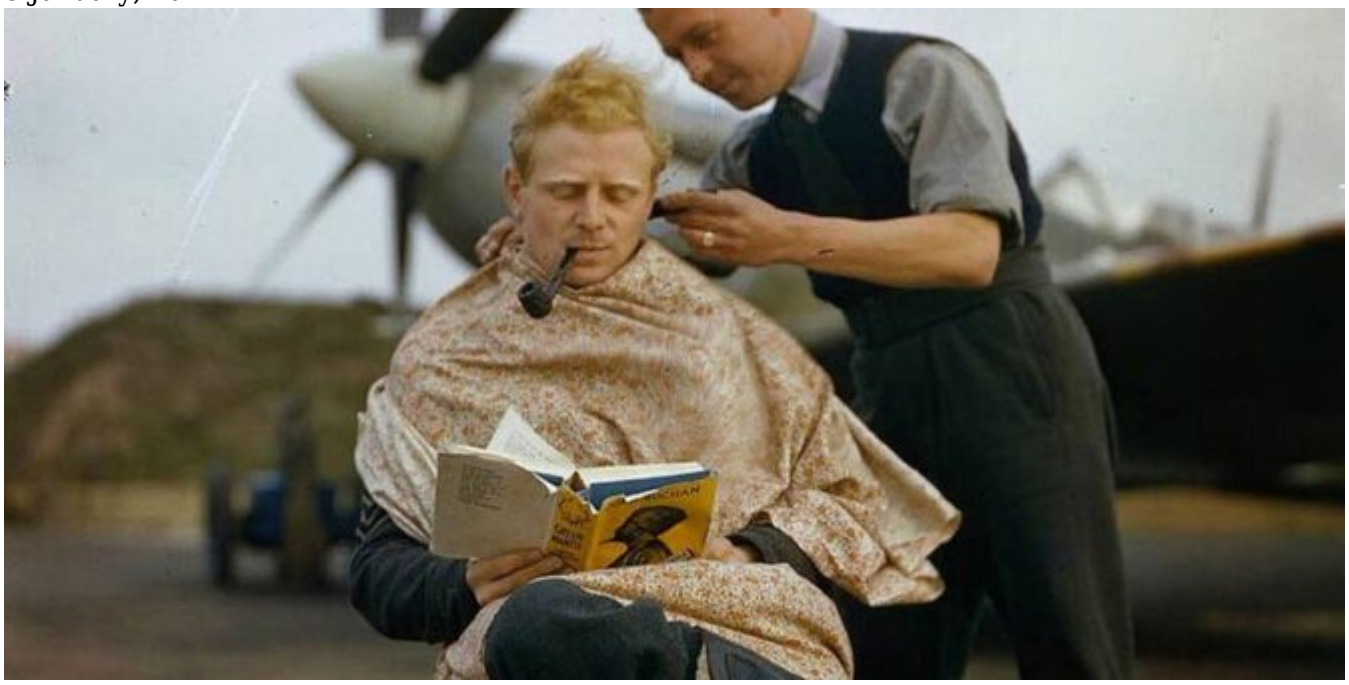
# US Airport Fact Sheets (CBP)

