SWISS AIR FORCE

Air Crew Guide for World Economic Forum 2024

Dübendorf

WEF 2024 only

Valid from January 13th to 19th 2024

Procedures applicable for World Economic Forum only

GREY SHADED TEXT: DEVIATION FROM INTERNATIONAL STANDARD

Proposals for next AMDT shall be sent to

Operational Military Support (OMS)

omc@skyguide.ch

The scale published on charts may be inaccurate due to size changes.

GENERAL

GENERAL **3**

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GENERAL

AD INFO

ELEV
448 m / 1470 ft

ARP (mid RWY)
47°23'54.45" N / 008°38'53.55" E

Aerodrome
Dübendorf LSMD

Postal address
LW / Airbase Dübendorf
8600 Dübendorf

Chief Flight Operations (CFO)	+41 58 460 24 81
PHONE Air Traffic Control	+41 44 823 61 63
PHONE: OC	+41 58 460 20 04

Variation: 2° 56' E (2020.5)

Air Traffic Control service hours, Restricted AD service hours:

Aircraft	Date	Day	Operating Hours
Jet/Prop/Heli	13. – 19.01.2024	MON – FRI	0700 – 2100 LT (0600 – 2000 UTC)
		SAT & SUN	0900 – 2000 LT (0800 – 1900 UTC)

RWY PHYSICAL CHARACTERISTICS

Designation RWY NR	TRUE & MAG BRG	Dimensions of RWY (m)	Surface of RWY	THR COORD	THR ELEV	SLOPE of RWY-SWY
11	108° GEO 105° MAG	2355 X 40	ASPH	47 24.1 N 008 38.0 E	1427ft	+0.52%
29	288° GEO 285° MAG		ASPH	47 23.7 N 008 39.8 E	1470ft	-0.52%

RWY	TORA	ASDA	TODA	LDA	ASI
11	7726 ft	8448 ft	8448 ft	7726 ft	PAPI 4.5°
	2355 m	2575 m	2575 m	2355 m	
29	7726 ft	8218 ft	8382 ft	7545 ft	PAPI 4.5°
	2355 m	2505 m	2555 m	2300 m	

Helipad WEF
In front of Hangar 7, South of RWY

Meteorological Minima
See DUB 8

GENERAL

DEFINITIONS

GREY SHADED TEXT: DEVIATION FROM INTERNATIONAL STANDARD

Airport Reference Point (ARP)
Consider RWY Center as ARP indicated by geographical coordinates.

Aerodrome elevation
ELEV of the highest point of the Landing Area.

Runway lighting
Consult the legend on Aerodrome Charts as runway lighting is not yet standardized.

Inertial Navigation
For aircraft equipped with inertial navigation systems (INS), coordinates see DUB 12.

Magnetic variation
Horizontal angle between geographical North (non MIL coordinate grid system) and magnetic North, is measured in degrees and minutes to the East or West, depending on whether the magnetic North is situated in the East or West of geographical North.

Obstacles
High-voltage transmission lines and permanent obstacles are registered on Landing Charts only; consider that the registration of all obstacles is not guaranteed.

Runway Visual Range (RVR) / Visibility (MOR)
Distances to 2000 m (incl.) are given in RVR.
Distances over 2000 m are given in visibility (MOR).

Aerodrome traffic circuit altitude
These altitudes are approximate values to be observed because of noise, if meteorological and air traffic conditions permitting.

Indicator type

PAPI (**P**recision **A**pproach **P**ath **I**ndicator)
MIL use only

RWY 11 = 4.5°
RWY 29 = 4.5°

Geographic Coordinates
Based on Geographic Coordinates WGS84, unless indicated otherwise.

Approach-Time / Approach Fix
Approach-time starts at the FAF/FAP (final approach fix / -point) of the RWY used for IFR approach.
Hereby, the FAF/FAP is the point of descent, at which the IFR final approach procedure (PAR, ILS, RNP, SRA and EINA not followed by other APP) is initiated.

SERA (Standardized **E**uropean **R**ules of the **A**ir**)**
Common and standardized European rules of the air by Eurocontrol and EASA, helping free movement of aircraft across Europe's borders.

TIME INDICATION

All time indications used in this Air Crew Guide are completed with the corresponding reference LT (for Local Time) or UTC or Z (for Universal Time Coordinated or Zulu Time). LT applies when no reference is given. Local Time (LT) always applies for coordinated procedures with other Army services.

Standard time:
Central European Time (CET) = LT
Difference between LT and UTC: +1 hour.

Day and Night limits
Day and Night limits according VFRM, RAC 1-1

CUSTOMS

General
Entry, Departure and Landings must be performed in accordance with Civil Aviation legislation of Switzerland.

Diplomatic clearance
Foreign military aircraft and other state aircraft are subjected to a prior permission for overflying Swiss territory or landing at LSMD.
The diplomatic representation in Switzerland of the State concerned shall submit a written application in fourfold to the Federal Office for Civil Aviation (see DUB10).

Authorization for foreign Air Crews and Aircrafts
The approval is given by Air Operations Center (AOC) in agreement with the Handling Agent, Airbase Commander and Air Force Support or upper Commander.

Fuel
Tax-free fuel available

Restrictions

WORLD ECONOMIC FORUM RELEVANT FLIGHTS ALLOWED ONLY

PAX
No constitutionally protected PAX allowed. Accurate PAX List is mandatory.

Commercial Goods
No commercial goods available.

Public Health
Flights with origin in epidemiologic affected countries are not allowed to land at LSMD.

REF AIP SWITZERLAND
GEN 1.2
2.4 Public Health
Switzerland does not exercise any health control. If necessary, special measures will be taken. The International Health Regulations 2005 (IHR 2005), adopted by the World Health Assembly on 23 MAY 2005, in force since 15 JUN 2007, are applicable. Switzerland has officially designated the airports of Zurich (LSZH) and Genève (LSGG) according to the requirements of the IHR 2005.

Operational Requirements

Reverse Thrust
For deceleration, it is recommended to use entire RWY LEN AVBL.

ATC flight plan
Flight plan is compulsory, communication (regarding flight plan) to ATC is provided by ATC Dübendorf (AIS Service).
The crew is responsible for the compliance with ATC restrictions and slots (contact Flow Management Position for coordination, see DUB 10).

Weather
For general weather information (TAF, METAR) refer to civil Weather Information Services.

Actual weather information and condition for Airforce Base Dübendorf are provided.

Runway Surface Conditions
The braking action (BA) in the standard format from GOOD to POOR is available and shall be treated as estimated surface friction (ESF).

Contact Chief Flight Operations.
Outside these hours contact Meteo Schweiz (see DUB 10)

Available Ground Services

Fuel
JET A1 / F35
JET A1 with anti-ice / F34
JP 8

Note: Pipe or NATO coupling

Electricity/GPU
AC: 115V / 400Hz
3 phases, 9kVA
DC: 28V, 200A

Tow truck
Capability 20 tons, no tow bar necessary (towbarless tractor).

Fire protection
Standard ICAO cat 5 (cat 6 and 7 on request).

Deicing fluids
Type I: Kilfrost DF Plus
Type IV: Kilfrost ABC S Plus

Note: For any special requirements contact TopMotion GmbH in advance: aircraft.handling@topmotion.ch

OPS REQUIREMENTS - VFR

VFR
For flight plan routing refer to VFR Manual and/or AIP–Switzerland.

Approach
ATC flight plan “Y” and "V" possible.

Departure
ATC flight plan “Z” and "V" possible.

Weather minima
According VFRM, RAC 4-0-1, 1 “VFR procedures within control zones (CTR)”

VFR
VFR weather minima according SERA 5005 and SERA 5010:

A/C	Ceiling	Visibility
All	1500ft/AGL	5000m

SVFR

A/C	Ceiling	Visibility
All	600ft/AGL	1500m

NVFR
8km VIS, Distance to clouds: 1.5km lateral / 300m vertical

Under IMC special VFR procedures (SVFR) or Low Visibility Procedure (LVP) are cleared by TWR.
Special ILS HEL Procedure during WEF see DUB 43.

OPS REQUIREMENTS - IFR

IFR
For flight plan routing refer to ENROUTE CHART – ICAO AIP Switzerland.

Approach
ATC flight plan “I” compulsory. Expect radar vectoring by ATC (DÜBENDORF ARRIVAL). ILS approach / RNP approach track only for RWY29 available. Expect straight in landing. If required for Meteo or safety reasons expect VIS circling to RWY11. For further information contact ATC Supervisor Dübendorf (see DUB 10).

Depending on weather conditions and status of NAVAIDs all IFR approaches are vectored for:

- RNP APCH (4.4°)
- Visual APCH
- ILS/DME APCH (4.5°)
- LOC/DME APCH (4.5°)

Departure
Startup clearance and ATC departure clearance are delivered by ATC on LSMD TWR frequency.

CONTACT DETAILS

Handling Agent (TopMotion):	Phone: Mail:	+41 44 820 10 60 aircraft.handling@topmotion.ch
Meteo Schweiz:	Phone:	0900 162 737 +41 58 460 91 11
ATC Supervisor Dübendorf:	Phone:	+41 44 823 61 63
Chief Flight Operations (CFO)	Phone: Mail:	+41 58 460 24 81 cfo-duebendorf.lw@vtg.admin.ch
Chief Support Ground	Phone:	+41 58 460 22 31
Flow Management Position (FMP) Zurich	Phone:	+41 43 931 69 62
Flight plan transmission by phone:	Phone:	+41 43 931 61 61

Links:

Daily Airspace Bulletin Switzerland (DABS):
www.skybriefing.com

Diplomatic Clearance:
http://www.bazl.admin.ch
→ Portal for Specialists → Air Transport → Diplomatic Clearances

Meteo Service:
http://www.meteoschweiz.admin.ch/
→ Services & publications → Advice & service → Aviation weather

Obstacle Chart:
http://map.bazl.admin.ch/

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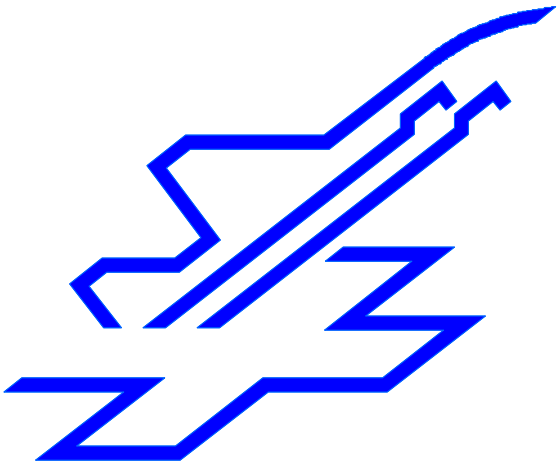
Part One VFR

WEF 2024 only

Valid from January 13th to 19th 2024



DUB 11

VFR GENERAL

Be aware of possible delay especially between 1000LT – 1100LT / 1230LT – 1430LT due to LSZH RWY 16 departures.

FLIGHT RESTRICTIONS AND REMARKS:

Temporary Airspace Restrictions

LSZH RWY34 IN USE
Status (LSZH RWY 34 in use for landing and activation of corresponding airspace) may be inquired via TEL +41 43 816 22 95 or on following frequencies:

LSZH CTR 2 HX: ZRH ATIS: 129.005 MHz
LSZH TMA 14/15 HX: ZRH ATIS: 129.005 MHZ or ZRH TERMINAL: 127.755 MHz
Alternative: DUB TWR 118.975 MHz, EMM TWR 118.000 MHz

LSZH RWY34 may be used for landing at any time. However, it's mainly the case during the following times:

Monday - Friday:	Saturday, Sunday, German Public Holidays
2045 – 0715 LT (1945 – 0615 UTC)	1945 –0915 LT (1845 – 0845 UTC)

Airspace CTR LSMD above *6000 ft/AMSL (4000ft/AMSL* during APCH RWY34 LSZH):
ATC DUB may grant the authorization after coordination with ZRH ATC. Clearance for the use of the airspace within CTR LSMD above *6000 ft/AMSL (4000ft/AMSL)* shall be requested as necessary by reporting times of entry and departure on DUB TWR five minutes prior to utilization.

Regulation with Speck-Fehraltorf
Aerodrome Speck-Fehraltorf is located ESE of LSMD within the CTR.
VFR activity has to be expected.

Procedures for TMA's 4,5,7,11,14 and 15 of Zurich
Entering this airspace without clearance is prohibited.

Noise Sensitive Areas
All cities, bigger towns and hospitals shall be considered as noise sensitive areas.
Overflights are only allowed exceptionally.

PROCEDURES HELICOPTER

For ARR and DEP routes refer to pages DUB 26 to DUB 27.
For TAXI PROCEDURE refer to pages DUB 21 to DUB 22.

RESTRICTIONS

LSZH RWY 28 in-use

Sector 1:
closed unless instructed by ATC.

LSZH RWY 34 in-use

Sector 2

- ARR: Via Richterswil, Stäfa and South of Pfäffikersee max 4000ft/AMSL, then straight-in approach or according ATC. Call DUB TWR 5NM south of Richterswil (due to coordination CTR 2 LSZH).

- DEP: Via KP (max 3000ft/AMSL) along the northshore of Greifensee and Sihlbrugg (max 4000ft/AMSL), east of the line KP – Sihlbrugg.

Sector 3:
closed unless instructed by ATC.

PROCEDURES PROP/JET

For ARR and DEP routes refer to pages DUB 25 and DUB 28.

RESTRICTIONS

LSZH RWY 28 in-use

Sector 1:
closed unless instructed by ATC. Expect traffic circuit south of aerodrome.

LSZH RWY 34 in-use

Sector 2:

- ARR RWY 29: Via Richterswil, Stäfa and South of Pfäffikersee max 4000ft/AMSL, then straight-in approach or according ATC. Call DUB TWR latest 5NM south of Richterswil (due to coordination CTR 2 LSZH). In case of go-around join right hand circuit.
- ARR RWY 11: not available unless instructed by ATC.
- DEP RWY 11:
  PROP: Via KP (max 3000ft/AMSL) along the northshore of Greifensee and Sihlbrugg (max 4000ft/AMSL), east of the line KP – Sihlbrugg.
  JET: According ATC.
- DEP RWY 29: Via right turn after departure only. Route according DEP RWY 11 (see above).

Sector 3:
closed unless instructed by ATC.

