3) of Annex III (Part-ORO) to Regulation (EU) 965/2012 and include, as a minimum, the completion of:

(1) a minimum of two EBT modules;

(2) line evaluation(s) of competence. In the case of renewal of a type rating, the line evaluation of competence can be performed only when the pilot has their type rating renewed; and

(3) ground training.

(f) The EBT programme includes equivalencies of approaches (point ORO.FC.231(g)) and determines the necessary training frequency for particular approaches. Therefore, pilots can maintain their PBN privileges when completing an EBT programme. Additionally, in the case of specific approaches related to PBN which require a specific approval in accordance with Subpart B of Annex V (Part-SPA) to Regulation (EU) No 965/2012, the requirements of that Subpart (SPA.PBN) apply.

GM2 to Appendix 10 — Revalidation and renewal of type ratings, and revalidation and renewal of IRs when combined with the revalidation or renewal of type ratings – EBT practical assessment

ED Decision 2022/014/R

EBT PRACTICAL ASSESSMENT — PROFICIENCY CHECK

EBT practical assessment (or **Practical assessment)** is defined in FCL.010. More information can be found in ICAO Doc 9868 'PANS-TRG'.

(a) The demonstration of skills to revalidate or renew referred to in the definition of 'proficiency check' in point FCL.010 is equivalent to the EBT practical assessments conducted in the EBT programme and the final review of the examiner. In fact, one single EBT practical assessment demonstrates the necessary skills performed in legacy training; however, EBT goes one step further — to revalidate or renew, the pilot performs at least two demonstrations, corresponding to at least two EBT modules within the validity period of the type rating.

(b) A proficiency check is equivalent to the combination of the evaluation phase (EVAL) and manoeuvres training phase (MT). However, EBT also requires a scenario-based training phase (SBT) following the EVAL to complete the module.

ANNEX II – CONDITIONS FOR THE CONVERSION OF EXISTING NATIONAL LICENCES AND RATINGS FOR AEROPLANES AND HELICOPTERS

Regulation (EU) 2015/445

A. AEROPLANES

1. Pilot licences

A pilot licence issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL licence provided that the applicant complies with the following requirements:

(a) for ATPL(A) and CPL(A), complete as a proficiency check the revalidation requirements of Part-FCL for type/class and instrument rating, relevant to the privileges of the licence held;

(b) demonstrate knowledge of the relevant parts of the operational requirements and Part-FCL;

(c) demonstrate language proficiency in accordance with FCL.055;

(d) comply with the requirements set out in the following table:

National licence held	Total flying hours experience	Any further requirements	Replacement Part-FCL licence and conditions (where applicable)	Removal of conditions	
(1)	(2)	(3)	(4)	(5)	
ATPL(A)	> 1 500 as PIC on multi-pilot aeroplanes	None	ATPL(A)	Not applicable	(a)
ATPL(A)	> 1 500 on multi-pilot aeroplanes	None	as in (c)(4)	as in (c)(5)	(b)
ATPL(A)	> 500 on multi-pilot aeroplanes	Demonstrate knowledge of flight planning and performance as required by FCL.515	ATPL(A), with type rating restricted to co-pilot	Demonstrate ability to act as PIC as required by Appendix 9 to Part-FCL	(c)
CPL/IR(A) and passed an ICAO ATPL theory test in the Member State of licence issue		(i) demonstrate knowledge of flight planning and performance as required by FCL.310 and FCL.615(b) (ii) meet remaining requirements of FCL.720.A(c)	CPL/IR(A) with ATPL theory credit	Not applicable	(d)
CPL/IR(A)	> 500 on multi-pilot aeroplanes,	(i) pass an examination for ATPL(A)	CPL/IR(A) with ATPL theory credit	Not applicable	(e)

	or in multi-pilot operations on single-pilot aeroplanes CS-23 commuter category or equivalent in accordance with the relevant requirements of Part-CAT and Part-ORO for commercial air transport	knowledge in the Member State of licence issue[1] (ii) meet remaining requirements of FCL.720.A(c)			
CPL/IR(A)	> 500 as PIC on single-pilot aeroplanes	None	CPL/IR(A) with class ratings and type ratings restricted to single-pilot aeroplanes	Obtain multi-pilot type rating in accordance with Part-FCL	(f)
CPL/IR(A)	< 500 as PIC on single-pilot aeroplanes	Demonstrate knowledge of flight planning and flight performance for CPL/IR level	As (4)(f)	As (5)(f)	(g)
CPL(A)	> 500 as PIC on single-pilot aeroplanes	Night rating, if applicable	CPL(A), with type/class ratings restricted to single-pilot aeroplanes		(h)
CPL(A)	< 500 as PIC on single-pilot aeroplanes	(i) Night rating, if applicable; (ii) demonstrate knowledge of flight performance and planning as required by FCL.310	as (4)(h)		(i)
PPL/IR(A)	≥ 75 in accordance with IFR		PPL/IR(A) (the IR restricted to PPL)	Demonstrate knowledge of flight performance and planning as required by FCL.615(b)	(j)
PPL(A)	≥ 70 on aeroplanes	Demonstrate the use of radio navigation aids	PPL(A)		(k)

[1] CPL holders already holding a type rating for a multi-pilot aeroplane are not required to have passed an examination for ATPL(A) theoretical knowledge whilst they continue to operate that same aeroplane type, but will not be given ATPL(A) theory credit for a Part-FCL licence. If they require another type rating for a different multi-pilot aeroplane, they must comply with column (3), row (e)(i) of the above table.

2. Instructor certificates

An instructor certificate issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	Experience	Any further requirements	Replacement Part-FCL certificate
(1)	(2)	(3)	(4)
FI(A)/IRI(A)/TRI(A)/CRI(A)	as required under Part-FCL for the relevant certificate	N/A	FI(A)/IRI(A)/TRI(A)/CRI(A)

3. SFI certificate

A SFI certificate issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL certificate provided that the holder complies with the following requirements:

National certificate held	Experience	Any further requirements	Replacement Part-FCL certificate
(1)	(2)	(3)	(4)
SFI(A)	>1500 hours as pilot of MPA	(i) hold or have held a CPL, MPL or ATPL for aeroplanes issued by a Member State; (ii) have completed the flight simulator content of the applicable type rating course including MCC.	SFI(A)
SFI(A)	3 years recent experience as a SFI	have completed the flight simulator content of the applicable type rating course including MCC	SFI(A)

The conversion shall be valid for a maximum period of 3 years. Revalidation shall be subject to the completion of the relevant requirements set out in Part-FCL.

4. STI certificate

An STI certificate issued by a Member State in accordance with the national requirements of that State may be converted into a Part-FCL certificate provided that the holder complies with the requirements set out in the table below:

National certificate held	Experience	Any further requirements	Replacement certificate
(1)	(2)	(3)	(4)
STI(A)	> 500 hours as pilot on SPA	(i) hold or have held a pilot licence issued by a Member State; (ii) have completed a proficiency check in accordance with Appendix 9 to Part-FCL in an FSTD appropriate to the instruction intended	STI(A)
STI(A)	3 years recent experience as a STI	have completed a proficiency check in accordance with Appendix 9 to Part-FCL in an FSTD appropriate to the instruction intended	STI(A)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in Part-FCL.

B. HELICOPTERS

1. Pilot licences

A pilot licence issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL licence provided that the applicant complies with the following requirements:

(a) complete as a proficiency check the revalidation requirements of Part-FCL for type and instrument rating, relevant to the privileges of the licence held;

(b) demonstrate knowledge of the relevant parts of the operational requirements and Part-FCL;

(c) demonstrate language proficiency in accordance with FCL.055;

(d) comply with the requirements set out in the following table:

National licence held	Total flying hours experience	Any further requirements	Replacement Part-FCL licence and conditions (where applicable)	Removal of conditions	
(1)	(2)	(3)	(4)	(5)	
ATPL(H) valid IR(H)	>1000 as PIC on multi-pilot helicopters	none	ATPL(H) and IR	Not applicable	(a)
ATPL(H) no IR(H) privileges	>1000 as PIC on multi-pilot helicopters	none	ATPL(H)		(b)
ATPL(H) valid IR(H)	>1000 on multi-pilot helicopters	None	ATPL(H), and IR with type rating restricted to co-pilot	demonstrate ability to act as PIC as required by Appendix 9 to Part-FCL	(c)
ATPL(H) no IR(H) privileges	>1000 on multi-pilot helicopters	None	ATPL(H) type rating restricted to co-pilot	demonstrate ability to act as PIC as required by Appendix 9 to Part-FCL	(d)
ATPL(H) valid IR(H)	>500 on multi-pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.515 and FCL.615(b)	as (4)(c)	as (5)(c)	(e)
ATPL(H) no IR(H) privileges	>500 on multi-pilot helicopters	as (3)(e)	as (4)(d)	as (5)(d)	(f)
CPL/IR(H) and passed an ICAO ATPL(H) theory test in the Member State of licence issue		(i) demonstrate knowledge of flight planning and flight performance as required by FCL.310 and FCL.615(b);	CPL/IR(H) with ATPL(H) theory credit, provided that the ICAO ATPL(H) theory test is assessed as being at Part-FCL ATPL level	Not applicable	(g)

National licence held	Total flying hours experience	Any further requirements	Replacement Part-FCL licence and conditions (where applicable)	Removal of conditions	
		(ii) meet remaining requirements of FCL.720.H(b)			
CPL/IR(H)	>500 hrs on multi-pilot helicopters	(i) to pass an examination for Part-FCL ATPL(H) theoretical knowledge in the Member State of licence issue[1] (ii) to meet remaining requirements of FCL.720.H(b)	CPL/IR(H) with Part-FCL ATPL(H) theory credit	Not applicable	(h)
CPL/IR(H)	>500 as PIC on single-pilot helicopters	None	CPL/IR(H) with type ratings restricted to single-pilot helicopters	obtain multi-pilot type rating as required by Part-FCL	(i)
CPL/IR(H)	<500 as PIC on single-pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.310 and FCL.615(b)	as (4)(i)		(j)
CPL(H)	>500 as PIC on single-pilot helicopters	night rating	CPL(H), with type ratings restricted to single-pilot helicopters		(k)
CPL(H)	<500 as PIC on single-pilot helicopters	night rating demonstrate knowledge of flight performance and planning as required by FCL.310	as (4) (k)		(l)
CPL(H) Without night rating	>500 as PIC on single-pilot helicopters		As (4)(k) and restricted to day VFR operations	Obtain multi-pilot type rating as required by Part-FCL and a night rating.	(m)
CPL(H) Without night rating	<500 as PIC on single-pilot helicopters	demonstrate knowledge of flight planning and flight performance as required by FCL.310	As (4)(k) and restricted to day VFR operations		(n)

[1] CPL holders already holding a type rating for a multi-pilot helicopter are not required to have passed an examination for ATPL(H) theoretical knowledge whilst they continue to operate that same helicopter type, but will not be given ATPL(H) theory credit for a Part-FCL licence. If they require another type rating for a different multi-pilot helicopter, they must comply with column (3), row (h)(i) of the table.

National licence held	Total flying hours experience	Any further requirements	Replacement Part-FCL licence and conditions (where applicable)	Removal of conditions	
PPL/IR(H)	≥75 in accordance with IFR		PPL/IR(H) (the IR restricted to PPL)	demonstrate knowledge of flight performance and planning as required by FCL.615(b)	(o)
PPL(H)	≥75 on helicopters	demonstrate the use of radio navigation aids	PPL (H)		(p)

2. Instructor certificates

An instructor certificate issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL certificate provided that the applicant complies with the following requirements:

National certificate or privileges held	Experience	Any further requirements	Replacement certificate
(1)	(2)	(3)	(4)
FI(H)/IRI(H)/TRI(H)	as required under Part-FCL for the relevant certificate		FI(H)/IRI(H)/TRI(H)([1])

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in Part-FCL.

3. SFI certificate

An SFI certificate issued by a Member State in accordance with the national requirements shall be converted into a Part-FCL certificate provided that the holder complies with the following requirements:

National certificate held	Experience	Any further requirements	Replacement certificate
(1)	(2)	(3)	(4)
SFI(H)	>1.000 hours as pilot of MPH	(i) hold or have held a CPL, MPL or ATPL issued by a Member State; (ii) have completed the flight simulator content of the applicable type rating course including MCC	SFI(H)
SFI(H)	3 years recent experience as an SFI	have completed the simulator content of the applicable type rating course including MCC	SFI(H)

[1] CPL holders already holding a type rating for a multi-pilot helicopter are not required to have passed an examination for ATPL(H) theoretical knowledge whilst they continue to operate that same helicopter type, but will not be given ATPL(H) theory credit for a Part-FCL licence. If they require another type rating for a different multi-pilot helicopter, they must comply with column (3), row (h)(i) of the table.

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in Part-FCL.

4. STI certificate

An STI certificate issued by a Member State in accordance with the national requirements of that State may be converted into a Part-FCL certificate provided that the holder complies with the requirements set out in the table below:

National certificate held	Experience	Any further requirements	Replacement certificate
(1)	(2)	(3)	(4)
STI(H)	>500 hours as pilot on SPH	(i) hold or have held a pilot licence issued by a Member State; (ii) have completed a proficiency check in accordance with Appendix 9 to Part-FCL in an FSTD appropriate to the instruction intended	STI(H)
STI(H)	3 years recent experience as an STI	have completed a proficiency check in accordance with Appendix 9 to Part-FCL in an FSTD appropriate to the instruction intended	STI(H)

Revalidation of the certificate shall be subject to the completion of the relevant requirements set out in Part-FCL.

ANNEX III

Regulation (EU) 2020/723

[*Deleted by Commission Delegated Regulation (EU) 2020/723*]

ANNEX IV (PART-MED)

SUBPART A – GENERAL REQUIREMENTS

SECTION 1 – GENERAL

MED.A.001 Competent authority

Regulation (EU) 2019/27

For the purpose of this Annex (Part-MED), the competent authority shall be:

(a) for aero-medical centres (AeMCs):

(1) the authority designated by the Member State, where the AeMC has its principal place of business;

(2) the Agency, if the AeMC is located in a third country;

(b) for aero-medical examiners (AMEs):

(1) the authority designated by the Member State where the AME has its principal place of practice;

(2) if the principal place of practice of an AME is located in a third country, the authority designated by the Member State to which the AME applies for the issue of the AME certificate;

(c) for general medical practitioners (GMPs), the authority designated by the Member State to which the GMP notify their activity;

(d) for occupational health medical practitioners (OHMPs) assessing the medical fitness of cabin crew, the authority designated by the Member State to which the OHMP notify their activity.

MED.A.005 Scope

Regulation (EU) 2019/27

This Annex (Part-MED) establishes the requirements for:

(a) the issuance, validity, revalidation and renewal of the medical certificate required for exercising the privileges of a pilot licence or of a student pilot;

(b) the medical fitness of cabin crew;

(c) the certification of AMEs;

(d) the qualification of GMPs and OHMPs.

MED.A.010 Definitions

Regulation (EU) 2024/2076

For the purpose of this Annex (Part-MED), the following definitions shall apply:

— 'limitation' means a condition placed on the medical certificate or cabin crew medical report that shall be complied with whilst exercising the privileges of the licence or cabin crew attestation;

— 'aero-medical examination' means an inspection, palpation, percussion, auscultation or any other means of investigation for determining the medical fitness to exercise the privileges of the licence, or to carry out cabin crew safety duties;

— 'aero-medical assessment' means the conclusion on the medical fitness of an applicant based on the evaluation of the applicant as required in this Annex (Part-MED) and further examinations and medical tests as clinically indicated;

— 'significant' means a degree of a medical condition, the effect of which would prevent the safe exercise of the privileges of the licence or of the cabin crew safety duties;

— 'applicant' means a person applying for, or being the holder of, a medical certificate who undergoes an aero-medical assessment of fitness to exercise the privileges of the licence, or to carry out cabin crew safety duties;

— 'medical history' means a narrative or record of past diseases, injuries, treatments or other medical facts, including unfit assessment(s) or limitation of a medical certificate, that are or may be relevant to an applicant's current state of health and aero-medical fitness;

— 'licensing authority' means the competent authority of the Member State that issued the licence, or to which a person applies for the issuance of a licence, or, when a person has not yet applied for a licence, the competent authority as determined in accordance with FCL.001 of Annex I (Part-FCL);

— 'colour safe' means the ability of an applicant to readily distinguish the colours used in air navigation and to correctly identify aviation coloured lights;

— 'helicopter emergency medical services (HEMS) operation' means a "HEMS flight" as defined in point 61 of Annex I to Regulation (EU) No 965/2012;

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

— 'investigation' means the assessment of a suspected pathological condition of an applicant by means of examinations and tests in order to verify the presence or absence of a medical condition;

— 'accredited medical conclusion' means the conclusion reached by one or more medical experts acceptable to the licensing authority, on the basis of objective and non-discriminatory criteria, for the purposes of the case concerned, in consultation with flight operations or other experts as necessary, for which an operational risk assessment may be appropriate;

— 'misuse of substances' means the use of one or more psychoactive substances by aircrew in a way that, alternatively or jointly:

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others;

(b) causes or worsens an occupational, social, mental or physical problem or disorder;

— ‘psychoactive substances’ means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, with the exception of caffeine and tobacco;;

— ‘refractive error’ means the deviation from emmetropia measured in dioptres in the most ametropic meridian, measured by standard methods.

MED.A.015 Medical confidentiality

Regulation (EU) 2019/27

All persons involved in aero-medical examinations, assessments and certification shall ensure that medical confidentiality is respected at all times.

AMC1 MED.A.015 Medical confidentiality

ED Decision 2019/002/R

To ensure medical confidentiality, all medical reports and records should be securely held with accessibility restricted to personnel authorised by the medical assessor or, where applicable, by the head of the aero-medical centre (AEMC), the aero-medical examiner (AME), general medical practitioner (GMP) or occupational health medical practitioner (OHMP).

MED.A.020 Decrease in medical fitness

Regulation (EU) 2019/27

(a) Licence holders shall not exercise the privileges of their licence and related ratings or certificates, and student pilots shall not fly solo, at any time when they:

(1) are aware of any decrease in their medical fitness which might render them unable to safely exercise those privileges;

(2) take or use any prescribed or non-prescribed medication which is likely to interfere with the safe exercise of the privileges of the applicable licence;

(3) receive any medical, surgical or other treatment that is likely to interfere with the safe exercise of the privileges of the applicable licence.

(b) In addition, holders of a medical certificate shall, without undue delay and before exercising the privileges of their licence, seek aero-medical advice from the AeMC, AME or GMP, as applicable, when they:

(1) have undergone a surgical operation or invasive procedure;

(2) have commenced the regular use of any medication;

(3) have suffered any significant personal injury involving incapacity to function as a member of the flight crew;

(4) have been suffering from any significant illness involving incapacity to function as a member of the flight crew;

(5) are pregnant;

(6) have been admitted to hospital or medical clinic;

(7) first require correcting lenses.

(c) In the cases referred to in point (b):

(1) holders of class 1 and class 2 medical certificates shall seek the aero-medical advice of an AeMC or AME. In that case, the AeMC or AME shall assess their medical fitness and decide whether they are fit to resume the exercise of their privileges;

(2) holders of light aircraft pilot licence medical certificates shall seek the aero-medical advice of an AeMC, an AME or the GMP who signed the medical certificate. In that case, the AeMC, AME or GMP shall assess their medical fitness and decide whether they are fit to resume the exercise of their privileges.

(d) Cabin crew members shall not perform duties on an aircraft and, where applicable, shall not exercise the privileges of their cabin crew attestation when they are aware of any decrease in their medical fitness, to the extent that this medical condition might render them unable to discharge their safety duties and responsibilities.

(e) In addition, if any of the medical conditions specified in points (1) to (5) of point (b) apply, cabin crew members shall, without undue delay, seek the advice of an AME, AeMC or OHMP, as applicable. In that case, the AME, AeMC or OHMP shall assess the medical fitness of the cabin crew members and decide whether they are fit to resume their safety duties.

GM1 MED.A.020 Decrease in medical fitness

ED Decision 2019/002/R

MEDICATION – GUIDANCE FOR PILOTS AND CABIN CREW MEMBERS

(a) Any medication can cause side effects, some of which may impair the safe performance of flying duties. Equally, symptoms of colds, sore throats, diarrhoea and other abdominal upsets may cause little or no problem whilst on the ground but may distract the pilot or cabin crew member and degrade their performance whilst on duty. The in-flight environment may also increase the severity of symptoms which may only be minor whilst on the ground. Therefore, one issue with medication and flying is the underlying condition and, in addition, the symptoms may be compounded by the side effects of the medication prescribed or bought over the counter for treatment. This guidance material provides some help to pilots and cabin crew in deciding whether expert aero-medical advice by an AME, AeMC, GMP, OHMP or medical assessor is needed.

(b) Before taking any medication and acting as a pilot or cabin crew member, the following three basic questions should be satisfactorily answered:

(1) Do I feel fit to fly?

(2) Do I really need to take medication at all?

(3) Have I given this particular medication a personal trial on the ground to ensure that it will not have any adverse effects on my ability to fly?

(c) Confirming the absence of adverse effects may well need expert aero-medical advice.

(d) The following are some widely used medicines with a description of their compatibility with flying duties:

(1) Antibiotics. Antibiotics may have short-term or delayed side effects which can affect pilot or cabin crew performance. More significantly, however, their use usually indicates that an infection is present and, thus, the effects of this infection may mean that a pilot or cabin crew member is not fit to fly and should obtain expert aero-medical advice.

(2) Anti-malaria drugs. The decision on the need for anti-malaria drugs depends on the geographical areas to be visited, and the risk that the pilot or cabin crew member has of being exposed to mosquitoes and of developing malaria. An expert medical opinion should be obtained to establish whether anti-malaria drugs are needed and what kind of drugs should be used. Most of the anti-malaria drugs (atovaquone plus proguanil, chloroquine, doxycycline) are compatible with flying duties. However, adverse effects associated with mefloquine include insomnia, strange dreams, mood changes, nausea, diarrhoea and headaches. In addition, mefloquine may cause spatial disorientation and lack of fine coordination and is, therefore, not compatible with flying duties.

(3) Antihistamines. Antihistamines can cause drowsiness. They are widely used in 'cold cures' and in treatment of hay fever, asthma and allergic rashes. They may be in tablet form or a constituent of nose drops or sprays. In many cases, the condition itself may preclude flying, so that, if treatment is necessary, expert aero-medical advice should be sought so that so-called non-sedative antihistamines, which do not degrade human performance, can be prescribed.

(4) Cough medicines. Antitussives often contain codeine, dextromethorfan or pseudo-ephedrine which are not compatible with flying duties. However, mucolytic agents (e.g. carbocysteine) are well-tolerated and are compatible with flying duties.

(5) Decongestants. Nasal decongestants with no effect on alertness may be compatible with flying duties. However, as the underlying condition requiring the use of decongestants may be incompatible with flying duties, expert aero-medical advice should be sought. For example, oedema of the mucosal membranes causes difficulties in equalising the pressure in the ears or sinuses.

(6) Nasal corticosteroids are commonly used to treat hay fever, and they are compatible with flying duties.

(7) (i) Common pain killers and antifebrile drugs. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and paracetamol, commonly used to treat pain, fever or headaches, may be compatible with flying duties. However, the pilot or cabin crew member should give affirmative answers to the three basic questions listed in (b) before using the medication and carrying out flying duties.

(ii) Strong analgesics. The more potent analgesics including codeine are opiate derivatives, and may produce a significant decrement in human performance and, therefore, are not compatible with flying duties.

(8) Anti-ulcer medicines. Gastric secretion inhibitors such as H2 antagonists (e.g. ranitidine, cimetidine) or proton pump inhibitors (e.g. omeprazole) may be acceptable after diagnosis of the pathological condition. It is important to seek for the medical diagnosis and not to only treat the dyspeptic symptoms.

(9) Anti-diarrhoeal drugs. Loperamide is one of the more common anti-diarrhoeal drugs and is usually safe to take whilst flying. However, the diarrhoea itself often makes the pilot and cabin crew member unfit for flying duties.

(10) Hormonal contraceptives and hormone replacement therapy usually have no adverse effects and are compatible with flying duties.

(11) Erectile dysfunction medication. This medication may cause disturbances in colour vision and dizziness. There should be at least 6 hours between taking sildenafil and flying duty; and 36 hours between taking vardenafil or tadalafil and flying duty.

(12) Smoking cessation. Nicotine replacement therapy may be acceptable. However, other medication affecting the central nervous system (buproprion, varenicline) is not acceptable for pilots.

(13) High blood pressure medication. Most anti-hypertensive drugs are compatible with flying duties However, if the level of blood pressure is such that drug therapy is required, the pilot or cabin crew member should be monitored for any side effects before carrying out flying duties. Therefore, consultation with the AME, AeMC, GMP, OHMP or medical assessor as applicable, is needed.

(14) Asthma medication. Asthma has to be clinically stable before a pilot or cabin crew member can return to flying duties. The use of respiratory aerosols or powders, such as corticosteroids, beta-2-agonists or chromoglycic acid may be compatible with flying duties. However, the use of oral steroids or theophylline derivatives is incompatible with flying duty. Pilots or cabin crew members using medication for asthma should consult the AME, AeMC, GMP, OHMP or medical assessor, as applicable.

(15) Tranquillisers and sedatives. The inability to react, due to the use of this group of medicines, has been a contributory cause to fatal aircraft accidents. In addition, the underlying condition for which these medications have been prescribed will almost certainly mean that the mental state of a pilot or cabin crew member is not compatible with flying duties.

(16) Sleeping tablets. Sleeping tablets dull the senses, may cause confusion and slow reaction times. The duration of effect may vary from individual to individual and may be unduly prolonged. Expert aero-medical advice should be obtained before using sleeping tablets.

(17) Melatonin. Melatonin is a hormone that is involved with the regulation of the circadian rhythm. In some countries it is a prescription medicine, whereas in most other countries it is regarded as a 'dietary supplement' and can be bought without any prescription. The results from the efficiency of melatonin in treatment of jet lag or sleep disorders have been contradictory. Expert aero-medical advice should be obtained.

(18) Coffee and other caffeinated drinks may be acceptable, but excessive coffee drinking may have harmful effects, including disturbance of the heart's rhythm. Other stimulants including caffeine pills, amphetamines, etc. (often known as 'pep' pills) used to maintain wakefulness or suppress appetite can be habit forming. Susceptibility to different stimulants varies from one individual to another, and all may cause dangerous overconfidence. Overdosage causes headaches, dizziness and mental disturbance. These other stimulants should not be used.

(19) Anaesthetics. Following local, general, dental and other anaesthetics, a period of time should elapse before returning to flying. The period will vary considerably from individual to individual, but a pilot or cabin crew member should not fly for at least 12 hours after a local anaesthetic, and for at least 48 hours after a general, spinal or epidural anaesthetic (see MED.A.020).

(e) Many preparations on the market nowadays contain a combination of medicines. It is, therefore, essential that if there is any new medication or dosage, however slight, the effect should be observed by the pilot or the cabin crew member on the ground prior to flying. It should be noted that medication which would not normally affect pilot or cabin crew performance may do so in individuals who are 'oversensitive' to a particular preparation. Individuals are, therefore, advised not to take any medicines before or during flight unless they are completely familiar with their effects on their own bodies. In cases of doubt, pilots and cabin crew members should consult an AME, AeMC, GMP, OHMP or medical assessor, as applicable.

(f) Other treatments

Alternative or complementary medicine, such as acupuncture, homeopathy, hypnotherapy and several other disciplines, is developing and gaining greater credibility. Such treatments are more acceptable in some States than others. There is a need to ensure that 'other treatments', as well as the underlying condition, are declared and considered by the AME, AeMC, GMP, OHMP or medical assessor, as applicable, for assessing fitness.

MED.A.025 Obligations of the AeMC, AME, GMP and OHMP

Regulation (EU) 2019/27

(a) When conducting aero-medical examinations and aero-medical assessments as required in this Annex (Part-MED), the AeMC, AME, GMP and OHMP shall:

(1) ensure that communication with the applicant can be established without language barriers;

(2) make the applicant aware of the consequences of providing incomplete, inaccurate or false statements on their medical history;

(3) notify the licensing authority, or, in the case of cabin crew attestation holders, notify the competent authority, if the applicant provides incomplete, inaccurate or false statements on their medical history;

(4) notify the licensing authority if an applicant withdraws the application for a medical certificate at any stage of the process.

(b) After completion of the aero-medical examinations and assessments, the AeMC, AME, GMP and OHMP shall:

(1) inform the applicant whether he or she is fit, unfit or referred to the medical assessor of the licensing authority, AeMC or AME, as applicable;

(2) inform the applicant of any limitation that may restrict flight training or the privileges of his or her licence or cabin crew attestation, as applicable;

(3) if the applicant has been assessed as unfit, inform him or her of his or her right to have the decision reviewed in accordance with the procedures of the competent authority;

(4) in the case of applicants for a medical certificate, submit without delay to the medical assessor of the licensing authority a signed, or electronically authenticated, report containing the detailed results of the aero-medical examinations and assessments as required for the class of medical certificate–and a copy of the application form, the examination form, and the medical certificate;

(5) inform the applicant of his or her responsibilities in the case of decrease in medical fitness, as specified in point MED.A.020.

(c) Where consultation with the medical assessor of the licensing authority is required in accordance with this Annex (Part-MED), the AeMC and AME shall follow the procedure established by the competent authority.

(d) AeMCs, AMEs, GMPs and OHMPs shall maintain records with details of aero-medical examinations and assessments performed in accordance with this Annex (Part-MED) and their results for a minimum of 10 years, or for a longer period if so determined by national legislation.

(e) AeMCs, AMEs, GMPs and OHMPs shall submit to the medical assessor of the competent authority, upon request, all aero-medical records and reports, and any other relevant information, when required for:

(1) medical certification;

(2) oversight functions.

(f) AeMCs and AMEs shall enter or update the data included in the European Aero-Medical Repository in accordance with point (c) of point ARA.MED.160.

