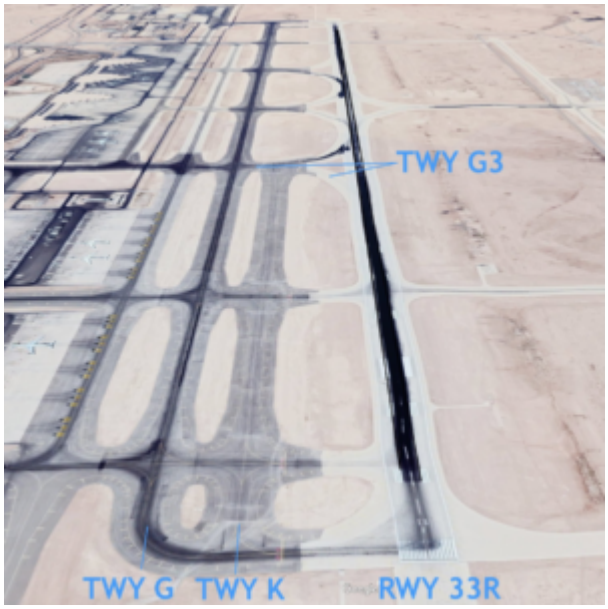
Runway? Who needs one when you have a taxiway!

OPSGROUP Team
7 August, 2018



It's happened again.

Around midnight on a **perfectly clear nigh**t last week in Riyadh, **a Jet Airways 737 tried to take off on a taxiway**. The crew **mistaking a new taxiway for a runway**!

The crew, with thousands of hours experience, took off on a surface that didn't have runway markings or runway lights. Thankfully no one was seriously hurt. It's too early to exactly say why this happened, but it's clear that some sort of **"expectation bias"** was a factor. Expecting to make the first left turn onto the runway. One has to ask – was ATC monitoring the take off?

After the tragic Singapore 747 accident in Taipei, technology was developed to audibly notify crew if they

were about to depart **“ON TAXIWAY”**. This is known as the Runway Awareness and Advisory System (RAAS).

Sadly the Riyadh incident is not isolated. There have been a plethora of near misses in the past few years (more details in Extra Reading below).

There have also been more than a few “incidents” of aircraft from C17’s to 747s **landing** at the **wrong** airports! The most notable near miss recently was that of an Air Canada A320 nearly landing on a taxiway full of aircraft at **KSFO/San Francisco**. But it’s happened to Delta and Alaskan Air recently too.

It is an even bigger issue at a General Aviation level (and not just because Harrison Ford did it!). The FAA safety team recently noted;

*The FAA Air Traffic Organization (ATO) has advised of an increase in, “**Wrong Surface Landing Incidents**” in the National Airspace System (NAS).*

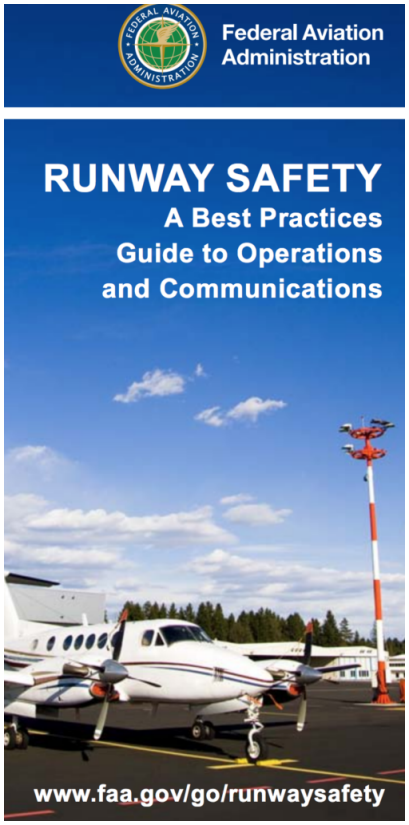
Incidents include:

- Landing on a runway other than the one specified in the ATC clearance (frequently after the pilot provides a correct read back)
- Landing on a Taxiway
- Lining up with the wrong runway or with a taxiway during approach
- Landing at the wrong airport

The FAA published some **shocking statistics:**

- **557** “**wrong** surface **landing/approach events**” between 2016-2018. **That’s one every other day!**

- **89% occurred during daylight hours**
- **91% occurred with a visibility of 3 statue miles or greater**



So what to do?