CHART LEGEND

Aerodromes

International Airport, hard surface RWY


Airport, hard surface RWY


Airfield (private), hard surface RWY


Airfield (private), unpaved RWY


Civil airport with military use (joint), hard surface RWY


Civil airfield with military use (joint), hard surface RWY


Military aerodrome, hard surface RWY


Military aerodrome, unpaved RWY


Alignment of longest RWY


Closed aerodrome

Heliport

Obstacles

Obstacle and obstacle group, numerals indicate elevation of top in *ft AMSL*, or Height in ft AGL


Obstacle and obstacle group, lighted

Obstacle, lighted 500 ft AGL or more


Transmission lines

Mainly aerial cableways, numerals indicate heights of top in ft AGL

Navigation

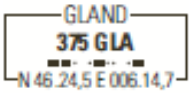

DME

Tag for DME


VOR/DME

Tag for VOR/DME


NDB



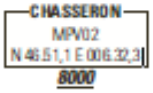
Tag for NDB


Compulsory and on request reporting point


Intersection (INT) reporting compulsory/on request


Waypoint (WPT) Fly-by reporting compulsory/on request

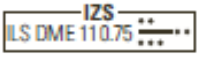

Waypoint (WPT) Fly-over reporting compulsory/on request



TAG for INT or WPT with MCA


ILS front course

ILS profile



Tag for ILS with morse code

Tracks

Approach

Missed approach

Engine Out Standard Instrument Departure (EOSID)

COR: Legend Swiss MIL FLIP integrated (WEF 12OCT2017)

VFR – CHART LEGEND

Airspace Structure

Flight information region, FIR

AoR ZURICH / AoR GENEVA — Area of responsibility, AoR

W 104 — ATS routes

FIZ SAMEDAN — Flight information zone, FIZ

FL 100 — Buffer zone to AWY, at and above indicated FL

TEMPO buffer

CTR airspace class A

CTR airspace class C D

Airspace class A

Airspace class C D

Airspace class E

TEMPO C D

D FL 130 / GND / U 07 / ALP TWR — Tag for airspace

Airspace Restriction

LS - D4 / 7200 / GND — Prohibited, restricted or danger area

Nature reserve, overflight at high altitute only

Miscellaneous

Separation line Mittelland-Jura/Alps

Political border

Protected Area

Noise sensitive Area

5500 — All indications of altitude in *ft AMSL*

5500 — All indications of heights in ft AGL

Airspace Activities


Hang glider area


Glider activity


Paraglider area


Parachute jumping


Free balloon site


Winch-launching

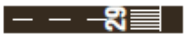

Helicopter activity

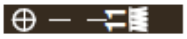
COR: Legend Swiss MIL FLIP integrated (WEF 12OCT2017)

ADDITIONAL AERODROME CHART ELEMENTS

Runway, Taxiway, Apron


Paved pre-threshold area; not suitable for the normal use by aircraft


Hard surface RWY with displaced THR

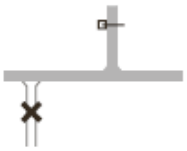

Hard surface RWY with displaced THR, touchdown point 1-engine ACFT


ARP on RWY


Begin/End of RWY

Grass RWY


Apron and TWY


Barrier on TWY, closed TWY


Apron BDRY

Marking, Lighting, Landing Facilities


WDI, lighted and unlighted


Drag chute release signal

Arresting cable and barrier


ARG

Infrastructure


Helicopter landing area


Weapon troubles area


Alert location port


AIS/MET


Hot refuelling area

Navigation


Radio communication installations


LOC or SRE/SSR antenna


GP/DME or LOC/DME antenna


QUAD radar / MALS+ radar

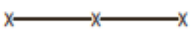

VASIS

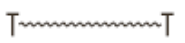
Base Map

Road

Railway and railway tunnel


Buildings


Fence


Transmission lines

VFR - AERODROME SIGNS

STANAG SIGNALS

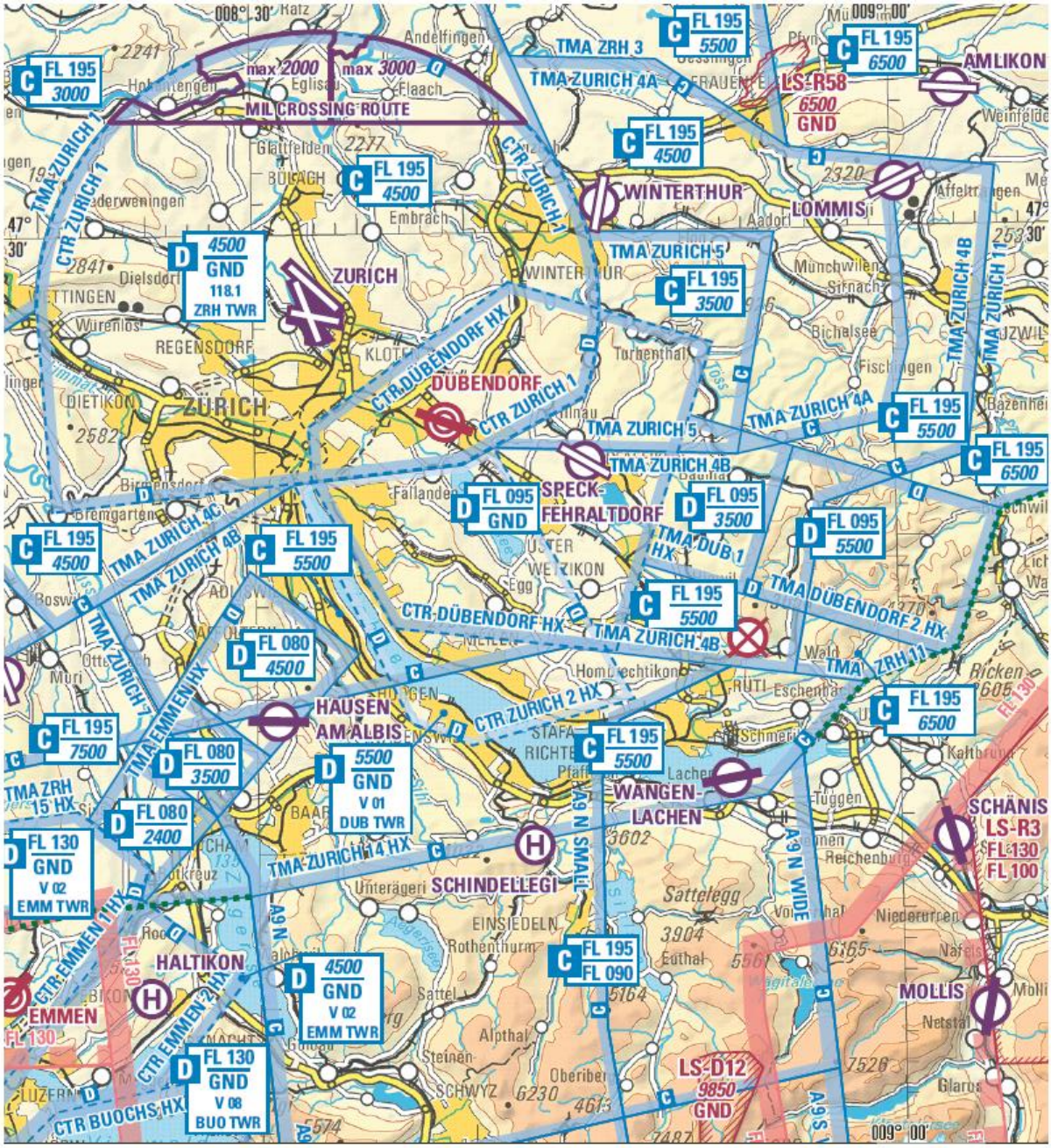
04 / 22	Runway Designator
A - H	Taxiway Designator
	Taxiway Direction, lighted
	Location Holding Position, lighted
	Runway Distance Remaining, lighted *provides remaining runwy length in 1000 feet increments*
	Black-ice Emergency Warning System
	Taxiway Edge Light
	Rotating Beacon

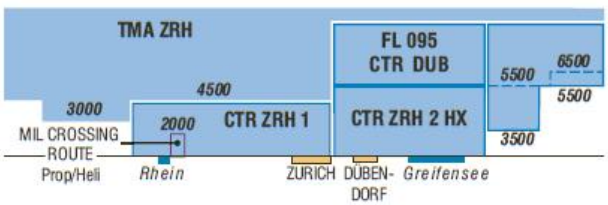
AERA CHART

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	

VFR AREA CHARTS





Scale 1:500 000

0 1 2 3 4 5 6 7 8 9 10 NM

When LSZH RWY34 in use see GEN
Without CLR CTR/TMA DUB MAX *6000ft* AMSL

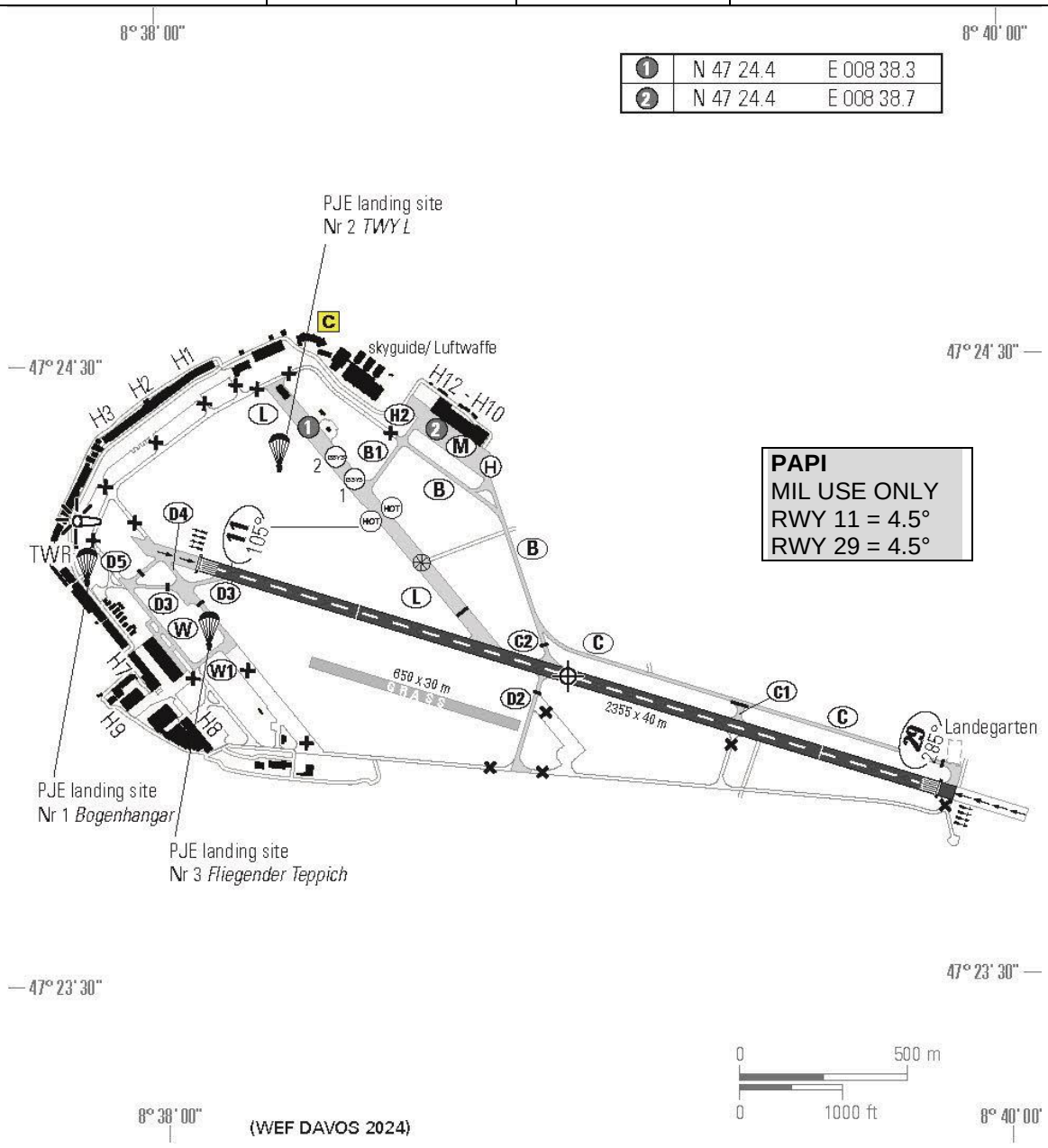
COR: LS-R58 added (WEF 23MAR2023)

AERODROME CHART

AERODROME CHART

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	



RWY width 40m / 131ft

TWY width 10m / 33ft

Slope RWY 11: +0.52%
RWY 29: -0.52%

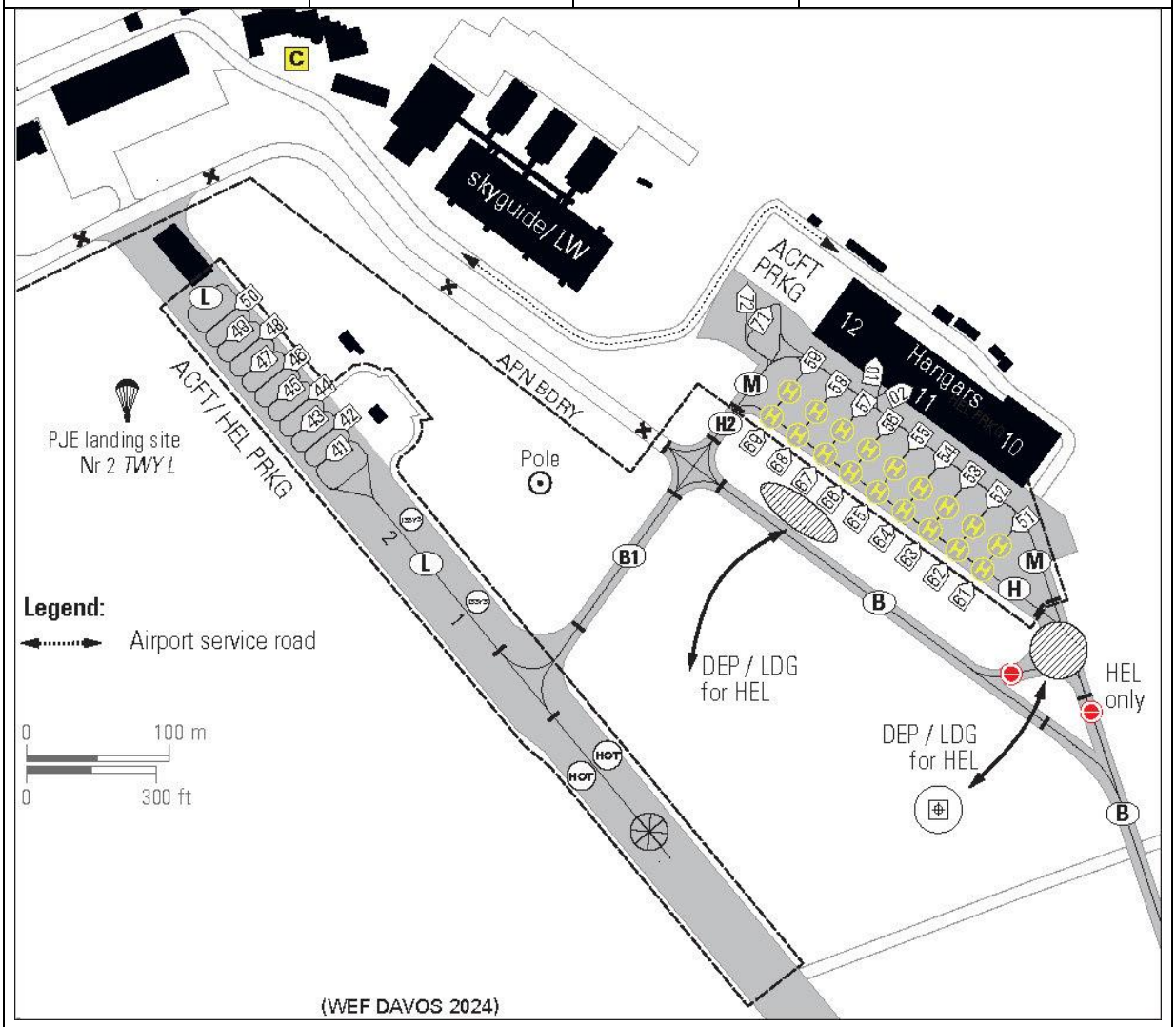
Helicopters max overall width
WEF HELIPAD 18m