AMC1 MED.A.025 Obligations of the AeMC, AME, GMP and OHMP

ED Decision 2019/002/R

(a) If the medical examination is carried out by two or more AMEs or GMPs, only one of them should be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

(b) The applicant should be made aware that the associated medical certificate or cabin crew report may be suspended or revoked if the applicant provides incomplete, inaccurate or false statements on their medical history to the AeMC, AME, GMP or OHMP.

(c) In cases where the AeMC or AME is required to assess the fitness of an applicant for a class 2 medical certificate in consultation with the medical assessor of the licensing authority, they should document the consultation in accordance with the procedure established by the competent authority.

(d) The AeMC, AME, GMP or OHMP should give advice to the applicant on treatment and preventive measures if, during the course of the examination, medical conditions or risk factors are identified which may endanger the medical fitness of the applicant in the future.

(e) When data is not being properly recorded in the European aero-medical data repository (EAMR due to unserviceability of the system, the AeMCs and AMEs should enter, or correct the existing data, in the EAMR without undue delay when the system recovers.

(f) In case of denial or referral to the licensing authority, the AeMC, AME, GMP or OHMP should inform the applicant in writing regarding the result of the assessment in a form and manner established by the competent authority.

GM1 MED.A.025 Obligations of the AeMC, AME, GMP and OHMP

ED Decision 2019/002/R

GUIDELINES FOR THE AeMC, AME OR GMP CONDUCTING THE MEDICAL EXAMINATIONS AND ASSESSMENTS FOR MEDICAL CERTIFICATION OF PILOTS

(a) Before performing the medical examination, the AeMC, AME or GMP should:

(1) verify the applicant's identity by checking their identity card, passport, driving licence or other official document containing a photograph of the applicant;

(2) obtain details of the applicant's flight crew licence from the applicant's licensing authority if they do not have their licence with them;

(3) except for initial applicants, obtain details of the applicant's most recent medical certificate from the medical assessor of the applicant's licensing authority if they do not have their certificate with them;

(4) in the case of a specific medical examination(s) (SIC) limitation on the existing medical certificate, obtain details of the specific medical condition and any associated instructions from the medical assessor of the applicant's licensing authority. This could include, for example, a requirement to undergo a specific examination or test;

(5) except for initial applicants, ascertain, from the previous medical certificate, which routine medical test(s) should be conducted, for example electrocardiography (ECG);

(6) provide the applicant with the application form for a medical certificate and the instructions for completion and ask the applicant to complete the form but not to sign it yet;

(7) go through the form with the applicant and give information to help the applicant understand the significance of the entries and ask any questions which might help the applicant to recall important historical medical data;

(8) verify that the form is complete and legible, ask the applicant to sign and date the form and then sign it as well. If the applicant declines to complete the application form fully, inform the applicant that it may not be possible to issue a medical certificate regardless of the outcome of the clinical examination and assessment.

(b) Once all the items in (a) have been addressed, the AeMC, AME or GMP should:

(1) perform the medical examination of the applicant in accordance with the applicable rules;

(2) arrange for additional specialist medical examinations, such as otorhinolaryngology (ENT) or ophthalmology, to be conducted as applicable and obtain the associated report forms or reports;

(3) complete the medical examination report form in accordance with the associated instructions for completion;

(4) ensure that all of the report forms are complete, accurate and legible.

(c) Once all the actions in (b) have been carried out, the AeMC, AME or GMP should review the report forms and:

(1) if satisfied that the applicant meets the applicable medical requirements as set out in Part-MED, issue a medical certificate for the appropriate class, with limitations if necessary. The applicant should sign the certificate once signed by the AeMC, AME or GMP; or

(2) if the applicant does not meet the applicable medical requirements, or if the fitness of the applicant for the class of medical certificate applied for is in doubt:

(i) refer the decision on medical fitness to, or consult the decision on medical fitness with, the medical assessor of the licensing authority or AME in compliance with MED.B.001; or

(ii) deny issuance of a medical certificate, explain the reason(s) for denial to the applicant and inform them of their right of a review according to the procedures of the competent authority.

(d) The AeMC, AME or GMP should send the documents as required by MED.A.025(b) to the medical assessor of the applicant's licensing authority within 5 days from the date of the medical examination. If a medical certificate has been denied or the decision has been referred, the documents should be sent to the medical assessor of the licensing authority on the same day that the denial or referral decision is reached.

SECTION 2 - REQUIREMENTS FOR MEDICAL CERTIFICATES

MED.A.030 Medical certificates

Regulation (EU) 2020/359

(a) A student pilot shall not fly solo unless that student pilot holds a medical certificate, as required for the relevant licence.

(b) An applicant for a licence, in accordance with Annex I (Part-FCL), shall hold a medical certificate issued in accordance with this Annex (Part-MED) and appropriate to the licence privileges applied for.

(c) When exercising the privileges of a:

(1) light aircraft pilot licence (LAPL), a balloon pilot licence (BPL) issued in accordance with Annex III (Part-BFCL) to Commission Regulation (EU 2018/395, or a sailplane pilot licence (SPL) issued in accordance with Annex III (Part-SFCL) to Commission Implementing Regulation (EU) 2018/1976, the pilot shall hold at least a valid LAPL medical certificate;

(2) private pilot licence (PPL), the pilot shall hold at least a valid class 2 medical certificate;

(3) BPL for the purpose of:

(i) commercial passenger ballooning, the pilot shall hold at least a valid class 2 medical certificate;

(ii) commercial operation other than commercial passenger ballooning, with more than 4 persons on board the aircraft, the pilot shall hold at least a valid class 2 medical certificate;

(4) SPL for the purpose of commercial sailplane operations other than those specified in Article 3(2) of Commission Implementing Regulation (EU) 2018/1976, the pilot shall hold at least a valid class 2 medical certificate;

(5) a commercial pilot licence (CPL), a multi-crew pilot licence (MPL) or an airline transport pilot licence (ATPL), the pilot shall hold a valid class 1 medical certificate.

(d) If a night rating is added to a PPL or LAPL, the licence holder shall be colour safe.

(e) If an instrument rating or basic instrument rating is added to a PPL, the licence holder shall undergo pure tone audiometry examinations in accordance with the periodicity and the standard required for class 1 medical certificate holders.

(f) A licence holder shall not at any time hold more than one medical certificate issued in accordance with this Annex (Part-MED).

AMC1 MED.A.030 Medical certificates

ED Decision 2019/002/R

(a) A class 1 medical certificate includes the privileges and validities of class 2 and LAPL medical certificates.

(b) A class 2 medical certificate includes the privileges and validities of a LAPL medical certificate.

MED.A.035 Application for a medical certificate

Regulation (EU) 2019/27

(a) Applications for a medical certificate shall be made in a form and manner established by the competent authority.

(b) Applicants for a medical certificate shall provide the AeMC, AME or GMP, as applicable, with:

(1) proof of their identity;

(2) a signed declaration:

(i) of medical facts concerning their medical history;

(ii) as to whether they have previously applied for a medical certificate or have undergone an aero-medical examination for a medical certificate and, if so, by whom and with what result;

(iii) as to whether they have ever been assessed as unfit or had a medical certificate suspended or revoked.

(c) When applying for a revalidation or renewal of the medical certificate, applicants shall present the most recent medical certificate to the AeMC, AME or GMP, as applicable, prior to the relevant aero-medical examinations.

AMC1 MED.A.035 Application for a medical certificate

ED Decision 2019/002/R

Except for initial applicants, the AeMC, AME or GMP should not start the aero-medical examination for the issue of the medical certificate where applicants do not present the most recent medical certificate, unless relevant information is received from the medical assessor of the licensing authority.

MED.A.040 Issuance, revalidation and renewal of medical certificates

Regulation (EU) 2024/2076

(a) A medical certificate shall only be issued, revalidated or renewed once the required aero-medical examinations and assessments, as applicable, have been completed and the applicant has been assessed as fit.

(b) *Initial issuance*

(1) Class 1 medical certificates shall be issued by an AeMC.

(2) Class 2 medical certificates shall be issued by an AeMC or an AME.

(3) LAPL medical certificates shall be issued by an AeMC or an AME. They may also be issued by a GMP if so permitted under the national law of the Member State of the licensing authority to which the application for the medical certificate has been made.

(c) *Revalidation and renewal*

(1) Class 1 and class 2 medical certificates shall be revalidated and renewed by an AeMC or an AME.

[applicable until 12 February 2025 - Regulation (EU) 2019/27]

(1) Class 1 and class 2 medical certificates shall be revalidated and renewed by an AeMC or an AME. Specifically, class 1 medical certificates for applicants who have reached the age of 60 and are involved in single-pilot HEMS operations shall be revalidated and renewed primarily by an AeMC or, at the discretion of the competent authority, by an experienced AME designated by the competent authority.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(2) LAPL medical certificates shall be revalidated and renewed by an AeMC or an AME. They may also be revalidated or renewed by a GMP if so permitted under the national law of the Member State of the licensing authority to which the application for the medical certificate has been made.

(d) The AeMC, AME or GMP shall only issue, revalidate or renew a medical certificate if both of the following conditions have been met:

(1) the applicant has provided them with a complete medical history and, if required by the AeMC, AME or GMP, with results of medical examinations and tests conducted by the applicant's physician or any medical specialists;

(2) the AeMC, AME or GMP has conducted the aero-medical assessment based on the medical examinations and tests as required for the relevant medical certificate to verify that the applicant complies with all the relevant requirements of this Annex (Part-MED).

(e) The AME, AeMC or, in the case of referral, the medical assessor of the licensing authority may require the applicant to undergo additional medical examinations and investigations when there is a clinical or epidemiological indication before the medical certificate is issued, revalidated or renewed.

(f) The medical assessor of the licensing authority may issue or reissue a medical certificate.

MED.A.045 Validity, revalidation and renewal of medical certificates

Regulation (EU) 2019/27

(a) *Validity*

(1) Class 1 medical certificates shall be valid for a period of 12 months.

(2) By derogation from point (1), the period of validity of class 1 medical certificates shall be 6 months for licence holders who:

(i) are engaged in single-pilot commercial air transport operations carrying passengers and have reached the age of 40;

(ii) have reached the age of 60.

(3) Class 2 medical certificates shall be valid for a period of:

(i) 60 months, until the licence holder reaches the age of 40. A medical certificate issued prior to the licence holder reaching the age of 40 shall cease to be valid after the licence holder reaches the age of 42;

(ii) 24 months, for licence holders aged between 40 and 50. A medical certificate issued prior to the licence holder reaching the age of 50 shall cease to be valid after the licence holder reaches the age of 51;

(iii) 12 months, for licence holders aged above 50.

(4) LAPL medical certificates shall be valid for a period of:

(i) 60 months, until the licence holder reaches the age of 40. A medical certificate issued prior to the licence holder reaching the age of 40 shall cease to be valid after the licence holder reaches the age of 42;

(ii) 24 months, for licence holders aged above 40.

(5) The validity period of a medical certificate, including any associated examination or special investigation, shall be calculated from the date of the aero-medical examination in the case of initial issue and renewal, and from the expiry date of the previous medical certificate in the case of revalidation.

(b) *Revalidation*

Aero-medical examinations and assessments, as applicable, for the revalidation of a medical certificate may be undertaken up to 45 days prior to the expiry date of the medical certificate.

(c) *Renewal*

(1) If the holder of a medical certificate does not comply with point (b), a renewal examination and assessment, as applicable, shall be required.

(2) In the case of class 1 and class 2 medical certificates:

(i) if the medical certificate has expired for less than 2 years, a routine revalidation aero-medical examination shall be performed;

(ii) if the medical certificate has expired for more than 2 years but less than 5 years, the AeMC or AME shall only conduct the renewal aero-medical examination after assessment of the aero-medical records of the applicant;

(iii) if the medical certificate has expired for more than 5 years, the aero-medical examination requirements for initial issue shall apply and the assessment shall be based on the revalidation requirements.

(3) In the case of LAPL medical certificates, the AeMC, AME or GMP shall assess the medical history of the applicant and perform the aero-medical examinations and assessments, as applicable, in accordance with points MED.B.005 and MED.B.095.

MED.A.046 Suspension or revocation of medical certificates

Regulation (EU) 2019/27

(a) A medical certificate may be suspended or revoked by the licensing authority.

(b) Upon suspension of the medical certificate, the holder shall return the medical certificate to the licensing authority on request of that authority.

(c) Upon revocation of the medical certificate, the holder shall immediately return the medical certificate to the licensing authority.

MED.A.050 Referral

Regulation (EU) 2019/27

(a) If an applicant for a class 1 or class 2 medical certificate is referred to the medical assessor of the licensing authority in accordance with point MED.B.001, the AeMC or AME shall transfer the relevant medical documentation to the licensing authority.

(b) If an applicant for a LAPL medical certificate is referred to an AME or AeMC in accordance with point MED.B.001, the GMP shall transfer the relevant medical documentation to the AeMC or AME.

SUBPART B – REQUIREMENTS FOR PILOT MEDICAL CERTIFICATES

SECTION 1 – GENERAL

MED.B.001 Limitations to medical certificates

Regulation (EU) 2019/27

(a) *Limitations to class 1 and class 2 medical certificates*

(1) If the applicant does not fully comply with the requirements for the relevant class of medical certificate but is considered to be not likely to jeopardise the safe exercise of the privileges of the applicable licence, the AeMC or AME shall:

(i) in the case of applicants for a class 1 medical certificate, refer the decision on fitness of the applicant to the medical assessor of the licensing authority as indicated in this Subpart;

(ii) in cases where a referral to the medical assessor of the licensing authority is not indicated in this Subpart, evaluate whether the applicant is able to perform his/her duties safely when complying with one or more limitations endorsed on the medical certificate and issue the medical certificate with limitation(s) as necessary;

(iii) in the case of applicants for a class 2 medical certificate, evaluate, in consultation with the medical assessor of the licensing authority as indicated in this Subpart, whether the applicant is able to perform his/her duties safely when complying with one or more limitations endorsed on the medical certificate and issue the medical certificate, with limitation(s) as necessary.

(2) The AeMC or AME may revalidate or renew a medical certificate with the same limitation(s) without referring to or consulting with the medical assessor of the licensing authority.

(b) *Limitations to LAPL medical certificates*

(1) If a GMP, after due consideration of the applicant's medical history, concludes that the applicant for a LAPL medical certificate does not fully meet the requirements for medical fitness, the GMP shall refer the applicant to an AeMC or AME, unless the applicant requires only limitation(s) related to the use of corrective lenses or to the period of validity of the medical certificate.

(2) If an applicant for a LAPL medical certificate has been referred in accordance with point (1), the AeMC or AME shall give due consideration to points MED.B.005 and MED.B.095, evaluate whether the applicant is able to perform his or her duties safely when complying with one or more limitations endorsed on the medical certificate and issue the medical certificate with limitation(s) as necessary. The AeMC or AME shall always consider the need to restrict the applicant from carrying passengers (operational passenger limitation, OPL).

(3) The GMP may revalidate or renew a LAPL medical certificate with the same limitation without referring the applicant to an AeMC or AME.

(c) When assessing whether a limitation is necessary, particular consideration shall be given to:

(1) whether accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that the exercise of the privileges of the licence applied for is not likely to jeopardise flight safety;

(2) the applicant's ability, skill and experience relevant to the operation to be performed.

(d) *Operational limitation codes*

(1) Operational multi-pilot limitation (OML – class 1 only)

(i) When the holder of a CPL, ATPL or MPL does not fully meet the requirements for a class 1 medical certificate and has been referred to a medical assessor of the licensing authority, that medical assessor shall assess whether the medical certificate may be issued with an OML 'valid only as or with qualified co-pilot'.

(ii) The holder of a medical certificate with an OML shall only operate an aircraft in multi-pilot operations when the other pilot is fully qualified on the relevant class and type of aircraft, is not subject to an OML and has not attained the age of 60 years.

(iii) The OML for class 1 medical certificates shall be initially imposed and only removed by the medical assessor of the licensing authority.

(2) Operational safety pilot limitation (OSL – class 2 and LAPL privileges)

(i) The holder of a medical certificate with an OSL shall only operate an aircraft if another pilot fully qualified to act as pilot-in-command on the relevant class and type of aircraft is carried on board, the aircraft is fitted with dual controls and the other pilot occupies a seat at the controls.

(ii) The OSL for class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or an AME in consultation with the medical assessor of the licensing authority.

(iii) The OSL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(3) Operational passenger limitation (OPL – class 2 and LAPL privileges)

(i) The holder of a medical certificate with an OPL shall only operate an aircraft without passengers on board.

(ii) The OPL for class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or an AME in consultation with the medical assessor of the licensing authority.

(iii) The OPL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(4) Operational pilot restriction limitation (ORL – class 2 and LAPL privileges)

(i) The holder of a medical certificate with an ORL shall only operate an aircraft if one of the two following conditions have been met:

(A) another pilot fully qualified to act as pilot-in-command on the relevant class and type of aircraft is on board the aircraft, the aircraft is fitted with dual controls and the other pilot occupies a seat at the controls;

(B) there are no passengers on board the aircraft.

(ii) The ORL for class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or AME in consultation with the medical assessor of the licensing authority.

(iii) The ORL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(5) Special restriction as specified (SSL)

The SSL on a medical certificate shall be followed by a description of the limitation.

(e) Any other limitation may be imposed on the holder of a medical certificate by the medical assessor of the licensing authority, AeMC, AME or GMP, as applicable, if required to ensure flight safety.

(f) Any limitation imposed on the holder of a medical certificate shall be specified therein.

AMC1 MED.B.001 Limitations to medical certificates

ED Decision 2019/002/R

GENERAL

(a) An AeMC or AME may refer the decision on fitness of an applicant to the medical assessor of the licensing authority in borderline cases or where fitness is in doubt.

(b) In cases where a fit assessment may only be considered with a limitation, the AeMC, AME, GMP or the medical assessor of the licensing authority should evaluate the medical condition of the applicant in consultation with flight operations and other experts, if necessary.

(c) Initial application of limitations

(1) The limitations TML, VDL, VML, VNL and VCL, as listed in AMC2 MED.B.001(a), may be imposed by an AME or an AeMC for class 1, class 2, and LAPL medical certificates, or a GMP for LAPL medical certificates.

(2) All other limitations listed in AMC2 MED.B.001(a) should only be imposed:

(i) for class 1 medical certificates, by the medical assessor of the licensing authority where a referral is required according to MED.B.001;

(ii) for class 2 medical certificates, by the AME or AeMC in consultation with the medical assessor of the licensing authority where consultation is required according to MED.B.001;

(iii) for LAPL medical certificates, by an AME or AeMC.

(d) Removal of limitations

(1) For class 1 medical certificates, all limitations should only be removed by the medical assessor of the licensing authority.

(2) For class 2 medical certificates, limitations may be removed by the medical assessor of the licensing authority or by an AeMC or AME in consultation with the medical assessor of the licensing authority.

(3) For LAPL medical certificates, limitations may be removed by an AeMC or AME.

AMC2 MED.B.001 Limitations to medical certificates

ED Decision 2019/002/R

LIMITATION CODES

(a) The following abbreviations for limitations codes should be used on the medical certificates as applicable:

Code	Limitation
TML	Limited period of validity of the medical certificate
VDL	Valid only with correction for defective distant vision
VML	Valid only with correction for defective distant, intermediate and near vision
VNL	Valid only with correction for defective near vision
CCL	Correction by means of contact lenses
VCL	Valid by day only
RXO	Specialist ophthalmological examination(s)
SIC	Specific medical examination(s)
HAL	Valid only when hearing aids are worn
APL	Valid only with approved prosthesis
AHL	Valid only with approved hand controls
OML	Valid only as, or with, a qualified co-pilot
OCL	Valid only as a qualified co-pilot
OSL	Valid only with a safety pilot and in aircraft with dual controls
OPL	Valid only without passengers
ORL	Valid only with a safety pilot if passengers are carried
OAL	Restricted to demonstrated aircraft type
SSL	Special restriction(s) as specified

(b) The abbreviations for the limitation codes should be explained to the holder of a medical certificate as follows:

(1) TML Time limitation

The period of validity of the medical certificate is limited to the duration as shown on the medical certificate. This period of validity commences on the date of the medical examination. Any period of validity remaining on the previous medical certificate is no longer valid. The holder of the medical certificate should present themselves for re-examination when advised and should follow any medical recommendations.

(2) VDL Wear corrective lenses and carry a spare set of spectacles

Correction for defective distant vision: whilst exercising the privileges of the licence, the holder of the medical certificate should wear spectacles or contact lenses that correct for

defective distant vision as examined and approved by the AeMC, AME or GMP. Contact lenses may not be worn until cleared to do so by the AeMC, AME or GMP. A spare set of spectacles, approved by the AeMC, AME or GMP, should be readily available.

(3) VML Wear multifocal spectacles and carry a spare set of spectacles

Correction for defective distant, intermediate and near vision: whilst exercising the privileges of the licence, the holder of the medical certificate should wear spectacles that correct for defective distant, intermediate and near vision as examined and approved by the AeMC, AME or GMP. Contact lenses or full frame spectacles, when either correct for near vision only, may not be worn. A spare set of spectacles, approved by the AeMC, AME or GMP, should be readily available.

(4) VNL Have available corrective spectacles and carry a spare set of spectacles

Correction for defective near vision: whilst exercising the privileges of the licence, the holder of the medical certificate should have readily available spectacles that correct for defective near vision as examined and approved by the AeMC, AME or GMP. Contact lenses or full frame spectacles, when either correct for near vision only, may not be worn. A spare set of spectacles, approved by the AeMC, AME or GMP, should be readily available.

(5) CCL Wear contact lenses that correct for defective distant vision

Correction for defective distant vision: whilst exercising the privileges of the licence, the holder of a medical certificate should wear contact lenses that correct for defective distant vision, as examined and approved by the AeMC, AME or GMP. A spare set of similarly correcting spectacles, approved by the AeMC, AME or GMP, should be readily available for immediate use whilst exercising the privileges of the licence.

(6) VCL Valid by day only

This limitation allows holders of a class 2 or LAPL medical certificate with varying degrees of colour deficiency, to exercise the privileges of their licence by daytime only.

(7) RXO Specialist ophthalmological examination(s)

Specialist ophthalmological examination(s), other than the examinations stipulated in Part-MED, are required for a significant reason.

(8) SIC Specific regular medical examination(s) contact the medical assessor of the licensing authority

This limitation requires the AeMC, or AME to contact the medical assessor of the licensing authority before embarking upon a revalidation or renewal aero-medical assessment. The limitation is likely to concern a medical history or additional examination(s) which the AeMC or AME should be aware of prior to undertaking the assessment.

(9) HAL Wear hearing aid(s)

Whilst exercising the privileges of the licence, the holder of the medical certificate should use hearing aid(s) that compensate for defective hearing as examined and approved by the AeMC or AME. A spare set of batteries should be readily available.

(10) APL Valid only with approved prosthesis

This limitation applies to the holder of a medical certificate with a musculoskeletal condition when a medical flight test or a flight simulator test has shown that the use of a prosthesis is required to safely exercise the privileges of the licence. The prosthesis to be used should be approved.

(11) AHL Valid only with approved hand controls

This limitation applies to the holder of a medical certificate who has a limb deficiency or other anatomical problem which had been shown by a medical flight test or flight simulator testing to be acceptable but to require the aircraft to be equipped with suitable, approved hand controls.

(12) OML Valid only as or with a qualified co-pilot

This limitation applies to holders of a class 1 medical certificate who do not fully meet the aero-medical requirements for single-pilot operations, but are fit for multi-pilot operations. Refer to MED.B.001(d)(1).

(13) OCL Valid only as a qualified co-pilot

This limitation is an extension of the OML and are restricted to the role of co-pilot.

(14) OSL Valid only with a safety pilot and in aircraft with dual controls

This limitation applies to holders of a class 2 or a LAPL medical certificate only. The safety pilot should be made aware of the type(s) of possible incapacity that the pilot whose medical certificate has been issued with this limitation may suffer and should be prepared to take over the aircraft controls during flight. Refer to MED.B.001(d)(2).

(15) OPL Valid only without passengers

This limitation applies to holders of a class 2 or LAPL medical certificate with a medical condition that may lead to an increased level of risk to flight safety when exercising the privileges of the licence. This limitation is to be applied when this risk is not acceptable for the carriage of passengers. Refer to MED.B.001(d)(3).

(16) ORL Valid only with a safety pilot if passengers are carried and in aircraft with dual controls

This limitation applies to holders of a class 2 or LAPL medical certificate with a medical condition that may lead to an increased level of risk to flight safety when exercising the privileges of the licence. The safety pilot, if carried, should be made aware of the type(s) of possible incapacity that the pilot whose medical certificate has been issued with this limitation may suffer and should be prepared to take over the aircraft controls during flight. Refer to MED.B.001(d)(4).

(17) OAL Restricted to demonstrated aircraft type

This limitation applies to a the holder of a medical certificate who has a limb deficiency or other medical problem which had been shown by a medical flight test or flight simulator testing to be acceptable but to require a restriction to a specific class and type of aircraft.

(18) SSL Special restriction(s) as specified

This limitation may be considered when an individually specified limitation, not defined in this AMC, is appropriate to mitigate an increased level of risk to flight safety. The description of the SSL should be entered on the medical certificate or in a separate document to be carried with the medical certificate.

MED.B.005 General medical requirements

Regulation (EU) 2024/2076

Applicants for a medical certificate shall be assessed in accordance with the detailed medical requirements set out in Sections 2 and 3.

They shall, in addition, be assessed as unfit where they have any of the following medical conditions which entails a degree of functional incapacity which is likely to interfere with the safe exercise of the privileges of the licence applied for or could render the applicant likely to become suddenly unable to exercise those privileges:

(a) abnormality, either congenital or acquired;

(b) active, latent, acute or chronic disease or disability;

(c) wound, injury or sequelae from operation;

(d) effect or side effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken.

In their examination AMEs shall give proper consideration to the degenerative effects of ageing on the body systems.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

SECTION 2 – MEDICAL REQUIREMENTS FOR CLASS 1 AND CLASS 2 MEDICAL CERTIFICATES

MED.B.010 Cardiovascular System

Regulation (EU) 2024/2076

(a) *Examination*

(1) A standard 12-lead resting electrocardiogram (ECG) and report shall be completed when clinically indicated and at the following moments:

(i) for a class 1 medical certificate, at the initial examination, then every 5 years until age 30, every 2 years until age 40, annually until age 50, and at all revalidation or renewal examinations thereafter;

(ii) for a class 2 medical certificate, at the initial examination, at the first examination after age 40 and then at the first examination after age 50, and every 2 years thereafter.

(2) An extended cardiovascular assessment shall be required when clinically indicated.

(3) For a class 1 medical certificate, an extended cardiovascular assessment shall be completed at the first revalidation or renewal examination after age 65 and every 4 years thereafter.

[applicable until 12 February 2025 - Regulation (EU) *2019/27]*

(3) For a class 1 medical certificate, an extended cardiovascular assessment shall be completed at the first revalidation or renewal examination after the age of 65 and every 4 years thereafter. For applicants involved in single-pilot HEMS operations, an extended cardiovascular assessment shall be completed at the first revalidation or renewal examination after the age of 60 and subject to a cardiovascular risk factor assessment thereafter.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(4) For a class 1 medical certificate, estimation of serum lipids, including cholesterol, shall be required at the initial examination, and at the first examination after having reached the age of 40.

[applicable until 12 February 2025 - Regulation (EU) 2019/27]

(4) For a class 1 medical certificate, estimation of serum lipids, including cholesterol fractions, shall be required at the initial examination, and at the first examination after having reached the age of 40.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(b) *Cardiovascular System – General*

(1) Applicants for a class 1 medical certificate with any of the following medical conditions shall be assessed as unfit:

(i) aneurysm of the thoracic or supra-renal abdominal aorta, before surgery;

(ii) significant functional or symptomatic abnormality of any of the heart valves;

(iii) heart or heart/lung transplantation.;

(iv) symptomatic hypertrophic cardiomyopathy.

(2) Before further consideration is given to their application, applicants for a class 1 medical certificate with a documented medical history or diagnosis of any of the following medical conditions shall be referred to the medical assessor of the licensing authority:

(i) peripheral arterial disease before or after surgery;

(ii) aneurysm of the thoracic or supra-renal abdominal aorta after surgery;

(iii) aneurysm of the infra-renal abdominal aorta before or after surgery;

(iv) functionally insignificant cardiac valvular abnormalities;

(v) after cardiac valve surgery;

(vi) abnormality of the pericardium, myocardium or endocardium;

(vii) congenital abnormality of the heart, before or after corrective surgery;

(viii) vasovagal syncope of uncertain cause;

(ix) arterial or venous thrombosis;

(x) pulmonary embolism;

(xi) cardiovascular condition requiring systemic anticoagulant therapy.

(3) Applicants for a class 2 medical certificate with an established diagnosis of one of the conditions specified in points (1) and (2) shall be evaluated by a cardiologist before they may be assessed as fit, in consultation with the medical assessor of the licensing authority.

(4) Applicants with cardiac disorders other than those specified in points (1) and (2) may be assessed as fit subject to satisfactory cardiological evaluation.

(5) A cardiovascular risk factor assessment shall form part of examinations for class 1 and class 2 medical certificates at the first examination after reaching the age of 40 and at regular intervals thereafter.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(c) *Blood Pressure*

(1) Applicants' blood pressure shall be recorded at each examination.

(2) Applicants whose's blood pressure is not within normal limits shall be further assessed with regard to their cardiovascular condition and medication with a view to determining whether they are to be assessed as unfit in accordance with points (3) and (4).

(3) Applicants for a class 1 medical certificate with any of the following medical conditions shall be assessed as unfit:

(i) symptomatic hypotension;

(ii) blood pressure at examination consistently exceeding 160 mmHg systolic or 95 mmHg diastolic, with or without treatment.

(4) Applicants who have commenced the use of medication for the control of blood pressure shall be assessed as unfit until the absence of significant side effects has been established.

(d) *Coronary Artery Disease*

(1) Before further consideration is given to their application, applicants for a class 1 medical certificate with any of the following medical conditions shall be referred to the medical assessor of the licensing authority and undergo cardiological evaluation to exclude myocardial ischaemia:

(i) suspected myocardial ischaemia;

(ii) asymptomatic minor coronary artery disease requiring no anti-anginal treatment.