There are numerous *'best operating practices'* pilots can use to help avoid such incidents.

- Be **prepared**! Preflight planning should include familiarization with destination and alternate airports to include airport location, runway layout, NOTAMs, weather conditions (to include anticipated landing runway)
- **Reduce** cockpit **distractions** during approach and landing phase of flight.
- **Use visual cues** such as verifying right versus left runways; runway magnetic orientation; known landmarks versus the location of the airport or runway
- Be on the lookout for "**Expectation Bias**" If approaching a familiar airport, ATC might clear you for a different approach or landing runway. Be careful not to fall back on your past experiences. Verify!
- **Always include** the assigned **landing runway and** your **call sign** in the **read back** to a landing clearance
- **Utilize navigation equipment** such as Localizer/GPS (if available) **to verify proper runway alignment**

It's worth spending a few minutes watching this.

Extra Reading

- Finnair A340 taxiway rejected take off Hong Kong
- Portugal ERJ-190 taxiway rejected take off Nice
- KLM B733 taxiway take off Amsterdam
- Schaheen Air B734 taxiway take off Sharjah
- Eva Air MD11 taxiway take off Anchorage
- Etihad A330 lined up on runway edge Abu Dhabi – rejected take off

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The risks posed to civil aircraft by surface-to-air missiles

OPSGROUP Team
7 August, 2018

In Short: Worldwide the SAM threat is deemed to be “low” by ICAO with the caveat that this can change quickly when flying over or near conflict zones. The best risk mitigation is centred around which airspace you are operating over and what information you have access to. As we have explained before: **There is no safe altitude from a large SAM**.

What are surface-to-air missiles, and who has them?

Surface-to-air missiles (SAMs) are large, complex units, with the capability of reaching aircraft at cruising levels well above 25,000 ft, and they are designed to be operated by trained military personnel.

They are distinct from Man Portable Air Defence Systems (MANPADS), which are the smaller, shoulder-launched systems, the most dangerous of which being the **FIM-92 Stinger** which has an operational ceiling of 26,000 ft.

SAM systems vary but they are all designed to track and destroy military targets in flight. Due to the size and predictable flight paths, civil aircraft represent easy and highly vulnerable targets.

Many SAMs are mobile and can be moved quickly between locations. Many are located on warships. It is estimated that more than 70 States around the world have acquired SAMs as part of their military capability. A small number of non-State actors (i.e. militant groups) have also reportedly acquired SAMs, but as they require a radar system as part of the mechanism, they may not have the technical capability to use them. To date, SAMs have never been used by terrorists.

What has happened in the past?

There have been three documented occurrences where aircraft destruction has occurred due to SAM attacks.

- **Iran Air flight 655 (1988)**
- **Siberia Airlines flight 1812 (2001)**
- **Malaysian Airlines flight 17 (2014)**

The risk of intentional attack

To date, no documented case of intentional SAM attack on a civilian aircraft has been identified. In the case of MH17 and Iran Air, both occurred during periods of military conflict or high tension, whilst Siberia flight 1812 was shot down during a military training exercise.

ICAO say that “with regard to the States and non-State actors that currently do have access to SAMs, there is no reason to believe that the intent currently exists to target civil aviation deliberately.” And with regards to terrorist groups (as opposed to militarized forces), they say that “even where intent may exist there is currently no evidence of capability (in terms of hardware and trained personnel).”

Overall, the current risk to aviation from intentional SAM attack is therefore currently assessed to be low, the key caveat being to avoid overflying airspace over territory where terrorist groups tend to operate – normally areas of conflict where there is a breakdown of State control.

The risk of unintentional attack

Past events show us that the higher risk to civil aviation is from unintended and unintentional attacks when flying over or near conflict zones – **missiles fired at military aircraft which miss their target, missiles fired at civil aircraft which have been misidentified as military aircraft, and missiles fired by State defence systems intended to shoot down other missiles.**

Areas where there are armed conflicts going on clearly present an increased risk of an unintentional attack. But when assessing the risk of overflying a particular conflict zone, here are some more specific questions to consider:

Are there increased levels of military aircraft flying around in the region?