TAXI PROCEDURE

TAXI PROCEDURE

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	

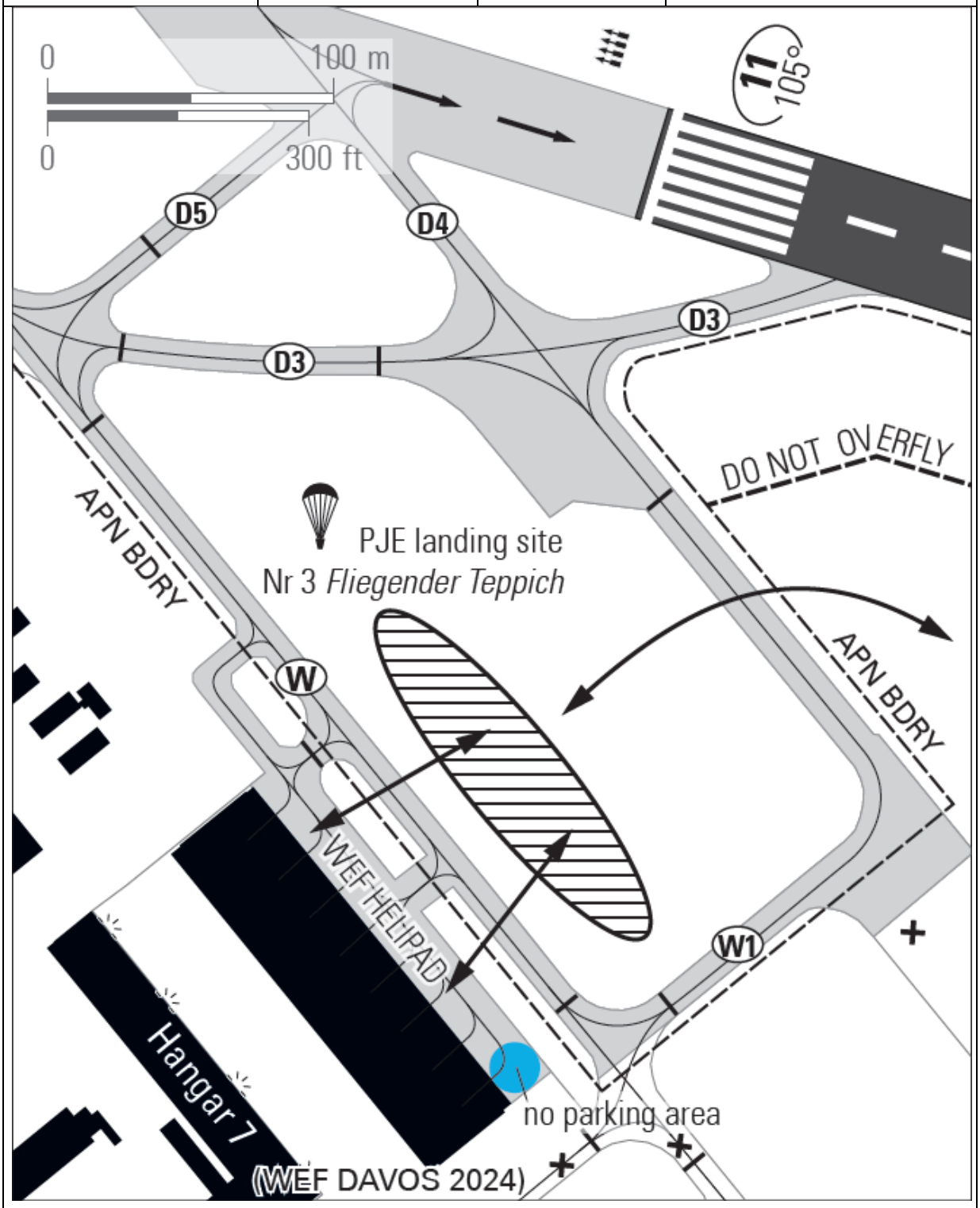


TAXI PROCEDURE HEL

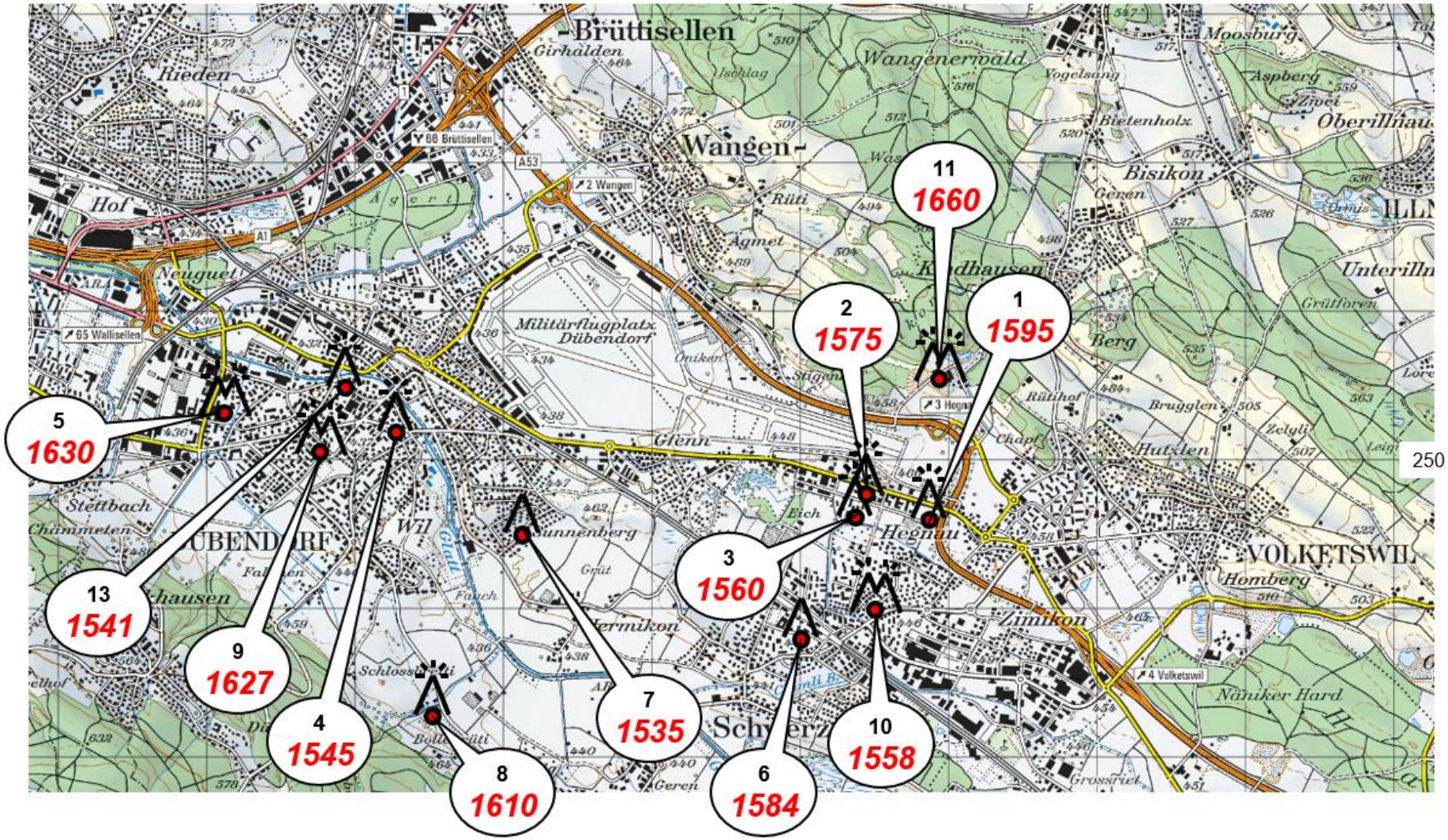
TAXI PROCEDURE & HELIPAD SITUATION

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	



OBSTACLES AND CRANES CHART



250

NMLC50/2023: last update 28.11.2023

Legal disclaimer: Obstacle data could be wrong or incomplete.

DUB 23

OBSTACLES AND CRANES

Nr auf Karte (siehe Rückseite):	1	2	3	4 (neu)
Art:	Baukran	Baukran	Baukran	Baukran
Standort:	Zürcherstrasse Volketswil	Maiacherstrasse Volketswil	Maiacherstrasse Volketswil	Schulhausstrasse 19 Dübendorf
	~ 0.6km SE THR 29	~ 0.4km S THR29	~ 0.5km S THR29	~ 1.2km SW THR 11
Koordinaten:	692920 / 249620	692326 / 249843	692362 / 249634	689291 / 250140
Höhe:	35m (485m/1595ft AMSL)	35m (480m/1575ft AMSL)	25m (475m/1560ft AMSL)	34m (472m/1545ft AMSL)
Markierungen:	Tagesmarkierung und Nachtbefeuerung vorhanden	Tagesmarkierung und Nachtbefeuerung vorhanden	Tagesmarkierung und Nachtbefeuerung vorhanden	Tagesmarkierung und Nachtbefeuerung vorhanden

Nr auf Karte (siehe Rückseite):	5	6	7	8
Art:	Krangruppe	Baukran	Baukran	Baukran
Standort:	Sonnentalstrasse / Ringstrasse Dübendorf	Schorenstrasse 7 Schwerzenbach	Raubbühlstrasse 18 Dübendorf	Dübendorferstrasse 25 Fällanden
	~ 0.5km SW THR 11	~ 1.4km SSW THR 29	~ 1.3 km S THR 11	~ 2.6km S THR 29
Koordinaten:	687937 / 250 384	691927 / 248794	690123 / 249447	689555 / 248288
Höhe:	63m (497m/1630ft AMSL)	38m (483m/1584ft AMSL)	20m (468m/1535 ft AMSL)	40m (491m/1610ft AMSL)
Markierungen:	Tagesmarkierung und Nachtbefeuerung vorhanden	Keine	Keine	Tagesmarkierung und Nachtbefeuerung vorhanden

Nr auf Karte (siehe Rückseite):	9	10	11	12
Art:	Baukran	Krangruppe	Krangruppe	
Standort:	Lerchenweg Dübendorf	Grindelstrasse 2-6 Volketswil	Schützenstrasse 55 Volketswil	
	~ 1.7 km WSW THR 11	~ 1.1km S THR 29	~ 0.7 km NE THR 29	
Koordinaten:	688758 / 250094	692532 / 249015	689188 / 250191	
Höhe:	60m (496m/1627ft AMSL)	34m (475m/1558ft AMSL)	42m (480m/1575ft AMSL)	
Markierungen:	Tagesmarkierung und Nachtbefeuerung vorhanden	Tagesmarkierung und Nachtbefeuerung vorhanden	Tagesmarkierung und Nachtbefeuerung vorhanden	

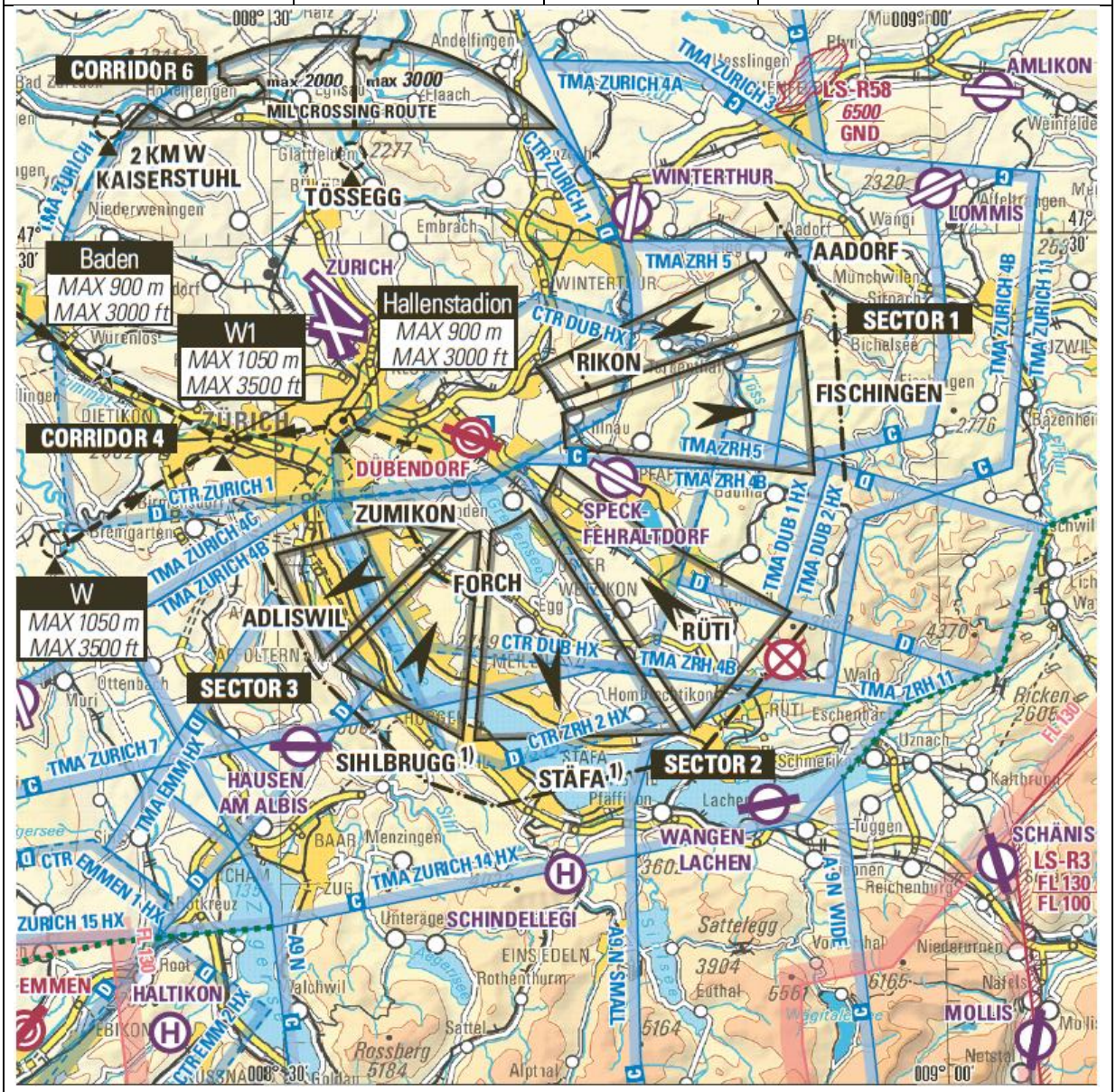
See NOMIL 50/2023 (EFFECTIVE DATE 28.11.2023)

VFR ARR/DEP ROUTES

ARRIVAL/DEPARTURE ROUTES

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	



1) When LSZH RWY34 or RWY28 in use see VFR GENERAL

Scale 1:500 000

0 1 2 3 4 5 6 7 8 9 10 NM

Reporting Line

Subject to Authorization by ATC

SECTOR — See VFR GENERAL

Without CLR CTR/TMA DUB MAX *6000ft* AMSL

HEL VFR ARR / DEP ROUTES

DUB TWR	ALTN TWR
V/U 01 (118.975 / 259.650)	V 00 (119.700)

Avoid cities and isolated houses!
Outbound Russikon: be aware and avoid circuit Speck.