(2) Before further consideration is given to their application, applicants for a class 2 medical certificate with any of the medical conditions set out in point (1) shall undergo satisfactory cardiological evaluation.

(3) Applicants with any of the following medical conditions shall be assessed as unfit:

(i) myocardial ischaemia;

(ii) symptomatic coronary artery disease;

(iii) symptoms of coronary artery disease controlled by medication.

(4) Applicants for the initial issue of a class 1 medical certificate with a medical history or diagnosis of any of the following medical conditions shall be assessed as unfit:

(i) myocardial ischaemia;

(ii) myocardial infarction;

(iii) revascularisation or stenting for coronary artery disease.

(5) Before further consideration is given to their application, applicants for a class 2 medical certificate who are asymptomatic following myocardial infarction or surgery for coronary artery disease shall undergo satisfactory cardiological evaluation, in consultation with the medical assessor of the licensing authority. Such applicants for the revalidation of a class 1 medical certificate shall be referred to the medical assessor of the licensing authority.

(e) *Rhythm/Conduction Disturbances*

(1) Applicants with any of the following medical conditions shall be assessed as unfit:

(i) symptomatic sinoatrial disease;

(ii) complete atrioventricular block;

(iii) symptomatic QT prolongation;

(iv) an automatic implantable defibrillating system;

(v) a ventricular anti-tachycardia pacemaker.

(2) Before further consideration is given to their application, applicants for a class 1 medical certificate havingany significant disturbance of cardiac conduction or rhythm, including any of the following, shall be referred to the medical assessor of the licensing authority:

(i) disturbance of supraventricular rhythm, including intermittent or established sinoatrial dysfunction, atrial fibrillation and/or flutter and asymptomatic sinus pauses;

(ii) complete left bundle branch block;

(iii) Mobitz type 2 atrioventricular block;

(iv) broad and/or narrow complex tachycardia;

(v) ventricular pre-excitation;

(vi) asymptomatic QT prolongation;

(vii) Brugada pattern on electrocardiography.

(3) Before further consideration is given to their application, applicants for a class 2 medical certificate with any of the medical conditions specified in point (2) shall undergo satisfactory cardiological evaluation, in consultation with the medical assessor of the licensing authority.

(4) Applicants with any of the following medical conditions may be assessed as fit subject to satisfactory cardiological evaluation and in the absence of any other abnormality:

(i) incomplete bundle branch block;

(ii) complete right bundle branch block;

(iii) stable left axis deviation;

(iv) asymptomatic sinus bradycardia;

(v) asymptomatic sinus tachycardia;

(vi) asymptomatic isolated uniform supra-ventricular or ventricular ectopic complexes;

(vii) first degree atrioventricular block;

(viii) Mobitz type 1 atrioventricular block.

(5) Applicants with a medical history of any of the following medical conditions shall undergo satisfactory cardiovascular evaluation before they may be assessed as fit:

(i) ablation therapy;

(ii) pacemaker implantation.

Such applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority. Such applicants for a class 2 medical certificate shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

(a) Examination

Exercise electrocardiography

An exercise ECG when required as part of a cardiovascular assessment should be symptom limited and completed to a minimum of Bruce Stage IV or equivalent.

(b) General

(1) Cardiovascular risk factor assessment

(i) Serum lipid estimation is case finding and significant abnormalities should be reviewed, investigated and supervised by the AeMC or AME in consultation with the medical assessor of the licensing authority.

(ii) Applicants with an accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) should undergo a cardiovascular evaluation by the AeMC or AME, if necessary in consultation with the medical assessor of the licensing authority.

(2) Cardiovascular assessment

(i) Reporting of resting and exercise electrocardiograms should be by the AME or an accredited specialist.

(ii) The extended cardiovascular assessment should be undertaken at an AeMC or may be delegated to a cardiologist.

(c) Peripheral arterial disease

If there is no significant functional impairment, a fit assessment may be considered provided:

(1) applicants without symptoms of coronary artery disease have reduced any vascular risk factors to an appropriate level;

(2) applicants should be on appropriate secondary prevention treatment;

(3) exercise electrocardiography is satisfactory. Further tests may be required which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

(d) Aortic aneurysm

(1) Applicants with an aneurysm of the infra-renal abdominal aorta of less than 5 cm in diameter may be assessed as fit before surgery, with an OML subject to satisfactory evaluation by a cardiologist. Follow-up by ultra-sound scans or other imaging techniques, as necessary, should be determined by the medical assessor of the licensing authority.

(2) Applicants may be assessed as fit with an OML after surgery for an aneurysm of the thoracic or abdominal aorta if the blood pressure and cardiovascular evaluation is satisfactory. Regular evaluations by a cardiologist should be carried out.

(e) Cardiac valvular abnormalities

(1) Applicants with previously unrecognised cardiac murmurs should undergo evaluation by a cardiologist and assessment by the medical assessor of the licensing authority. If considered significant, further investigation should include at least 2D Doppler echocardiography or equivalent imaging.

(2) Applicants with minor cardiac valvular abnormalities may be assessed as fit. Applicants with significant abnormality of any of the heart valves should be assessed as unfit.

(3) Aortic valve disease

(i) Applicants with a bicuspid aortic valve may be assessed as fit if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, should be determined by the medical assessor of the licensing authority.

(ii) Applicants with aortic stenosis may be assessed as fit provided the left ventricular function is intact and the mean pressure gradient is less than 20 mmHg. Applicants with an aortic valve orifice with indexation on the body surface of more than 0.6 cm^2/m^2 and a mean pressure gradient above 20 mmHg, but not greater than 50 mmHg, may be assessed as fit with an OML. Follow-up with 2D Doppler echocardiography, as necessary, should be determined by the medical assessor of

the licensing authority in all cases. Alternative measurement techniques with equivalent ranges may be used. Regular evaluation by a cardiologist should be considered. Applicants with a history of systemic embolism or significant dilatation of the thoracic aorta should be assessed as unfit.

(iii) Applicants with trivial aortic regurgitation may be assessed as fit. A greater degree of aortic regurgitation should require an OML. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, should be determined by the medical assessor of the licensing authority.

(4) Mitral valve disease

(i) Asymptomatic applicants with an isolated mid-systolic click due to mitral leaflet prolapse may be assessed as fit.

(ii) Applicants with rheumatic mitral stenosis should normally be assessed as unfit.

(iii) Applicants with minor regurgitation may be assessed as fit. Periodic cardiological review should be determined by the medical assessor of the licensing authority.

(iv) Applicants with moderate mitral regurgitation may be considered as fit with an OML if the 2D Doppler echocardiogram demonstrates satisfactory left ventricular dimensions and satisfactory myocardial function is confirmed by exercise electrocardiography. Periodic cardiological review should be required, as determined by the medical assessor of the licensing authority.

(v) Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter or evidence of systolic impairment should be assessed as unfit.

(f) Valvular surgery

Applicants who have undergone cardiac valve replacement or repair should be assessed as unfit. A fit assessment may be considered in the following cases:

(1) Mitral leaflet repair for prolapse is compatible with a fit assessment, provided post-operative investigations reveal satisfactory left ventricular function without systolic or diastolic dilation and no more than minor mitral regurgitation.

(2) Asymptomatic applicants with a tissue valve or with a mechanical valve who, at least 6 months following surgery, are taking no cardioactive medication may be considered for a fit assessment with an OML. Investigations which demonstrate normal valvular and ventricular configuration and function should have been completed as demonstrated by:

(i) a satisfactory symptom limited exercise ECG. Myocardial perfusion imaging/stress echocardiography should be required if the exercise ECG is abnormal or any coronary artery disease is suspected;

(ii) a 2D Doppler echocardiogram showing no significant selective chamber enlargement, a tissue valve with minimal structural alteration and a normal Doppler blood flow, and no structural or functional abnormality of the other heart valves. Left ventricular fractional shortening should be normal.

Follow-up with exercise ECG and 2D echocardiography, as necessary, should be determined by the medical assessor of the licensing authority.

(3) Where anticoagulation is needed after valvular surgery, a fit assessment with an OML may be considered if the haemorrhagic risk is acceptable and the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 international normalised ratio (INR) values are documented, of which at least 4 are within the INR target range. The INR target range should be determined by the type of surgery performed.

(g) Thromboembolic disorders

Applicants with arterial or venous thrombosis or pulmonary embolism should be assessed as unfit. A fit assessment with an OML may be considered after a period of stable anticoagulation as prophylaxis, after review by the medical assessor of the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range and the haemorrhagic risk is acceptable. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment with an OML may be considered after review by the medical assessor of the licensing authority after a stabilisation period of 3 months. Applicants with pulmonary embolism should also be evaluated by a cardiologist. Following cessation of anticoagulant therapy, for any indication, applicants should undergo a re-assessment by the medical assessor of the licensing authority.

(h) Other cardiac disorders

(1) Applicants with a primary or secondary abnormality of the pericardium, myocardium or endocardium should be assessed as unfit. A fit assessment may be considered following complete resolution and satisfactory cardiological evaluation which may include 2D Doppler echocardiography, exercise ECG and/or myocardial perfusion imaging/stress echocardiography and 24-hour ambulatory ECG. Coronary angiography may be indicated. Frequent review and an OML may be required after fit assessment.

(2) Applicants with a congenital abnormality of the heart should be assessed as unfit. Applicants following surgical correction or with minor abnormalities that are functionally unimportant may be assessed as fit following cardiological evaluation. No cardioactive medication is acceptable. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. The potential hazard of any medication should be considered as part of the assessment. Particular attention should be paid to the potential for the medication to mask the effects of the congenital abnormality before or after surgery. Regular cardiological evaluations should be carried out.

(i) Syncope

(1) In the case of a single episode of vasovagal syncope which can be explained and is compatible with flight safety, a fit assessment may be considered.

(2) Applicants with a history of recurrent vasovagal syncope should be assessed as unfit. A fit assessment may be considered after a 6-month period without recurrence, provided cardiological evaluation is satisfactory. Such evaluation should include:

(i) a satisfactory symptom limited 12 lead exercise ECG to Bruce Stage IV, or equivalent. If the exercise ECG is abnormal, myocardial perfusion imaging/stress echocardiography or equivalent test should be carried out;

(ii) a 2D Doppler echocardiogram showing neither significant selective chamber enlargement nor structural or functional abnormality of the heart, valves or myocardium;

(iii) a 24-hour ambulatory ECG recording showing no conduction disturbance, complex or sustained rhythm disturbance or evidence of myocardial ischaemia.

(3) A tilt test, or equivalent, carried out to a standard protocol showing no evidence of vasomotor instability may be required.

(4) Neurological review should be required.

(5) An OML should be required until a period of 5 years has elapsed without recurrence. The medical assessor of the licensing authority may determine a shorter or longer period of OML according to the individual circumstances of the case.

(6) Applicants who experienced loss of consciousness without significant warning should be assessed as unfit.

(j) Blood pressure

(1) The diagnosis of hypertension should require cardiovascular evaluation to include potential vascular risk factors.

(2) Anti-hypertensive treatment should be agreed by the medical assessor of the licensing authority. Acceptable medication may include:

(i) non-loop diuretic agents;

(ii) ACE inhibitors;

(iii) angiotensin II receptor blocking agents (sartans);

(iv) channel calcium blocking agents;

(v) certain (generally hydrophilic) beta-blocking agents.

(3) Following initiation of medication for the control of blood pressure, applicants should be re-assessed to verify that satisfactory control has been achieved and the treatment is compatible with the safe exercise of the privileges of the applicable licence(s).

(k) Coronary artery disease

(1) Chest pain of uncertain cause should require full investigation. Applicants with angina pectoris should be assessed as unfit, whether or not it is alleviated by medication.

(2) In suspected asymptomatic coronary artery disease, exercise electrocardiography should be required. Further tests may be required, which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

(3) Applicants with evidence of exercise-induced myocardial ischaemia should be assessed as unfit.

(4) After an ischaemic cardiac event or revascularisation procedure, applicants should have reduced cardiovascular risk factors to an appropriate level. Medication, when used to control cardiac symptoms, is not acceptable. All applicants should be on appropriate secondary prevention treatment.

(i) A coronary angiogram obtained around the time of, or during, the ischaemic myocardial event or revasculisation procedure and a complete, detailed clinical report of the ischaemic event and of any operative procedures should be made available to the medical assessor of the licensing authority:

(A) there should be no stenosis more than 50 % in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel subtending a myocardial infarction;

(B) the whole coronary vascular tree should be assessed as satisfactory by a cardiologist, and particular attention should be paid to multiple stenoses and/or multiple revascularisations;

(C) Applicants with an untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should be assessed as unfit.

(ii) At least 6 months from the ischaemic myocardial event or revascularisation procedure, the following investigations should be completed (equivalent tests may be substituted):

(A) an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm or conduction disturbance;

(B) an echocardiogram showing satisfactory left ventricular function with no important abnormality of wall motion (such as dyskinesia or akinesia) and a left ventricular ejection fraction of 50 % or more;

(C) in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiogram, or equivalent test, which should show no evidence of reversible myocardial ischaemia. If there is any doubt about myocardial perfusion in other cases (infarction or bypass grafting) a perfusion scan, or equivalent test, should also be carried out;

(D) further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

(iii) Follow-up should be annual (or more frequently, if necessary) to ensure that there is no deterioration of the cardiovascular status. It should include a review by a cardiologist, exercise ECG and cardiovascular risk assessment. Additional investigations may be required by the medical assessor of the licensing authority.

(A) After coronary artery bypass grafting, a myocardial perfusion scan, or equivalent test, should be performed if there is any indication, and in all cases within 5 years from the procedure.

(B) In all cases, coronary angiography should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischaemia.

(iv) Successful completion of the 6-month or subsequent review will allow a fit assessment with an OML.

(l) Rhythm and conduction disturbances

(1) Applicants with significant rhythm or conduction disturbance should undergo evaluation by a cardiologist before a fit assessment with an OML, as necessary, may be considered. Appropriate follow-up should be carried out at regular intervals. Such evaluation should include:

(i) exercise ECG to the Bruce protocol or equivalent. Bruce stage 4 should be achieved and no significant abnormality of rhythm or conduction, or evidence of myocardial ischaemia should be demonstrated. Withdrawal of cardioactive medication prior to the test should normally be required;

(ii) 24-hour ambulatory ECG which should demonstrate no significant rhythm or conduction disturbance;

(iii) 2D Doppler echocardiogram which should show no significant selective chamber enlargement or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50 %.

Further evaluation may include (equivalent tests may be substituted):

(iv) 24-hour ECG recording repeated as necessary;

(v) electrophysiological study;

(vi) myocardial perfusion imaging;

(vii) cardiac magnetic resonance imaging (MRI);

(viii) coronary angiogram.

(2) Applicants with frequent or complex forms of supra ventricular or ventricular ectopic complexes require full cardiological evaluation.

(3) Where anticoagulation is needed for a rhythm disturbance, a fit assessment with an OML may be considered if the haemorrhagic risk is acceptable and the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment with an OML may be considered after review by the medical assessor of the licensing authority after a stabilisation period of 3 months.

(4) Ablation

Applicants who have undergone ablation therapy should be assessed as unfit. A fit assessment may be considered following successful catheter ablation and should require an OML for at least one year, unless an electrophysiological study, undertaken at a minimum of 2 months after the ablation, demonstrates satisfactory results. For those whose long-term outcome cannot be assured by invasive or non-invasive testing, an additional period with an OML and/or observation may be necessary.

(5) Supraventricular arrhythmias

Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, should be assessed as unfit. A fit assessment may be considered if cardiological evaluation is satisfactory.

(i) Atrial fibrillation/flutter

(A) For initial applicants, a fit assessment should be limited to those with a single episode of arrhythmia which is considered by the medical assessor of the licensing authority to be unlikely to recur.

(B) For revalidation, applicants may be assessed as fit if cardiological evaluation is satisfactory and the stroke risk is sufficiently low. A fit assessment with an OML may be considered after a period of stable anticoagulation as prophylaxis, after review by the medical assessor of the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment with an OML may be considered after review

by the medical assessor of the licensing authority after a stabilisation period of 3 months.

(ii) Applicants with asymptomatic sinus pauses up to 2.5 seconds on resting electrocardiography may be assessed as fit if exercise electrocardiography, echocardiography and 24-hour ambulatory ECG are satisfactory.

(iii) Applicants with symptomatic sino-atrial disease should be assessed as unfit.

(6) Mobitz type 2 atrio-ventricular block

Applicants with Mobitz type 2 AV block should require full cardiological evaluation and may be assessed as fit in the absence of distal conducting tissue disease.

(7) Complete right bundle branch block

(i) Applicants with complete right bundle branch block should undergo a cardiological evaluation on first presentation. A fit assessment may be considered if there is no underlying pathology.

(ii) Applicants with bifascicular block may be assessed as fit with an OML after a satisfactory cardiological evaluation. The OML may be considered for removal if an electrophysiological study demonstrates no infra-Hissian block, or a 3-year period of satisfactory surveillance has been completed.

(8) Complete left bundle branch block

(i) A fit assessment may be considered subject to satisfactory cardiological evaluation and a 3-year period with an OML, and without an OML after 3 years of surveillance and satisfactory cardiological evaluation.

(ii) Investigation of the coronary arteries is necessary for applicants over age 40.

(9) Ventricular pre-excitation

(i) Asymptomatic initial applicants with pre-excitation may be assessed as fit if an electrophysiological study, including adequate drug-induced autonomic stimulation reveals no inducible re-entry tachycardia and the existence of multiple pathways is excluded.

(ii) Asymptomatic applicants with pre-excitation may be assessed as fit at revalidation with limitation(s) as appropriate. Limitations may not be necessary if an electrophysiological study, including adequate drug-induced autonomic stimulation, reveals no inducible re-entry tachycardia and the existence of multiple accessory pathways is excluded.

(10) Pacemaker

Applicants with a subendocardial pacemaker should be assessed as unfit. A fit assessment with an OML may be considered at revalidation no sooner than 3 months after insertion provided:

(i) there is no other disqualifying condition;

(ii) a bipolar lead system, programmed in bipolar mode without automatic mode change has been used;

(iii) the applicant is not pacemaker dependent; and

(iv) the applicant has a follow-up at least every 12 months, including a pacemaker check.

(11) QT prolongation

Applicants with asymptomatic QT prolongation may be assessed as fit with an OML subject to satisfactory cardiological evaluation.

(12) Brugada pattern on electrocardiography

Applicants with a Brugada pattern Type 1 should be assessed as unfit. Applicants with Type 2 or Type 3 may be assessed as fit, with limitations as appropriate, subject to satisfactory cardiological evaluation.

AMC2 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

(a) Examination

Exercise electrocardiography

An exercise ECG when required as part of a cardiovascular assessment should be symptom-limited and completed to a minimum of Bruce Stage IV or equivalent.

(b) General

(1) Cardiovascular risk factor assessment

Applicants with an accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) should undergo a cardiovascular evaluation by the AeMC or AME.

(2) Cardiovascular assessment

Reporting of resting and exercise electrocardiograms should be by the AME or an accredited specialist.

(c) Peripheral arterial disease

A fit assessment may be considered for an applicant with peripheral arterial disease, or after surgery for peripheral arterial disease, provided there is no significant functional impairment, any vascular risk factors have been reduced to an appropriate level, the applicant is receiving acceptable secondary prevention treatment, and there is no evidence of myocardial ischaemia.

(d) Aortic aneurysm

(1) Applicants with an aneurysm of the infra-renal abdominal aorta of less than 5 cm in diameter may be assessed as fit, subject to satisfactory cardiological evaluation. Regular cardiological evaluations should be carried out.

(2) Applicants with an aneurysm of the thoracic or supra-renal abdominal aorta of less than 5 cm in diameter may be assessed as fit with an ORL or OSL, subject to satisfactory cardiological evaluation. Regular follow-up should be carried out.

(3) Applicants may be assessed as fit after surgery for an infra-renal abdominal aortic aneurysm, subject to satisfactory cardiological evaluation. Regular cardiological evaluations should be carried out.

(4) Applicants may be assessed as fit with an ORL or OSL after surgery for a thoracic or supra-renal abdominal aortic aneurysm, subject to satisfactory cardiological evaluation. Regular cardiological evaluations should be carried out.

(e) Cardiac valvular abnormalities

(1) Applicants with previously unrecognised cardiac murmurs should undergo further cardiological evaluation.

(2) Applicants with minor cardiac valvular abnormalities may be assessed as fit.

(3) Aortic valve disease

(i) Applicants with a bicuspid aortic valve may be assessed as fit if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, should be determined in consultation with the medical assessor of the licensing authority.

(ii) Applicants with aortic stenosis may be assessed as fit provided the left ventricular function is intact and the mean pressure gradient is less than 20 mmHg. Applicants with an aortic valve orifice of more than 1 cm^2 and a mean pressure gradient above 20 mmHg, but not greater than 50 mmHg, may be assessed as fit with an ORL or OSL. Follow-up with 2D Doppler echocardiography, as necessary, should be determined in consultation with the medical assessor of the licensing authority in all cases. Alternative measurement techniques with equivalent ranges may be used. Regular cardiological evaluation should be considered. Applicants with a history of systemic embolism or significant dilatation of the thoracic aorta should be assessed as unfit.

(iii) Applicants with trivial aortic regurgitation may be assessed as fit. Applicants with a greater degree of aortic regurgitation may be assessed as fit with an OSL. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, should be determined in consultation with the medical assessor of the licensing authority.

(4) Mitral valve disease

(i) Asymptomatic applicants with an isolated mid-systolic click due to mitral leaflet prolapse may be assessed as fit.

(ii) Applicants with rheumatic mitral stenosis should be assessed as unfit.

(iii) Applicants with minor regurgitation may be assessed as fit. Periodic cardiological review should be determined in consultation with the medical assessor of the licensing authority.

(iv) Applicants with moderate mitral regurgitation may be considered as fit with an ORL or OSL if the 2D Doppler echocardiogram demonstrates satisfactory left ventricular dimensions and satisfactory myocardial function is confirmed by exercise electrocardiography. Periodic cardiological review should be determined in consultation with the medical assessor of the licensing authority.

(v) Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter or evidence of systolic impairment should be assessed as unfit.

(f) Valvular surgery

(1) Applicants who have undergone cardiac valve replacement or repair may be assessed as fit without limitations subject to satisfactory post-operative cardiological evaluation and if no anticoagulants are needed.

(2) Where anticoagulation is needed after valvular surgery, a fit assessment with an ORL or OSL may be considered after cardiological evaluation if the haemorrhagic risk is acceptable. The review should show that the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. The INR target range should be determined by the type of surgery performed. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence(s) if the INR is within the target range, may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(g) Thromboembolic disorders

Applicants with arterial or venous thrombosis or pulmonary embolism should be assessed as unfit. A fit assessment with an ORL or OSL may be considered after a period of stable anticoagulation as prophylaxis in consultation with the medical assessor of the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range and the haemorrhagic risk is acceptable. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence(s) if the INR is within the target range may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months. Applicants with pulmonary embolism should also undergo a cardiological evaluation. Following cessation of anticoagulant therapy for any indication, applicants should undergo a re-assessment in consultation with the medical assessor of the licensing authority.

(h) Other cardiac disorders

(1) Applicants with a primary or secondary abnormality of the pericardium, myocardium or endocardium may be assessed as fit subject to satisfactory cardiological evaluation.

(2) Applicants with a congenital abnormality of the heart, including those who have undergone surgical correction, may be assessed as fit subject to satisfactory cardiological evaluation. Cardiological follow-up may be necessary and should be determined in consultation with the medical assessor of the licensing authority.

(i) Syncope

(1) In the case of a single episode of vasovagal syncope which can be explained and is compatible with flight safety, a fit assessment may be considered.

(2) Applicants with a history of recurrent vasovagal syncope should be assessed as unfit. A fit assessment may be considered after a 6-month period without recurrence, providing cardiological evaluation is satisfactory. Neurological review may be indicated.

(j) Blood pressure

(1) When the blood pressure at examination consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, the applicant should be assessed as unfit.

(2) The diagnosis of hypertension requires review of other potential vascular risk factors.

(3) Applicants with symptomatic hypotension should be assessed as unfit.

(4) Anti-hypertensive treatment should be compatible with flight safety.

(5) Following initiation of medication for the control of blood pressure, applicants should be re-assessed to verify that satisfactory control has been achieved and that the treatment is compatible with the safe exercise of the privileges of the applicable licence(s).

(k) Coronary artery disease

(1) Chest pain of uncertain cause requires full investigation.

(2) Applicants with suspected asymptomatic coronary artery disease should undergo cardiological evaluation which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

(3) Applicants with evidence of exercise-induced myocardial ischaemia should be assessed as unfit.

(4) After an ischaemic cardiac event, or revascularisation, applicants without symptoms should have reduced cardiovascular risk factors to an appropriate level. Medication, when used to control angina pectoris, is not acceptable. All applicants should be on appropriate secondary prevention treatment.

(i) A coronary angiogram obtained around the time of, or during, the ischaemic myocardial event and a complete, detailed clinical report of the ischaemic event and of any operative procedures should be available to the AME.

(A) There should be no stenosis more than 50 % in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel subtending a myocardial infarction.

(B) The whole coronary vascular tree should be assessed as satisfactory by a cardiologist and particular attention should be paid to multiple stenoses and/or multiple revascularisations.

(C) Applicants with an untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should be assessed as unfit.

(ii) At least 6 months from the ischaemic myocardial event, including revascularisation, the following investigations should be completed (equivalent tests may be substituted):

(A) an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm disturbance;

(B) an echocardiogram showing satisfactory left ventricular function with no important abnormality of wall motion and a satisfactory left ventricular ejection fraction of 50 % or more;

(C) in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiogram, or equivalent test, which should show no evidence of reversible myocardial ischaemia. If there is doubt about revascularisation in myocardial infarction or bypass grafting, a perfusion scan, or equivalent test, should also be carried out;

(D) further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

(iii) Periodic follow-up should include a cardiological evaluation.

(A) After coronary artery bypass grafting, a myocardial perfusion scan (or equivalent test) should be performed if there is any indication, and in all cases within five years from the procedure for a fit assessment without an OSL, OPL or ORL.

(B) In all cases, coronary angiography should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischaemia.

(iv) Successful completion of the six-month or subsequent review will allow a fit assessment. Applicants may be assessed as fit with an ORL or OSL having successfully completed only an exercise ECG.

(5) Applicants with angina pectoris should be assessed as unfit, whether or not it is alleviated by medication.

(l) Rhythm and conduction disturbances

(1) Applicants with significant rhythm or conduction disturbance should undergo cardiological evaluation before a fit assessment may be considered with an ORL or OSL, as appropriate. Such evaluation should include:

(i) exercise ECG to the Bruce protocol or equivalent. Bruce stage 4 should be achieved and no significant abnormality of rhythm or conduction, or evidence of myocardial ischaemia should be demonstrated. Withdrawal of cardioactive medication prior to the test should normally be required;

(ii) 24-hour ambulatory ECG which should demonstrate no significant rhythm or conduction disturbance;

(iii) 2D Doppler echocardiogram which should show no significant selective chamber enlargement or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50 %.

Further evaluation may include (equivalent tests may be substituted):

(iv) 24-hour ECG recording repeated as necessary;

(v) electrophysiological study;

(vi) myocardial perfusion imaging;

(vii) cardiac magnetic resonance imaging (MRI);

(viii) coronary angiogram.

(2) Where anticoagulation is needed for a rhythm disturbance, a fit assessment with an ORL or OSL may be considered, if the haemorrhagic risk is acceptable and the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence(s) if the INR is within the target range may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(3) Ablation

A fit assessment may be considered following successful catheter ablation subject to satisfactory cardiological review undertaken at a minimum of 2 months after the ablation.

(4) Supraventricular arrhythmias

(i) Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, may be assessed as fit if cardiological evaluation is satisfactory.

(ii) Applicants with atrial fibrillation/flutter may be assessed as fit if cardiological evaluation is satisfactory and the stroke risk is sufficiently low. Where anticoagulation is needed, a fit assessment with an ORL or OSL may be considered after a period of stable anticoagulation as prophylaxis, in consultation with the medical assessor of the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence(s) if the INR is within the target range may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(iii) Applicants with asymptomatic sinus pauses up to 2.5 seconds on resting electrocardiography may be assessed as fit if cardiological evaluation is satisfactory.

(5) Heart block

(i) Applicants with first degree and Mobitz type 1 AV block may be assessed as fit.

(ii) Applicants with Mobitz type 2 AV block may be assessed as fit in the absence of distal conducting tissue disease.

(6) Complete right bundle branch block

Applicants with complete right bundle branch block may be assessed as fit with appropriate limitations, such as an ORL, and subject to satisfactory cardiological evaluation.

(7) Complete left bundle branch block

Applicants with complete left bundle branch block may be assessed as fit with appropriate limitations, such as an ORL, and subject to satisfactory cardiological evaluation.

(8) Ventricular pre-excitation

Asymptomatic applicants with ventricular pre-excitation may be assessed as fit with limitation(s) as appropriate, subject to satisfactory cardiological evaluation. Limitations may not be necessary if an electrophysiological study is conducted and the results are satisfactory.

(9) Pacemaker

Applicants with a subendocardial pacemaker should be assessed as unfit. A fit assessment may be considered no sooner than 3 months after insertion, providing:

(i) there is no other disqualifying condition;

(ii) a bipolar lead system, programmed in bipolar mode without automatic mode change, has been used;

(iii) the applicant is not pacemaker dependent; and

(iv) the applicant has a follow-up at least every 12 months, including a pacemaker check.

(10) QT prolongation

Applicants with asymptomatic QT prolongation may be assessed as fit with an ORL or OSL subject to satisfactory cardiological evaluation.

(11) Brugada pattern on electrocardiography

Applicants with a Brugada pattern Type 1 should be assessed as unfit. Applicants with Type 2 or Type 3 may be assessed as fit, with limitation(s) as appropriate, subject to satisfactory cardiological evaluation.

(m) Heart or heart/lung transplantation

(1) Applicants who have undergone heart or heart/lung transplantation may be assessed as fit, with appropriate limitation(s) such as an ORL , no sooner than 12 months after transplantation, provided that cardiological evaluation is satisfactory with:

(i) no rejection in the first year following transplantation;

(ii) no significant arrhythmias;

(iii) a left ventricular ejection fraction ≥ 50%;

(iv) a symptom limited exercise ECG; and

(v) a coronary angiogram if indicated;

(2) Regular cardiological evaluations should be carried out.