This could be anything from fighter jets being operated in a combat role, or for hostile reconnaissance; remotely piloted aircraft; or military aircraft used to transport troops or equipment. If military aircraft are one of the most likely targets for **intentional** attacks, then the chances of civil aircraft being mistakenly targeted increases in those areas where there are lots of military aircraft zipping around.

Are there likely to be a bunch of poorly trained or inexperienced personnel operating SAMs in the region?

This may be difficult to evaluate, but the risk is likely to be highest where SAMs may have been acquired by non-State actors. The risk is also likely to be higher in places where there is less of a robust command and control procedure for launching missiles, thus increasing the risk of misidentification of civil aircraft.

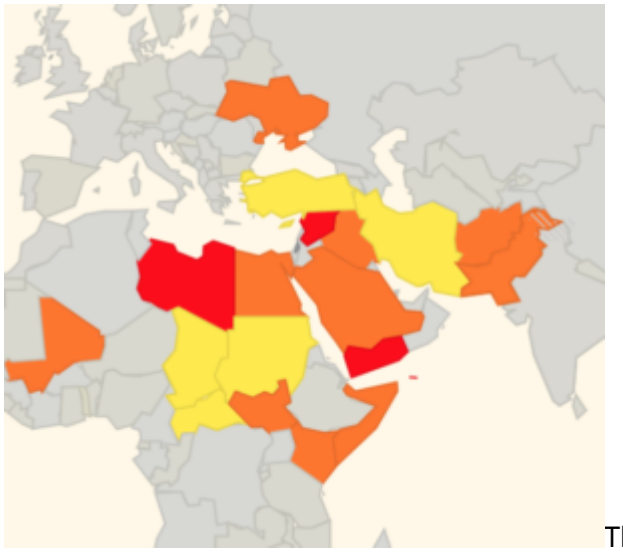
Is the territory below the airspace fully controlled by the State?

If not, and there are some areas controlled by militant or terrorist groups, the information on the presence and type of weaponry in such areas, as well as the information on who controls them, may not be readily available. In such regions, the information promulgated by the State about the risks to airspace safety may therefore not be 100% reliable.

Does the route pass over or near anywhere of particular importance in the context of the conflict?

These could be areas or locations that may be of strategic importance or sensitivity in the conflict, such as key infrastructure or military sites, which might be considered potential targets for air attack and would therefore be more likely to be guarded by SAMs.

Ultimately, risk mitigation is centred around **which airspace you are operating over and what information you have access to**. But as has been **reported in the past**, history has shown us that badly-written information published by the State often does little to highlight the real dangers posed by overflying conflict zones.



There is some evidence to suggest that more States are starting to provide better guidance and information to assist operators in making appropriate routing decisions, but we think this still has some way to go.

That is why we have been running our **safe airspace map** to provide guidance to assist operators in determining whether to avoid specific airspaces around the world.

Extra Reading:

- ICAO Doc 10084, Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones
- What altitude is ‘safe enough’ to overfly a conflict zone?
- Intercept Avoidance and Missile Evasion

Unsafe aircraft not welcome in Europe

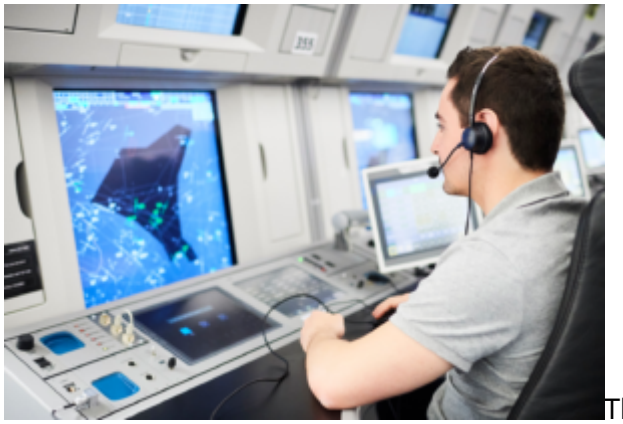
OPSGROUP Team
7 August, 2018

Eurocontrol and the European Aviation Safety Agency (EASA) have brought live an automated system which alerts air traffic controllers when unsafe aircraft enter European airspace.

How does it work?

Network Management Director at Eurocontrol Joe Sultana, explained that “We have added another parameter to our system, and this is now checking if an aircraft coming from outside of Europe is coming from a state where the regulatory environment is accepted by the European Aviation Safety Agency”.