300 m / 1000 ft AGL

"LOW ALTITUDE": 100 m / 350 ft AGL

When LSZH RWY34 in use see DUB 5

Without CLR CTR/TMA DUB MAX *6000ft* AMSL

Scale 1:250 000

0 1 2 3 4 5 NM

0 1 2 3 4 5 6 7 8 9 10 KM

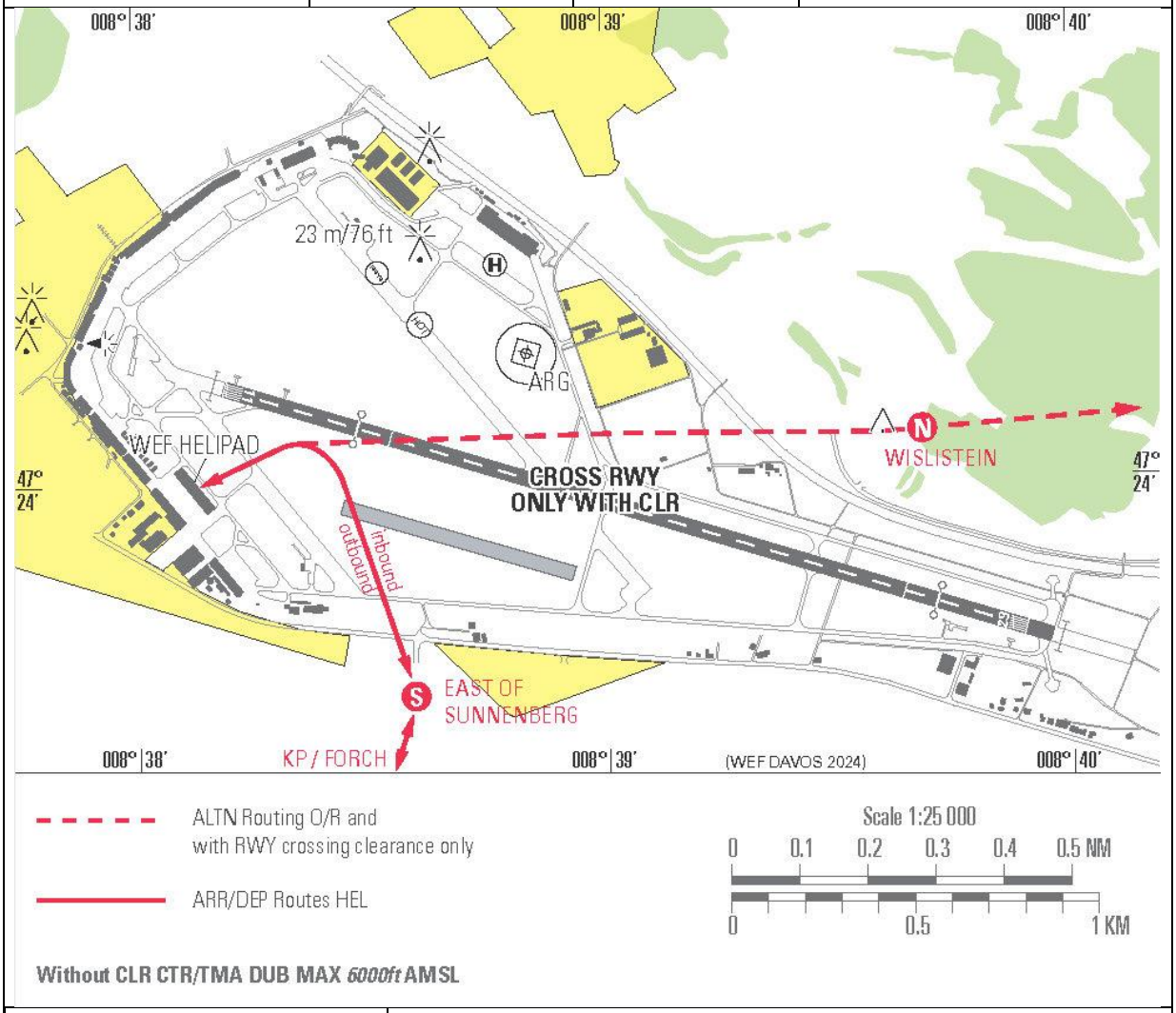
COR: LS-R58 added, REP Russikon, legend (WEF 23MAR2023)

VFR ARR/DEP ROUTES

HEL LANDING CHART

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	



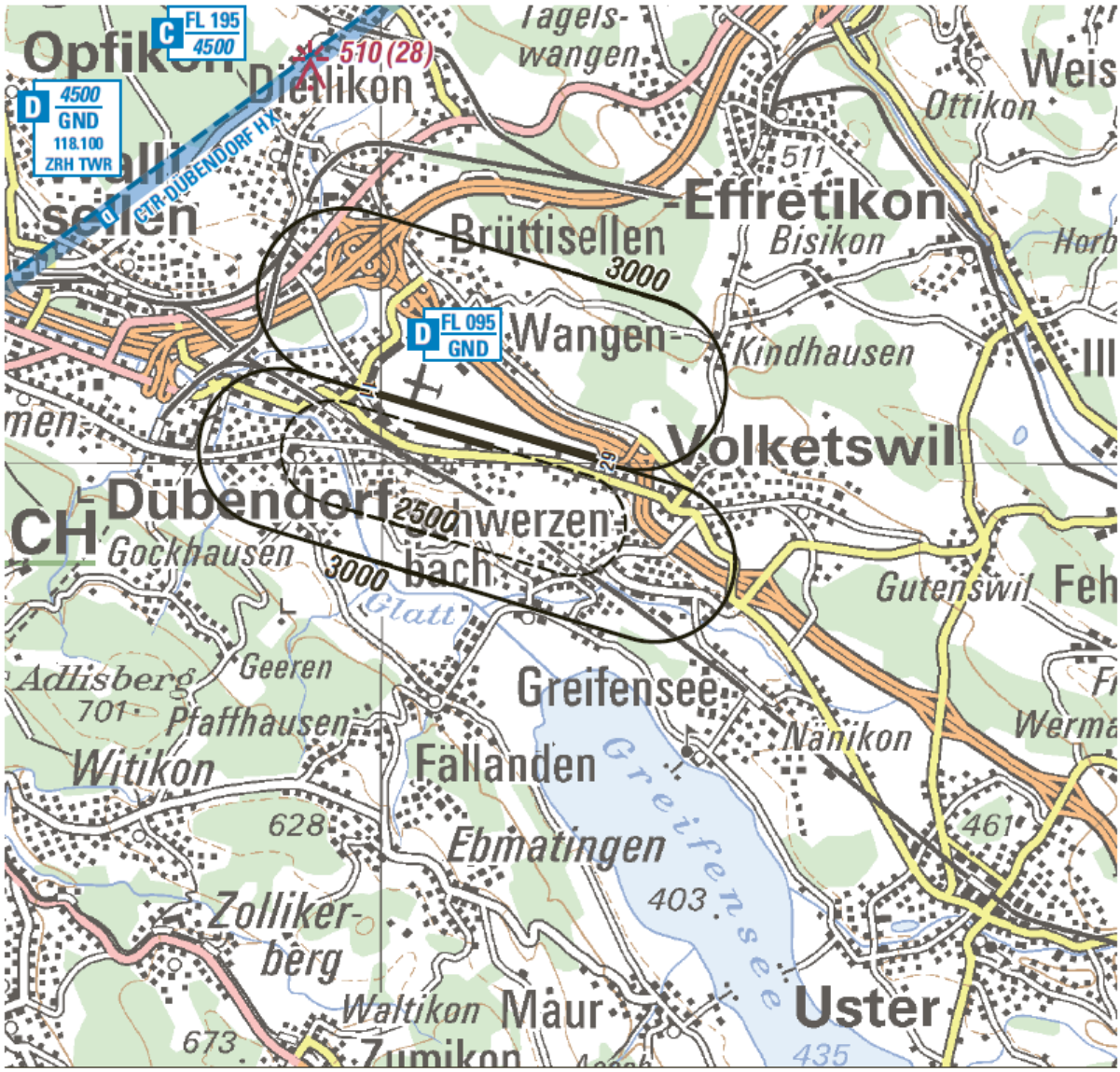
ARRIVAL CORRIDOR from the SOUTH	At least 200 m/GND / 600ft/AGL to "S", then descend for landing max. 90 KTS. Cross the RWY only with CLR! If TWR instruction "LOW ALTITUDE" 100 m/GND / 350ft/AGL to "S", then descend for landing.
DEPARTURE CORRIDOR to the SOUTH	Climb immediately to 200 m/GND / 600 ft/AGL. Cross the RWY only with CLR. If TWR instruction "LOW ALTITUDE", climb at aerodrome fence to 100 m/GND / 350ft/AGL. Remain at this Altitude to Lake Greifensee.
ARRIVAL CORRIDOR from the NORTH	200m/GND / 600ft/AGL to „N", then descend for landing max. 90 KTS. If TWR instruction "LOW ALTITUDE" descend to 100m/GND / 350ft/AGL to "N", then descend for landing.
DEPARTURE CORRIDOR to the NORTH	Climb immediately to 200m/GND / 600ft/AGL. If TWR instruction "LOW ALTITUDE" climb to 100m/GND / 350ft/AGL and remain at this altitude to Russikon.

VFR LANDING CHART

LANDING CHART

DUEBENDORF (LSMD)

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	



Without CLR CTR/TMA DUB MAX *6000ft* AMSL

3000 or according ATC

2500

1:100 000

0 0,5 1 1,5 2 NM

0 1 2 3 4 KM

COR: note (WEF 23MAR2023)

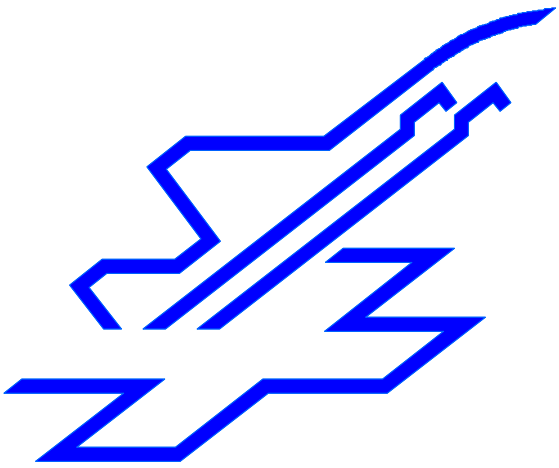
SWISS AIR FORCE

Air Crew Guide for World Economic Forum 2023

Part Two
IFR

WEF 2024 only

Valid from January 13th to 19th 2024



DUB 29

GENERAL

CIVIL AIRCRAFT AT MILITARY AIRBASE LSMD
Dübendorf is a military airbase which does not meet all requirements according to ICAO Annex 14.

Several installations such as the PAPI and the approach light system are not compliant with civil standards and shall be disregarded for flight planning and operation.

SAFA CHECKS
Expect random SAFA spot checks by FOCA after landing.

Civil users are advised to take the following into consideration:

ILS APCH PROCEDURES
While the ILS 29 radio-signal fulfills the requirements as per ICAO Annex 10, the approach leads to a non-instrument runway according to ICAO Annex 14.
Therefore the ILS is uncategorized.

ILS RWY 29 STEEP APCH
The ILS RWY 29 has a glidepath of 4.5° and is therefore considered as steep approach. A/C must be certified and crew must be trained to conduct steep approach. No exceptions to this regulation are granted. For A/C and/or crew unable to use steep approaches a RNP (GNSS) APCH "W" RWY 29 is available with a glidepath of 4.4° offering both LPV and LNAV MNM.

For more details see DUB 40 (ILS) and DUB 41 (RNP "W").

PAPI (**P**recision **A**pproach **P**ath **I**ndicator) MIL use only

RWY 11 = 4.5°
RWY 29 = 4.5°

Minima for IFR departures (TKOF minima)

RWY	ACFT CAT	RVR (m) / Ceiling (ft AGL)		RMK
		No LGT AVBL	REDL AVBL	
All	A-D	800 / --	400 / --	NIL
All	H	800 / --	400 / --	NIL

RNP APCH
Only RNP (GNSS) W APCH available during WEF.

DEFINITION OF APPROACH-TIME / APPROACH FIX
Approach-time starts at the FAF/FAP (final approach fix / -point) of the RWY used for IFR approach.
Hereby, the FAF/-FAP is the point of descent, at which the IFR final approach procedure (ILS, RNP, LOC) is initiated.

ILS / RNP APPROACH PROCEDURES
Uncategorized ILS approach RWY 29 due to runway type: Non-instrument runway.
ILS 29 signal fulfills ICAO Annex 10, CAT I specifications.
Steep approach.

APPLICABLE MNM FOR ACFT CAT A-D: DH 500ft (1970ft/AMSL)

RADIO NAVIGATION AND LANDING AIDS

TYPE CATEGORY (VARIATION)		ID	FREQENCY	HOURS OF OPERATION	SITE OF TRANSMITTING ANTENNA COORDINATES	ELEVATION OF DME TRANSMITTING ANTENNA [m]	REMARKS / RESTRICTIONS
ILS 29 LOC UNCAT		IDU	111.15 MHz	H24	47° 24' 08.59"N 008° 37' 48.59"E		LLZ: 17NM -35°S… 30° N 5300ft QNH 25NM + 10° 7300ft QNH DME: 17NM -35°S… 30° N 5300ft QNH 25NM + 10° 7300ft QNH GP: no restriction
GP 29				H24	47° 23' 43.51"N 008° 39' 34.45"E		GP Angle 4.5°
DME 29				H24	47° 23' 43.28"N 008° 39' 34.24"E	446.3	

RESTRICTIONS

LSZH RWY 28 in use
When ILS RWY 28 at LSZH is in operation, DUB will be limited to 6000 ft.