GM1 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

MITRAL VALVE DISEASE

(a) Minor regurgitation should have evidence of no thickened leaflets or flail chordae and left atrial internal diameter of less than or equal to 4.0 cm.

(b) The following may indicate severe regurgitation:

(1) LV internal diameter (diastole) > 6.0 cm; or

(2) LV internal diameter (systole) > 4.1 cm; or

(3) Left atrial internal diameter > 4.5 cm.

(c) Doppler indices, such as width of jet, backwards extension and whether there is flow reversal in the pulmonary veins may be helpful in assessing severity of regurgitation.

GM2 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

VENTRICULAR PRE-EXCITATION

Asymptomatic applicants with pre-excitation may be assessed as fit if they meet the following criteria, which may also indicate a satisfactory electrophysiological evaluation:

(a) refractory period > 300 ms;

(b) no induced atrial fibrillation.

GM3 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

ANTICOAGULATION

Applicants taking anticoagulant medication which requires monitoring with INR testing, should measure their INR on a 'near patient' testing system within 12 hours prior to flight and the privileges of the applicable licence(s) should only be exercised if the INR is within the target range. The INR result should be recorded and the results should be reviewed at each aero-medical assessment.

GM4 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

MITRAL VALVE DISEASE

(a) Minor regurgitation should have evidence of no thickened leaflets or flail chordae and left atrial internal diameter of less than or equal to 4.0 cm.

(b) The following may indicate severe regurgitation:

(1) LV internal diameter (diastole) > 6.0 cm; or

(2) LV internal diameter (systole) > 4.1 cm; or

(3) Left atrial internal diameter > 4.5 cm.

(c) Doppler indices, such as width of jet, backwards extension and whether there is flow reversal in the pulmonary veins may be helpful in assessing severity of regurgitation.

GM5 MED.B.010 Cardiovascular system

ED Decision 2019/002/R

VENTRICULAR PRE-EXCITATION

Asymptomatic applicants with pre-excitation may be assessed as fit if they meet the following criteria:

(a) no inducible re-entry tachycardia;

(b) refractory period > 300 ms;

(c) no induced atrial fibrillation;

(d) no evidence of multiple accessory pathways.

MED.B.015 Respiratory System

Regulation (EU) 2024/2076

(a) Applicants with significant impairment of pulmonary function shall be assessed as unfit. However, they may be assessed as fit once pulmonary function has recovered and is satisfactory.

(b) Applicants for a class 1 medical certificate shall undertake pulmonary morphological and functional tests at the initial examination and when clinically indicated.

[applicable until 12 February 2025 - Regulation (EU) 2019/27]

(b) Applicants for a class 1 medical certificate shall undertake pulmonary functional tests at the initial examination and when clinically indicated.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(ba) For class 1 medical certificate holders involved in single-pilot HEMS operations, pulmonary functional tests and obstructive sleep apnoea (OSA) screening shall be completed at the first revalidation or renewal examination after the age of 60.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(c) Applicants for a class 2 medical certificate shall undertake pulmonary morphological and functional tests when clinically indicated.

[applicable until 12 February 2025 - Regulation (EU) 2019/27]

(c) Applicants for a class 2 medical certificate shall undertake pulmonary morphological and functional tests when clinically or epidemiologically indicated.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(d) Applicants with a medical history or diagnosis of any of the following medical conditions shall undertake respiratory evaluation with a satisfactory result before they may be assessed as fit:

(1) asthma requiring medication;

(2) active inflammatory disease of the respiratory system;

(3) active sarcoidosis;

(4) pneumothorax;

(5) sleep apnoea syndrome;

(6) major thoracic surgery;

(7) pneumonectomy;

(8) chronic obstructive pulmonary disease.

Before further consideration is given to their application, applicants with an established diagnosis of any of the medical conditions specified in points (3) and (5) shall undergo satisfactory cardiological evaluation.

(e) Aero-medical assessment

(1) Applicants for a class 1 medical certificate with any of the medical conditions specified in point (d) shall be referred to the medical assessor of the licensing authority.

(2) Applicants for a class 2 medical certificate with any of the medical conditions specified in point (d) shall be assessed in consultation with the medical assessor of the licensing authority.

(f) Applicants for a class 1 medical certificate who have undergone a pneumonectomy shall be assessed as unfit.

AMC1 MED.B.015 Respiratory system

ED Decision 2019/002/R

(a) Examination

(1) Spirometry

A spirometric examination is required for initial examination and on clinical indication. Applicants with an FEV1/FVC ratio of less than 70 % should be evaluated by a specialist in respiratory disease.

(2) Chest radiography

Posterior/anterior chest radiography may be required at initial, revalidation or renewal examinations if clinically or epidemiologically indicated

(b) Chronic obstructive pulmonary disease

Applicants with chronic obstructive pulmonary disease should be assessed as unfit. Applicants with only minor impairment of pulmonary function may be assessed as fit.

(c) Asthma

Applicants with asthma requiring medication or experiencing recurrent attacks of asthma may be assessed as fit if the asthma is considered stable with satisfactory pulmonary function tests and medication is compatible with flight safety. Applicants requiring systemic steroids should be assessed as unfit.

(d) Inflammatory disease

For applicants with active inflammatory disease of the respiratory system a fit assessment may be considered when the condition has resolved without sequelae and no medication is required.

(e) Sarcoidosis

(1) Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic, particularly cardiac, involvement. A fit assessment may be considered if no medication is required, and the disease is investigated and shown to be limited to hilar lymphadenopathy and inactive.

(2) Applicants with cardiac or neurological sarcoid should be assessed as unfit.

(f) Pneumothorax

(1) Applicants with a spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered if respiratory evaluation is satisfactory:

(i) 1 year following full recovery from a single spontaneous pneumothorax;

(ii) at revalidation, 6 weeks following full recovery from a single spontaneous pneumothorax, with an OML for at least a year after full recovery;

(iii) following surgical intervention in the case of a recurrent pneumothorax provided there is satisfactory recovery.

(2) Applicants with a recurrent spontaneous pneumothorax that has not been surgically should be assessed as unfit.

(3) A fit assessment following full recovery from a traumatic pneumothorax as a result of an accident or injury may be acceptable once full absorption of the pneumothorax is demonstrated.

(g) Thoracic surgery

(1) Applicants requiring major thoracic surgery should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

(2) A fit assessment following lesser chest surgery may be considered after satisfactory recovery and full respiratory evaluation.

(h) Sleep apnoea syndrome/sleep disorder

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

AMC2 MED.B.015 Respiratory system

ED Decision 2019/002/R

(a) Examination

(1) A spirometric examination should be performed on clinical indication. Applicants with a forced expiratory volume in the first one second (FEV1)/forced vital capacity(FVC)ratio of less than 70 % should be evaluated by a specialist in respiratory disease.

(2) Posterior/anterior chest radiography may be required if clinically or epidemiologically indicated.

(b) Chronic obstructive pulmonary disease

Applicants with only minor impairment of pulmonary function may be assessed as fit.

(c) Asthma

Applicants with asthma may be assessed as fit if the asthma is considered stable with satisfactory pulmonary function tests and medication is compatible with flight safety. Applicants requiring systemic steroids should be assessed as unfit.

(d) Inflammatory disease

Applicants with active inflammatory disease of the respiratory system should be assessed as unfit pending resolution of the condition.

(e) Sarcoidosis

(1) Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic involvement. A fit assessment may be considered once the disease is inactive.

(2) Applicants with cardiac sarcoid should be assessed as unfit.

(f) Pneumothorax

(1) Applicants with spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered if respiratory evaluation is satisfactory:

(i) six weeks following full recovery from a single spontaneous pneumothorax;

(ii) following surgical intervention in the case of a recurrent pneumothorax, provided there is satisfactory recovery.

(2) A fit assessment following full recovery from a traumatic pneumothorax as a result of an accident or injury may be acceptable once full absorption of the pneumothorax is demonstrated.

(g) Thoracic surgery

Applicants requiring major thoracic surgery should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

(h) Sleep apnoea syndrome

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

MED.B.020 Digestive System

Regulation (EU) 2019/27

(a) Applicants with any sequelae of disease or surgical intervention in any part of the digestive tract or its adnexa likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

(b) Applicants who have herniae that might give rise to incapacitating symptoms shall be assessed as unfit.

(c) Applicants with any of the following disorders of the gastrointestinal system may be assessed as fit subject to satisfactory gastrointestinal evaluation after successful treatment or full recovery after surgery:

(1) recurrent dyspeptic disorder requiring medication;

(2) pancreatitis;

(3) symptomatic gallstones;

(4) a clinical diagnosis or documented medical history of chronic inflammatory bowel disease;

(5) after surgical operation on the digestive tract or its adnexa, including surgery involving total or partial excision or a diversion of any of these organs.

(d) Aero-medical assessment

(1) Applicants for a class 1 medical certificate with the diagnosis of any of the medical conditions specified in points (2), (4) and (5) of point (c) shall be referred to the medical assessor of the licensing authority.

(2) The fitness of applicants for a class 2 medical certificate with the diagnosis of the medical condition specified in point (2) of point (c) shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.020 Digestive system

ED Decision 2019/002/R

(a) Oesophageal varices

Applicants with oesophageal varices should be assessed as unfit.

(b) Pancreatitis

Applicants with pancreatitis should be assessed as unfit pending assessment. A fit assessment may be considered if the cause is removed.

(c) Gallstones

(1) Applicants with a single asymptomatic large gallstone discovered incidentally may be assessed as fit if not likely to cause incapacitation in flight.

(2) Applicants with asymptomatic multiple gallstones may be assessed as fit with an OML.

(d) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease should be assessed as fit if the inflammatory bowel disease is in established remission and stable and if systemic steroids are not required for its control.

(e) Peptic ulceration

Applicants with peptic ulceration should be assessed as unfit pending full recovery and demonstrated healing.

(f) Digestive tract and abdominal surgery

Applicants who have undergone a surgical operation for medical conditions of the digestive tract or its adnexa, including a total or partial excision or a diversion of any of these organs or herniae should be assessed as unfit. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic, and there is only a minimal risk of secondary complication or recurrence.

(g) Liver disease

Applicants with morphological or functional liver disease, or after surgery, including liver transplantation, may be assessed as fit subject to satisfactory gastroenterological evaluation.

AMC2 MED.B.020 Digestive system

ED Decision 2019/002/R

(a) Oesophageal varices

Applicants with oesophageal varices should be assessed as unfit.

(b) Pancreatitis

Applicants with pancreatitis should be assessed as unfit pending satisfactory recovery.

(c) Gallstones

(1) Applicants with a single asymptomatic large gallstone or asymptomatic multiple gallstones may be assessed as fit.

(2) Applicants with symptomatic single or multiple gallstones should be assessed as unfit. A fit assessment may be considered following gallstone removal.

(d) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit provided that the disease is stable and not likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(e) Peptic ulceration

Applicants with peptic ulceration should be assessed as unfit pending full recovery.

(f) Digestive tract and abdominal surgery

Applicants who have undergone a surgical operation:

(1) for herniae; or

(2) on the digestive tract or its adnexa, including a total or partial excision or diversion of any of these organs

should be assessed as unfit. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic, and there is only a minimal risk of secondary complication or recurrence.

(g) Liver disease

Applicants with morphological or functional liver disease, or after surgery, including liver transplantation, may be assessed as fit subject to satisfactory gastroenterological evaluation.

MED.B.025 Metabolic and Endocrine Systems

Regulation (EU) 2019/27

(a) Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit subject to demonstrated stability of the medical condition and satisfactory aero-medical evaluation.

(b) *Diabetes mellitus*

(1) Applicants with diabetes mellitus requiring insulin shall be assessed as unfit.

(2) Applicants with diabetes mellitus not requiring insulin shall be assessed as unfit unless it can be demonstrated that blood sugar control has been achieved and is stable.

(c) Aero-medical assessment

(1) Applicants for a class 1 medical certificate requiring medication other than insulin for blood sugar control shall be referred to the medical assessor of the licensing authority.

(2) The fitness of applicants for a class 2 medical certificate requiring medication other than insulin for blood sugar control shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.025 Metabolic and endocrine systems

ED Decision 2019/002/R

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

(b) Obesity

Applicants with a Body Mass Index $\geq$ 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s) and the results of a risk assessment, including evaluation of the cardiovascular system and evaluation of the possibility of sleep apnoea, are satisfactory.

(c) Addison's disease

Applicants with Addison's disease should be assessed as unfit. A fit assessment with an OML may be considered, provided that cortisone is carried and available for use whilst exercising the privileges of the applicable licence(s).

(d) Gout

Applicants with acute gout should be assessed as unfit. A fit assessment may be considered once asymptomatic, after cessation of treatment or the condition is stabilised on anti-hyperuricaemic therapy.

(e) Thyroid dysfunction

Applicants with hyperthyroidism or hypothyroidism should be assessed as unfit. A fit assessment may be considered when a stable euthyroid state is attained.

(f) Abnormal glucose metabolism

Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance without diabetic pathology is fully controlled by diet and regularly reviewed.

(g) Diabetes mellitus

Subject to good control of blood sugar with no hypoglycaemic episodes:

(1) applicants with diabetes mellitus not requiring medication may be assessed as fit;

(2) the use of antidiabetic medications that are not likely to cause hypoglycaemia may be acceptable for a fit assessment with an OML.

AMC2 MED.B.025 Metabolic and endocrine systems

ED Decision 2019/002/R

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction should be assessed as unfit. A fit assessment may be considered if the condition is asymptomatic, clinically compensated and stable.

(b) Obesity

Applicants with a Body Mass Index ≥ 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s) and the results of a risk assessment, including evaluation of the cardiovascular system and evaluation of the possibility of sleep apnoea, are satisfactory.

(c) Addison's disease

Applicants with Addison's disease may be assessed as fit provided that cortisone is carried and available for use whilst exercising the privileges of the applicable licence(s).

(d) Gout

Applicants with acute gout should be assessed as unfit until asymptomatic.

(e) Thyroid dysfunction

Applicants with thyroid disease may be assessed as fit once a stable euthyroid state is attained.

(f) Abnormal glucose metabolism

Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance is fully controlled by diet and regularly reviewed.

(g) Diabetes mellitus

Applicants with diabetes mellitus may be assessed as fit. The use of antidiabetic medications that are not likely to cause hypoglycaemia may be acceptable.

MED.B.030 Haematology

Regulation (EU) 2019/27

(a) Applicants for a class 1 medical certificate shall be subjected to an haemoglobin test at each aero-medical examination.

(b) Applicants with a haematological condition may be assessed as fit subject to satisfactory aero-medical evaluation.

(c) Applicants for a class 1 medical certificate with any of the following haematological conditions shall be referred to the medical assessor of the licensing authority:

(1) abnormal haemoglobin, including, but not limited to anaemia, erythrocytosis or haemoglobinopathy;

(2) significant lymphatic enlargement;

(3) enlargement of the spleen;

(4) coagulation, haemorrhagic or thrombotic disorder;

(5) leukaemia.

(d) The fitness of applicants for a class 2 medical certificate with any of the haematological conditions specified in points (4) and (5) of point (c) shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.030 Haematology

ED Decision 2019/002/R

(a) Abnormal haemoglobin

Applicants with abnormal haemoglobin should be investigated.

(b) Anaemia

(1) Applicants with anaemia demonstrated by a reduced haemoglobin level require investigation. Applicants with an haematocrit of less than 32 % should be assessed as unfit. A fit assessment may be considered in cases where the primary cause, such as iron or B12 deficiency, has been treated and the haemoglobin or haematocrit has stabilised at a satisfactory level.

(2) Applicants with anaemia which is unamenable to treatment should be assessed as unfit.

(c) Erythrocytosis

Applicants with erythrocytosis should be assessed as unfit. A fit assessment with an OML may be considered if investigation establishes that the condition is stable and no associated pathology is demonstrated.

(d) Haemoglobinopathy

(1) Applicants with a haemoglobinopathy should be assessed as unfit. A fit assessment may be considered where minor thalassaemia or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated. The haemoglobin level should be satisfactory.

(2) Applicants with sickle cell disease (homozygote) should be assessed as unfit.

(e) Coagulation disorders

(1) Applicants with a coagulation disorder should be assessed as unfit. A fit assessment may be considered if there is no history of significant bleeding episodes.

(2) Applicants with thrombocytopenia with a platelet count less than $75x10^9$/L should be assessed as unfit. A fit assessment may be considered once the platelet count is above $75x10^9$/L and stable.

(f) Haemorrhagic disorders

Applicants with a haemorrhagic disorder require investigation. A fit assessment with an OML may be considered if there is no history of significant bleeding.

(g) Thromboembolic disorders

(1) Applicants with a thrombotic disorder require investigation. A fit assessment may be considered when the applicant is asymptomatic and there is only minimal risk of secondary complication or recurrence.

(2) If anticoagulation is used as treatment, refer to AMC1 MED.B.010(g).

(3) Applicants with arterial embolus should be assessed as unfit. A fit assessment may be considered once recovery is complete, the applicant is asymptomatic, and there is only minimal risk of secondary complication or recurrence.

(h) Disorders of the lymphatic system

Applicants with significant localised and generalised enlargement of the lymphatic glands or haematological disease should be assessed as unfit and require investigation. A fit assessment may be considered in cases of an acute infectious process which is fully recovered or Hodgkin's lymphoma or other lymphoid malignancy which has been treated and is in full remission.

(i) Leukaemia

(1) Applicants with acute leukaemia should be assessed as unfit. Once in established remission, applicants may be assessed as fit.

(2) Applicants with chronic leukaemia should be assessed as unfit. After a period of demonstrated stability a fit assessment may be considered.

(3) Applicants with a history of leukaemia should have no history of central nervous system involvement and no continuing side-effects from treatment of flight safety importance. Haemoglobin and platelet levels should be satisfactory. Regular follow-up is required.

(j) Splenomegaly

Applicants with splenomegaly should be assessed as unfit and require investigation. A fit assessment may be considered when the enlargement is minimal, stable and no associated pathology is demonstrated, or if the enlargement is minimal and associated with another acceptable condition.

AMC2 MED.B.030 Haematology

ED Decision 2019/002/R

(a) Abnormal haemoglobin

Haemoglobin should be tested when clinically indicated.

(b) Anaemia

Applicants with anaemia demonstrated by a reduced haemoglobin level or low haematocrit may be assessed as fit once the primary cause has been treated and the haemoglobin or haematocrit has stabilised at a satisfactory level.

(c) Erythrocytosis

Applicants with erythrocytosis may be assessed as fit if the condition is stable and no associated pathology is demonstrated.

(d) Haemoglobinopathy

Applicants with a haemoglobinopathy may be assessed as fit if minor thalassaemia or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated.

(e) Coagulation and haemorrhagic disorders

Applicants with a coagulation or haemorrhagic disorder may be assessed as fit if there is no likelihood of significant bleeding.

(f) Thromboembolic disorders

Applicants with a thrombotic disorder may be assessed as fit if there is minimal likelihood of significant clotting episodes. If anticoagulation is used as treatment, refer to AMC2 MED.B.010(g).

(g) Disorders of the lymphatic system

Applicants with significant enlargement of the lymphatic glands or haematological disease may be assessed as fit if the condition is unlikely to interfere with the safe exercise of the privileges of the applicable licence(s). Applicants may be assessed as fit in cases of acute infectious process which is fully recovered or Hodgkin's lymphoma or other lymphoid malignancy which has been treated and is in full remission.

(h) Leukaemia

(1) Applicants with acute leukaemia may be assessed as fit once in established remission.

(2) Applicants with chronic leukaemia may be assessed as fit after a period of demonstrated stability.

(3) In cases (h)(1) and (h)(2), there should be no history of central nervous system involvement and no continuing side effects from treatment of flight safety importance. Haemoglobin and platelet levels should be satisfactory. Regular follow-up is required.

(i) Splenomegaly

Applicants with splenomegaly may be assessed as fit if the enlargement is minimal, stable and no associated pathology is demonstrated, or if the enlargement is minimal and associated with another acceptable condition.

MED.B.035 Genitourinary System

Regulation (EU) 2019/27

(a) Urinalysis shall form part of each aero-medical examination. Applicants shall be assessed as unfit where their urine contains abnormal elements considered to be of pathological significance that could entail a degree of functional incapacity which is likely to jeopardise the safe exercise of the privileges of the license or could render the applicant likely to become suddenly unable to exercise those privileges.

(b) Applicants with any sequelae of disease or surgical procedures on the genitourinary system or its adnexa likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

(c) Applicants with a diagnosis or medical history of the following may be assessed as fit subject to satisfactory genitourinary evaluation, as applicable:

(1) renal disease;

(2) one or more urinary calculi, or a medical history of renal colic.

(d) Applicants who have undergone a major surgical operation in the genitourinary system or its adnexa involving a total or partial excision or a diversion of their organs shall be assessed as unfit. However, after full recovery, they may be assessed as fit.

(e) The applicants for a class 1 medical certificate referred to in points (c) and (d) shall be referred to the medical assessor of the licensing authority.

AMC1 MED.B.035 Genitourinary system

ED Decision 2019/002/R

(a) Abnormal urinalysis

Investigation is required if there is any abnormal finding on urinalysis.

(b) Renal disease

(1) Applicants presenting with any signs of renal disease should be assessed as unfit. A fit assessment may be considered if blood pressure is satisfactory and renal function is acceptable.

(2) Applicants requiring dialysis should be assessed as unfit.

(c) Urinary calculi

(1) Applicants with an asymptomatic calculus or a history of renal colic require investigation.

(2) Applicants presenting with one or more urinary calculi should be assessed as unfit and require investigation.

(3) Whilst awaiting assessment or treatment, a fit assessment with an OML may be considered.

(4) After successful treatment for a calculus a fit assessment without an OML may be considered.

(5) Applicants with parenchymal residual calculi may be considered for a fit assessment with an OML.

(d) Renal and urological surgery

(1) Applicants who have undergone a major surgical operation on the genitourinary system or its adnexa involving a total or partial excision or a diversion of any of its organs, should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

(2) After other urological surgery, a fit assessment may be considered when the applicant is completely asymptomatic and there is only minimal risk of secondary complication or recurrence.

(3) Applicants with compensated nephrectomy without hypertension or uraemia may be considered for a fit assessment.

(4) Applicants who have undergone renal transplantation may be considered for a fit assessment with an OML if it is fully compensated and tolerated with only minimal immuno-suppressive therapy after at least 12 months.

(5) Applicants who have undergone total cystectomy may be considered for a fit assessment with an OML if there is satisfactory urinary function, no infection and no recurrence of primary pathology.

AMC2 MED.B.035 Genitourinary system

ED Decision 2019/002/R

(a) Renal disease

Applicants presenting with renal disease may be assessed as fit if blood pressure is satisfactory and renal function is acceptable. Applicants requiring dialysis should be assessed as unfit.

(b) Urinary calculi

(1) Applicants presenting with one or more urinary calculi should be assessed as unfit.

(2) Applicants with an asymptomatic calculus or a history of renal colic require investigation.

(3) While awaiting assessment or treatment, a fit assessment with an OSL may be considered.

(4) After successful treatment the applicant may be assessed as fit.

(5) Applicants with parenchymal residual calculi may be assessed as fit.

(c) Renal and urological surgery

(1) Applicants who have undergone a major surgical operation on the genitourinary system or its adnexa involving a total or partial excision or a diversion of any of its organs, should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

(2) After other urological surgery, a fit assessment may be considered when the applicant is completely asymptomatic and there is only minimal risk of secondary complication or recurrence.

(3) Applicants with compensated nephrectomy without hypertension or uraemia may be assessed as fit.

(4) Applicants who have undergone renal transplantation may be considered for a fit assessment if it is fully compensated and with only minimal immuno-suppressive therapy.

(5) Applicants who have undergone total cystectomy may be considered for a fit assessment if there is satisfactory urinary function, no infection and no recurrence of primary pathology.

MED.B.040 Infectious Disease

Regulation (EU) 2019/27

(a) Applicants shall be assessed as unfit where they have a clinical diagnosis or medical history of any infectious disease which is likely to jeopardise the safe exercise of the privileges of the licence.

(b) Applicants who are HIV positive may be assessed as fit subject to satisfactory aero-medical evaluation. Such applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority.

AMC1 MED.B.040 Infectious disease

ED Decision 2019/002/R

(a) Infectious disease General

In cases of infectious disease, consideration should be given to a history of, or clinical signs indicating, underlying impairment of the immune system.

(b) Tuberculosis

(1) Applicants with active tuberculosis should be assessed as unfit. A fit assessment may be considered following completion of therapy.

(2) Applicants with quiescent or healed lesions may be assessed as fit. Specialist evaluation should consider the extent of the disease, the treatment required and possible side effects of medication.

(c) Syphilis

Applicants with acute syphilis should be assessed as unfit. A fit assessment may be considered in the case of those fully treated and recovered from the primary and secondary stages.

(d) HIV positivity

(1) Applicants who are HIV positive may be assessed as fit with an OML if a full investigation provides no evidence of HIV associated diseases that might give rise to incapacitating symptoms. Frequent review of the immunological status and neurological evaluation by an appropriate specialist should be carried out. A cardiological evaluation may also be required, depending on the medication.

(2) Applicants with signs or symptoms of an AIDS-defining condition should be assessed as unfit.

(e) Infectious hepatitis

Applicants with infectious hepatitis should be assessed as unfit. A fit assessment may be considered once the applicant has become asymptomatic. Regular review of the liver function should be carried out.

AMC2 MED.B.040 Infectious disease

ED Decision 2019/002/R

(a) Tuberculosis

(1) Applicants with active tuberculosis should be assessed as unfit. A fit assessment may be considered following completion of therapy.

(2) Applicants with quiescent or healed lesions may be assessed as fit. Specialist evaluation should consider the extent of the disease, the treatment required and possible side effects of medication.

(b) HIV positivity

(1) Applicants who are HIV positive may be assessed as fit if a full investigation provides no evidence of HIV associated diseases that might give rise to incapacitating symptoms. Frequent review of the immunological status and neurological evaluation by an appropriate specialist should be carried out. A cardiological evaluation may be required, depending on the medication.

(2) Applicants with signs or symptoms of an AIDS-defining condition should be assessed as unfit.

MED.B.045 Obstetrics and Gynaecology

Regulation (EU) 2019/27

(a) Applicants who have undergone a major gynaecological operation shall be assessed as unfit. However, they may be assessed as fit after full recovery.

(b) *Pregnancy*

(1) In the event of pregnancy, an applicant may continue to exercise her privileges until the end of the 26th week of gestation only if the AeMC or AME considers that she is fit to do so.

(2) For holders of a class 1 medical certificate who are pregnant, an OML shall apply. Notwithstanding point MED.B.001, in that case, the OML may be imposed and removed by the AeMC or AME.

(3) An applicant may resume exercising her privileges after recovery following the end of the pregnancy.

AMC1 MED.B.045 Obstetrics and gynaecology

ED Decision 2019/002/R

(a) Gynaecological surgery

Applicants who have undergone a major gynaecological operation should be assessed as unfit. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic, and the risk of

(b) Pregnancy

(1) A pregnant licence holder may be assessed as fit with an OML during the first 26 weeks of gestation following review of the obstetric evaluation by the AeMC or AME who should inform the medical assessor of the licensing authority.

(2) The AeMC or AME should provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy.

AMC2 MED.B.045 Obstetrics and gynaecology

ED Decision 2019/002/R

(a) Gynaecological surgery

Applicants who have undergone a major gynaecological operation should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication or recurrence is minimal.

(b) Pregnancy

(1) A pregnant licence holder may be assessed as fit during the first 26 weeks of gestation following satisfactory obstetric evaluation.

(2) Licence privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

MED.B.050 Musculoskeletal System

Regulation (EU) 2019/27

(a) Applicants who do not have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the licence shall be assessed as unfit. However, where their sitting height, arm and leg length and muscular strength is sufficient for the safe exercise of the privileges in respect of a certain aircraft type, which can be demonstrated where necessary through a medical flight or a simulator flight test, the applicant may be assessed as fit and their privileges shall be limited accordingly.

(b) Applicants who do not have satisfactory functional use of the musculoskeletal system to enable them to safely exercise the privileges of the licence shall be assessed as unfit. However, where their functional use of the musculoskeletal system is satisfactory for the safe exercise the privileges in respect of a certain aircraft type, which may be demonstrated where necessary through a medical flight or a simulator flight test, the applicant may be assessed as fit and their privileges shall be limited accordingly.

(c) In case of doubt arising in the context of the assessments referred to in points (a) and (b), applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority and applicants for a class 2 medical certificate shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.050 Musculoskeletal system

ED Decision 2019/002/R

(a) Applicants with any significant sequelae from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery require full evaluation prior to a fit assessment.

(b) Applicants with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit, provided the condition is in remission or is stable and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight or simulator flight test. Appropriate limitation(s) apply.

(c) Applicants with abnormal musculoskeletal system, including obesity, undertaking medical fight or flight simulator testing should satisfactorily perform all tasks required for the type of flight intended, including the emergency and evacuation procedures.

AMC2 MED.B.050 Musculoskeletal system

ED Decision 2019/002/R

(a) Applicants with any significant sequelae from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery should require full evaluation prior to a fit assessment.

(b) Applicants with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit provided the condition is in remission or is stable and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight test. Appropriate limitation(s) may apply.

(c) Applicants with abnormal musculoskeletal system, including obesity, undertaking a medical flight test should satisfactorily perform all tasks required for the type of flight intended, including the emergency and evacuation procedures.

MED.B.055 Mental Health

Regulation (EU) 2019/27

(a) Comprehensive mental health assessment shall form part of the initial class 1 aero-medical examination.

(b) Drugs and alcohol screening shall form part of the initial class 1 aero-medical examination.

(c) Applicants with a mental or behavioural disorder due to use or misuse of alcohol or other psychoactive substances shall be assessed as unfit pending recovery and freedom from psychoactive substance use or misuse and subject to satisfactory psychiatric evaluation after successful treatment.