> So **in short**: The system will now take an automatic look at the Third Country Operator Authorisation and alert ATC if there is a flight being operated from a aircraft on the banned list.

 The regulation that a plane coming from a non EU country must have a Third Country Operator Authorisation has been in place since 2014, but controllers have had no way to implement it across the 30,000 flights it receives into Europe each day, until this new component was entered into their systems.

As a reminder, Eurocontrol receives the flight plans of all aircraft entering into European air space, while the EASA holds the Third Country Operator Authorisations information which confirms that planes are from countries with recognised safe regulatory practices.

Bad NOTAMS = Runway overruns in Hamburg

OPSGROUP Team
7 August, 2018

If you're headed to Hamburg, watch out. The runway is shortened, and the Notams are vague.

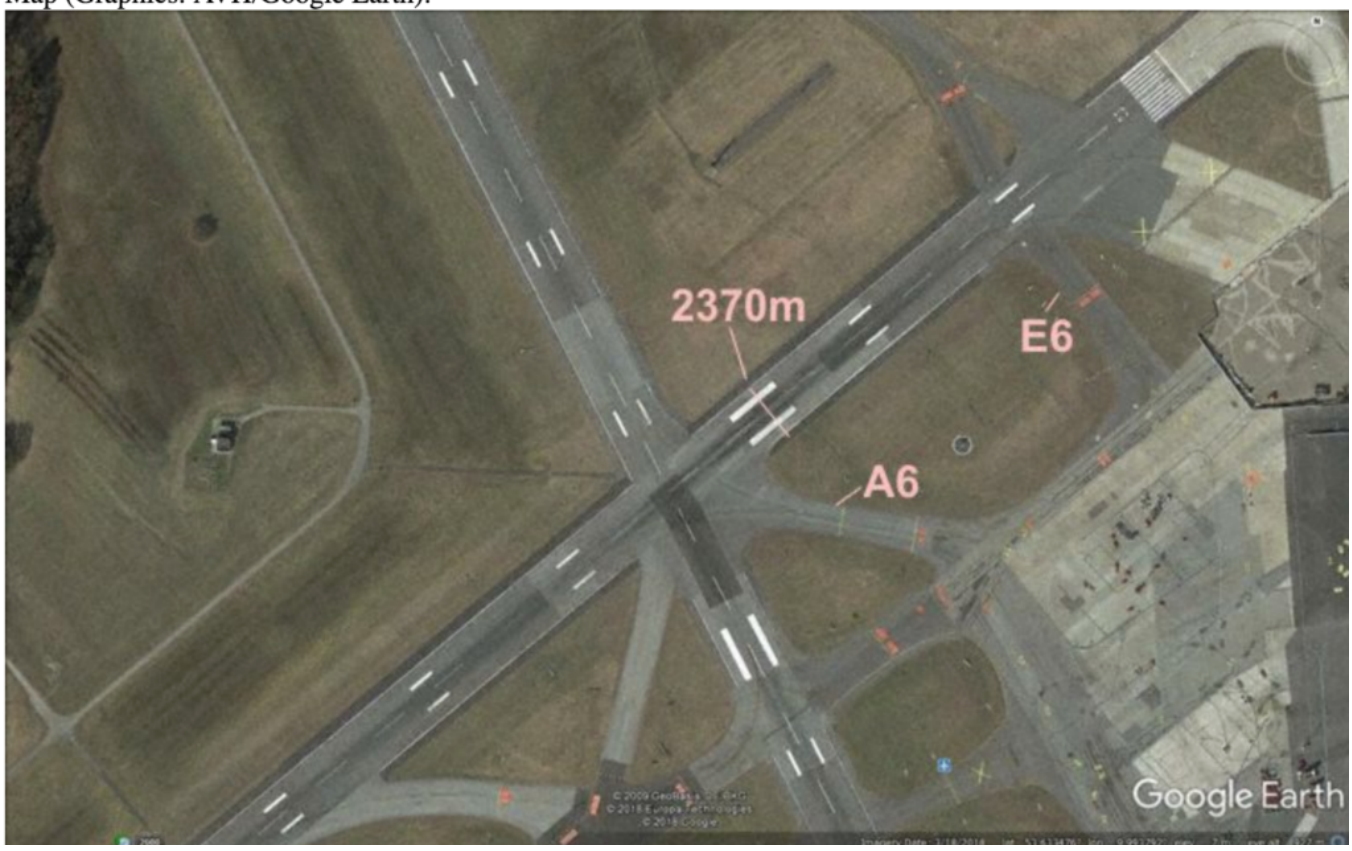
Poorly written NOTAMs struck again this week in Hamburg, Germany, when an A320 and a B737 both overran Runway 05 on landing – the first by SAS on May 11 and the second by Ryanair on May 15.