- Line-up from the SW
- IFR SID are possible, expect delay

LSZH RWY 34 in use
Expect significant delay (or routing to ALTN in exceptional cases depending on traffic amount of LSZH). Preferred DEP RWY11.
Expect IFR APCH RWY29 with straight-in LDG. (Circling to RWY11 available in exceptional cases only).

FLIGHTS FROM DAVOS (LSMV) TO ZURICH (LSZH)

ICAO flight plan “Z” with Destination LSMD (Alternate LSZH) mandatory.
Item 18: RMK/REQ ARR MSG TO LSMDYWYA NO LDG AT LSMD

For the flight plan to be accepted joining via ZUE has to be filled in.

METEO MINIMA
Be aware entering CTR LSZH requires 2000m VIS.

In any case at IDU DME3.0 visual contact compulsory to complete the APCH in VMC via Route S or Route 4B/4G.
If no visual contact, G/A has to be initiated.

COPTER IFR DEPARTURES RWY 11
COPTER RNP SID LS110 1K not available for civil HEL Operators during WEF 2023.

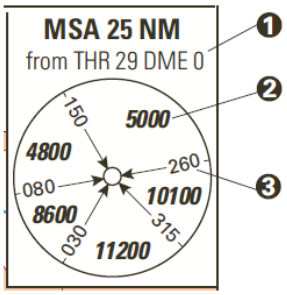
Altitude corrections at low OAT

The temperature correction on altitude effects the following published altitudes, which therefore should be increased whenever the OAT is below -15°C on the aerodrome:

OAT	*Height above elevation of the altimeter setting source (feet)*													
(°C)	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
0	20	20	30	30	40	40	50	50	60	90	120	170	230	280
-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20	30	50	60	70	90	100	120	130	140	210	280	420	570	710
-30	40	60	80	100	120	140	150	170	190	280	380	570	760	950
-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50	60	90	120	150	180	210	240	270	300	450	590	890	1190	1500

MINIMUM SECTOR ALTITUDE (MSA)

NOTE: Normal coverage is a 25 NM radius from the forming facility/fix. If the protected coverage is other than 25 NM, that radius is depicted below the forming facility/fix. If the depiction of the MSA is feasible on the MAP VIEW the MSA BOX will not be shown.



❶ Navaid/Fix/ARP the MSA is predicated on.

❷ Minimum sector altitude.

❸ Sector defining Radial/Bearing, always depicted inbound for the Navaid, Fix or Aerodrome Reference Point (ARP).

GRADIENT TO RATE TABLE

TABLES

GRADIENT TO RATE TABLE

This table provides a RATE OF CLIMB (ROC) or DESCEND (ROD) in feet per minute below the GROUND SPEED IN KNOTS for the gradient shown in FEET PER NAUTICAL MILE, DEGREES and PER CENT at the left. This table is for use in climbs, descends from altitude and non-precision instrument approach procedures.

GRADIENT			GROUND SPEED IN KNOTS													
ft/NM	°	%	60	70	80	100	120	140	150	160	180	200	250	300	350	400
300	*2.83°*	*4.94*	300	350	400	500	600	700	750	800	900	1000	1250	1500	1750	2000
320	*3.02°*	*5.27*	320	373	427	533	640	747	800	853	960	1067	1333	1600	1867	2133
340	*3.20°*	*5.60*	340	397	453	567	680	793	850	907	1020	1133	1417	1700	1983	2267
360	*3.39°*	*5.92*	360	420	480	600	720	840	900	960	1080	1200	1500	1800	2100	2400
380	*3.58°*	*6.25*	380	443	507	633	760	887	950	1013	1140	1267	1583	1900	2217	2533
400	*3.77°*	*6.58*	400	467	533	667	800	933	1000	1067	1200	1333	1667	2000	2333	2667
420	*3.96°*	*6.91*	420	490	560	700	840	980	1050	1120	1260	1400	1750	2100	2450	2800
440	*4.14°*	*7.24*	440	513	587	733	880	1027	1100	1173	1320	1467	1833	2200	2567	2933
460	*4.33°*	*7.57*	460	537	613	767	920	1073	1150	1227	1380	1533	1917	2300	2683	3067
480	*4.52°*	*7.90*	480	560	640	800	960	1120	1200	1280	1440	1600	2000	2400	2800	3200
500	*4.70°*	*8.23*	500	583	667	833	1000	1167	1250	1333	1500	1667	2083	2500	2917	3333
520	*4.89°*	*8.56*	520	607	693	867	1040	1213	1300	1387	1560	1733	2167	2600	3033	3467
540	*5.08°*	*8.89*	540	630	720	900	1080	1260	1350	1440	1620	1800	2250	2700	3150	3600
560	*5.27°*	*9.22*	560	653	747	933	1120	1307	1400	1493	1680	1867	2333	2800	3267	3733
580	*5.45°*	*9.55*	580	677	773	967	1160	1353	1450	1547	1740	1933	2417	2900	3383	3867
600	*5.64°*	*9.88*	600	700	800	1000	1200	1400	1500	1600	1800	2000	2500	3000	3500	4000
620	*5.83°*	*10.20*	620	723	827	1033	1240	1447	1550	1653	1860	2067	2583	3100	3617	4133
640	*6.01°*	*10.53*	640	747	853	1067	1280	1493	1600	1707	1920	2133	2667	3200	3733	4267
660	*6.20°*	*10.86*	660	770	880	1100	1320	1540	1650	1760	1980	2200	2750	3300	3850	4400
680	*6.39°*	*11.19*	680	793	907	1133	1360	1587	1700	1813	2040	2267	2833	3400	3967	4533
700	*6.57°*	*11.52*	700	817	933	1167	1400	1633	1750	1867	2100	2333	2917	3500	4083	4667
720	*6.76°*	*11.85*	720	840	960	1200	1440	1680	1800	1920	2160	2400	3000	3600	4200	4800
740	*6.94°*	*12.18*	740	863	987	1233	1480	1727	1850	1973	2220	2467	3083	3700	4317	4933
760	*7.13°*	*12.51*	760	887	1013	1267	1520	1773	1900	2027	2280	2533	3167	3800	4433	5067
780	*7.32°*	*12.84*	780	910	1040	1300	1560	1820	1950	2080	2340	2600	3250	3900	4550	5200
800	*7.50°*	*13.17*	800	933	1067	1333	1600	1867	2000	2133	2400	2667	3333	4000	4667	5333
820	*7.69°*	*13.50*	820	957	1093	1367	1640	1913	2050	2187	2460	2733	3417	4100	4783	5467
840	*7.87°*	*13.82*	840	980	1120	1400	1680	1960	2100	2240	2520	2800	3500	4200	4900	5600
860	*8.06°*	*14.15*	860	1003	1147	1433	1720	2007	2150	2293	2580	2867	3583	4300	5017	5733
880	*8.24°*	*14.48*	880	1027	1173	1467	1760	2053	2200	2347	2640	2933	3667	4400	5133	5867
900	*8.43°*	*14.81*	900	1050	1200	1500	1800	2100	2250	2400	2700	3000	3750	4500	5250	6000
920	*8.61°*	*15.14*	920	1073	1227	1533	1840	2147	2300	2453	2760	3067	3833	4600	5367	6133
940	*8.79°*	*15.47*	940	1097	1253	1567	1880	2193	2350	2507	2820	3133	3917	4700	5483	6267
960	*8.98°*	*15.80*	960	1120	1280	1600	1920	2240	2400	2560	2880	3200	4000	4800	5600	6400
980	*9.16°*	*16.13*	980	1143	1307	1633	1960	2287	2450	2613	2940	3267	4083	4900	5717	6533

TABLES

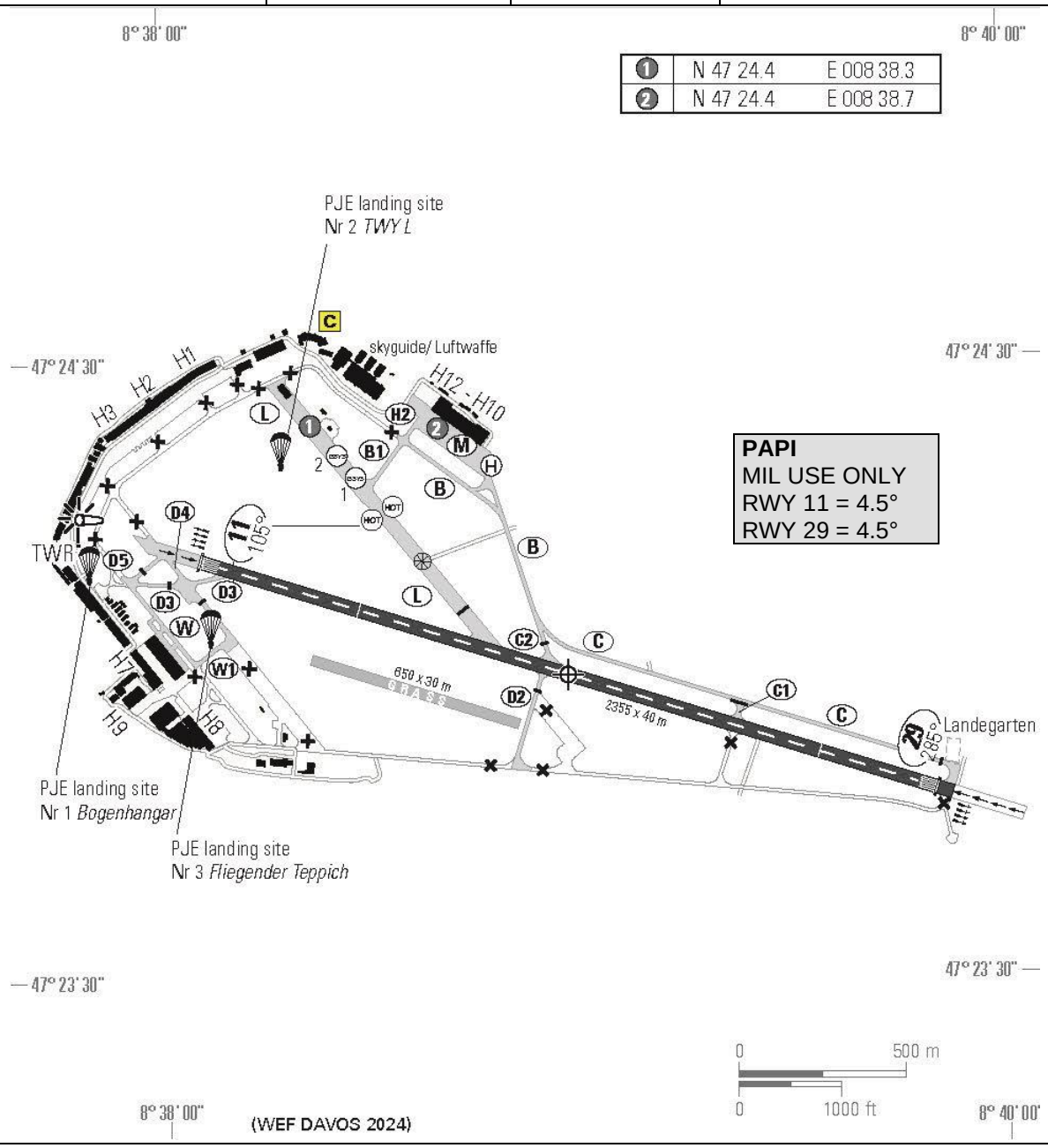
GRADIENT			GROUND SPEED IN KNOTS													
ft/NM	°	%	60	70	80	100	120	140	150	160	180	200	250	300	350	400
1000	*9.35°*	*16.46*	1000	1167	1333	1667	2000	2333	2500	2667	3000	3333	4167	5000	5833	6667
1020	*9.53°*	*16.79*	1020	1190	1360	1700	2040	2380	2550	2720	3060	3400	4250	5100	5950	6800
1040	*9.71°*	*17.12*	1040	1213	1387	1733	2080	2427	2600	2773	3120	3467	4333	5200	6067	6933
1060	*9.90°*	*17.45*	1060	1237	1413	1767	2120	2473	2650	2827	3180	3533	4417	5300	6183	7067
1080	*10.08°*	*17.77*	1080	1260	1440	1800	2160	2520	2700	2880	3240	3600	4500	5400	6300	7200
1100	*10.26°*	*18.10*	1100	1283	1467	1833	2200	2567	2750	2933	3300	3667	4583	5500	6417	7333
1120	*10.44°*	*18.43*	1120	1307	1493	1867	2240	2613	2800	2987	3360	3733	4667	5600	6533	7467
1140	*10.63°*	*18.76*	1140	1330	1520	1900	2280	2660	2850	3040	3420	3800	4750	5700	6650	7600
1160	*10.81°*	*19.09*	1160	1353	1547	1933	2320	2707	2900	3093	3480	3867	4833	5800	6767	7733
1180	*10.99°*	*19.42*	1180	1377	1573	1967	2360	2753	2950	3147	3540	3933	4917	5900	6883	7867
1200	*11.17°*	*19.75*	1200	1400	1600	2000	2400	2800	3000	3200	3600	4000	5000	6000	7000	8000
1300	*12.08°*	*21.40*	1300	1517	1733	2167	2600	3033	3250	3467	3900	4333	5417	6500	7583	8667
1400	*12.98°*	*23.04*	1400	1633	1867	2333	2800	3267	3500	3733	4200	4667	5833	7000	8167	9333
1500	*13.87°*	*24.69*	1500	1750	2000	2500	3000	3500	3750	4000	4500	5000	6250	7500	8750	10000
1600	*14.75°*	*26.33*	1600	1867	2133	2667	3200	3733	4000	4267	4800	5333	6667	8000	9333	10667
1700	*15.63°*	*27.98*	1700	1983	2267	2833	3400	3967	4250	4533	5100	5667	7083	8500	9917	11333
1800	*16.50°*	*29.62*	1800	2100	2400	3000	3600	4200	4500	4800	5400	6000	7500	9000	10500	12000
1900	*17.36°*	*31.27*	1900	2217	2533	3167	3800	4433	4750	5067	5700	6333	7917	9500	11083	12667
2000	*18.22°*	*32.92*	2000	2333	2667	3333	4000	4667	5000	5333	6000	6667	8333	10000	11667	13333
2100	*19.07°*	*34.56*	2100	2450	2800	3500	4200	4900	5250	5600	6300	7000	8750	10500	12250	14000
2200	*19.90°*	*36.21*	2200	2567	2933	3667	4400	5133	5500	5867	6600	7333	9167	11000	12833	14667
2300	*20.73°*	*37.85*	2300	2683	3067	3833	4600	5367	5750	6133	6900	7667	9583	11500	13417	15333