(d) Applicants with a clinical diagnosis or documented medical history of any of the following psychiatric conditions shall undergo satisfactory psychiatric evaluation before they may be assessed as fit:

(1) mood disorder;

(2) neurotic disorder;

(3) personality disorder;

(4) mental or behavioural disorder;

(5) misuse of a psychoactive substance.

(e) Applicants with a documented medical history of a single or repeated acts of deliberate self-harm or suicide attempt shall be assessed as unfit. However, they may be assessed as fit after satisfactory psychiatric evaluation.

(f) Aero-medical assessment

(1) Applicants for a class 1 medical certificate with any of the conditions specified in point (c), (d) or (e) shall be referred to the medical assessor of the licensing authority.

(2) The fitness of applicants for a class 2 medical certificate with any of the conditions specified in point (c), (d) or (e) shall be assessed in consultation with the medical assessor of the licensing authority.

(g) Applicants with a documented medical history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder shall be assessed as unfit.

AMC1 MED.B.055 Mental health

ED Decision 2019/002/R

(a) Mental health assessment as part of the initial class 1 aero-medical examination

(1) A comprehensive mental health assessment should be conducted and recorded taking into account social, environmental and cultural contexts.

(2) The applicant's history and symptoms of disorders that might pose a threat to flight safety should be identified and recorded.

(3) The mental health assessment should include assessment and documentation of:

(i) general attitudes to mental health, including understanding possible indications of reduced mental health in themselves and others;

(ii) coping strategies under periods of psychological stress or pressure in the past, including seeking advice from others;

(iii) childhood behavioural problems;

(iv) interpersonal and relationship issues;

(v) current work and life stressors; and

(vi) overt personality disorders.

(4) Where there are signs or is established evidence that an applicant may have a psychiatric or psychological disorder, the applicant should be referred for specialist opinion and advice.

(b) Mental health assessment as part of revalidation or renewal class 1 medical examination

(1) The assessment should include review and documentation of:

(i) current work and life stressors;

(ii) coping strategies under periods of psychological stress or pressure in the past, including seeking advice from others;

(iii) any difficulties with operational crew resource management (CRM);

(iv) any difficulties with employer and/or other colleagues and managers; and

(v) interpersonal and relationship issues, including difficulties with relatives, friends, and work colleagues.

(2) Where there are signs or is established evidence that an applicant may have a psychiatric or psychological disorder, the applicant should be referred for specialist opinion and advice.

(3) Established evidence should be verifiable information from an identifiable source related to the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, behaviour or knowledge relevant to the safe exercise of the privileges of the applicable licence(s).

(c) Assessment of holders of a class 1 medical certificate referenced in MED.B.055(d)

Assessment of holders of a class 1 medical certificate referenced in MED.B.055(d) may require psychiatric and psychological evaluation as determined by the medical assessor of the licensing authority. A SIC limitation should be imposed in case of a fit assessment. Follow-up and removal of SIC limitation, as necessary, should be determined by the medical assessor of the licensing authority.

(d) Psychoactive substance testing

(1) Drug tests should screen for opioids, cannabinoids, amphetamines, cocaine, hallucinogens and sedative hypnotics. Following a risk assessment performed by the competent authority on the target population, screening tests may include additional drugs.

(2) For renewal/revalidation, random psychoactive substance screening test may be performed based on the risk assessment by the competent authority on the target population. If random psychoactive substance screening test is considered, it should be performed and reported in accordance with the procedures developed by the competent authority.

(3) In the case of a positive psychoactive substance screening result, confirmation should be required in accordance with national standards and procedures for psychoactive substance testing.

(4) In case of a positive confirmation test, a psychiatric evaluation should be undertaken before a fit assessment may be considered by the medical assessor of the licensing authority.

(e) Assessment and referral decisions

(1) Psychotic disorder

Applicants with a history, or the occurrence, of a functional psychotic disorder should be assessed as unfit. A fit assessment may be considered if a cause can be unequivocally identified as one which is transient, has ceased and the risk of recurrence is minimal.

(2) Organic mental disorder

Applicants with an organic mental disorder should be assessed as unfit. Once the cause has been treated, an applicant may be assessed as fit following satisfactory psychiatric evaluation.

(3) Psychoactive medication

Applicants who use psychoactive medication likely to affect flight safety should be assessed as unfit. If stability on maintenance psychoactive medication is confirmed, a fit assessment with an OML may be considered. If the dosage or type of medication is changed, a further period of unfit assessment should be required until stability is confirmed.

(4) Schizophrenia, schizotypal or delusional disorder

Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder may only be considered for a fit assessment if the medical assessor of the licensing authority concludes that the original diagnosis was inappropriate or inaccurate as confirmed by psychiatric evaluation, or, in the case of a single episode of delirium of which the cause was clear, provided that the applicant has suffered no permanent mental impairment.

(5) Mood disorder

Applicants with an established mood disorder should be assessed as unfit. After full recovery and after full consideration of the individual case, a fit assessment may be considered, depending on the characteristics and severity of the mood disorder.

(6) Neurotic, stress-related or somatoform disorder

Where there are signs or is established evidence that an applicant may have a neurotic, stress-related or somatoform disorder, the applicant should be referred for psychiatric or psychological opinion and advice.

(7) Personality or behavioural disorders

Where there are signs or is established evidence that an applicant may have a personality or behavioural disorder, the applicant should be referred for psychiatric or psychological opinion and advice.

(8) Disorders due to alcohol or other psychoactive substance(s) use or misuse

(i) Applicants with mental or behavioural disorders due to alcohol or other psychoactive substance(s) use or misuse, with or without dependency, should be assessed as unfit.

(ii) A fit assessment may be considered after a period of two years of documented sobriety or freedom from psychoactive substance use or misuse. At revalidation or renewal, a fit assessment may be considered earlier with an OML. Depending on the individual case, treatment and evaluation may include in-patient treatment of some weeks and inclusion into a support programme followed by ongoing checks, including drug and alcohol testing and reports resulting from the support programme, which may be required indefinitely.

(9) Deliberate self-harm and suicide attempt

Applicants who have carried out a single self-destructive action or repeated acts of deliberate self-harm or suicide attempt should be assessed as unfit. A fit assessment may be considered after full consideration of an individual case and may require psychiatric or psychological evaluation. Neuropsychological evaluation may also be required.

(10) Assessment

The assessment should take into consideration if the indication for the treatment, side effects and addiction risks of such treatment and the characteristics of the psychiatric disorder are compatible with flight safety.

(f) Specialist opinion and advice

(1) In case a specialist evaluation is needed, following the evaluation, the specialist should submit a written report to the AME, AeMC or medical assessor of the licensing authority as appropriate, detailing their opinion and recommendation.

(2) Psychiatric evaluations should be conducted by a qualified psychiatrist having adequate knowledge and experience in aviation medicine.

(3) The psychological opinion and advice should be based on a clinical psychological assessment conducted by a suitably qualified and accredited clinical psychologist with expertise and experience in aviation psychology.

(4) The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and clinical interview.

AMC2 MED.B.055 Mental health

ED Decision 2019/002/R

(a) Mental health assessment as part of class 2 aero-medical examination

(1) A mental health assessment should be conducted and recorded taking into account social, environmental and cultural contexts.

(2) The applicant's history and symptoms of disorders that might pose a threat to flight safety should be identified and recorded.

(3) Where there are signs or is established evidence that an applicant may have a psychiatric or psychological disorder, the applicant should be referred for specialist opinion and advice.

(4) Established evidence should be verifiable information from an identifiable source related to the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, behaviour or knowledge relevant to the safe exercise of the privileges of the applicable licence(s).

(b) Assessment of holders of a class 2medical certificate referenced in MED.B.055(d)

Assessment of holders of a class 2 medical certificate referenced in MED.B.055(d) may require psychiatric and psychological evaluation as determined by the AME, AeMC or medical assessor of the licensing authority. Follow-up, as necessary, should be determined in consultation with the medical assessor of the licensing authority.

(c) Assessment and referral decisions

(1) Psychotic disorder

Applicants with a history, or the occurrence, of a functional psychotic disorder should be assessed as unfit. A fit assessment may be considered if a cause can be unequivocally identified as one which is transient, has ceased and the risk of recurrence is minimal.

(2) Organic mental disorder

Applicants with an organic mental disorder should be assessed as unfit. Once the cause has been treated, an applicant may be assessed as fit following satisfactory psychiatric evaluation.

(3) Schizophrenia, schizotypal or delusional disorder

Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder may only be considered for a fit assessment in consultation with the medical assessor of the licensing authority if the original diagnosis was inappropriate or inaccurate as confirmed by psychiatric evaluation, or, in the case of a single episode of delirium of which the cause was clear, provided that the applicant has suffered no permanent mental impairment.

(4) Mood disorder

Applicants with an established mood disorder should be assessed as unfit. After full recovery and after full consideration of the individual case, a fit assessment may be considered, depending on the characteristics and severity of the mood disorder.

(5) Neurotic, stress-related or somatoform disorder

Where there are signs or is established evidence that an applicant may have a neurotic, stress-related or somatoform disorder, the applicant should be referred for psychiatric opinion and advice.

(6) Personality or behavioural disorders

Where there are signs or is established evidence that an applicant may have a personality or behavioural disorder, the applicant should be referred for psychiatric opinion and advice.

(7) Psychoactive medication

Applicants who use psychoactive medication likely to affect flight safety should be assessed as unfit. If stability on maintenance psychoactive medication is confirmed, a fit assessment with an OSL or OPL may be considered. If the dosage or type of medication is changed, a further period of unfit assessment should be required until stability is confirmed.

(8) Disorders due to alcohol or other psychoactive substance(s) use or misuse

(i) Applicants with mental or behavioural disorders due to alcohol or other psychoactive substance(s) use or misuse, with or without dependency, should be assessed as unfit.

(ii) Drug and alcohol tests

(A) In the case of a positive drug or alcohol result, confirmation should be required in accordance with national procedures for drugs and alcohol testing.

(B) In case of a positive confirmation test, a psychiatric evaluation should be undertaken before a fit assessment may be considered.

(iii) A fit assessment may be considered after a period of two years of documented sobriety or freedom from psychoactive substance use or misuse. At revalidation or renewal, a fit assessment may be considered earlier with an OSL or OPL. Depending on the individual case, treatment and evaluation may include in-patient treatment of some weeks and inclusion into a support programme followed by ongoing checks, including drug and alcohol testing and reports resulting from the support programme, which may be required indefinitely.

(9) Deliberate self-harm

Applicants who have carried out a single self-destructive action or repeated acts of deliberate self-harm or suicide attempt should be assessed as unfit. A fit assessment may be considered after full consideration of an individual case and may require psychiatric or psychological evaluation. Neuropsychological evaluation may also be required.

(e) Specialist opinion and advice

(1) In case a specialist evaluation is needed, following the evaluation, the specialist should submit a written report to the AME, AeMC or medical assessor of the licensing authority as appropriate, detailing their opinion and recommendation.

(2) Psychiatric evaluations should be conducted by a qualified psychiatrist having adequate knowledge and experience in aviation medicine.

(3) The psychological opinion and advice should be based on a clinical psychological assessment conducted by a suitably qualified and accredited clinical psychologist with expertise and experience in aviation psychology.

(4) The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and clinical interview.

GM1 MED.B.055 Mental health

ED Decision 2019/002/R

(a) Symptoms of concern may include but are not limited to:

(1) use of alcohol or other psychoactive substances;

(2) loss of interest/energy;

(3) eating and weight changes;

(4) sleeping problems;

(5) low mood and, if present, any suicidal thoughts;

(6) family history of psychiatric disorders, particularly suicide;

(7) anger, agitation or high mood; and

(8) depersonalisation or loss of control.

(b) The following aspects should be taken into consideration when conducting the mental health examination:

(1) Appearance;

(2) Attitude;

(3) Behaviour;

(4) Mood;

(5) Speech;

(6) Thoughts process and content;

(7) Perception;

(8) Cognition;

(9) Insight; and

(10) Judgement.

GM2 MED.B.055 Mental health

ED Decision 2019/002/R

(a) Drugs and alcohol screening tests used should:

(1) provide information regarding medium-term consumption;

(2) be accepted on national level by the competent authority based on the availability and suitability for the scope mentioned in point(a)(1) above.

(b) Statistical data of the screening campaign mentioned in AMC1 MED.B.055(d)(1) should be made available to the Agency on a yearly basis.

GM3 MED.B.055 Mental health

ED Decision 2019/002/R

(a) The mental health assessment for class 2 applicants should include assessment and documentation of:

(1) general attitudes to mental health, including understanding possible indications of reduced mental health in themselves and others;

(2) coping strategies under periods of psychological stress or pressure in the past, including seeking advice from others;

(3) childhood behavioural problems;

(4) interpersonal and relationship issues, including difficulties with relatives, friends, and work colleagues;

(5) current work and life stressors, including difficulties with aviation operational environment; and

(6) overt personality disorders.

(b) In regard to symptoms of concern and aspects to be taken into consideration when conducting mental health examination for class 2 applicants, guidance presented in GM1 MED.B.055 should be used.

GM4 MED.B.055 Mental health

ED Decision 2019/002/R

Drugs and alcohol screening tests used should:

(a) provide information regarding medium-term consumption;

(b) be accepted on national level by the competent authority based on the availability and suitability with the scope mentioned in GM2 MED.B.055(a) above.

MED.B.065 Neurology

Regulation (EU) 2019/27

(a) Applicants with clinical diagnosis or a documented medical history of any of the following medical conditions shall be assessed as unfit:

(1) epilepsy, except in the cases referred to in points (1) and (2) of point (b);

(2) recurring episodes of disturbance of consciousness of uncertain cause.

(b) Applicants with clinical diagnosis or a documented medical history of any of the following medical conditions shall undergo further evaluation before they may be assessed as fit:

(1) epilepsy without recurrence after age 5;

(2) epilepsy without recurrence and off all treatment for more than 10 years;

(3) epileptiform EEG abnormalities and focal slow waves;

(4) progressive or non-progressive disease of the nervous system;

(5) inflammatory disease of the central or peripheral nervous system;

(6) migraine;

(7) a single episode of disturbance of consciousness of uncertain cause;

(8) loss of consciousness after head injury;

(9) penetrating brain injury;

(10) spinal or peripheral nerve injury;

(11) disorders of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events.

Applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority. The fitness of applicants for a class 2 medical certificate shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.065 Neurology

ED Decision 2019/002/R

(a) Epilepsy

(1) Applicants with a diagnosis of epilepsy should be assessed as unfit unless there is unequivocal evidence of a syndrome of benign childhood epilepsy associated with a very low risk of recurrence, and unless the applicant has been free of recurrence and off treatment for more than 10 years. One or more convulsive episode after the age of 5 should lead to unfitness. In the case of an acute symptomatic seizure, which is considered to have a very low risk of recurrence, a fit assessment may be considered after neurological evaluation.

(2) Applicants may be assessed as fit with an OML if:

(i) there is a history of a single afebrile epileptiform seizure;

(ii) there has been no recurrence after at least 10 years off treatment;

(iii) there is no evidence of continuing predisposition to epilepsy.

(b) EEG

(1) Electroencephalography is required when indicated by the applicant's history or on clinical grounds.

(2) Applicants with epileptiform paroxysmal EEG abnormalities and focal slow waves should be assessed as unfit.

(c) Neurological disease

Applicants with any disease of the nervous system which is likely to cause a hazard to flight safety should be assessed as unfit. However, in certain cases, including cases of minor functional losses associated withstable disease, a fit assessment may be considered after full evaluation which should include a medical flight test which may be conducted in a flight simulation training device.

(d) Migraine

Applicants with an established diagnosis of migraine or other severe periodic headaches likely to cause a hazard to flight safety should be assessed as unfit. A fit assessment may be considered after full evaluation. The evaluation should take into account at least the following: auras, visual field loss, frequency, severity, therapy. Appropriate limitation(s) may apply.

(e) Episode of disturbance of consciousness

In the case of a single episode of disturbance of consciousness, which can be satisfactorily explained, a fit assessment may be considered, but applicants experiencing a recurrence should be assessed as unfit.

(f) Head injury

Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury should be evaluated by a neurologist. A fit assessment may be considered if there has been a full recovery and the risk of epilepsy is sufficiently low.

(g) Spinal or peripheral nerve injury

Applicants with a history or diagnosis of spinal or peripheral nerve injury or a disorder of the nervous system due to a traumatic injury should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory and the conditions of AMC1 MED.B.050 are satisfied.

(h) Vascular deficiencies

Applicants with a disorder of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory and the conditions of AMC1 MED.B.050 are satisfied. A cardiological evaluation and medical flight test should be undertaken for applicants with residual deficiencies.

AMC2 MED.B.065 Neurology

ED Decision 2019/002/R

(a) Epilepsy

Applicants may be assessed as fit if:

(1) there is a history of a single afebrile epileptiform seizure, considered to have a very low risk of recurrence;

(2) there has been no recurrence after at least 10 years off treatment; and

(3) there is no evidence of continuing predisposition to epilepsy.

(b) Neurological disease

Applicants with any disease of the nervous system which is likely to cause a hazard to flight safety should be assessed as unfit. However, in certain cases, including cases of functional loss associated with stable disease, a fit assessment may be considered after full evaluation which should include a medical flight test which may be conducted in a flight simulation training device.

(c) Migraine

Applicants with an established diagnosis of migraine or other severe periodic headaches likely to cause a hazard to flight safety should be assessed as unfit. A fit assessment may be considered after full evaluation. The evaluation should take into account at least the following: auras, visual field loss, frequency, severity, and therapy. Appropriate limitation(s) may apply.

(d) Head injury

Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury may be assessed as fit if there has been a full recovery and the risk of epilepsy is sufficiently low. An evaluation by a neurologist may be required depending on the staging of the original injury.

(e) Spinal or peripheral nerve injury

Applicants with a history or diagnosis of spinal or peripheral nerve injury or a disorder of the nervous system due to a traumatic injury should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory and the conditions of AMC2 MED.B.050 are satisfied.

(f) Vascular deficiencies

Applicants with a disorder of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory and the provisions of AMC2 MED.B.050 are met. A cardiological evaluation and medical flight test should be undertaken for applicants with residual deficiencies.

MED.B.070 Visual System

Regulation (EU) 2024/2076

(a) Examination

(1) For a class 1 medical certificate:

(i) a comprehensive eye examination shall form part of the initial examination and shall be undertaken when clinically indicated and periodically, depending on the refraction and the functional performance of the eye.

(ii) a routine eye examination shall form part of all revalidation and renewal examinations.

(iii) when holders are involved in single-pilot HEMS operations, a comprehensive eye examination shall be completed at the first revalidation or renewal examination after the age of 60 and every year thereafter.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(2) For a class 2 medical certificate:

(i) a routine eye examination shall form part of the initial and all revalidation and renewal examinations.

(ii) a comprehensive eye examination shall be undertaken when clinically indicated.

(b) Visual acuity

(1) For a class 1 medical certificate:

(i) Distant visual acuity, with or without correction, shall be 6/9 (0,7) or better in each eye separately and visual acuity with both eyes shall be 6/6 (1,0) or better.

(ii) At the initial examination, applicants with substandard vision in one eye shall be assessed as unfit.

(iii) At revalidation and renewal examinations, notwithstanding point (b)(1)(i), applicants with acquired substandard vision in one eye or acquired monocularity shall be referred to the medical assessor of the licensing authority and may be assessed as fit subject to a satisfactory ophthalmological evaluation.

(2) For a class 2 medical certificate:

(i) Distant visual acuity, with or without correction, shall be 6/12 (0,5) or better in each eye separately and visual acuity with both eyes shall be 6/9 (0,7) or better.

(ii) Notwithstanding point (b)(2)(i), applicants with substandard vision in one eye or monocularity may be assessed as fit, in consultation with the medical assessor of the licensing authority and subject to a satisfactory ophthalmological evaluation.

(3) Applicants shall be able to read an N5 chart or equivalent at 30-50 cm and an N14 chart or equivalent at 100 cm, if necessary with correction.

(c) Refractive error and anisometropia

(1) Applicants with refractive errors or anisometropia may be assessed as fit subject to satisfactory ophthalmic evaluation.

(2) Notwithstanding point (c)(1), applicants for a class 1 medical certificate with any of the following medical conditions shall be referred to the medical assessor of the licensing

authority and may be assessed as fit subject to a satisfactory ophthalmological evaluation:

(i) myopia exceeding –6.0 dioptres;

(ii) astigmatism exceeding 2.0 dioptres;

(iii) anisometropia exceeding 2.0 dioptres.

(3) Notwithstanding point (c)(1), applicants for a class 1 medical certificate with hypermetropia exceeding +5.0 dioptres shall be referred to the medical assessor of the licensing authority and may be assessed as fit subject to a satisfactory ophthalmological evaluation, provided that there are adequate fusional reserves, normal intraocular pressures and anterior angles and no significant pathology has been demonstrated. Notwithstanding point (b)(1)(i), corrected visual acuity in each eye shall be 6/6 or better.

(4) Applicants with a clinical diagnosis of keratoconus may be assessed as fit subject to a satisfactory examination by an ophthalmologist. Such applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority.

(d) Binocular function

(1) Applicants for a class 1 medical certificate shall be assessed as unfit, where they do not have normal binocular function and that medical condition is likely to jeopardise the safe exercise of the privileges of the license, taking account of any appropriate corrective measures where relevant.

(2) Applicants with diplopia shall be assessed as unfit.

(e) Visual fields

Applicants for a class 1 medical certificate shall be assessed as unfit, where they do not have normal fields of vision and that medical condition is likely to jeopardise the safe exercise of the privileges of the license, taking account of any appropriate corrective measures where relevant.

(f) Eye surgery

Applicants who have undergone eye surgery shall be assessed as unfit. However, they may be assessed as fit after full recovery of their visual function and subject to satisfactory ophthalmological evaluation.

(g) Spectacles and contact lenses

(1) If satisfactory visual function is achieved only with the use of correction, the spectacles or contact lenses shall provide optimal visual function, be well-tolerated and suitable for aviation purposes.

(2) No more than one pair of spectacles shall be used to meet the visual requirements when exercising the privileges of the applicable licence(s).

(3) For distant vision, spectacles or contact lenses shall be worn when exercising the privileges of the applicable licence(s).

(4) For near vision, a pair of spectacles shall be kept available when exercising the privileges of the applicable licence(s).

(5) A spare set of similarly correcting spectacles, for distant or near vision as applicable, shall be readily available for immediate use when exercising the privileges of the applicable licence(s).

(6) If contact lenses are worn when exercising the privileges of the applicable licence(s), they shall be for distant vision, monofocal, and non-tinted and well-tolerated.

(7) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

(8) Orthokeratological lenses shall not be used.

AMC1 MED.B.070 Visual system

ED Decision 2019/002/R

(a) Eye examination

(1) At each aero-medical examination, an assessment of the visual fitness should be undertaken and the eyes should be examined with regard to possible pathology.

(2) All abnormal and doubtful cases should be referred to an ophthalmologist. Conditions which indicate ophthalmological examination include but are not limited to a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

(3) Where specialist ophthalmological examinations are required for any significant reason, this should be imposed as a limitation on the medical certificate.

(4) The possible cumulative effect of more than one eye condition should be evaluated by an ophthalmologist.

(b) Comprehensive eye examination

A comprehensive eye examination by an eye specialist is required at the initial examination. All abnormal and doubtful cases should be referred to an ophthalmologist. The examination should include:

(1) history;

(2) visual acuities near, intermediate and distant vision (uncorrected and with best optical correction if needed);

(3) examination of the external eye, anatomy, media (slit lamp) and fundoscopy;

(4) ocular motility;

(5) binocular vision;

(6) visual fields;

(7) tonometry on clinical indication;

(8) objective refraction: hyperopic initial applicants with a hyperopia of more than +2 dioptres and under the age of 25 should undergo objective refraction in cycloplegia;

(9) assessment of mesopic contrast sensitivity; and

(10) colour vision.

(c) Routine eye examination

A routine eye examination may be performed by an AME and should include:

(1) history;

(2) visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);

(3) examination of the external eye, anatomy, media and fundoscopy; and

(4) further examination on clinical indication.

(d) Refractive error and anisometropia

(1) Applicants with the following conditions may be assessed as fit subject to satisfactory ophthalmic evaluation and provided that optimal correction has been considered and no significant pathology is demonstrated:

(i) hypermetropia not exceeding +5.0 dioptres;

(ii) myopia not exceeding –6.0 dioptres;

(iii) astigmatism not exceeding 2.0 dioptres;

(iv) anisometropia not exceeding 2.0 dioptres.

(2) Applicants should wear contact lenses if:

(i) hypermetropia exceeds +5.0 dioptres;

(ii) anisometropia exceeds 3.0 dioptres.

(3) An evaluation by an eye specialist should be undertaken 5-yearly if:

(i) the refractive error is between –3.0 and –6.0 dioptres or +3 and +5 dioptres;

(ii) astigmatism or anisometropia is between 2.0 and 3.0 dioptres.

(4) An evaluation by an eye specialist should be undertaken 2-yearly if:

(i) the refractive error is greater than –6.0 dioptres or +5.0 dioptres;

(ii) astigmatism or anisometropia exceeds 3.0 dioptres.

(e) Uncorrected visual acuity

No limits apply to uncorrected visual acuity.

(f) Visual acuity

(1) Reduced vision in one eye or monocularity: Applicants for revalidation or renewal with reduced central vision or acquired loss of vision in one eye may be assessed as fit with an OML if:

(i) the binocular visual field or, in the case of monocularity, the monocular visual field is acceptable;

(ii) in the case of monocularity, a period of adaptation time has passed from the known point of visual loss, during which the applicant should be assessed as unfit;

(iii) the unaffected eye achieves distant visual acuity of 6/6 (1,0) corrected or uncorrected;

(iv) the unaffected eye achieves intermediate visual acuity of N14 and N5 for near;

(v) the underlying pathology is acceptable according to ophthalmological assessment and there is no significant ocular pathology in the unaffected eye; and

(vi) a medical flight test is satisfactory.

(2) Visual fields

Applicants with a visual field defect, who do not have reduced central vision or acquired loss of vision in one eye, may be assessed as fit if the binocular visual field is normal.

(g) Keratoconus

Applicants with keratoconus may be assessed as fit if the visual requirements are met with the use of corrective lenses and periodic evaluation is undertaken by an ophthalmologist.

(h) Binocular function

Applicants with heterophoria (imbalance of the ocular muscles) exceeding:

(1) at 6 metres:

2.0 prism dioptres in hyperphoria,

10.0 prism dioptres in esophoria,

8.0 prism dioptres in exophoria

and

(2) at 33 centimetres:

1.0 prism dioptre in hyperphoria,

8.0 prism dioptres in esophoria,

12.0 prism dioptres in exophoria

should be assessed as unfit. A fit assessment may be considered if an orthoptic evaluation demonstrates that the fusional reserves are sufficient to prevent asthenopia and diplopia.

(i) Eye surgery

The assessment after eye surgery should include an ophthalmological examination.

(1) After refractive surgery, a fit assessment may be considered, provided that:

(i) stability of refraction of less than 0.75 dioptres variation diurnally has been achieved;

(ii) examination of the eye shows no post-operative complications;

(iii) glare sensitivity is within normal standards;

(iv) mesopic contrast sensitivity is not impaired;

(v) an evaluation is undertaken by an eye specialist.

(2) Following intraocular lens surgery, including cataract surgery, a fit assessment may be considered once recovery is complete and the visual requirements are met with or without correction. Intraocular lenses should be monofocal and should not impair colour vision and night vision.

(3) Retinal surgery entails unfitness. A fit assessment may be considered 6 months after surgery, or earlier if recovery is complete. A fit assessment may also be considered earlier after retinal laser therapy. Regular follow-up by an ophthalmologist should be carried out.

(4) Glaucoma surgery entails unfitness. A fit assessment may be considered 6 months after surgery or earlier if recovery is complete. Regular follow-up by an ophthalmologist should be carried out.

(j) Visual correction

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

AMC2 MED.B.070 Visual system

ED Decision 2019/002/R

(a) Eye examination

(1) At each aero-medical revalidation examination an assessment of the visual fitness of the applicant should be undertaken and the eyes should be examined with regard to possible pathology. Conditions which indicate further ophthalmological examination include but are not limited to a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

(2) At the initial assessment, the examination should include:

(i) history;

(ii) visual acuities near, intermediate and distant vision (uncorrected and with best optical correction if needed);

(iii) examination of the external eye, anatomy, media and fundoscopy;

(iv) ocular motility;

(v) binocular vision;

(vi) visual fields;

(vii) colour vision;

(viii) further examination on clinical indication.

(3) At the initial assessment the applicant should submit a copy of the recent spectacle prescription if visual correction is required to meet the visual requirements.

(b) Routine eye examination

A routine eye examination should include:

(1) history;

(2) visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);

(3) examination of the external eye, anatomy, media and fundoscopy;

(4) further examination on clinical indication.

(c) Visual acuity

Reduced vision in one eye or monocularity: Applicants with reduced vision or loss of vision in one eye may be assessed as fit if:

(1) the binocular visual field or, in the case of monocularity, the monocular visual field is acceptable;

(2) in the case of monocularity, a period of adaptation time has passed from the known point of visual loss, during which the applicant should be assessed as unfit;

(3) the unaffected eye achieves distant visual acuity of 6/6 (1,0), corrected or uncorrected;

(4) the unaffected eye achieves intermediate visual acuity of N14 or equivalent and N5 or equivalent for near (Refer to GM1 MED.B.070);

(5) there is no significant ocular pathology in the unaffected eye; and

(6) a medical flight test is satisfactory.

(d) Binocular function

Reduced stereopsis, abnormal convergence not interfering with near vision and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may be acceptable.

(e) Eye surgery

(1) The assessment after eye surgery should include an ophthalmological examination.

(2) After refractive surgery a fit assessment may be considered provided that there is satisfactory stability of refraction, there are no post-operative complications and no increase in glare sensitivity.

(3) After cataract, retinal or glaucoma surgery a fit assessment may be considered once recovery is complete and the visual requirements are met with or without correction.