Runway 05 in **EDDH**/Hamburg has been undergoing works and a litany of related NOTAMs and AIP SUP were issued to explain.

> A1608/18 – RWY 05 LDA 2370M. 12 APR 04:00 2018 UNTIL 23 MAY 21:00 2018. CREATED: 05 APR 09:50 2018
>
> A1605/18 – SHORTENED DECLARED DISTANCES FOR RWY 05/23. AIP SUP IFR 09/18 REFERS. 12 APR 04:00 2018 UNTIL 23 MAY 21:00 2018. CREATED: 05 APR 09:42 2018
>
> A2223/18 – TWY A1, A3, A4, A5 CLOSED. 02 MAY 10:26 2018 UNTIL 01 JUL 04:00 2018. CREATED: 02 MAY 10:27 2018
>
> A2044/18 – ILS RWY 05 NOT AVBL. AIP SUP IFR 09/18 REFERS. 23 APR 09:17 2018 UNTIL 23 MAY 21:00 2018. CREATED: 23 APR 09:17 2018
>
> A1725/18 – CONSTRUCTION EQUIPMENT IN DEP SECTOR ALL IFR DEPARTURES RWY 05. PSN WITHIN AN AREA 533810N 0095948E AND 533805N 0100023E. MAX ELEV 89 FT. NOT MARKED AND LIGHTED. SUP 09 2018, CONSTRUCTION WORK EDDH REFER. 12 APR 04:00 2018 UNTIL 23 MAY 20:00 2018. CREATED: 09 APR 13:10 2018
>
> A1609/18 – RWY 23 CLOSED FOR ARR. 12 APR 04:00 2018 UNTIL 23 MAY 21:00 2018. CREATED: 05 APR 09:52 2018

Despite this, **both were unable to stop** before the last open exit (A6) and vacated further down the runway. Thankfully both resulted in no injury because all construction equipment was kept clear of, and beyond, taxiway E6.

Map (Graphics: AVH/Google Earth):



A better NOTAM may have been:

RWY 05 IS SHORTER THAN USUAL DUE TO CONSTRUCTION WORK AT 23 END. REDUCED LANDING DISTANCE IS 2370M. LAST TAXIWAY OPEN FOR EXIT IS A6. CONSTRUCTION EQUIPMENT ON RUNWAY BEYOND TAXIWAY A6.

You get the idea. Concise and plain language in one NOTAM to make it clear what the issue is and the consequences of going beyond 2370m of runway.

They did, to their credit, try and tidy it up since the incidents:

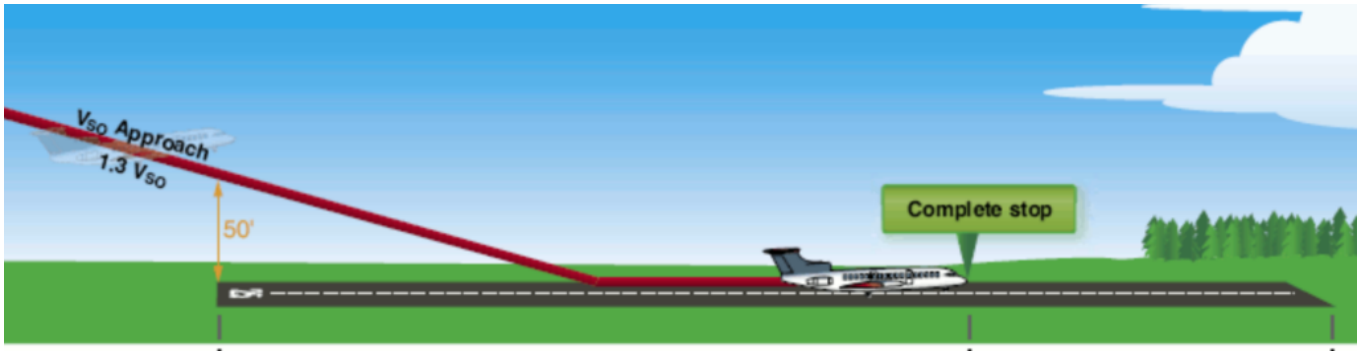
> A2563/18 – RWY 05 CLSD EAST OF TWY A6. RWY 05 LDA 2370M. RWY 05 NON STANDARD TDZ AND AIMING POINT MARKINGS AT 400M FM THR ISO 300M. ADJUST LDG PERF ACCORDINGLY. 17 MAY 16:30 2018 UNTIL 23 MAY 21:00 2018. CREATED: 17 MAY 16:31 2018