AERODROME CHART

AERODROME CHART

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	
134.925	118.975	134.925	VAR: 2°56' E (2020.5)



RWY width 40m / 131ft

TWY width 10m / 33ft

Helicopters max overall width
WEF HELIPAD 18m

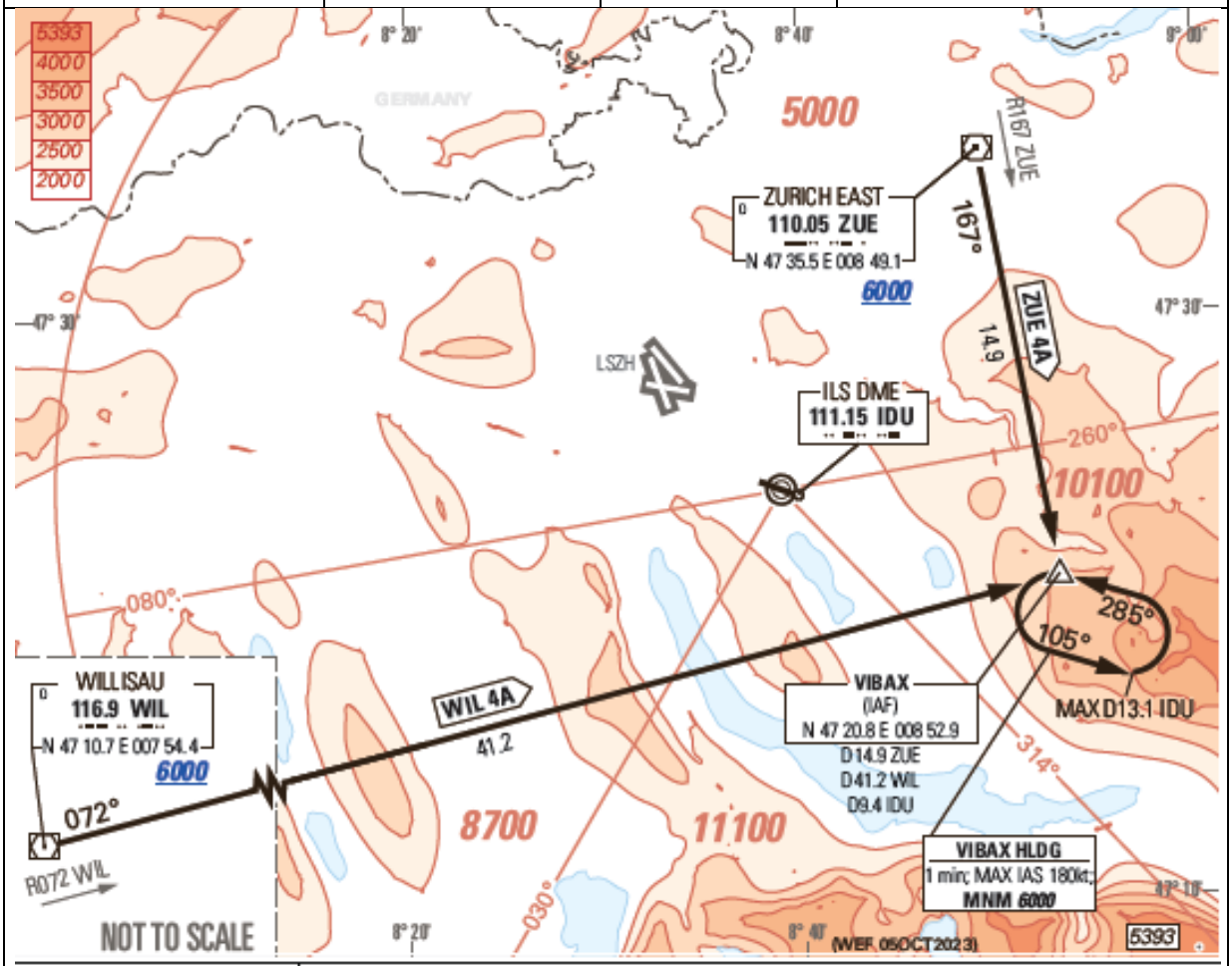
Slope RWY 11: +0.52%
RWY 29: -0.52%

STAR TO VIBAX

NON RNAV STAR

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	



WIL 4A [*WIL4A*]	At WIL (*MCA 6000*) intercept R072 WIL. Proceed to VIBAX.
ZUE 4A [*ZUE4A*]	At ZUE (*MCA 6000*) intercept R167 ZUE. Proceed to VIBAX.

COM FAILURE PROC squawk 7600	Proceed via STAR to VIBAX. At last received or acknowledged EAT or, if no EAT has been received or acknowledged at FPL ETA, descend in the VIBAX holding pattern to *6000*. Carry out a STANDARD INSTRUMENT APCH for the RWY in use.

RNAV 1 STAR

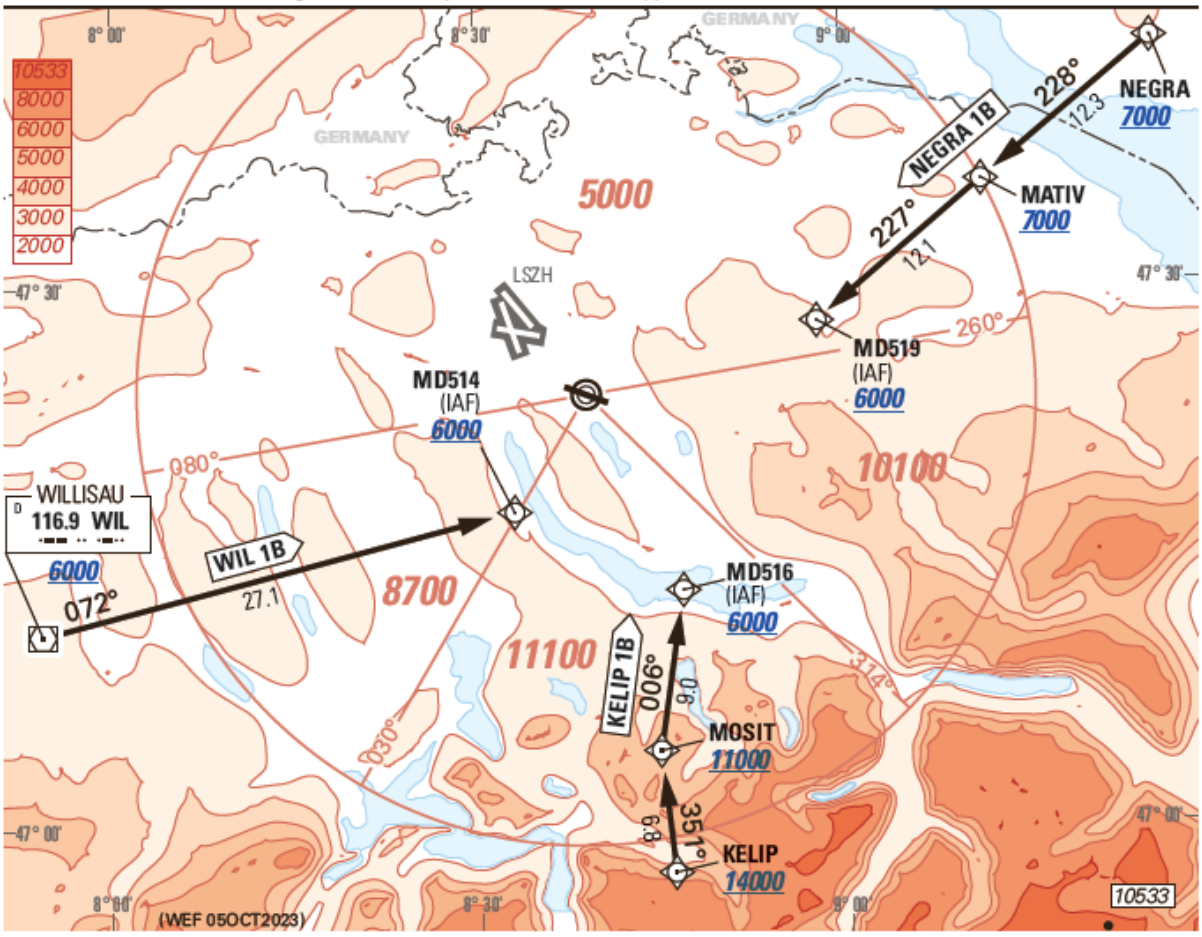
RNAV 1 STAR

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°56' E (2020.5)
134.925	118.975	134.925	

TRANS LVL: BY ATC
TRANS ALT: *7000*

1. GNSS required.
2. IFR profiles partly within airspace class E.
3. Flight crew shall request RNAV W/X/Y/Z approach before WIL/NEGRA/KELIP.



WIL 1B [*WIL1B*]	From WIL (*MCA 6000*) proceed to MD514 (*MCA 6000*).
KELIP 1B [*KELI1B*]	From KELIP (*MCA 14000*) proceed via MOSIT (*MCA 11000*) to MD516 (*MCA 6000*).
NEGRA 1B [*NEGR1B*]	From NEGRA (*MCA 7000*) proceed via MATIV (*MCA 7000*) to MD519 (*MCA 6000*).

WAY POINT LIST RNAV 1 STAR

LSMD ELEV 448 m / 1470ft

WAY POINT RNAV 1 STAR LSMD

Name	Type	Coordinates	
		Latitude	Longitude
WIL		47° 10‘ 41.9’’ N	007° 54’ 21.3’’ E
MD514	IAF	47° 17’ 26.3” N	008° 32’ 56.3’’ E
KELIP		46° 57’ 22.3’’ N	008° 45‘ 42.0’’ E
MOSIT		47° 04’ 08.7’’ N	008° 44’ 37.7’’ E
MD516	IAF	47° 13’ 02.2’’ N	008° 46’ 37.2’’ E
NEGRA		47° 43‘ 20.0’’ N	009° 25’ 37.9’’ E
MATIV		47° 35’ 35.0’’ N	009° 11’ 32.0’’ E
MD519	IAF	47° 27’ 52.2’’ N	008° 57’ 50.6’’ E

INSTRUMENT APCH CHART

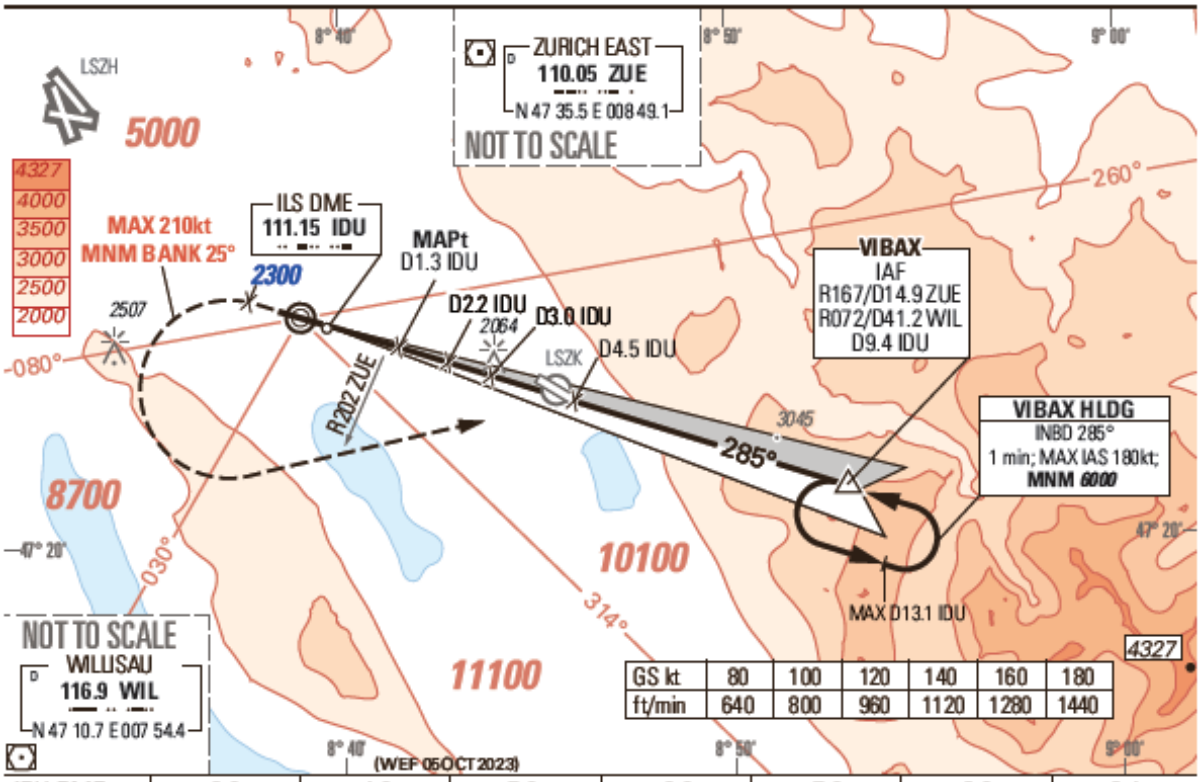
ILS or LOC RWY 29 GS 4.5°

Elevation 448 m / 1470ft — **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR 2°56' E (2020.5)
134.925	118.975	134.925	

TRANS LVL: BY ATC
TRANS ALT: *7000*

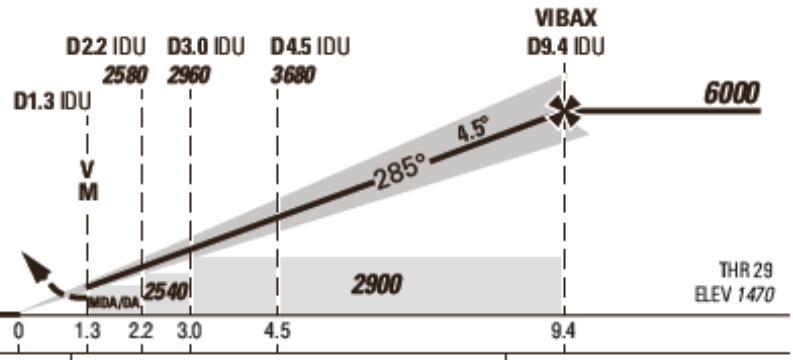
1. Circling: MAX IAS 180kt.
2. Non-Standard approach angle.
3. ❄ -5°C: (Initial, Final and Missed APCH). -1°C: (Circling).