(f) Visual correction

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

GM1 MED.B.070 Visual system

ED Decision 2019/002/R

COMPARISON OF DIFFERENT READING CHARTS (APPROXIMATE FIGURES)

(a) Test distance: 40 cm

Decimal	Nieden	Jäger	Snellen	N	Parinaud
1,0	1	2	1,5	3	2
0,8	2	3	2	4	3
0,7	3	4	2,5		
0,6	4	5	3	5	4
0,5	5	5		6	5
0,4	7	9	4	8	6
0,35	8	10	4,5		8
0,32	9	12	5,5	10	10
0,3	9	12		12	

0,25	9	12		14	
0,2	10	14	7,5	16	14
0,16	11	14	12	20	

(b) Test distance: 80 cm

Decimal	Nieden	Jäger	Snellen	N	Parinaud
1,2	4	5	3	5	4
1,0	5	5		6	5
0,8	7	9	4	8	6
0,7	8	10	4,5		8
0,63	9	12	5,5	10	10
0,6	9	12		12	10
0,5	9	12		14	10
0,4	10	14	7,5	16	14
0,32	11	14	12	20	14

GM2 MED.B.070 Visual system

ED Decision 2019/002/R

EYE SPECIALIST

The term 'eye specialist' refers to an ophthalmologist or a vision care specialist qualified in optometry and trained to recognise pathological conditions.

MED.B.075 Colour vision

Regulation (EU) 2024/2076

(a) Applicants shall be assessed as unfit, where they cannot demonstrate their ability to readily perceive the colours that are necessary for the safe exercise of the privileges of the licence.

(b) *Examination and assessment*

(1) Applicants shall be subjected to the Ishihara test for the initial issue of a medical certificate. Applicants who pass that test may be assessed as fit.

[applicable until 12 February 2025 - Regulation (EU) 2019/27*]*

(1) Applicants shall be subjected to the Ishihara test for the initial issue of a medical certificate. For class 1 medical certificate holders involved in single-pilot HEMS operations, a colour vision assessment shall be completed at the first revalidation or renewal examination after the age of 60 and every year thereafter. Applicants who pass that test may be assessed as fit.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(2) For a class 1 medical certificate:

(i) Applicants who do not pass the Ishihara test shall be referred to the medical assessor of the licensing authority and shall undergo further colour perception testing to establish whether they are colour safe.

(ii) Applicants shall be normal trichromats or shall be colour safe.

(iii) Applicants who fail further colour perception testing shall be assessed as unfit.

(3) For a class 2 medical certificate:

(i) Applicants who do not pass the Ishihara test shall undergo further colour perception testing to establish whether they are colour safe.

(ii) Applicants who do not have satisfactory perception of colours shall be limited to exercising the privileges of the applicable licence in daytime only.

AMC1 MED.B.075 Colour vision

ED Decision 2019/002/R

(a) At revalidation and renewal examinations, colour vision should be tested on clinical indication.

(b) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:

(1) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is 4 scale units or less, or if the anomalous quotient is acceptable; or by

(2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns.

(3) Colour Assessment and Diagnosis (CAD) test. This test is considered passed if the threshold is less than 6 standard normal (SN) units for deutan deficiency, or less than 12 SN units for protan deficiency. A threshold greater than 2 SN units for tritan deficiency indicates an acquired cause which should be investigated.

AMC2 MED.B.075 Colour vision

ED Decision 2019/002/R

(a) Colour vision should be tested on clinical indication at revalidation and renewal examinations.

(b) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:

(1) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is 4 scale units or less, or if the anomalous quotient is acceptable; or by

(2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns.

(3) Colour Assessment and Diagnosis (CAD) test. This test is considered passed if the threshold is less than 6 standard normal (SN) units for deutan deficiency, or less than 12 SN units for protan deficiency. A threshold greater than 2 SN units for tritan deficiency indicates an acquired cause which should be investigated.

MED.B.080 Otorhinolaryngology (ENT)

Regulation (EU) 2024/2076

(a) Examination

(1) Applicants' hearing shall be tested at all examinations.

(i) For a class 1 medical certificate, and for a class 2 medical certificate when an instrument rating or en route instrument rating is to be added to the licence, hearing shall be tested with pure-tone audiometry at the initial examination, then every 5 years until the licence holder reaches the age of 40 and then every 2 years thereafter.

[applicable until 12 February 2025 - Regulation (EU) 2019/27]

(i) For a class 1 medical certificate, and for a class 2 medical certificate when an instrument rating or a basic instrument rating is to be added to the licence, hearing shall be tested with pure-tone audiometry at the initial examination, then every 5 years until the licence holder reaches the age of 40, and then every 2 years until the licence holder reaches the age of 60 and every year thereafter.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(ii) When tested on a pure-tone audiometer, initial applicants shall not have a hearing loss of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz, in either ear separately. Applicants for revalidation or renewal with greater hearing loss shall demonstrate satisfactory functional hearing ability.

(2) A comprehensive ear, nose and throat examination shall be undertaken for the initial issue of a class 1 medical certificate and periodically thereafter when clinically indicated.

(3) For class 1 medical certificate holders involved in single-pilot HEMS operations, a comprehensive ear, nose and throat examination shall be completed at the first revalidation or renewal examination after the age of 60.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(b) Applicants with any of the following medical conditions shall undergo further examination to establish that the medical condition does not interfere with the safe exercise of the privileges of the applicable licence(s):

(1) hypoacusis;

(2) an active pathological process of the internal or middle ear;

(3) unhealed perforation or dysfunction of the tympanic membrane(s);

(4) dysfunction of the Eustachian tube(s);

(5) disturbance of vestibular function;

(6) significant restriction of the nasal passages;

(7) sinus dysfunction;

(8) significant malformation or significant infection of the oral cavity or upper respiratory tract;

(9) significant disorder of speech or voice;

(10) any sequelae of surgery of the internal or middle ear.

(c) Aero-medical assessment

(1) Applicants for a class 1 medical certificate with any of the medical conditions specified in points (1), (4) and (5) of point (b) shall be referred to the medical assessor of the licensing authority.

(2) The fitness of applicants for a class 2 medical certificate with any of the medical conditions specified in point (4) and (5) of point (b) shall be assessed in consultation with the medical assessor of the licensing authority.

(3) The fitness of applicants for a class 2 medical certificate for an instrument rating or en route instrument rating to be added to the licence with the medical condition specified in point (1) of point (b) shall be assessed in consultation with the medical assessor of the licensing authority.

AMC1 MED.B.080 Otorhinolaryngology (ENT)

ED Decision 2019/002/R

(a) Hearing

(1) Applicants should understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with the applicant's back turned towards the AME.

(2) Applicants with hypoacusis may be assessed as fit if a speech discrimination test or functional flight deck hearing test demonstrates satisfactory hearing ability. A vestibular function test may be appropriate.

(3) If the hearing requirements can only be met with the use of hearing aids, the hearing aids should provide optimal hearing function, be well tolerated and suitable for aviation purposes.

(b) Comprehensive ENT examination

A comprehensive ENT examination should include:

(1) history;

(2) clinical examination including otoscopy, rhinoscopy, and examination of the mouth and throat;

(3) tympanometry or equivalent;

(4) clinical examination of the vestibular system.

(c) Ear conditions

(1) Applicants with an active pathological process of the internal or middle ear should be assessed as unfit. A fit assessment may be considered once the condition has stabilised or there has been a full recovery.

(2) Applicants with an unhealed perforation or dysfunction of the tympanic membranes should be assessed as unfit. An applicant with a single dry perforation of non-infectious origin and which does not interfere with the normal function of the ear may be considered for a fit assessment.

(d) Vestibular disturbance

Applicants with disturbance of vestibular function should be assessed as unfit. A fit assessment may be considered after full recovery. The presence of spontaneous or positional nystagmus requires complete vestibular evaluation by specialist. Applicants with significant abnormal caloric or rotational vestibular responses should be assessed as unfit. Abnormal vestibular responses should be assessed in their clinical context.

(e) Sinus dysfunction

Applicants with any dysfunction of the sinuses should be assessed as unfit until there has been full recovery.

(f) Oral/upper respiratory tract infections

Applicants with a significant infection of the oral cavity or upper respiratory tract should be assessed as unfit. A fit assessment may be considered after full recovery.

(g) Speech disorder

Applicants with a significant disorder of speech or voice should be assessed as unfit.

(h) Air passage restrictions

Applicants with significant restriction of the nasal air passage on either side, or significant malformation of the oral cavity or upper respiratory tract may be assessed as fit if ENT evaluation is satisfactory.

(i) Eustachian tube(s)

Applicants with permanent dysfunction of the Eustachian tube(s) may be assessed as fit if ENT evaluation is satisfactory.

(j) Sequelae of surgery of the internal or middle ear

Applicants with sequelae of surgery of the internal or middle ear should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

AMC2 MED.B.080 Otorhinolaryngology (ENT)

ED Decision 2019/002/R

(a) Hearing

(1) Applicants should understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with the applicant's back turned towards the AME.

(2) Applicants with hypoacusis may be assessed as fit if a speech discrimination test or functional cockpit hearing test demonstrates satisfactory hearing ability.

(3) If the hearing requirements can be met only with the use of hearing aids, the hearing aids should provide optimal hearing function, be well tolerated and suitable for aviation purposes.

(4) Applicants with profound deafness or major disorder of speech, or both, may be assessed as fit with an SSL, such as 'limited to areas and operations where the use of radio is not mandatory'. The aircraft should be equipped with appropriate alternative warning devices in lieu of sound warnings.

(b) Examination

An ENT examination should form part of all initial, revalidation and renewal examinations.

(c) Ear conditions

(1) Applicants with an active pathological process of the internal or middle ear should be assessed as unfit until the condition has stabilised or there has been a full recovery.

(2) Applicants with an unhealed perforation or dysfunction of the tympanic membranes should be assessed as unfit. An applicant with a single dry perforation of non-infectious origin which does not interfere with the normal function of the ear may be considered for a fit assessment.

(d) Vestibular disturbance

Applicants with disturbance of vestibular function should be assessed as unfit pending full recovery.

(e) Sinus dysfunction

Applicants with any dysfunction of the sinuses should be assessed as unfit pending full recovery.

(f) Oral/upper respiratory tract infections

Applicants with a significant infection of the oral cavity or upper respiratory tract should be assessed as unfit. A fit assessment may be considered after full recovery.

(g) Speech disorder

Applicants with a significant disorder of speech or voice should be assessed as unfit.

(h) Air passage restrictions

Applicants with significant restriction of the nasal air passage on either side, or significant malformation of the oral cavity or upper respiratory tract may be assessed as fit if ENT evaluation is satisfactory.

(i) Eustachian tube dysfunction

Applicants with permanent dysfunction of the Eustachian tube(s) may be assessed as fit if ENT evaluation is satisfactory.

(j) Sequelae of surgery of the internal or middle ear

Applicants with sequelae of surgery of the internal or middle ear should be assessed as unfit until recovery is complete, the applicant is asymptomatic, and the risk of secondary complication is minimal.

GM1 MED.B.080 Otorhinolaryngology (ENT)

ED Decision 2019/002/R

PURE TONE AUDIOGRAM

The pure tone audiogram may also cover the 4 000 Hz frequency for early detection of decrease in hearing.

GM2 MED.B.080 Otorhinolaryngology (ENT)

ED Decision 2019/002/R

PURE TONE AUDIOGRAM

The pure tone audiogram may also cover the 4 000 Hz frequency for early detection of decrease in hearing.

MED.B.085 Dermatology

Regulation (EU) 2019/27

Applicants shall be assessed as unfit, where they have an established dermatological condition which is likely to jeopardise the safe exercise of the privileges of the licence.

AMC1 MED.B.085 Dermatology

ED Decision 2019/002/R

(a) If doubt exists about the fitness of applicants with eczema (exogenous and endogenous), severe psoriasis, bacterial infections, drug induced or bullous eruptions or urticaria, the AME should refer the case to the medical assessor of the licensing authority.

(b) Systemic effects of radiant or pharmacological treatment for a dermatological condition should be reviewed before a fit assessment may be considered.

(c) In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be considered.

AMC2 MED.B.085 Dermatology

ED Decision 2019/002/R

In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be considered.

MED.B.090 Oncology

Regulation (EU) 2019/27

(a) Before further consideration is given to their application, applicants with primary or secondary malignant disease shall undergo satisfactory oncological evaluation. Such applicants for a class 1 medical certificate shall be referred to the medical assessor of the licensing authority. Such applicants for a class 2 medical certificate shall be assessed in consultation with the medical assessor of the licensing authority.

(b) Applicants with a documented medical history or clinical diagnosis of an intracerebral malignant tumour shall be assessed as unfit.

AMC1 MED.B.090 Oncology

ED Decision 2019/002/R

(a) Applicants who have been diagnosed with a malignant disease may be assessed as fit provided that:

(1) after primary treatment, there is no evidence of residual malignant disease likely to jeopardise flight safety;

(2) time appropriate to the type of tumour and primary treatment has elapsed;

(3) the risk of inflight incapacitation from a recurrence or metastasis is sufficiently low;

(4) there is no evidence of short or long-term sequelae from treatment. Special attention should be paid to applicants who have received anthracycline chemotherapy;

(5) satisfactory oncology follow-up reports are provided to the medical assessor of the licensing authority.

(b) An OML should be applied as appropriate.

(c) Applicants receiving ongoing chemotherapy or radiation treatment should be assessed as unfit.

(d) Applicants with pre-malignant conditions of the skin may be assessed as fit if treated or excised as necessary and there is regular follow-up.

AMC2 MED.B.090 Oncology

ED Decision 2019/002/R

(a) Applicants who have been diagnosed with a malignant disease may be considered for a fit assessment provided that:

(1) after primary treatment, there is no evidence of residual malignant disease likely to jeopardise flight safety;

(2) time appropriate to the type of tumour and primary treatment has elapsed;

(3) the risk of in-flight incapacitation from a recurrence or metastasis is sufficiently low;

(4) there is no evidence of short or long-term sequelae from treatment that may jeopardise flight safety;

(5) arrangements for an oncological follow-up have been made for an appropriate period of time.

(b) Applicants receiving ongoing chemotherapy or radiation treatment should be assessed as unfit.

(c) Applicants with pre-malignant conditions of the skin may be assessed as fit if treated or excised as necessary and there is a regular follow-up.

SECTION 3 – SPECIFIC REQUIREMENTS FOR LAPL MEDICAL CERTIFICATES

MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

Regulation (EU) 2019/27

(a) An applicant for a LAPL medical certificate shall be assessed based on aero-medical best practice.

(b) Special attention shall be given to the applicant's complete medical history.

(c) The initial assessment, all subsequent re-assessments after the licence holder reaches the age of 50 and any assessments in cases where the medical history of the applicant is not available to the examiner shall include at least all of the following:

(1) clinical examination;

(2) blood pressure;

(3) urine test;

(4) vision;

(5) hearing ability.

(d) After the initial assessment, subsequent re-assessments until the licence holder reaches the age of 50 shall include at least both of the following:

(1) an assessment of the LAPL holder's medical history;

(2) the items specified in point(c) as deemed necessary by the AeMC, AME or GMP in accordance with aero-medical best practice.

AMC1 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

When a specialist evaluation is required under this section, the aero-medical assessment of the applicant should be performed by an AeMC, an AME or, in the case of AMC5 MED.B.095(d), by the medical assessor of the licensing authority.

AMC2 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

CARDIOVASCULAR SYSTEM

(a) Examination

Pulse and blood pressure should be recorded at each examination.

(b) General

(1) Cardiovascular risk factor assessment

An accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) requires cardiovascular evaluation.

(2) Aortic aneurysm

Applicants with an aortic aneurysm may be assessed as fit subject to satisfactory cardiological evaluation and a regular follow-up.

(3) Cardiac valvular abnormalities

(i) Applicants with a cardiac murmur may be assessed as fit if the murmur is assessed as being of no pathological significance.

(ii) Applicants with a cardiac valvular abnormality may be assessed as fit subject to satisfactory cardiological evaluation.

(4) Valvular surgery

After cardiac valve replacement or repair, a fit assessment may be considered, with an ORL if anticoagulation is needed, subject to satisfactory post-operative cardiological evaluation. Anticoagulation should be stable and the haemorrhagic risk should be acceptable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. The INR target range should be determined by the type of surgery performed. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence if the INR is within the target range, may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(5) Other cardiac disorders

(i) Applicants with other cardiac disorders may be assessed as fit subject to satisfactory cardiological evaluation. A fit assessment may be considered, with an ORL if anticoagulation is needed. Anticoagulation should be stable and the haemorrhagic risk should be acceptable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. The INR target range should be determined by the type of surgery performed. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence if the INR is within the target range, may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(ii) Applicants with symptomatic hypertrophic cardiomyopathy should be assessed as unfit.

(c) Blood pressure

(1) When the blood pressure consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, the applicant should be assessed as unfit.

(2) Applicants initiating medication for the control of blood pressure should be assessed as unfit until the absence of significant side effects has been established.

(d) Coronary artery disease

(1) Applicants with suspected myocardial ischaemia should undergo a cardiological evaluation before a fit assessment may be considered.

(2) Applicants with angina pectoris requiring medication for cardiac symptoms should be assessed as unfit.

(3) After an ischaemic cardiac event, including myocardial infarction or revascularisation, applicants without symptoms should have reduced cardiovascular risk factors to an appropriate level. Medication, when used to control cardiac symptoms, is not acceptable. All applicants should be on appropriate secondary prevention treatment.

(4) In cases (d)(1), (d)(2) and (d)(3), applicants who have had a satisfactory cardiological evaluation to include an exercise test or equivalent that is negative for ischaemia may be assessed as fit.

(e) Rhythm and conduction disturbances

(1) Applicants with a significant disturbance of cardiac rhythm or conduction should be assessed as unfit unless a cardiological evaluation concludes that the disturbance is not likely to interfere with the safe exercise of the privileges of the licence. A fit assessment may be considered, with an ORL if anticoagulation is needed. Anticoagulation should be stable and the haemorrhagic risk should be acceptable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. The INR target range should be determined by the type of surgery performed. Applicants who measure their INR on a 'near patient' testing system within 12 hours prior to flight and only exercise the privileges of their licence if the INR is within the target range, may be assessed as fit without the above-mentioned limitation. The INR results should be recorded and the results should be reviewed at each aero-medical assessment. Applicants taking anticoagulation medication not requiring INR monitoring, may be assessed as fit without the above-mentioned limitation in consultation with the medical assessor of the licensing authority after a stabilisation period of 3 months.

(2) Pre-excitation

Applicants with ventricular pre-excitation may be assessed as fit subject to satisfactory cardiological evaluation. Applicants with ventricular pre-excitation associated with a significant arrhythmia should be assessed as unfit.

(3) Automatic implantable defibrillating system

Applicants with an automatic implantable defibrillating system should be assessed as unfit.

(4) Pacemaker

A fit assessment may be considered subject to satisfactory cardiological evaluation.

AMC3 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

RESPIRATORY SYSTEM

(a) Applicants should undergo pulmonary morphological or functional tests when clinically indicated.

(b) Asthma and chronic obstructive pulmonary disease

Applicants with asthma or impairment of pulmonary function may be assessed as fit provided that the condition is considered stable with satisfactory pulmonary function and medication is compatible with flight safety. Systemic steroids may be acceptable provided that the dosage required is acceptable and there are no adverse side effects.

(c) Sarcoidosis

(1) Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic involvement. A fit assessment may be considered once the disease is inactive.

(2) Applicants with cardiac sarcoidosis should be assessed as unfit.

(d) Pneumothorax

(1) Applicants with spontaneous pneumothorax may be assessed as fit subject to satisfactory respiratory evaluation following recovery from a single spontaneous pneumothorax or following recovery from surgical intervention for a recurrent pneumothorax.

(2) Applicants with traumatic pneumothorax may be assessed as fit following recovery.

(e) Thoracic surgery

Applicants who have undergone thoracic surgery may be assessed as fit following recovery.

(f) Sleep apnoea syndrome/sleep disorder

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

AMC4 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

DIGESTIVE SYSTEM

(a) Gallstones

Applicants with symptomatic gallstones should be assessed as unfit. A fit assessment may be considered following gallstone removal.

(b) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit provided that the disease is stable and not likely to interfere with the safe exercise of the privileges of the licence.

(c) Peptic ulceration

Applicants with peptic ulceration may be assessed as fit subject to satisfactory gastroenterological evaluation.

(d) Digestive tract and abdominal surgery

Applicants who have undergone a surgical operation:

(1) for herniae; or

(2) on the digestive tract or its adnexa, including a total or partial excision or diversion of any of these organs,

should be assessed as unfit. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic, and there is only a minimal risk of secondary complication or recurrence.

(e) Pancreatitis

Applicants with pancreatitis may be assessed as fit after satisfactory recovery.

(f) Liver disease

Applicants with morphological or functional liver disease or after surgery, including liver transplantation, may be assessed as fit subject to satisfactory gastroenterological evaluation.

AMC5 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

METABOLIC AND ENDOCRINE SYSTEMS

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit subject to demonstrated stability of the condition and satisfactory aero-medical evaluation.

(b) Obesity

Obese applicants may be assessed as fit if the excess weight is not likely to interfere with the safe exercise of the licence.

(c) Thyroid dysfunction

Applicants with thyroid disease may be assessed as fit once a stable euthyroid state is attained.

(d) Diabetes mellitus

(1) Applicants using antidiabetic medications that are not likely to cause hypoglycaemia may be assessed as fit.

(2) Applicants with diabetes mellitus Type 1 should be assessed as unfit.

(3) Applicants with diabetes mellitus Type 2 treated with insulin may be assessed as fit with limitations for revalidation if blood sugar control has been achieved and the process under (e) and (f) is followed. An ORL is required. A TML for 12 months may be needed to ensure compliance with the follow-up requirements below. Licence privileges should not include rotary aircraft flying.

(e) Aero-medical assessment by, or under the guidance of, the medical assessor of the licensing authority:

(1) A diabetology review at yearly intervals, including:

(i) symptom review;

(ii) review of data logging of blood sugar;

(iii) cardiovascular status. Exercise ECG at age 40, at 5-yearly intervals thereafter and on clinical indication, including an accumulation of risk factors;

(iv) nephropathy status.

(2) Ophthalmological review at yearly intervals, including:

(i) visual fields — Humphrey-perimeter;

(ii) retinae — full dilatation slit lamp examination;

(iii) cataract — clinical screening.

The development of retinopathy requires a full ophthalmological review.

(3) Blood testing at 6-monthly intervals:

(i) HbA1c;

(ii) renal profile;

(iii) liver profile;

(iv) lipid profile.

(4) Applicants should be assessed as temporarily unfit after:

(i) changes of medication/insulin leading to a change to the testing regime until stable blood sugar control can be demonstrated;

(ii) a single unexplained episode of severe hypoglycaemia until stable blood sugar control can be demonstrated.

(5) Applicants should be assessed as unfit in the following cases:

(i) loss of hypoglycaemic awareness;

(ii) development of retinopathy with any visual field loss;

(iii) significant nephropathy;

(iv) any other complication of the disease where flight safety may be jeopardised.

(f) Pilot responsibility

Blood sugar testing is carried out during non-operational and operational periods. A whole blood glucose measuring device with memory should be carried and used. Equipment for continuous glucose monitoring (CGMS) should not be used. Pilots should prove to the AME or AeMC or medical assessor of the licensing authority that testing has been performed as indicated below and with which results.

(1) Testing during non-operational periods: normally 3–4 times/day or as recommended by the treating physician, and on any awareness of hypoglycaemia.

(2) Testing frequency during operational periods:

(i) 120 minutes before departure;

(ii) <30 minutes before departure;

(iii) 60 minutes during flight;

(iv) 30 minutes before landing.

(3) Actions following glucose testing:

(i) 120 minutes before departure: if the test result is >15 mmol/l, piloting should not be commenced.

(ii) 10–15g of carbohydrate should be ingested and a re-test performed within 30 minutes if:

(A) any test result is <4,5 mmol/l;

(B) the pre-landing test measurement is missed or a subsequent go-around/diversion is performed.

AMC6 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

HAEMATOLOGY

Applicants with a haematological condition, such as:

(a) abnormal haemoglobin including, but not limited to, anaemia, erythrocytosis or haemoglobinopathy;

(b) coagulation, haemorrhagic or thrombotic disorder;

(c) significant lymphatic enlargement;

(d) acute or chronic leukaemia;

(e) splenomegaly;

may be assessed as fit subject to satisfactory aero-medical evaluation. If anticoagulation is being used as treatment, refer to AMC2 MED.B.095(b)(4).

AMC7 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

GENITOURINARY SYSTEM

(a) Applicants with a genitourinary disorder, such as:

(1) renal disease; or

(2) one or more urinary calculi, or a history of renal colic

may be assessed as fit subject to satisfactory renal and urological evaluation, as applicable.

(b) Applicants who have undergone a major surgical operation on the genitourinary system or its adnexa may be assessed as fit following recovery.

(c) Applicants who have undergone renal transplantation may be assessed as fit subject to satisfactory renal evaluation.

AMC8 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

INFECTIOUS DISEASE

(a) Applicants who are HIV positive may be assessed as fit subject to satisfactory aero-medical evaluation.

(b) Applicants with other chronic infections may be assessed as fit provided the infections are not likely to interfere with the safe exercise of the privileges of the licence.

AMC9 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

OBSTETRICS AND GYNAECOLOGY

(a) Pregnancy

Holders of a LAPL medical certificate should only exercise the privileges of their licences until the end of the 26th week of gestation under routine antenatal care.

(b) Applicants who have undergone a major gynaecological operation may be assessed as fit after recovery.

AMC10 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

MUSCULOSKELETAL SYSTEM

Applicants should have satisfactory functional use of the musculoskeletal system to enable the safe exercise of the privileges of the licence.

AMC11 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

MENTAL HEALTH

(a) Applicants with a mental or behavioural disorder due to use or misuse of alcohol or other psychoactive substances, with or without dependency, should be assessed as unfit. A fit assessment may be considered after a period of two years of documented sobriety or freedom from psychoactive substance use or misuse, subject to satisfactory psychiatric evaluation after successful treatment. At revalidation or renewal, a fit assessment may be considered earlier. Depending on the individual case, treatment and evaluation may include in-patient treatment of some weeks followed by ongoing checks, including blood testing and peer reports, which may be required indefinitely.

(b) Applicants with a history of, or the occurrence of, a functional psychotic disorder should be assessed as unfit. A fit assessment may be considered if a cause can be unequivocally identified as one which is transient, has ceased, and the risk of recurrence is minimal.

(c) Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder should be assessed as unfit. A fit assessment may only be considered if the original diagnosis was inappropriate or inaccurate as confirmed by psychiatric evaluation or, in the case of a single episode of delirium, provided that the applicant has suffered no permanent impairment.

(d) Psychoactive substances

Applicants who use or misuse psychoactive substances or psychoactive medication likely to affect flight safety should be assessed as unfit. If stability on maintenance psychoactive medication is confirmed, a fit assessment with appropriate limitation(s) may be considered. If the dosage or type of medication is changed, a further period of unfit assessment should be required until stability is confirmed.

(e) Applicants with a psychiatric condition, such as:

(1) mood disorder;

(2) neurotic disorder;

(3) personality disorder;

(4) mental or behavioural disorder

should undergo satisfactory psychiatric evaluation before a fit assessment may be considered.

(f) Applicants with a history of significant or repeated acts of deliberate self-harm should undergo satisfactory psychiatric or psychological evaluation or both before a fit assessment may be considered.

(g) Psychiatric evaluations and reviews may include reports from the applicant's flight instructor.

(h) Applicants with a psychological disorder may need to be referred for psychological opinion and advice.

(i) In case a specialist evaluation is needed, following the evaluation, the specialist should submit a written report to the AME, AeMC, GMP or medical assessor of the licensing authority as appropriate, detailing their opinion and recommendation.

AMC12 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

NEUROLOGY

(a) Epilepsy and seizures

(1) Applicants with an established diagnosis of and under treatment for epilepsy should be assessed as unfit. A re-assessment after all treatment has been stopped for at least 5 years should include a review of neurological reports.

(2) Applicants may be assessed as fit if:

(i) there is a history of a single afebrile epileptiform seizure considered to have a very low risk of recurrence;

(ii) there has been no recurrence after at least 5 years off treatment;

(iii) a cause has been identified and treated and there is no evidence of continuing predisposition to epilepsy.

(b) Neurological disease

Applicants with any disease of the nervous system which is likely to cause a hazard to flight safety should be assessed as unfit. However, in certain cases, including cases of functional loss associated with stable disease, a fit assessment may be considered after full evaluation including, if necessary, a medical flight test.

(c) Migraine

Applicants with an established diagnosis of migraine or other severe periodic headaches likely to cause a hazard to flight safety should be assessed as unfit. A fit assessment may be considered after full evaluation. The evaluation should take into account at least the following: auras, visual field loss, frequency, severity, therapy. Appropriate limitation(s) may apply.

(d) Head injury

Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury may be assessed as fit if there has been a full recovery and the risk of epilepsy is sufficiently low. An evaluation by a neurologist may be required depending on the staging of the original injury.

(e) Spinal or peripheral nerve injury

Applicants with a history or diagnosis of spinal or peripheral nerve injury or a disorder of the nervous system due to a traumatic injury may be assessed as fit if neurological evaluation is satisfactory and the conditions of AMC10 MED.B.095 are satisfied.

(f) Vascular deficiencies

Applicants with a disorder of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory and the conditions of AMC10 MED.B.095 are satisfied. A cardiological evaluation and medical flight test should be undertaken for applicants with residual deficiencies.

AMC13 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

VISUAL SYSTEM

(a) Applicants should not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequelae of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence.

(b) Eye examination

The examination should include visual acuities (near, intermediate and distant vision) and visual field.

(c) Visual acuity

(1) Visual acuity with or without corrective lenses should be 6/9 (0,7) binocularly and 6/12 (0,5) in each eye.

(2) Applicants who do not meet the required visual acuity should be assessed by an AME or AeMC, taking into account the privileges of the licence held and the risk involved.

(3) Applicants should be able to read, binocularly, an N5 chart (or equivalent) at 30-50 cm and an N14 chart (or equivalent) at 100 cm, with correction if prescribed (Refer to GM1 MED.B.070).