In another serious incident associated with these runway works, a Vueling A320 (another foreign operator) nearly landed at the wrong airport on May 11. Thankfully ATC intervened on that one.

All incidents are now the subject of investigation.

Naturally it's imperative for crew and disptachers to check and read all NOTAMS thoroughly. But **with over 40 current** just for **EDDH**/Hamburg right now, it's easy to understand why things get missed.

Until then "adjust landing performance accordingly".



Extra Viewing:

https://www.youtube.com/watch?v=QIz03wbx4IE

Hong Kong near-misses on the rise

OPSGROUP Team
7 August, 2018

According to recent figures released by the Civil Aviation Department (CAD) of Hong Kong, **2017** saw an **increase** in 'loss of separation' incidents within it's airspace.

Twelve times, two aircraft came within 1000 feet and less than 5 nautical miles of each other last year. This is the **highest** in six years.

Local law makers are now calling for a new ATC system to be implemented. A local pilot operating regularly through VHHH/Hong Kong International Airport (HKIA) commented to FSB recently that the Air Traffic Services have been in *"constant decline"* over the past seven to ten years.

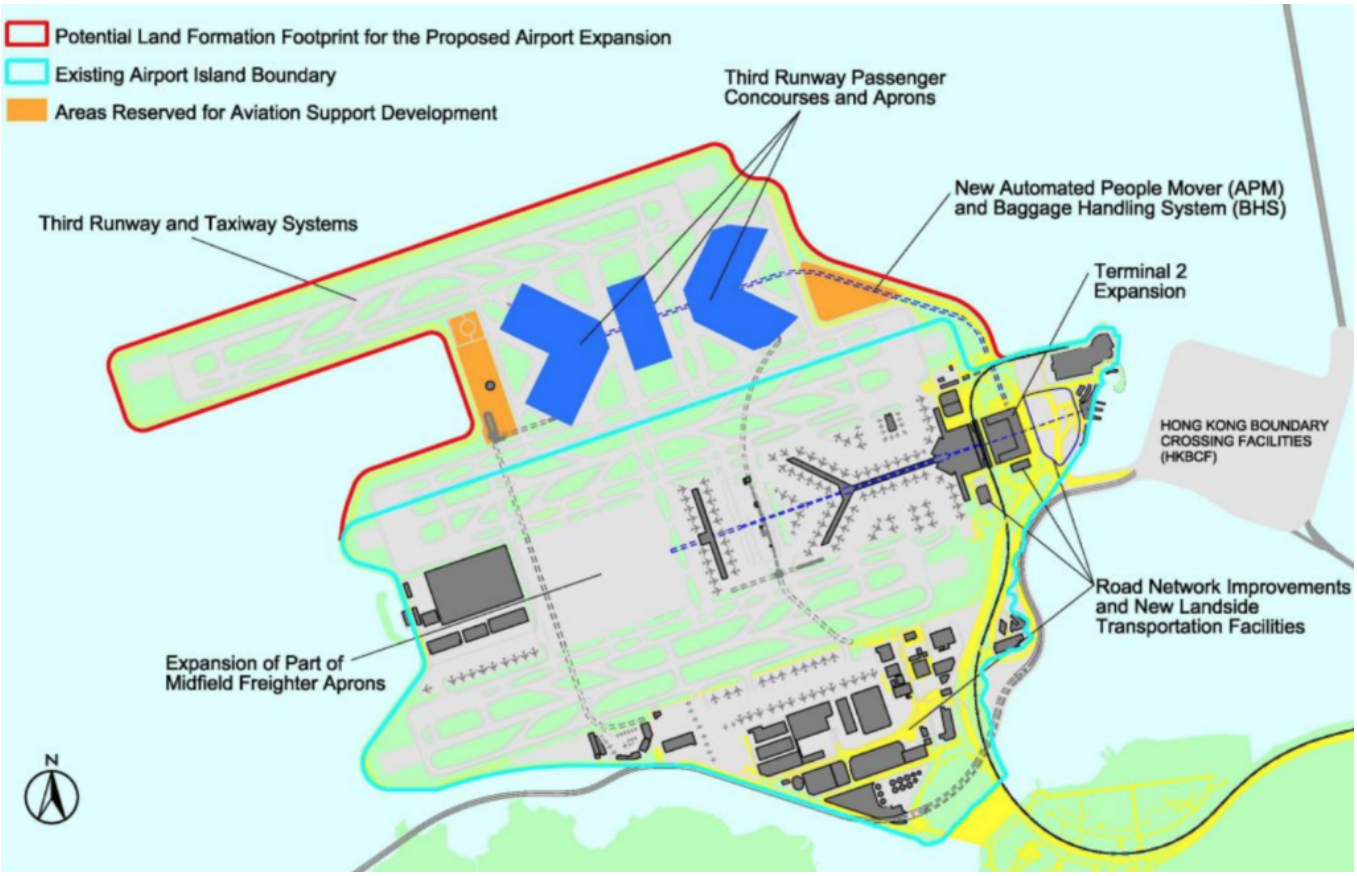
CAD insisted that alerts were issued *"in a timely manner as per system design"*. It said *"losses of separation"* were due to a number of factors such as adverse weather, operating procedures and human factors and they did occasionally occur due to the old air traffic system and other systems around the world. *"CAD would investigate every individual incident according to established procedures and make necessary improvement,"* the department added.