GS kt	80	100	120	140	160	180
ft/min	640	800	960	1120	1280	1440

IDU DME	2.0	4.0	5.0	6.0	7.0	8.0	9.4
ALTITUDE	*2480*	*3440*	*3920*	*4400*	*4870*	*5350*	*6000*

MISSED APPROACH
Climb straight ahead. At *2300* but not before MAPt, D1.3 IDU, turn left (MAX IAS 210kt MNM bank angle 25°) to intercept LOC outbound to VIBAX. Climb to *5000*. After passing ZUE R202 continue climb to *6000*. MNM climb gradient 6.0% up to *3500* (ILS) due to airspace.



ILS	LOC	CIRCLING
Missed apch climb grad MNM 5.0% up to 2600	Missed apch climb grad MNM 2.9% up to 3000	
DA(H) A: **1878** (408) C: **1917** (448) B: **1898** (428) D: **1934** (464)	MDA(H) **2140** (670)	

	ILS FULL	ILS ALS OUT	LOC FULL	LOC ALS OUT	MDA(H)	VIS
A	RVR 1500m		RVR 1500m		2330 (860)	1500m
B					2750 (1280)	1600m
C	RVR 1900m	RVR 2100m	RVR 2400m		3060 (1590)	2400m
D	RVR 2000m	RVR 2200m			3060 (1590)	3600m

These depicted DA(H) are only for MIL use, according DUB 31 applicable MNM for civil aircraft DH 500ft.

INSTRUMENT APCH CHART

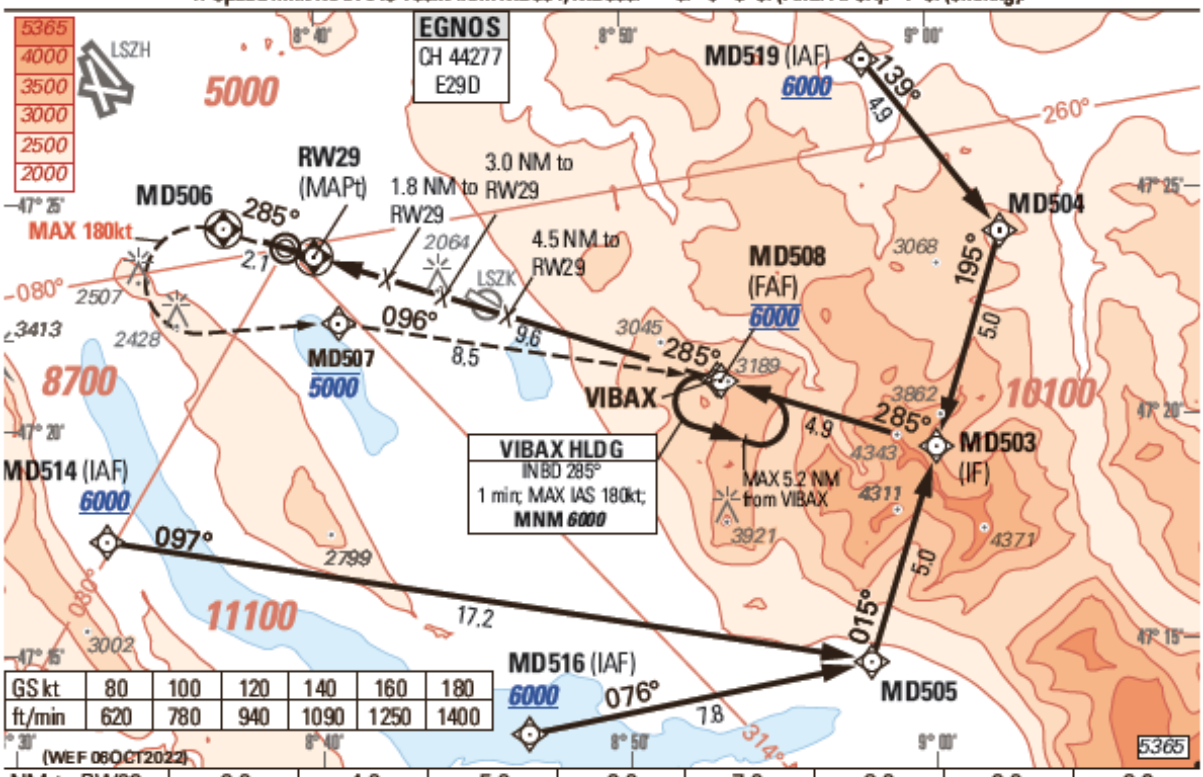
RNP (GNSS) W RWY29 GS 4.4°

Elevation 448 m / 1470ft — **DUEBENDORF (LSMD)**

ARR	TWR	DEP	
134.925	118.975	125.950 (ZRH DEP)	VAR: 2°56' E (2020.5)

TRANS LVL: BY ATC
TRANS ALT: *7000*

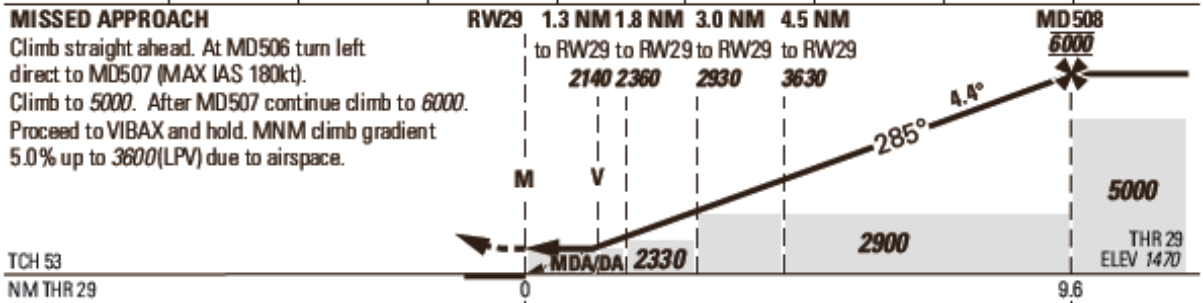
1. PAPI is set to 4.5°.
2. IFR profiles partly within airspace class E.
3. Circling: MAX IAS 180kt.
4. Speed limit MAX IAS 180kt from MD504/MD505.
5. LNAV only: 0.6 NM before THR29 right of centreline Visual Segment Surface (VSS) penetrated by trees up to *1710ft* AMSL.
6. ❄ -8°C: (Final APCH). -1°C: (Circling).



NM to RW29	2.0	4.0	5.0	6.0	7.0	8.0	9.0	9.6
ALTITUDE	*2460*	*3390*	*3860*	*4330*	*4800*	*5260*	*5730*	*6000*

MISSED APPROACH

Climb straight ahead. At MD506 turn left direct to MD507 (MAX IAS 180kt).
Climb to *5000*. After MD507 continue climb to *6000*.
Proceed to VIBAX and hold. MNM climb gradient 5.0% up to *3600*(LPV) due to airspace.



	LPV (Cat I)				LNAV				CIRCLING	
	Missed apch climb grad MNM 5.0% up to 2700		Missed apch climb grad MNM 2.5%		Missed apch climb grad MNM 6.4% up to 3000		Missed apch climb grad MNM 2.5%			
	DA(H) A: **1875** (405) B: **1895** (425) C: **1914** (444) D: **1931** (461)		DA(H) A: **2210** (740) B: **2230** (760) C: **2250** (780) D: **2266** (796)		MDA(H) **2140** (670)		MDA(H) **2630** (1160)			
	FULL	ALS OUT	FULL	ALS OUT	FULL	ALS OUT	FULL	ALS OUT	MDA(H)	VIS
A	RVR 1500m		RVR 1500m		RVR 1500m		RVR 1500m		2330 (860)	1500m
B									2750 (1280)	1600m
C	RVR 1900m	RVR 2100m	RVR 2400m		RVR 2400m		RVR 2400m		3060 (1590)	2400m
D	RVR 2000m	RVR 2200m							3060 (1590)	3600m

These depicted DA(H) are only for MIL use, according DUB 31 applicable MNM for civil aircraft DH 500ft.

WAY POINT LIST RNP (GNSS) W RWY29

Name	Type	Coordinates	
		Latitude	Longitude
MD514	IAF	47° 17' 26.3 N	008° 32' 56.3'' E
MD516	IAF	47° 13' 02.2'' N	008° 46' 37.2'' E
MD519	IAF	47° 27' 52.2'' N	008° 57' 50.6'' E
MD505		47° 14' 30.6" N	008° 57' 49.1" E
MD504		47° 24' 01.5" N	009° 02' 18.9" E
MD503	IF	47° 19' 16.1" N	009° 00' 03.8" E
VIBAX		47° 20' 49.8'' N	008° 52' 55.8'' E
RWY29	THR	47° 23' 43.10'' N	008° 39' 45.84'' E
MD506		47° 24' 20.7" N	008° 36' 52.8" E
MD507		47° 22' 13.3" N	008° 40' 35.9" E
MD508	FAF / FAP	47° 20' 47.2'' N	008° 53' 10.5'' E

INSTRUMENT APCH CHART

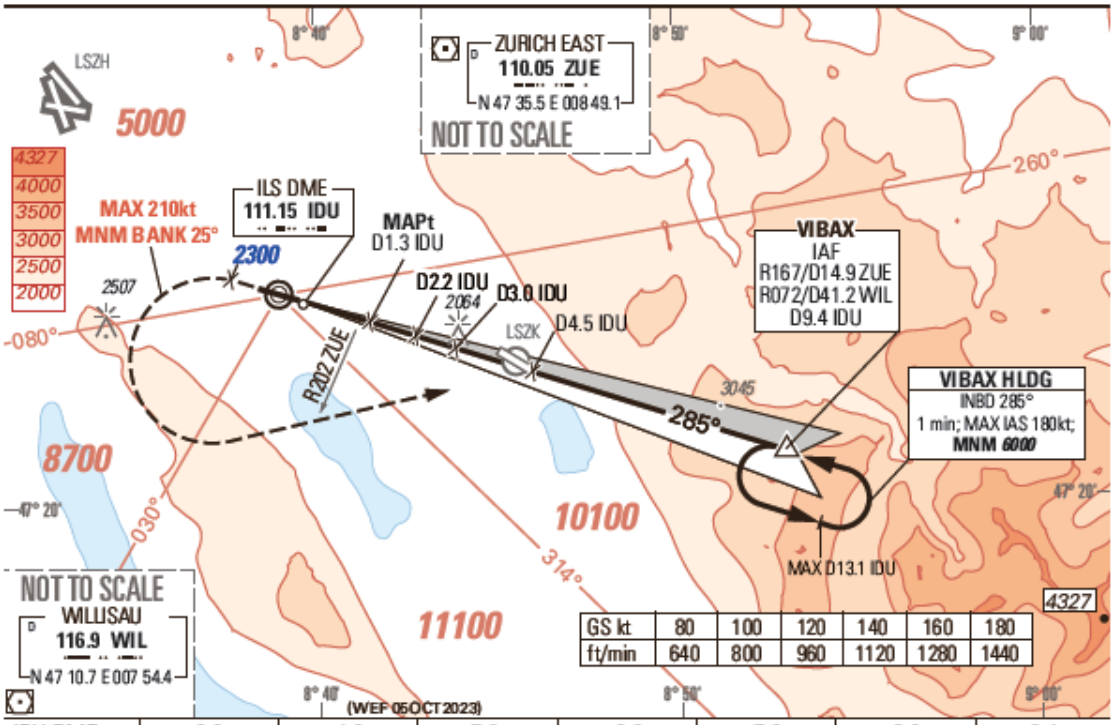
ILS CLOUDBREAK TO LSZH (HEL ONLY)

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°09' E (2020.5)
134.925	118.975	134.925	

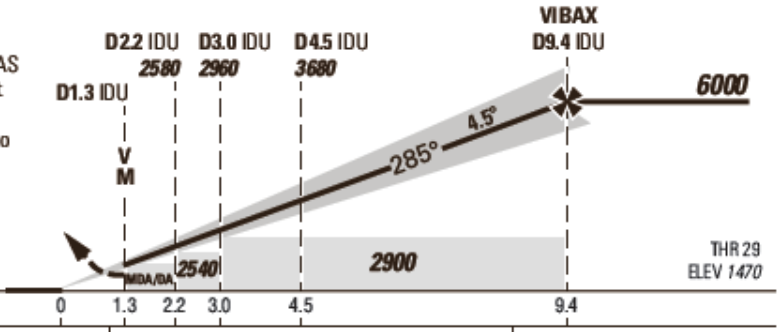
TRANS LVL: BY ATC
TRANS ALT: *7000*

1. Circling: MAX IAS 180kt.
2. Non-Standard approach angle.
3. ❄ -5°C: (Initial, Final and Missed APCH). -1°C: (Circling).



IDU DME	2.0	4.0	5.0	6.0	7.0	8.0	9.4
ALTITUDE	*2480*	*3440*	*3920*	*4400*	*4870*	*5350*	*6000*

MISSED APPROACH
Climb straight ahead. At *2300* but not before MAPt, D1.3 IDU, turn left (MAX IAS 210kt MNM bank angle 25°) to intercept LOC outbound to VIBAX. Climb to *5000*. After passing ZUE R202 continue climb to *6000*. MNM climb gradient 6.0% up to *3500* (ILS) due to airspace.



ILS
Missed apch climb grad MNM 5.0% up to 2600
DA(H) A: **1878** (408) C: **1917** (448) B: **1898** (428) D: **1934** (464)

LOC
Missed apch climb grad MNM 2.9% up to 3000
MDA(H) **2140** (670)

CIRCLING

	ILS FULL	ILS ALS OUT	LOC FULL	LOC ALS OUT	CIRCLING MDA(H)	CIRCLING VIS
A	RVR 1500m		RVR 1500m		2330 (860)	1500m
B					2750 (1280)	1600m
C	RVR 1900m	RVR 2100m	RVR 2400m		3060 (1590)	2400m
D	RVR 2000m	RVR 2200m			3060 (1590)	3600m

VIS:	2000m

RMK:
Be aware when proceeding to LSZH: Route 4G/B only available in VMC.