(d) Visual acuity

Applicants with substandard vision in one eye may be assessed as fit if the better eye:

(1) achieves distant visual acuity of 6/6 (1,0), corrected or uncorrected;

(2) achieves distant visual acuity less than 6/6 (1,0) but not less than 6/9 (0,7), after ophthalmological evaluation.

(e) Visual field defects

Applicants with a visual field defect may be assessed as fit if the binocular visual field or, in the case of monocularity, the monocular visual field is acceptable.

(f) Eye surgery

(1) After refractive surgery, a fit assessment may be considered, provided that there is satisfactory stability of refraction, there are no post-operative complications and no significant increase in glare sensitivity.

(2) After cataract, retinal or glaucoma surgery a fit assessment may be considered once recovery is complete.

(g) Visual correction

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

AMC14 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

COLOUR VISION

Applicants for a night rating should correctly identify 9 of the first 15 plates of the 24-plate edition of Ishihara pseudoisochromatic plates or should be colour safe.

AMC15 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

OTORHINOLARYNGOLOGY (ENT)

(a) Hearing

(1) Applicants should understand correctly conversational speech when tested with or without hearing aids at a distance of 2 metres from and with the applicant's back turned towards the examiner.

(2) If the hearing requirements can only be met with the use of hearing aid(s), the hearing aid(s) should provide optimal hearing function, be well-tolerated, and be suitable for aviation purposes.

(3) Applicants with hypoacusis should demonstrate satisfactory functional hearing ability.

(4) Applicants with profound deafness or major disorder of speech, or both, may be assessed as fit with an SSL such as 'limited to areas and operations where the use of radio is not mandatory'. The aircraft should be equipped with appropriate alternative warning devices in lieu of sound warnings.

(b) Ear conditions

Applicants with:

(1) an active pathological process of the internal or middle ear;

(2) unhealed perforation or dysfunction of the tympanic membrane(s);

(3) disturbance of vestibular function;

(4) significant restriction of the nasal passages;

(5) sinus dysfunction;

(6) significant malformation or significant infection of the oral cavity or upper respiratory tract; or

(7) significant disorder of speech or voice

should undergo further examination to establish that the condition does not interfere with the safe exercise of the privileges of the licence.

AMC16 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

DERMATOLOGY

In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be considered.

AMC17 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

ONCOLOGY

(a) In the case of malignant disease, applicants may be considered for a fit assessment if:

(1) there is no evidence of residual malignant disease likely to jeopardise flight safety;

(2) time appropriate to the type of tumour has elapsed since the end of primary treatment;

(3) the risk of in-flight incapacitation from a recurrence or metastasis is sufficiently low;

(4) there is no evidence of short or long-term sequelae from treatment that may jeopardise flight safety.

(b) Arrangements for an oncological follow-up should be made for an appropriate period of time.

(c) Applicants with an established history or clinical diagnosis of intracerebral malignant tumour should be assessed as unfit.

GM1 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

DIABETES MELLITUS TYPE 2 TREATED WITH INSULIN – GENERAL

(a) Pilots and their treating physician should be aware that if the HbA1c target level was set to normal (non-diabetic) levels, this will significantly increase the chance of hypoglycaemia. For safety reasons the target level of HbA1c is therefore set to 7,5–8,5 % even though there is evidence that lower HbA1c levels are correlated with fewer diabetic complications.

(b) The safety pilot should be briefed pre-flight on the potential condition of the pilot. The results of blood sugar testing before and during flight should be shared with the safety pilot for the acceptability of the values obtained.

GM2 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

DIABETES MELLITUS TYPE 2 TREATED WITH INSULIN – CONVERSION TABLE FOR HbA1c IN % AND MMOL/MOL

HbA1c in %	HbA1c in mmol/mol
4,7	28
5,0	31
5,3	34
5,6	38
5,9	41
6,2	44
6,5	48
6,8	51
7,4	57
8,0	64

8,6	70
9,2	77
9,8	84
10,4	90
11,6	103

GM3 MED.B.095 Medical examination and assessment of applicants for LAPL medical certificates

ED Decision 2019/002/R

MOOD DISORDER

After full recovery from a mood disorder and after full consideration of the individual case, a fit assessment may be considered, depending on the characteristics and gravity of the mood disorder. If stability on maintenance psychoactive medication is confirmed, a fit assessment may be considered. If the dosage or type of medication is changed, a further evaluation may be required until stability is confirmed.

SUBPART C – REQUIREMENTS FOR MEDICAL FITNESS OF CABIN CREW

SECTION 1 – GENERAL REQUIREMENTS

MED.C.001 General

Regulation (EU) No 1178/2011

Cabin crew members shall only perform the duties and responsibilities required by aviation safety rules on an aircraft if they comply with the applicable requirements of this Part.

MED.C.005 Aero-medical assessments

Regulation (EU) No 1178/2011

(a) Cabin crew members shall undergo aero-medical assessments to verify that they are free from any physical or mental illness which might lead to incapacitation or an inability to perform their assigned safety duties and responsibilities.

(b) Each cabin crew member shall undergo an aero-medical assessment before being first assigned to duties on an aircraft, and after that at intervals of maximum 60 months.

(c) Aero-medical assessments shall be conducted by an AME, AeMC, or by an OHMP if the requirements of MED.D.040 are complied with.

AMC1 MED.C.005 Aero-medical assessments

ED Decision 2019/002/R

(a) When conducting aero-medical examinations and assessments of cabin crew members, as applicable, their medical fitness should be assessed with particular regard to their physical and mental ability to:

(1) undergo the training required for cabin crew to acquire and maintain competence, e.g. actual fire-fighting, slide descending, using Protective Breathing Equipment (PBE) in a simulated smoke-filled environment, providing first aid;

(2) manipulate the aircraft systems and emergency equipment to be used by cabin crew, e.g. cabin management systems, doors/exits, escape devices, fire extinguishers, taking also into account the class and type of aircraft operated, e.g. narrow-bodied or wide-bodied, single/multi-deck, single/multi-cabin crew operation;

(3) continuously tolerate the aircraft environment whilst performing duties, e.g. altitude, pressure, re-circulated air, noise; and the type of operations such as short/medium/long/ultra long haul; and

(4) perform the required duties and responsibilities efficiently during normal and abnormal operations, and in emergency situations and psychologically demanding circumstances, e.g. assistance to crew members and passengers in case of decompression; stress management, decision-making, crowd control and effective crew coordination, management of disruptive passengers and of security threats. When relevant, operating as single cabin crew should also be taken into account when assessing the medical fitness of cabin crew.

(b) Intervals

(1) The interval between aero-medical assessments should be determined by the competent authority. The intervals established by the competent authority apply to cabin crew members who:

(i) undergo aero-medical assessments by an AME, AeMC or OHMP under the oversight of that competent authority; or

(ii) are employed by an operator under the oversight of that competent authority.

(2) The interval between aero-medical assessments may be reduced by the AME, AeMC or OHMP for medical reasons and in accordance with MED.C.035.

(3) Aero-medical assessments for the revalidation of a cabin crew medical report may be undertaken up to 45 days prior to the expiry date of the previous medical report. The validity period of the aero-medical assessment should be calculated from the expiry date of the previous aero-medical assessment.

SECTION 2 – REQUIREMENTS FOR AERO-MEDICAL ASSESSMENT OF CABIN CREW

MED.C.020 General

Regulation (EU) No 1178/2011

Cabin crew members shall be free from any:

(a) abnormality, congenital or acquired;

(b) active, latent, acute or chronic disease or disability;

(c) wound, injury or sequelae from operation; and

(d) effect or side effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken that would entail a degree of functional incapacity which might lead to incapacitation or an inability to discharge their safety duties and responsibilities.

MED.C.025 Content of aero-medical assessments

Regulation (EU) No 1178/2011

(a) An initial aero-medical assessment shall include at least:

(1) an assessment of the applicant cabin crew member's medical history; and

(2) a clinical examination of the following:

(i) cardiovascular system;

(ii) respiratory system;

(iii) musculoskeletal system;

(iv) otorhino-laryngology;

(v) visual system; and

(vi) colour vision.

(b) Each subsequent aero-medical re-assessment shall include:

(1) an assessment of the cabin crew member's medical history; and

(2) a clinical examination if deemed necessary in accordance with aero-medical best practice.

(c) For the purpose of (a) and (b), in case of any doubt or if clinically indicated, a cabin crew member's aero-medical assessment shall also include any additional medical examination, test or investigation that are considered necessary by the AME, AeMC or OHMP.

AMC1 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

Aero-medical examinations and assessments of cabin crew members should be conducted in accordance with AMC2 to AMC18 MED.C.025.

AMC2 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

CARDIOVASCULAR SYSTEM

(a) Examination

(1) A standard 12-lead resting electrocardiogram (ECG) and report should be completed on clinical indication, at the first examination after the age of 40 and then at least every five years after the age of 50. If cardiovascular risk factors such as smoking, abnormal cholesterol levels or obesity are present, the intervals of resting ECGs should be reduced to two years.

(2) Extended cardiovascular assessment should be required when clinically indicated.

(b) Cardiovascular system - general

(1) Cabin crew members with any of the following conditions:

(i) aneurysm of the thoracic or supra-renal abdominal aorta, before surgery;

(ii) significant functional abnormality of any of the heart valves; or

(iii) heart or heart/lung transplantation

should be assessed as unfit.

(2) Cabin crew members with an established diagnosis of one of the following conditions:

(i) peripheral arterial disease before or after surgery;

(ii) aneurysm of the abdominal aorta, before or after surgery;

(iii) minor cardiac valvular abnormalities;

(iv) after cardiac valve surgery;

(v) abnormality of the pericardium, myocardium or endocardium;

(vi) congenital abnormality of the heart, before or after corrective surgery;

(vii) a cardiovascular condition requiring systemic anticoagulation;

(viii) vasovagal syncope of uncertain cause;

(ix) arterial or venous thrombosis; or

(x) pulmonary embolism

should be evaluated by a cardiologist before a fit assessment may be considered.

(c) Thromboembolic disorders

Whilst anticoagulation therapy is initiated, cabin crew members should be assessed as unfit. After a period of stable anticoagulation, a fit assessment may be considered with limitation(s), as appropriate. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range and the haemorrhagic risk is acceptable. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment may be considered after a stabilisation period of 3 months. Cabin crew members with pulmonary embolism should also be evaluated by a cardiologist. Following cessation of anticoagulant therapy, for any indication, cabin crew members should undergo a re-assessment.

(d) Syncope

(1) In the case of a single episode of vasovagal syncope which can be satisfactorily explained, a fit assessment may be considered.

(2) Cabin crew members with a history of recurrent vasovagal syncope should be assessed as unfit. A fit assessment may be considered after a 6-month period without recurrence, provided cardiological evaluation is satisfactory. Neurological review may be indicated.

(e) Blood pressure

Blood pressure should be recorded at each examination.

(1) The blood pressure should be within normal limits and should not consistently exceed 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, taking into account other risk factors.

(2) Cabin crew members initiating medication for the control of blood pressure should be assessed as unfit until the absence of any significant side effects has been established and verification that the treatment is compatible with the safe exercise of cabin crew duties has been achieved.

(f) Coronary artery disease

(1) Cabin crew members with:

(i) cardiac ischaemia;

(ii) symptomatic coronary artery disease; or

(iii) symptoms of coronary artery disease controlled by medication

should be assessed as unfit.

(2) Cabin crew members who are asymptomatic after myocardial infarction or surgery for coronary artery disease should have fully recovered before a fit assessment may be considered. The affected cabin crew members should be on appropriate secondary prevention treatment.

(g) Rhythm/conduction disturbances

(1) Cabin crew members with any significant disturbance of cardiac conduction or rhythm should undergo cardiological evaluation before a fit assessment may be considered.

(2) Cabin crew members with a history of:

(i) ablation therapy; or

(ii) pacemaker implantation

should undergo satisfactory cardiovascular evaluation before a fit assessment may be made.

(3) Cabin crew members with:

(i) symptomatic sinoatrial disease;

(ii) symptomatic hypertrophic cardiomyopathy

(iii) complete atrioventricular block;

(iv) symptomatic QT prolongation;

(v) an automatic implantable defibrillating system; or

(vi) a ventricular anti-tachycardia pacemaker

should be assessed as unfit.

AMC3 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

RESPIRATORY SYSTEM

(a) Cabin crew members with significant impairment of pulmonary function should be assessed as unfit. A fit assessment may be considered once pulmonary function has recovered and is satisfactory.

(b) Cabin crew members should undergo pulmonary morphological or functional tests on when clinically indicated.

(c) Cabin crew members with a history or established diagnosis of:

(1) asthma;

(2) active inflammatory disease of the respiratory system;

(3) active sarcoidosis;

(4) pneumothorax;

(5) sleep apnoea syndrome/sleep disorder; or

(6) major thoracic surgery

should undergo respiratory evaluation with a satisfactory result before a fit assessment may be considered.

(d) Cabin crew members who have undergone a pneumonectomy should be assessed as unfit.

AMC4 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

DIGESTIVE SYSTEM

(a) Cabin crew members with any disease or sequelae of surgical intervention in any part of the digestive tract or its adnexa likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, should be assessed as unfit.

(b) Cabin crew members should be free from herniae that might give rise to incapacitating symptoms.

(c) Cabin crew members with disorders of the gastro-intestinal system, including:

(1) recurrent severe dyspeptic disorder requiring medication;

(2) peptic ulceration;

(3) pancreatitis;

(4) symptomatic gallstones;

(5) an established diagnosis or history of chronic inflammatory bowel disease;

(6) after surgical operation on the digestive tract or its adnexa, including surgery involving total or partial excision or a diversion of any of these organs;

(7) morphological or functional liver disease; or

(8) after surgery, including liver transplantation

may be assessed as fit subject to satisfactory gastroenterological evaluation.

AMC5 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

METABOLIC AND ENDOCRINE SYSTEMS

(a) Cabin crew members should not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of their duties and responsibilities.

(b) Cabin crew members with metabolic, nutritional or endocrine dysfunction may be assessed as fit, subject to demonstrated stability of the condition and satisfactory aero-medical evaluation.

(c) Diabetes mellitus

(1) Cabin crew members with diabetes mellitus requiring insulin may be assessed as fit:

(i) if it can be demonstrated that adequate blood sugar control has been achieved and hypoglycaemia awareness is established and maintained; and

(ii) in the absence, within the preceding 12 months, of any;

(A) hospitalisation related to diabetes; or

(B) hypoglycaemia that resulted in a seizure, loss of consciousness, impaired cognitive function or that required the intervention by another party; or

(C) episode of hypoglycaemia unawareness.

(2) Limitations should be imposed as appropriate. A limitation to undergo specific medical examinations (SIC) and a restriction to operate only in multi-cabin crew operations (MCL) should be placed as a minimum.

(3) Cabin crew members with diabetes mellitus not requiring insulin may be assessed as fit if it can be demonstrated that adequate blood sugar control has been achieved and hypoglycaemia awareness, if applicable considering the medication, is achieved.

AMC6 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

HAEMATOLOGY

Cabin crew members with a haematological condition, such as:

(a) abnormal haemoglobin including, but not limited to, anaemia, erythrocytosis or haemoglobinopathy;

(b) coagulation, haemorrhagic or thrombotic disorder;

(c) significant lymphatic enlargement;

(d) acute or chronic leukaemia; or

(e) splenomegaly

may be assessed as fit subject to satisfactory aero-medical evaluation. If anticoagulation is being used as treatment, refer to AMC2 MED.C.025(c).

AMC7 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

GENITOURINARY SYSTEM

(a) Urine analysis should form part of every aero-medical examination and assessment. The urine should not contain any abnormal element(s) considered to be of pathological significance.

(b) Cabin crew members with any disease or sequelae of surgical procedures on the kidneys or the urinary tract, in particular any obstruction due to stricture or compression likely to cause incapacitation should be assessed as unfit.

(c) Cabin crew members with a genitourinary disorder, such as:

(1) renal disease; or

(2) a history of renal colic due to one or more urinary calculi

may be assessed as fit subject to satisfactory renal/urological evaluation.

(d) Cabin crew members who have undergone a major surgical operation in the genitourinary apparatus involving a total or partial excision or a diversion of its organs should be assessed as unfit and be re-assessed after recovery before a fit assessment may be made.

(e) Cabin crew members who have undergone renal transplantation may be considered for a fit assessment if it is fully compensated and tolerated with only minimal immuno-suppressive therapy after at least 12 months. A requirement to undergo specific medical examinations (SIC) and a restriction to operate only in multi-cabin crew operations (MCL) should be considered.

(f) Cabin crew members requiring dialysis should be assessed as unfit.

AMC8 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

INFECTIOUS DISEASE

Cabin crew members who are HIV positive may be assessed as fit if investigation provides no evidence of clinical disease and subject to satisfactory aero-medical evaluation.

AMC9 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

OBSTETRICS AND GYNAECOLOGY

(a) Cabin crew members who have undergone a major gynaecological operation should be assessed as unfit until after recovery.

(b) Pregnancy

(1) A pregnant cabin crew member may be assessed as fit only during the first 16 weeks of gestation following review of the obstetric evaluation by the AME or OHMP.

(2) A limitation not to perform duties as single cabin crew member should be considered.

(3) The AME or OHMP should provide written advice to the cabin crew member and supervising physician regarding potentially significant complications of pregnancy resulting from flying duties.

AMC10 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

MUSCULOSKELETAL SYSTEM

(a) Cabin crew members should have sufficient standing height, arm and leg length and muscular strength for the safe exercise of their duties and responsibilities.

(b) Cabin crew members should have satisfactory functional use of the musculoskeletal system. Particular attention should be paid to emergency procedures and evacuation, and related training.

(c) Cabin crew members with any significant sequelae from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery require full evaluation prior to a fit assessment.

(d) Cabin crew members with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit provided the condition is in remission or is stable and the affected cabin crew member is not taking any medication that may lead to unfitness.

AMC11 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

MENTAL HEALTH

(a) Cabin crew members with a mental or behavioural disorder due to use or misuse of alcohol or other psychoactive substances should be assessed as unfit pending recovery and freedom from psychoactive substance use or misuse and subject to satisfactory psychiatric evaluation after successful treatment.

(b) Cabin crew members with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder should be assessed as unfit.

(c) Cabin crew members with a psychiatric condition such as:

(1) mood disorder;

(2) neurotic disorder;

(3) personality disorder; or

(4) mental or behavioural disorder

should undergo satisfactory psychiatric evaluation before a fit assessment may be considered.

(d) Cabin crew members with a history of a single or repeated acts of deliberate self-harm should be assessed as unfit. Cabin crew members should undergo satisfactory psychiatric evaluation before a fit assessment may be considered.

(e) Where there is established evidence that a cabin crew member has a psychological disorder, he/she should be referred for psychological opinion and advice.

(f) The psychological evaluation may include a collection of biographical data, the review of aptitudes, and personality tests and psychological interview.

(g) The psychologist should submit a report to the AME or OHMP, detailing the results and recommendation.

AMC12 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

NEUROLOGY

(a) Cabin crew members with an established history or clinical diagnosis of:

(1) epilepsy; or

(2) recurring episodes of disturbance of consciousness of uncertain cause

should be assessed as unfit.

(b) Cabin crew members with an established history or clinical diagnosis of:

(1) epilepsy without recurrence after 5 years of age and without treatment for more than 10 years;

(2) epileptiform EEG abnormalities and focal slow waves;

(3) progressive or non-progressive disease of the nervous system;

(4) inflammatory disease of the central or peripheral nervous system;

(5) migraine;

(6) a single episode of disturbance of consciousness of uncertain cause;

(7) loss of consciousness after head injury;

(8) penetrating brain injury; or

(9) spinal or peripheral nerve injury

should undergo further evaluation before a fit assessment may be considered.

(c) Cabin crew members with a disorder of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events should be assessed as unfit. A fit assessment may be considered if neurological review and musculoskeletal assessments are satisfactory.

AMC13 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

VISUAL SYSTEM

(a) Examination

(1) a routine eye examination should form part of the initial and all further examinations and assessments; and

(2) an extended eye examination should be undertaken by an eye specialist when clinically indicated.(Refer to GM2 MED.B.070)

(b) Distant visual acuity, with or without correction, should be with both eyes 6/9 (0,7) or better.

(c) Cabin crew members should be able to read an N5 chart (or equivalent) at 30–50 cm, with correction if prescribed (Refer to GM1 MED.B.070).

(d) The binocular visual field or, in the case of monocularity, the monocular visual field should be acceptable.

(e) Cabin crew members who have undergone refractive surgery may be assessed as fit subject to satisfactory ophthalmic evaluation.

(f) Cabin crew members with diplopia should be assessed as unfit.

(g) Spectacles and contact lenses:

If satisfactory visual function is achieved only with the use of correction:

(1) in the case of myopia or hyperopia or both, spectacles or contact lenses should be worn whilst on duty;

(2) in the case of presbyopia, spectacles should be readily available for immediate use;

(3) the correction should provide optimal visual function and be well-tolerated;

(4) a spare set of similarly correcting spectacles should be readily available for immediate use whilst on duty;

(5) orthokeratologic lenses should not be used.

AMC14 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

COLOUR VISION

Cabin crew members should be able to correctly identify 9 of the first 15 plates of the 24-plate edition of Ishihara pseudoisochromatic plates. Alternatively, cabin crew members should demonstrate the ability to readily perceive those colours of which the perception is required for the safe performance of their duties.

AMC15 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

OTORHINOLARYNGOLOGY (ENT)

(a) Hearing should be satisfactory for the safe exercise of cabin crew duties and responsibilities. Cabin crew with hypoacusis should demonstrate satisfactory functional hearing abilities.

(b) Examination

(1) An ear, nose and throat (ENT) examination should form part of all examinations and assessments. A tympanometry or equivalent should be performed at the initial examination and when clinically indicated.

(2) Hearing should be tested at all examinations and assessments:

(i) the cabin crew member should understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with the cabin crew member's back turned towards the examiner;

(ii) notwithstanding (b)(2)(i), hearing should be tested with pure tone audiometry at the initial examination and when clinically indicated;

(iii) at initial examination the cabin crew member should not have a hearing loss of more than 35 dB at any of the frequencies 500 Hz, 1 000 Hz or 2 000 Hz, or more than 50 dB at 3 000 Hz, in either ear separately.

(3) If the hearing requirements can be met only with the use of hearing aid(s), the hearing aid(s) should provide optimal hearing function, be well-tolerated, and suitable for aviation purposes.

(c) Cabin crew members with:

(1) an active pathological process of the internal or middle ear;

(2) unhealed perforation or dysfunction of the tympanic membrane(s);

(3) disturbance of vestibular function;

(4) significant restriction of the nasal passages;

(5) sinus dysfunction;

(6) significant malformation or significant infection of the oral cavity or upper respiratory tract;

(7) significant disorder of speech or voice

should undergo further examination to establish that the condition does not interfere with the safe exercise of their duties and responsibilities.

AMC16 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

DERMATOLOGY

In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be made.

AMC17 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

ONCOLOGY

(a) After treatment for malignant disease, cabin crew members should undergo satisfactory oncological and aero-medical evaluation before a fit assessment may be considered.

(b) Cabin crew members with an established history or clinical diagnosis of intracerebral malignant tumour should be assessed as unfit. Considering the histology of the tumour, a fit assessment may be considered after successful treatment and recovery.

GM1 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

(a) When conducting aero-medical examinations and assessments, typical cabin crew duties as listed in (b) and (c), particularly those to be performed during abnormal operations and emergency situations, and cabin crew responsibilities to the travelling public should be considered in order to identify:

(1) any physical and/or mental conditions that could be detrimental to the performance of the duties required from cabin crew; and

(2) which examination(s), test(s) or investigation(s) should be undergone to complete an appropriate aero-medical assessment.

(b) Main cabin crew duties and responsibilities during day-to-day normal operations

(1) During pre/post-flight ground operations with/without passengers on board:

(i) monitoring of situation inside the aircraft cabin and awareness of conditions outside the aircraft including observation of visible aircraft surfaces and information to flight crew of any surface contamination such as ice or snow;

(ii) assistance to special categories of passengers (SCPs) such as infants and children (accompanied or unaccompanied), persons with disabilities or reduced mobility, medical cases with or without medical escort, and inadmissible persons, deportees and passengers in custody;

(iii) observation of passengers (any suspicious behaviour, passengers under the influence of alcohol and/or drugs, mentally disturbed), observation of potential able-bodied persons, crowd control during boarding and disembarkation;

(iv) safe stowage of cabin luggage, safety demonstrations and cabin secured checks, management of passengers and ground services during re-fuelling, observation of use of portable electronic devices;

(v) preparedness to carry out safety and emergency duties at any time, and security alertness.

(2) During flight:

(i) operation and monitoring of aircraft systems, surveillance of the cabin, lavatories, galleys, crew areas and flight crew compartment;

(ii) coordination with flight crew on situation in the cabin and turbulence events/effects;

(iii) management and observation of passengers (consumption of alcohol, behaviour, potential medical issues), observation of use of portable electronic devices;

(iv) safety and security awareness and preparedness to carry out safety and emergency duties at any time, and cabin secured checks prior to landing.

(c) Main cabin crew duties and responsibilities during abnormal and emergency operations

(1) In case of planned or unplanned emergency evacuation: briefing and/or commands to passengers including SCPs and selection and briefing to able-bodied persons; crowd control monitoring and evacuation conduct including in the absence of command from the flight crew; post-evacuation duties including assistance, first aid and management of survivors and survival in particular environments; activation of applicable communication means towards search and rescue services.

(2) In case of decompression: checking of crew members, passengers, cabin, lavatories, galleys, crew rest areas and flight crew compartment, and administering oxygen to crew members and passengers as necessary.

(3) In case of pilot incapacitation: secure pilot in his/her seat or remove from flight crew compartment; administer first aid and assist operating pilot as required.

(4) In case of fire or smoke: identify source/cause/type of fire/smoke to perform the necessary required actions; coordinate with other cabin crew members and flight crew; select appropriate extinguisher/agent and fight the fire using portable breathing equipment (PBE), gloves, and protective clothing as required; management of necessary passengers' movement if possible; instructions to passengers to prevent smoke

inhalation/suffocation; give first aid as necessary; monitor the affected area until landing; preparation for possible emergency landing.

(5) In case of first aid and medical emergencies: assistance to crew members and/or passengers; correct assessment and correct use of therapeutic oxygen, defibrillator, first-aid kits/emergency medical kit contents as required; management of events, of incapacitated person(s) and of other passengers; coordination and effective communication with other crew members, in particular when medical advice is transmitted by frequency to flight crew or by a telecommunication connection.

(6) In case of disruptive passenger behaviour: passenger management as appropriate including use of restraint technique as considered required.

(7) In case of security threats (bomb threat on ground or in-flight and/or hijack): control of cabin areas and passengers' management as required by the type of threat, management of suspicious device, protection of flight crew compartment door.

(8) In case of handling of dangerous goods: observing safety procedures when handling the affected device, in particular when handling chemical substances that are leaking; protection and management of self and passengers and effective coordination and communication with other crew members.

GM2 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

DIABETES MELLITUS TREATED WITH INSULIN

When considering a fit assessment for cabin crew with diabetes mellitus requiring insulin, account should be taken of the IATA Guidelines on Insulin-Treated Diabetes (Cabin Crew), as last amended.

GM3 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

COLOUR VISION – GENERAL

Examples of colours of which the perception is required for the safe performance of cabin crew members' duties are: cabin crew indication panels, pressure gauges of emergency equipment (e.g. fire extinguishers) and cabin door status.

GM4 MED.C.025 Content of aero-medical assessments

ED Decision 2019/002/R

OTORHINOLARYNGOLOGY (ENT) – PURE TONE AUDIOGRAM

The pure tone audiogram may also cover the 4 000 Hz frequency for early detection of decrease in hearing.

SECTION 3 – ADDITIONAL REQUIREMENTS FOR APPLICANTS FOR, OR HOLDERS OF, A CABIN CREW ATTESTATION

MED.C.030 Cabin crew medical report

Regulation (EU) No 1178/2011

(a) After completion of each aero-medical assessment, applicants for, and holders of, a cabin crew attestation:

(1) shall be provided with a cabin crew medical report by the AME,AeMC or OHMP; and

(2) shall provide the related information, or a copy of their cabin crew medical report to the operator(s) employing their services.

(b) Cabin crew medical report

A cabin crew medical report shall indicate the date of the aero-medical assessment, whether the cabin crew member has been assessed fit or unfit, the date of the next required aero-medical assessment and, if applicable, any limitation(s). Any other elements shall be subject to medical confidentiality in accordance with MED.A.015.

AMC1 MED.C.030 Cabin crew medical report

ED Decision 2019/002/R

The cabin crew medical report to be provided in writing to the applicants for, and holders of, a cabin crew attestation:

(a) should be issued in the national language(s) and/or in English; and

(b) should include the following elements:

(1) The State where the aero-medical assessment of the Cabin Crew Attestation (CCA) applicant/holder was conducted (I);

(2) Last and first name of the CCA applicant/holder (IV);

(3) Date of birth of the CCA applicant/holder (*dd/mm/yyyy*) (XIV);

(4) Nationality of the CCA applicant/holder (VI);

(5) Signature of the CCA applicant/holder (VII);

(6) Aero-medical assessment result (fit or unfit) (II);

(7) Expiry date of the previous cabin crew medical report (*dd/mm/yyyy*);

(8) Date of issue (*dd/mm/yyyy*) and signature of the AeMC, AME, or OHMP (X);

(9) Date of the aero-medical assessment (*dd/mm/yyyy*);

(10) Seal or stamp of the AeMC, AME or OHMP (XI);

(11) Limitation(s), if applicable (XII);

(12) Expiry date of medical report (*dd/mm/yyyy*) (IX).

GM1 MED.C.030(b) Cabin crew medical report

ED Decision 2019/002/R

GENERAL

The format of the cabin crew medical report may be as shown in the example below, with the size of each sheet being 1/8 of A4.