Hong Kong airspace is congested at the best of times. With four major airports within 150 kilometres and many overflights to and from mainland China, the 2016 introduction of a new Air Traffic System known as "Autotrac3" was set to assist in solving some of the complexity whilst increasing safety. The transition to the new system was challenging with various system issues.

The TMA is also complicated by significant terrain and regular adverse weather. Recent statistics show that air traffic is up over 3.5% already in 2018 with 36,000 movements occurring monthly (6.4 million passengers).

The continued massive year-on-year growth has seen the start of work to construct a third runway, expected to be operational in 2023-24 to facilitate the expected 100 million passengers using HKIA by that time.

This will no doubt just put further strain on an already complicated airspace situation.



The new third runway at HKIA- coming 2023-24.

Have you operated through the Hong Kong area lately? Can you provide an update?

Extra Reading:

- Civil Aviation Department Annual Report 2016/2017
- Three-runway System Hong Kong

Rules revised: SAFA Ramp Checks for ‘Suspect Aircraft’

Declan Selleck
7 August, 2018

01JUN: EASA have published **new guidelines** for inspectors to assess which aircraft should be prioritised for SAFA ramp checks in Europe and SAFA compliant states. ARO.RAMP.100(b) in the Part-ARO contains the updated list of aircraft that will be selected for priority checking:

(a) (when EASA receive) information regarding **poor maintenance** of, or obvious damage or defects to an aircraft;

(b) reports that an aircraft has performed **abnormal manoeuvres** that give rise to serious safety concerns in the airspace of a Member State;

(c) a **previous ramp inspection that has revealed deficiencies** indicating that the aircraft does not comply with the applicable requirements and where the competent authority suspects that these deficiencies have not been corrected;

(d) previous lists, referred to in ARO.RAMP.105, indicating that the operator or the State of the operator has been **suspected of non-compliance**;

(e) evidence that the State in which an aircraft is registered is not exercising proper safety oversight; or

(f) concerns about the operator of the aircraft that have arisen from occurrence reporting information and non-compliance recorded in a ramp inspection report on any other aircraft used by that operator;

(g) information received from **EASA Third-Country Operator (TCO)** monitoring activities;

(h) any relevant information collected pursuant to **ARO.RAMP.110**. (“whistleblowers”)

The revised Part-ARO, issued in May 2016, contains a large number of revisions and operators should take a close look at the changes.

For a general guide to SAFA Ramp Checks, have a look at our other article: **Avoiding the Pain of a Ramp Check**.

References:

- Part ARO – Issue 3.2