SID RWY 11

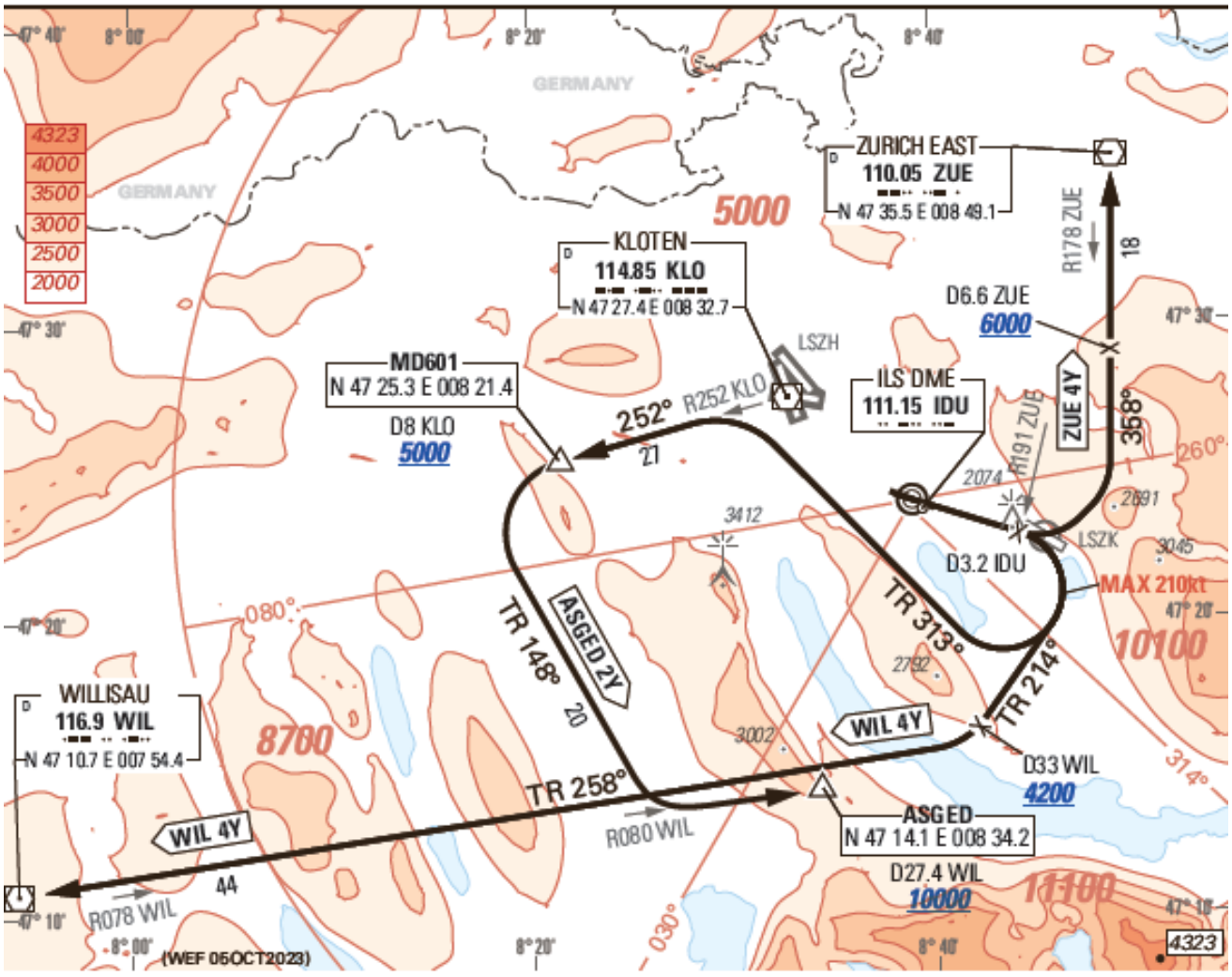
NON RNAV SID RWY 11

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	

TRANS LVL: BY ATC
TRANS ALT: *7000*

1. CLOSE-IN OBST: Left and right of track up to *1550ft* AMSL shortly after end of RWY 11.



Initial climb clearance ***5000ft***

ASGED 2Y [*ASGE2Y*] Minimum climb gradient 8.7% up to *2200ft*.	Climb straight ahead. When crossing R191 ZUE or at D3.2 IDU turn right (MAX IAS 210kt). Establish TR 313° to intercept R252 KLO. Proceed to MD601. At MD601 turn left. Establish TR 148° to intercept R080 WIL. Proceed to ASGED. Cross MD601 at *5000* or above, ASGED at *10000* or above.
WIL 4Y [*WIL4Y*] Minimum climb gradient 8.7% up to *2200ft*. 8.7% up to *4700ft* due to air-space.	Climb straight ahead. When crossing R191 ZUE or at D3.2 IDU turn right (MAX IAS 210kt). Establish TR 214° to intercept R078 WIL. Proceed to WIL. Cross D33 WIL at *4200* or above.
ZUE 4Y [*ZUE4Y*] Minimum climb gradient 8.7% up to *2400ft*	Climb straight ahead. When crossing R191 ZUE or at D3.2 IDU turn left to intercept R178 ZUE. Proceed to ZUE. Cross D6.6 ZUE at *6000* or above. **Note:** For routing after ZUE: see AIP LSZH AD 2.24.6-3
COM FAILURE PROC squawk 7600	Cross ZUE / ASGED / WIL climbing to/at last assigned and acknowledged FL but not below MCA (Leave last assigned and acknowledged FL or ALT earliest three minutes after airborne). Continue climb to FPL FL.

SID RWY 29

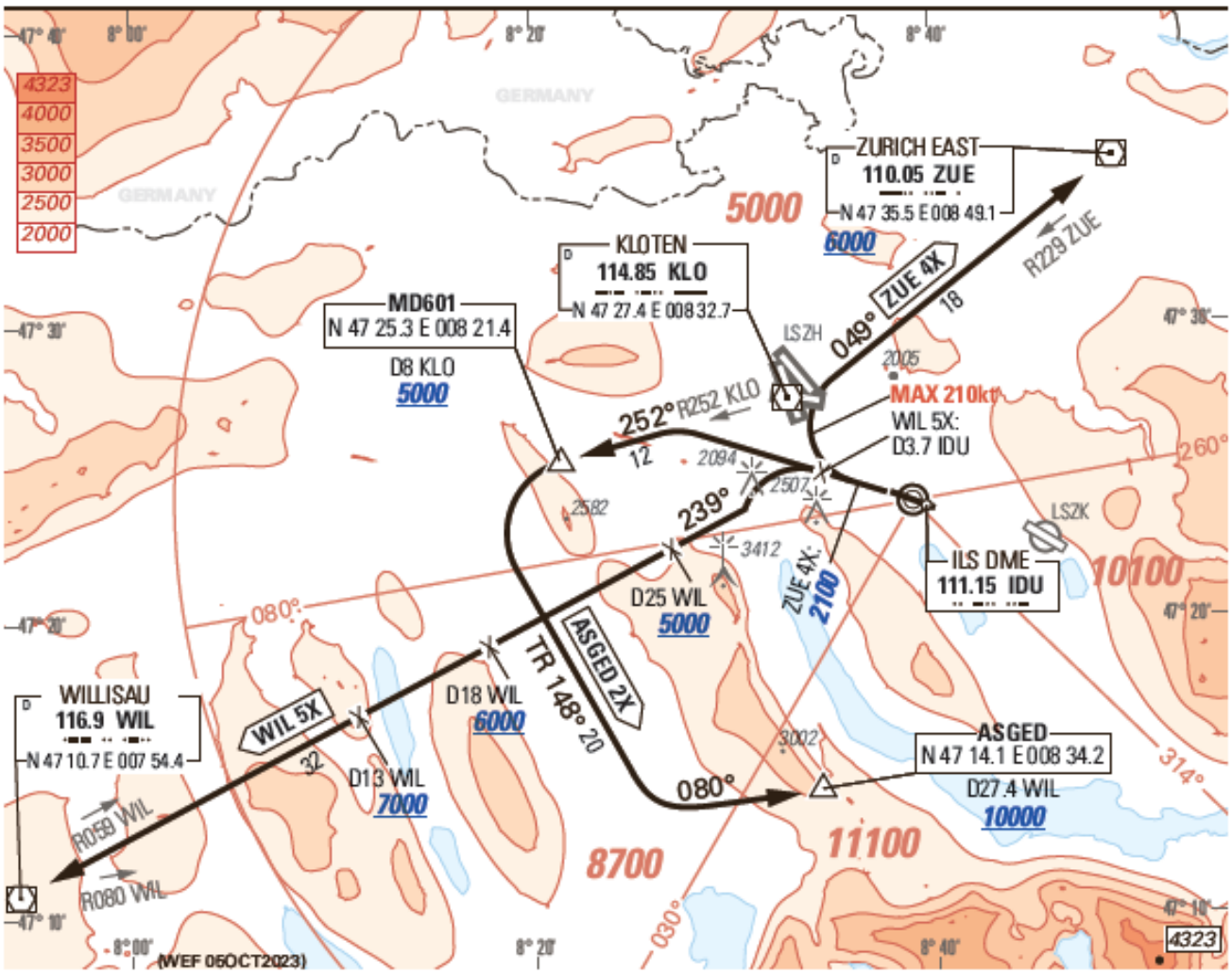
NON RNAV SID RWY 29

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	

TRANS LVL: BY ATC
TRANS ALT: *7000*

1. CLOSE-IN OBST: Left and right of track up to *1540ft* AMSL shortly after end of RWY 29.



Initial climb clearance ***5000ft***

ASGED 2X [*ASGE2X*] Minimum climb gradient 4.1% up to *1700ft*. 5.4% up to *8000ft* due to airspace.	Climb straight ahead. Intercept R252 KLO. Proceed to MD601. At MD601 turn left, establish TR 148° to intercept R080 WIL. Proceed to ASGED. Cross MD601 at *5000* or above, ASGED at *10000* or above.
WIL 5X [*WIL5X*] Minimum climb gradient 5.8% up to *3700ft*. 7.3% up to *5000ft* due to airspace.	Climb straight ahead. At D3.7 IDU turn left. Intercept R059 WIL. Proceed to WIL. Cross D25 WIL at *5000* or above, D18 WIL at *6000* or above, D13 WIL at *7000* or above. **Note:** Expect bad VOR signal quality as well as low field strength for VOR and DME WIL at *3400* and below.
ZUE 4X [*ZUE4X*] Minimum climb gradient 4.1% up to *2100ft*. 4.1% up to *4300ft* due to airspace.	Climb straight ahead. When passing *2100* turn right (MAX IAS 210kt), intercept R229 inbound ZUE. Proceed to ZUE. Cross ZUE at *6000* or above.
COM FAILURE PROC squawk 7600	Cross ZUE / ASGED / WIL climbing to/at last assigned and acknowledged FL but not below MCA (Leave last assigned and acknowledged FL or ALT earliest three minutes after airborne). Continue climb to FPL FL.

COPTER RNAV DEP RWY 11

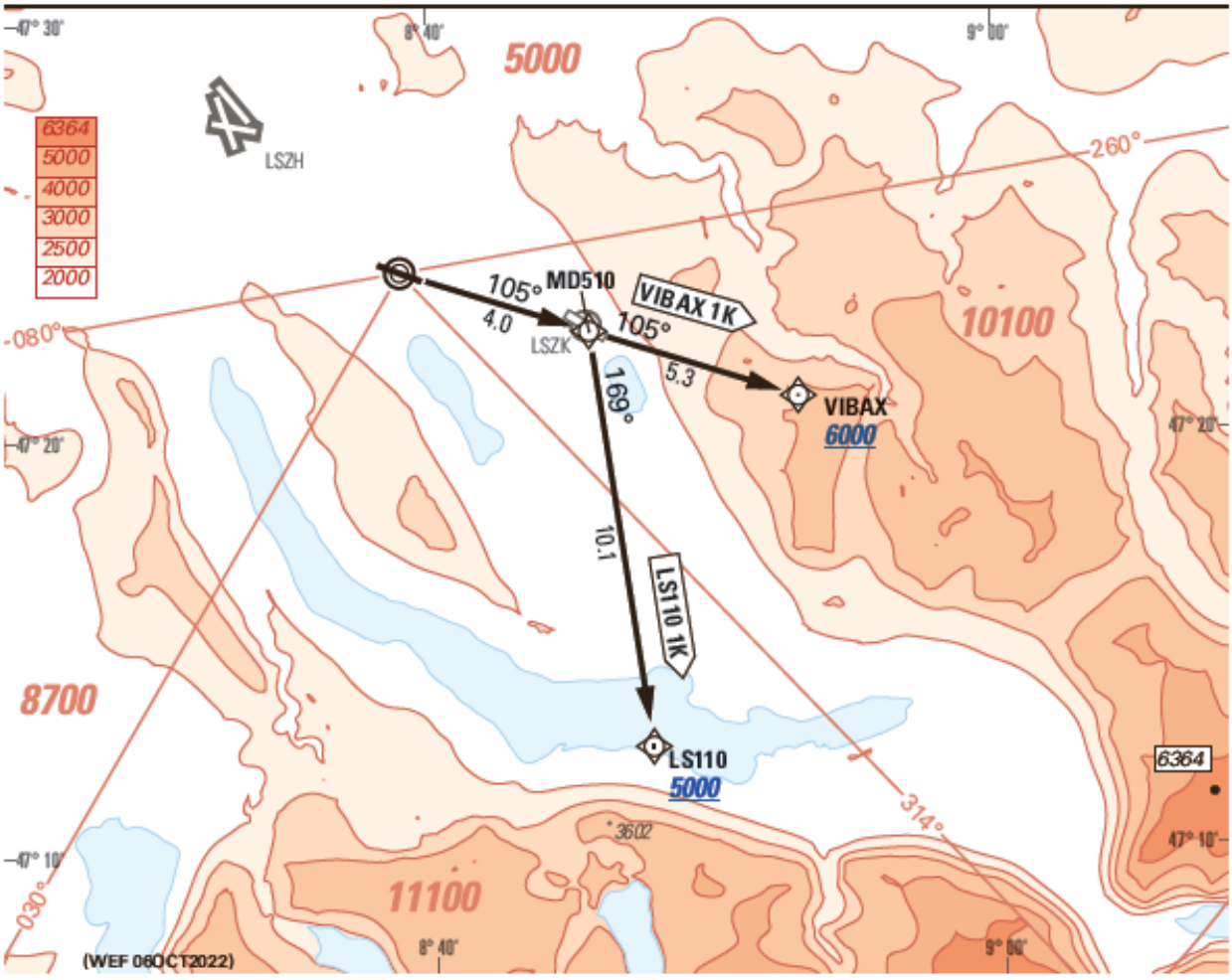
COPTER RNAV SID

Elevation 448 m / 1470ft **DUEBENDORF (LSMD)**

ARR	TWR	DEP	VAR: 2°56‘ E (2020.5)
134.925	118.975	134.925	

TRANS LVL: BY ATC
TRANS ALT: *7000*

1. CAT H only.
2. GNSS required, RNAV 1 certification required.



Initial climb clearance:
LS110 1K *5000ft* / VIBAX 1K *6000ft*

LS110 1K [*LS111K*] Minimum climb gradient 8.7% up to *1900ft*.	Climb on RWY track. Proceed via MD510 to LS110. Cross LS110 at *5000ft* or above (due to LFN MEA).
VIBAX 1K [*VIBA1K*] Minimum climb gradient 8.7% up to *1900ft*. 8.0% up to *6000ft* due to airspace.	Climb on RWY track. Proceed via MD510 to VIBAX. Cross VIBAX at *6000ft* or above (due to LFN MEA).

COM FAILURE PROC squawk 7600	Cross LS110 / VIBAX climbing to / at last received ALT or FL but not below MCA. Continue climb to FPL ALT/FL.

RMK:
COPTER RNAV SID **LS110 1K** not available for civil HEL Operators during WEF 2023.