State of issue CABIN CREW MEDICAL REPORT FOR CABIN CREW ATTESTATION (CCA) APPLICANT OR HOLDER		

I The State where the aero-medical assessment is conducted: III Cabin crew attestation reference number: IV Last and first name: XIV Date of birth (dd/mm/yyyy): VI Nationality: VII Signature of CCA applicant/holder:	II Aero-medical assessment result (fit/unfit): Expiry date of the previous cabin crew medical report (dd/mm/yyyy): Date of aero-medical assessment (dd/mm/yyyy): X Date of issue* (dd/mm/yyyy): X Signature of the AeMC, AME or OHMP: XI Seal or stamp of the AeMC, AME or OHMP:
2	3

* Date of issue is the date the Cabin Crew Medical Report is issued and signed.

XII Limitation(s), if applicable: Code: Description: Code: Description: Code: Description:	IX Expiry date of this medical report (dd/mm/yyyy):
4	5

MED.C.035 Limitations

Regulation (EU) No 1178/2011

(a) If holders of a cabin crew attestation do not fully comply with the medical requirements specified in Section 2, the AME,AeMC or OHMP shall consider whether they may be able to perform cabin crew duties safely if complying with one or more limitations.

(b) Any limitation(s) to the exercise of the privileges granted by the cabin crew attestation shall be specified on the cabin crew medical report and shall only be removed by an AME,AeMC or by an OHMP in consultation with an AME.

AMC1 MED.C.035 Limitations

ED Decision 2019/002/R

When assessing whether the holder of a cabin crew attestation may be able to perform cabin crew duties safely if complying with one or more limitations, the following possible limitations should be considered:

(a) a restriction to operate only in multi-cabin crew operations (MCL);

(b) a restriction to specified aircraft type(s) (OAL) or to a specified type of operation (OOL);

(c) a requirement to undergo the next aero-medical examination and assessment at an earlier date than required by MED.C.005(b) (TML);

(d) a requirement to undergo specific medical examination(s) (SIC);

(e) a requirement for visual correction (CVL), or by means of contact lenses that correct for defective vision (CCL);

(f) a requirement to use hearing aids (HAL); and

(g) special restriction as specified (SSL).

SUBPART D – AERO-MEDICAL EXAMINERS (AME), GENERAL MEDICAL PRACTITIONERS (GMP), OCCUPATIONAL HEALTH MEDICAL PRACTITIONERS (OHMP)

SECTION 1 – AERO-MEDICAL EXAMINERS

MED.D.001 Privileges

Regulation (EU) 2019/27

(a) The privileges of holders of an aero-medical examiner (AME) certificate are to issue, revalidate and renew class 2 medical certificates and LAPL medical certificates and to conduct the relevant medical examinations and assessments.

(b) Holders of an AME certificate may apply for an extension of their privileges to include medical examinations for the revalidation and renewal of class 1 medical certificates, if they comply with the requirements set out in point MED.D.015.

(c) The privileges of a holder of an AME certificate referred to in points (a) and (b) shall include the privileges to conduct cabin crew members' aero-medical examinations and assessments and to provide the related cabin crew members' medical reports, as applicable, in accordance with this Annex (Part-MED).

(d) The scope of the privileges of the holder of an AME certificate, and any condition thereof, shall be specified in that certificate.

(e) A holder of an AME certificate shall not at any time hold more than one AME certificate issued in accordance with this Regulation.

(f) Holders of an AME certificate shall not undertake aero-medical examinations and assessments in a Member State other than the Member State that issued their AME certificate, unless they have completed all the following steps:

(1) they have been granted access by the other Member State concerned to exercise their professional activities as a specialised doctor;

(2) they have informed the competent authority of that other Member State of their intention to conduct aero-medical examinations and assessments and to issue medical certificates within the scope of their privileges as AME;

(3) they have received a briefing from the competent authority of that other Member State.

MED.D.005 Application

Regulation (EU) 2019/27

(a) An application for an AME certificate or for an extension of the privileges of an AME certificate shall be made in a form and manner specified by the competent authority.

(b) Applicants for an AME certificate shall provide the competent authority with:

(1) their personal details and professional address;

(2) documentation demonstrating that they comply with the requirements of point MED.D.010, including evidence of successful completion of the training course in aviation medicine appropriate to the privileges they apply for;

(3) a written declaration that, once the AME certificate has been issued, the AME will issue medical certificates on the basis of the requirements of this Regulation.

(c) When AMEs undertake aero-medical examinations in more than one location, they shall provide the competent authority with relevant information regarding all practice locations and practice facilities.

MED.D.010 Requirements for the issue of an AME certificate

Regulation (EU) 2019/27

Applicants shall be issued an AME certificate, where they meet all of the following conditions:

(a) they are fully qualified and licensed for the practice of medicine and have evidence of completion of specialist medical training;

(b) they have successfully completed a basic training course in aviation medicine, including practical training in the examination methods and aero-medical assessments;

(c) they have demonstrated to the competent authority that they:

(1) have adequate facilities, procedures, documentation and functioning equipment suitable for aero-medical examinations;

(2) have in place the necessary procedures and conditions to ensure medical confidentiality.

MED.D.011 Privileges of an AME certificate holder

Regulation (EU) 2019/27

Through the issuance of an AME certificate, the holder shall be granted the privileges to initially issue, revalidate and renew all of the following:

(a) class 2 medical certificates;

(b) LAPL medical certificates;

(c) cabin crew members' medical reports.

MED.D.015 Requirements for the extension of privileges

Regulation (EU) 2019/27

Applicants shall be issued an AME certificate extending their privileges to the revalidation and renewal of class 1 medical certificates where they meet all of the following conditions:

(a) they hold a valid AME certificate;

(b) they conducted at least 30 examinations for the issue, revalidation or renewal of class 2 medical certificates or equivalent over a period of no more than 3 years preceding the application;

(c) they successfully completed an advanced training course in aviation medicine, including practical training in the examination methods and aero-medical assessments;

(d) they have successfully completed practical training of a duration of at least 2 days, either at an AeMC or under the supervision of the competent authority.

MED.D.020 Training courses in aviation medicine

Regulation (EU) 2024/2076

(a) Training courses in aviation medicine refered to in MED.D.010(b) and MED.D.015(c) shall only be provided after the prior approval of the course by the competent authority of the Member State where the training organisation has its principal place of business. In order to obtain such approval, the training organisation shall demonstrate that the course syllabus contains the learning objectives to acquire the necessary competencies and that the persons in charge of providing the training have adequate knowledge and experience.

(aa) For demonstrating compliance with points MED.D.010(b) and MED.D.015(c), an aviation medicine training course completed by an applicant outside the territories for which Member States are responsible under the Chicago Convention may be accepted by the competent authority, provided that the following conditions are met:

(i) the competent authority has assessed and verified the course syllabus in accordance with point ARA.MED.200(c)(1) of Annex VI;

(ii) the applicant has completed a specific training module on the aero-medical requirements detailed in this Annex (Part-MED) as provided by the competent authority.

[applicable from 13 February 2025 - Regulation (EU) 2024/2076]

(b) Except in the case of refresher training, the courses shall be concluded by a written examination on the subjects included in the course content.

(c) The training organisation shall issue a certificate of successful completion to participants when they have obtained a pass in the examination.

AMC1 MED.D.020 Training courses in aviation medicine

ED Decision 2019/002/R

BASIC TRAINING COURSE

(a) Basic training course for AMEs

The basic training course for AMEs should consist of 60 hours of theoretical and practical training, including specific examination techniques.

(b) The learning objectives to acquire the necessary competencies should include theoretical knowledge, risk management, and decision-making principles in the following subjects. Demonstrations and practical skills should also be included, where appropriate.

(1) Introduction to aviation medicine;

(2) Basic aeronautical knowledge;

(3) Aviation physiology;

(4) Cardiovascular system;

(5) Respiratory system;

(6) Digestive system;

(7) Metabolic and endocrine systems;

(8) Haematology;

(9) Genitourinary system;

(10) Obstetrics and gynaecology;

(11) Musculoskeletal system;

(12) Psychiatry;

(13) Psychology;

(14) Neurology;

(15) Visual system and colour vision;

(16) Otorhinolaryngology;

(17) Oncology;

(18) Incidents and accidents escape and survival;

(19) Medication and flying;

(20) Legislation, rules and regulations;

(21) Cabin crew working environment;

(22) In-flight environment; and

(23) Space medicine.

AMC2 MED.D.020 Training courses in aviation medicine

ED Decision 2019/002/R

ADVANCED TRAINING COURSE

(a) Advanced training course for AMEs

The advanced training course for AMEs should consist of 66 hours of theoretical and practical training, including specific examination techniques.

(b) The learning objectives to acquire the necessary competencies should include theoretical knowledge, risk management, and decision-making principles in the following subjects. Demonstrations and practical skills should also be included, where appropriate.

(1) Pilot working environment;

(2) Aerospace physiology;

(3) Clinical medicine;

(4) Cardiovascular system;

(5) Neurology;

(6) Psychiatry/psychology;

(7) Visual system and colour vision;

(8) Otorhinolaryngology;

(9) Dentistry;

(10) Human factors in aviation;

(11) Incidents and accidents, escape and survival; and

(12) Tropical medicine.

(c) Practical training in an AeMC should be under the guidance and supervision of the head of the AeMC.

(d) After the successful completion of the practical training, a report of demonstrated competency should be issued.

GM1 MED.D.020 Training courses in aviation medicine

ED Decision 2019/002/R

BASIC TRAINING COURSE

(a)	Basic training course in aviation medicine	60 hours
(1)	Introduction to aviation medicine	2 hours
(i)	History of aviation medicine	
(ii)	Specific aspects of civil aviation medicine	
(iii)	Different types of recreational flying	
(iv)	AME and pilots relationship	
(v)	Responsibility of the AME in aviation safety	
(vi)	Communication and interview techniques	
(2)	Basic aeronautical knowledge	2 hours
(i)	Flight mechanisms	
(ii)	Man-machine interface, informational processing	
(iii)	Propulsion	
(iv)	Conventional instruments, ‘glass cockpit’	
(v)	Recreational flying	
(vi)	Simulator/aircraft experience	
(3)	Aviation physiology	9 hours
(i)	Atmosphere	
(A)	Functional limits for humans in flight	
(B)	Divisions of the atmosphere	
(C)	Gas laws — physiological significance	

(D) Physiological effects of decompression

(ii) Respiration

(A) Blood gas exchange

(B) Oxygen saturation

(iii) Hypoxia signs and symptoms

(A) Average time of useful consciousness (TUC)

(B) Hyperventilation signs and symptoms

(C) Barotrauma

(D) Decompression sickness

(iv) Acceleration

(A) G-Vector orientation

(B) Effects and limits of G-load

(C) Methods to increase Gz-tolerance

(D) Positive/negative acceleration

(E) Acceleration and the vestibular system

(v) Visual disorientation

(A) Sloping cloud deck

(B) Ground lights and stars confusion

(C) Visual autokinesis

(vi) Vestibular disorientation

(A) Anatomy of the inner ear

(B) Function of the semicircular canals

(C) Function of the otolith organs

(D) The oculogyral and coriolis illusion

(E) 'Leans'

(F) Forward acceleration illusion of 'nose up'

(G) Deceleration illusion of 'nose down'

(H) Motion sickness — causes and management

(vii) Noise and vibration

(A) Preventive measures

(4) Cardiovascular system 3 hours

(i) Relation to aviation; risk of incapacitation

(ii) Examination procedures: ECG, laboratory testing and other special examinations

(iii) Cardiovascular diseases:

(A) Hypertension, treatment and assessment

(B) Ischaemic heart disease

(C) ECG findings

(D) Assessment of satisfactory recovery from myocardial infarction, interventional procedures and surgery

(E) Cardiomyopathies; pericarditis; rheumatic heart disease; valvular diseases

(F) Rhythm and conduction disturbances, treatment and assessment

(G) Congenital heart disease: surgical treatment, assessment

(H) Cardiovascular syncope: single and repeated episodes

Topics (5) to (11) inclusive, and (17) 10 hours

(5) Respiratory system

(i) Relation to aviation, risk of incapacitation

(ii) Examination procedures: spirometry, peak flow, x-ray, other examinations

(iii) Pulmonary diseases: asthma, chronic obstructive pulmonary diseases

(iv) Infections, tuberculosis

(v) Bullae, pneumothorax

(vi) Obstructive sleep apnoea

(vii) Treatment and assessment

(6) Digestive system

(i) Relation to aviation, risk of incapacitation

(ii) Examination of the system

(iii) Gastro-intestinal disorders: gastritis, ulcer disease

(iv) Biliary tract disorders

(v) Hepatitis and pancreatitis

(vi) Inflammatory bowel disease, irritable colon/irritable bowel disease

(vii) Herniae

(viii) Treatment and assessment including post-abdominal surgery

(7) Metabolic and endocrine systems

(i) Relation to aviation, risk of incapacitation

(ii) Endocrine disorders

(iii) Diabetes mellitus Type 1 & 2

(A) Diagnostic tests and criteria

(B) Anti-diabetic therapy

(C) Operational aspects in aviation

(D) Satisfactory control criteria for aviation

(iv) Hyper/hypothyroidism

(v) Pituitary and adrenal glands disorders

(vi) Treatment and assessment

(8) Haematology

(i) Relation to aviation, risk of incapacitation

(ii) Blood donation aspects

(iii) Erythrocytosis; anaemia; leukaemia; lymphoma

(iv) Sickle cell disorders

(v) Platelet disorders

(vi) Haemoglobinopathies; geographical distribution; classification

(vii) Treatment and assessment

(9) Genitourinary system

(i) Relation to aviation, risk of incapacitation

(ii) Action to be taken after discovery of abnormalities in routine dipstick urinalysis, e.g. haematuria; albuminuria

(iii) Urinary system disorders:

(A) Nephritis; pyelonephritis; obstructive uropathies

(B) Tuberculosis

(C) Lithiasis: single episode; recurrence

(D) Nephrectomy, transplantation, other treatment and assessment

(10) Obstetrics and gynaecology

(i) Relation to aviation, risk of incapacitation

(ii) Pregnancy and aviation

(iii) Disorders, treatment and assessment

(11) Musculoskeletal system

(i) Vertebral column diseases

(ii) Arthropathies and arthroprosthesis

(iii) Pilots with a physical impairment

(iv) Treatment of musculoskeletal system, assessment for flying

(12) Psychiatry 2 hours

(i) Relation to aviation, risk of incapacitation

(ii) Psychiatric examination

(iii) Psychiatric disorders: neurosis; personality disorders; psychosis; organic mental illness

(iv) Alcohol and other psychoactive substance(s) use

(v) Treatment, rehabilitation and assessment

(13) Psychology 2 hours

(i) Introduction to psychology in aviation as a supplement to psychiatric assessment

(ii) Methods of psychological examination

(iii) Behaviour and personality

(iv) Workload management and situational awareness

(v) Flight motivation and suitability

(vi) Group social factors

(vii) Psychological stress, stress coping, fatigue

(viii) Psychomotor functions and age

(ix) Mental fitness and training

(14) Neurology 3 hours

(i) Relation to aviation, risk of incapacitation

(ii) Examination procedures

(iii) Neurological disorders

(A) Seizures — assessment of single episode

(B) Epilepsy

(C) Multiple sclerosis

(D) Head trauma

(E) Post-traumatic states

(F) Vascular diseases

(G) Tumours

(H) Disturbance of consciousness — assessment of single and repeated episodes

(iv) Degenerative diseases

(v) Sleep disorders

(vi) Treatment and assessment

(15) Visual system and colour vision — 4 hours

- (i) Anatomy of the eye
- (ii) Relation to aviation duties
- (iii) Examination techniques
  - (A) Visual acuity assessment
  - (B) Visual aids
  - (C) Visual fields — acceptable limits for certification
  - (D) Ocular muscle balance
  - (E) Assessment of pathological eye conditions
  - (F) Glaucoma
- (iv) Monocularity and medical flight tests
- (v) Colour vision
- (vi) Methods of testing: pseudoisochromatic plates, lantern tests, anomaloscopy
- (vii) Importance of standardisation of tests and of test protocols
- (viii) Assessment after eye surgery

(16) Otorhinolaryngology — 3 hours

- (i) Anatomy of the systems
- (ii) Clinical examination in ORL
- (iii) Functional hearing tests
- (iv) Vestibular system; vertigo, examination techniques
- (v) Assessment after ENT surgery
- (vi) Barotrauma ears and sinuses
- (vii) Aeronautical ENT pathology
- (viii) ENT requirements

(17) Oncology

- (i) Relation to aviation, risk of metastasis and incapacitation
- (ii) Risk management
- (iii) Different methods of treatment and assessment

(18) Incidents and accidents, escape and survival — 1 hour

- (i) Accident statistics
- (ii) Injuries
- (iii) Aviation pathology, post-mortem examination, identification
- (iv) Aircraft evacuation

(A) Fire

(B) Ditching

(C) By parachute

(19) Medication and flying — 2 hours

(i) Hazards of medications

(ii) Common side effects; prescription medications; over-the-counter medications; herbal medications; 'alternative' therapies

(iii) Medication for sleep disturbance

(20) Legislation, rules and regulations — 4 hours

(i) ICAO Standards and Recommended Practices, European provisions (e.g. Implementing Rules, AMC and GM)

(ii) Incapacitation: acceptable aero-medical risk of incapacitation; types of incapacitation; operational aspects

(iii) Basic principles in assessment of fitness for aviation

(iv) Operational and environmental conditions

(v) Use of medical literature in assessing medical fitness; differences between scientific study populations and licensed populations

(vi) Flexibility

(vii) Annex 1 to the Chicago Convention, paragraph 1.2.4.9

(viii) Accredited Medical Conclusion; consideration of knowledge, skill and experience

(ix) Trained versus untrained crews; incapacitation training

(x) Medical flight tests

(21) Cabin crew working environment — 1 hour

(i) Cabin environment, workload, duty and rest time, fatigue risk management

(ii) Cabin crew safety duties and associated training

(iii) Types of aircraft and types of operations

(iv) Single-cabin crew and multi-cabin crew operations

(22) In-flight environment — 1 hour

(i) Hygiene aboard aircraft: water supply, oxygen supply, disposal of waste, cleaning, disinfection and disinsection

(ii) Catering

(iii) Crew nutrition

(iv) Aircraft and transmission of diseases

(23) Space medicine — 1 hour

(i) Microgravity and metabolism, life sciences

(24) Practical demonstrations of basic aeronautical knowledge 8 hours

(25) Concluding items 2 hours

(i) Final examination

(ii) De-briefing and critique

GM2 MED.D.020 Training courses in aviation medicine

ED Decision 2019/002/R

ADVANCED TRAINING COURSE

(a) Advanced training course in aviation medicine 66 hours

(1) Pilot working environment 6 hours

(i) Commercial aircraft flight crew compartment

(ii) Business jets, commuter flights, cargo flights

(iii) Professional airline operations

(iv) Fixed wing and helicopter, specialised operations including aerial work

(v) Air traffic control

(vi) Single-pilot/multi-pilot

(vii) Exposure to radiation and other harmful agents

(2) Aerospace physiology 4 hours

(i) Brief review of basics in physiology (hypoxia, rapid/slow decompression, hyperventilation, acceleration, ejection, spatial disorientation)

(ii) Simulator sickness

(3) Clinical medicine 5 hours

(i) Complete physical examination

(ii) Review of basics with relationship to commercial flight operations

(iii) Class 1 requirements

(iv) Clinical cases

(v) Communication and interview techniques

(4) Cardiovascular system 4 hours

(i) Cardiovascular examination and review of basics

(ii) Class 1 requirements

(iii) Diagnostic steps in cardiovascular system

(iv) Clinical cases

(5) Neurology 3 hours

(i) Brief review of basics (neurological and psychiatric examination)

(ii) Alcohol and other psychoactive substance(s) use

(iii) Class 1 requirements

(iv) Clinical cases

(6) Psychiatry/psychology 5 hours

(i) Brief review of basics (psychiatric/psychological evaluation techniques)

(ii) Alcohol and other psychoactive substance(s) use

(iii) Class 1 requirements

(iv) Clinical cases

(7) Visual system and colour vision 5 hours

(i) Brief review of basics (visual acuity, refraction, colour vision, visual fields, night vision, stereopsis, monocularity)

(ii) Class 1 visual requirements

(iii) Implications of refractive and other eye surgery

(iv) Clinical cases

(8) Otorhinolaryngology 4 hours

(i) Brief review of basics (barotrauma — ears and sinuses, functional hearing tests)

(ii) Noise and its prevention

(iii) Vibration, kinetosis

(iv) Class 1 hearing requirements

(v) Clinical cases

(9) Dentistry 2 hours

(i) Oral examination including dental formula

(ii) Oral cavity, dental disorders and treatment, including implants, fillings, prosthesis, etc.

(iii) Barodontalgia

(iv) Clinical cases

(10) Human factors in aviation, including 8 hours demonstration and practical experience 22 hours

(i) Long-haul flight operations

(A) Flight time limitations

(B) Sleep disturbance

(C) Extended/expanded crew

(D) Jet lag/time zones

(ii) Human information processing and system design

(A) Flight Management System (FMS), Primary Flight Display (PFD), datalink, fly by wire

(B) Adaptation to the glass cockpit

(C) Crew Coordination Concept (CCC), Crew Resource Management (CRM), Line Oriented Flight Training (LOFT) etc.

(D) Practical simulator training

(E) Ergonomics

(iii) Crew commonality

(A) Flying under the same type rating, e.g. A-318, A-319, A-320, A-321

(iv) Human factors in aircraft incidents and accidents

(v) Flight safety strategies in commercial aviation

(vi) Fear and refusal of flying

(vii) Psychological selection criteria

(viii) Operational requirements (flight time limitation, fatigue risk management, etc.)

(11) Incidents and accidents, escape and survival — 2 hours

(i) Accident statistics

(ii) Types of injuries

(iii) Aviation pathology, post-mortem examination related to aircraft accidents, identification

(iv) Rescue and emergency evacuation

(12) Tropical medicine — 2 hours

(i) Endemicity of tropical disease

(ii) Infectious diseases (communicable diseases, sexually transmitted diseases, HIV etc.)

(iii) Vaccination of flight crew and passengers

(iv) Diseases transmitted by vectors

(v) Food and water-borne diseases

(vi) Parasitic diseases

(vii) International health regulations

(viii) Personal hygiene of aviation personnel

(13) Concluding items — 2 hours

(i) Final examination

(ii) De-briefing and critique

GM3 MED.D.020 Training courses in aviation medicine

ED Decision 2019/002/R

GENERAL

(a) Principles of training:

To acquire knowledge and skills for the aero-medical examination and assessment, the training should be:

(1) based on regulations;

(2) based on general clinical skills and knowledge necessary to conduct relevant examinations for the different medical certificates;

(3) based on knowledge of the different risk assessments required for various types of medical certification;

(4) based on an understanding of the limits of the decision-making competences of an AME in assessing safety-critical medical conditions for when to defer and when to deny;

(5) based on knowledge of the aviation environment; and

(6) exemplified by clinical cases and practical demonstrations.

(b) Training outcomes:

The trainee should demonstrate a thorough understanding of:

(1) the aero-medical examination and assessment process:

(i) principles, requirements and methods;

(ii) ability to investigate all clinical aspects that present aero-medical risks, the reasonable use of additional investigations;

(iii) the role in the assessment of the ability of the pilot or cabin crew member to safely perform their duties in special cases, such as the medical flight test;

(iv) aero-medical decision-making based on risk management;

(v) medical confidentiality; and

(vi) correct use of appropriate forms, and the reporting and storing of information;

(2) the conditions under which the pilots and cabin crew carry out their duties; and

(3) principles of preventive medicine, including aero-medical advice in order to help prevent future limitations.

(c) The principles and training outcomes stated at (a) and (b) should also be taken into consideration for refresher training programmes

MED.D.025 Changes to the AME certificate

Regulation (EU) 2019/27

(a) Holders of an AME certificate shall, without undue delay, notify the competent authority of the following circumstances which could affect their AME certificate:

(1) the AME is subject to disciplinary proceedings or investigation by a medical regulatory body;

(2) there are changes to the conditions under which the certificate was granted, including the content of the statements provided with the application;

(3) the requirements for the issuance of the AME certificate are no longer met;

(4) there is a change to the aero-medical examiner's practice location(s) or correspondence address.

(b) Failure to notify the competent authority in accordance with point (a) shall result in the suspension or revocation of the AME certificate in accordance with point ARA.MED.250 of Annex II (Part-ARA).

MED.D.030 Validity of AME certificates

Regulation (EU) 2019/27

An AME certificate shall be valid for a period of 3 years, unless the competent authority decides to reduce that period for duly justified reasons related to the individual case.

Upon application by the holder, the certificate shall be:

(a) revalidated, provided that the holder:

(1) continues to fulfil the general conditions required for medical practice and maintains his or her licence for the practice of medicine;

(2) has undertaken refresher training in aviation medicine within the last 3 years;

(3) has performed at least 10 aero-medical examinations or equivalent every year;

(4) remains in compliance with the terms of the certificate;

(5) exercises the privileges in accordance with the requirements of this Annex (Part-MED);

(6) has demonstrated that he or she maintains his or her aero-medical competency in accordance with the procedure established by the competent authority.

(b) renewed, provided that the holder complies with either the requirements for revalidation set out in point (a) or with all of the following requirements:

(1) continues to fulfil the general conditions required for medical practice and maintains his or her licence for the practice of medicine;

(2) has undertaken refresher training in aviation medicine within the previous year;

(3) has successfully completed practical training within the previous year, either at an AeMC or under the supervision of the competent authority;

(4) remains in compliance with the requirements of point MED.D.010;

(5) has demonstrated that he or she maintains his or her aero-medical competency in accordance with the procedure established by the competent authority.

AMC1 MED.D.030 Validity of AME certificates

ED Decision 2019/002/R

REFRESHER TRAINING

(a) It is the responsibility of the AME to continuously maintain and improve their competencies.

(b) During the period of validity of the AME certificate, an AME should attend a minimum of 20 hours of refresher training.

(c) An AME exercising class 1 privileges should attend at least 10 hours of refresher training per year.

(d) A proportionate number of refresher training hours should be provided by, or conducted under the direct supervision of, the competent authority or the medical assessor.

(e) The curricula of refresher training hours referred to in (c) should be decided by the competent authority following a risk-based assessment.

(f) Attendance at scientific meetings and congresses, and flight deck experience may be credited by the competent authority for a specified number of hours against the training obligations of the AME, provided the competent authority has assessed it in advance as being relevant for crediting purposes.

(g) In case of renewal of an AME certificate, the practical training should include at least 10 aero-medical assessments, in accordance with the type of the requested AME certificate.

GM1 MED.D.030 Validity of AME certificates

ED Decision 2019/002/R

REFRESHER TRAINING

(a) The curricula for the refresher training hours that should be provided by, or conducted under the direct supervision of, the competent authority or the medical assessor may include but are not limited to subjects such as:

(1) Psychiatry

(i) Relation to aviation, risk of incapacitation;

(ii) Psychiatric examination;

(iii) Psychiatric disorders: neurosis, personality disorders, psychosis, organic mental illness;

(iv) Alcohol and other psychoactive substance(s) use; and

(v) Treatment, rehabilitation and assessment.

(2) Psychology

(i) Introduction to psychology in aviation as a supplement to psychiatric assessment;

(ii) Methods of psychological examination;

(iii) Behaviour and personality;

(iv) Workload management and situational awareness;

(v) Flight motivation and suitability;

(vi) Group social factors;

(vii) Psychological stress, stress coping, fatigue;

(viii) Psychomotor functions and age; and

(ix) Mental fitness and training.

(3) Communication and interview techniques

(b) Scientific meetings, congresses or flight deck experience that may be credited by the competent authority:

International Academy of Aviation and Space Medicine Annual Congresses (ICASM)	10 hours credit
European Conference of Aerospace Medicine (ECAM)	10 hours credit
Aerospace Medical Association Annual Scientific Meetings (AsMA)	10 hours credit
Other scientific meetings (A minimum of 6 hours to be under the direct supervision of the medical assessor of the competent authority)	10 hours credit

Flight crew compartment experience (a maximum of 5 hours credit per 3 years):

(i)	Jump seat	5 sectors — 1 hour credit
(ii)	Simulator	4 hours — 1 hour credit
(iii)	Aircraft piloting	4 hours — 1 hour credit

(c) An AME exercising class 1 revalidation/renewal privileges should attend international aviation medicine scientific meetings or congresses at regular intervals.

(d) Aero-medical examinations of military pilots may be considered as equivalent in accordance with MED.D.030(a)(3), subject to approval by the medical assessor of the competent authority.

GM2 MED.D.030 Validity of AME certificates

ED Decision 2019/002/R

AME PEER SUPPORT GROUPS

(a) The competent authority should promote better performance of AMEs by supporting the establishment of AME peer support groups that could provide both professional support and educational enhancement.

(b) Attendance to AME peer support group meetings may be credited by the competent authority as refresher training. The competent authority should determine a maximum of hours that can be credited as refresher training during the period of authorisation.

(c) AME peer support groups may be established as part of, or complementary to, national associations of aerospace medicine.

SECTION 2 – GENERAL MEDICAL PRACTITIONERS

MED.D.035 Requirements for general medical practitioners

Regulation (EU) 2019/27

General medical practitioners (GMPs) may act as AMEs for issuing LAPL medical certificates, where they meet all of the following conditions:

(a) they exercise their activity in a Member State where GMPs have access to the full medical records of applicants;

(b) they exercise their activity in accordance with any additional requirements established in the national law of the Member State of their competent authority;

(c) they are fully qualified and licensed for the practice of medicine in accordance with national law of the Member State of their competent authority;

(d) they have notified the competent authority before starting such activity.

SECTION 3 – OCCUPATIONAL HEALTH MEDICAL PRACTITIONERS

MED.D.040 Requirements for occupational health medical practitioners

Regulation (EU) 2019/27

In Member States where the competent authority is satisfied that the requirements of the national health system applicable to occupational health medical practitioners (OHMPs) are such as to ensure compliance with the requirements of this Annex (Part-MED) applicable to OHMPs, OHMPs may conduct aero-medical assessments of cabin crew, provided that:

(a) they are fully qualified and licensed in the practice of medicine and qualified in occupational medicine;

(b) the in-flight working environment and safety duties of the cabin crew were included in their occupational medicine qualification syllabus or other training or operational experience;

(c) they have notified the competent authority before starting such activity.