David Mumford
5 January, 2024



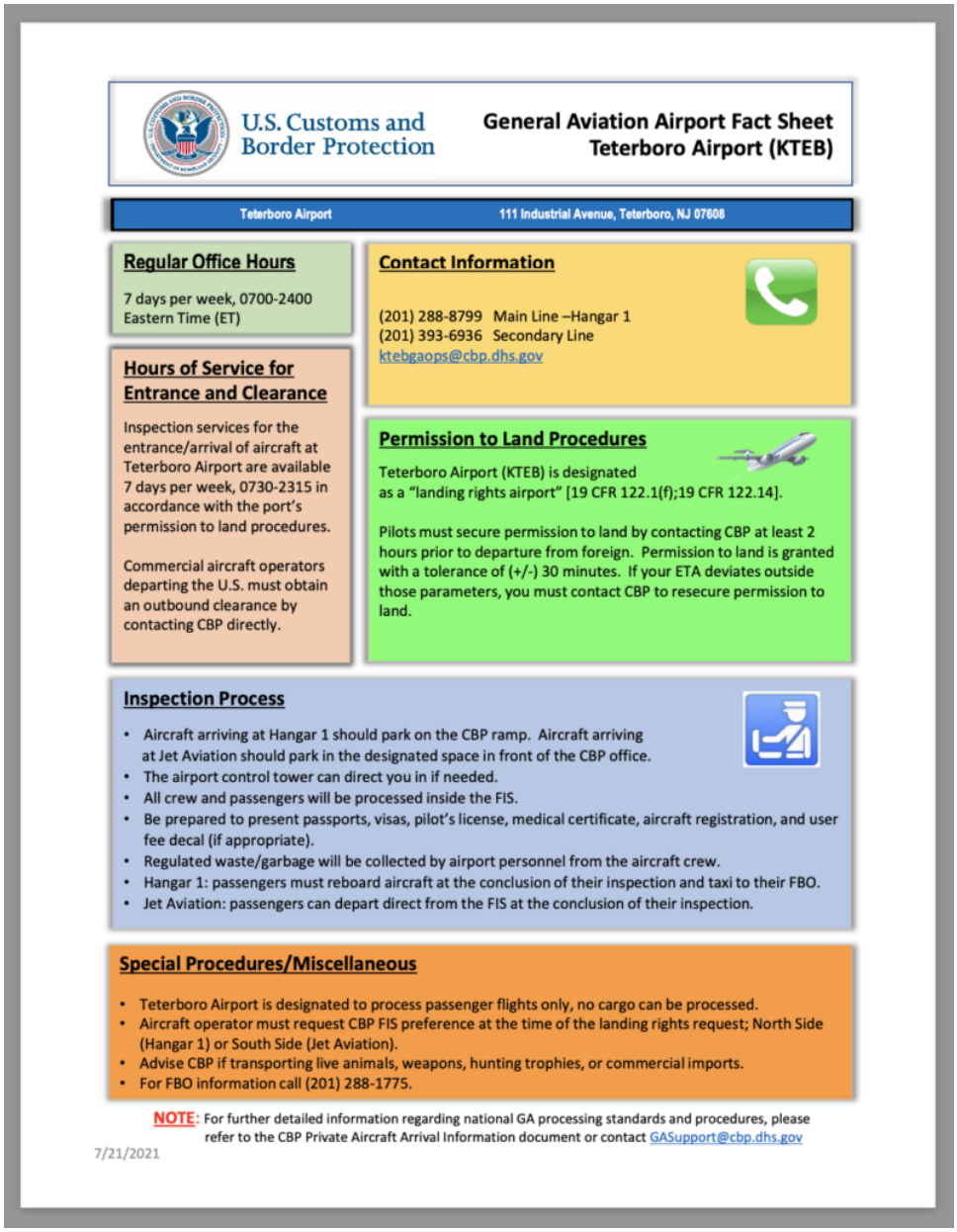
Did you know there are such things as **US Customs & Border Protection Airport General Aviation Fact Sheets?**

These are 1-page documents written by US CBP about select airports in the US, and they tell pilots pretty much all the important stuff they'd need to know about customs procedures at each one:

- **Opening Hours**
- **Contact Info**
- **Permission To Land Procedures**
- **Some blurb on what to expect for the Inspection Process**

### What do they look like?

This:



U.S. Customs and Border Protection

**General Aviation Airport Fact Sheet**
**Teterboro Airport (KTEB)**

| Teterboro Airport | 111 Industrial Avenue, Teterboro, NJ 07608 |
|---|---|

**Regular Office Hours**

7 days per week, 0700-2400 Eastern Time (ET)

**Contact Information**

(201) 288-8799 Main Line –Hangar 1
(201) 393-6936 Secondary Line
ktebgaops@cbp.dhs.gov

**Hours of Service for Entrance and Clearance**

Inspection services for the entrance/arrival of aircraft at Teterboro Airport are available 7 days per week, 0730-2315 in accordance with the port's permission to land procedures.

Commercial aircraft operators departing the U.S. must obtain an outbound clearance by contacting CBP directly.

**Permission to Land Procedures**

Teterboro Airport (KTEB) is designated as a "landing rights airport" [19 CFR 122.1(f);19 CFR 122.14].

Pilots must secure permission to land by contacting CBP at least 2 hours prior to departure from foreign. Permission to land is granted with a tolerance of (+/-) 30 minutes. If your ETA deviates outside those parameters, you must contact CBP to resecure permission to land.

**Inspection Process**

- Aircraft arriving at Hangar 1 should park on the CBP ramp. Aircraft arriving at Jet Aviation should park in the designated space in front of the CBP office.
- The airport control tower can direct you in if needed.
- All crew and passengers will be processed inside the FIS.
- Be prepared to present passports, visas, pilot's license, medical certificate, aircraft registration, and user fee decal (if appropriate).
- Regulated waste/garbage will be collected by airport personnel from the aircraft crew.
- Hangar 1: passengers must reboard aircraft at the conclusion of their inspection and taxi to their FBO.
- Jet Aviation: passengers can depart direct from the FIS at the conclusion of their inspection.

**Special Procedures/Miscellaneous**

- Teterboro Airport is designated to process passenger flights only, no cargo can be processed.
- Aircraft operator must request CBP FIS preference at the time of the landing rights request; North Side (Hangar 1) or South Side (Jet Aviation).
- Advise CBP if transporting live animals, weapons, hunting trophies, or commercial imports.
- For FBO information call (201) 288-1775.

NOTE: For further detailed information regarding national GA processing standards and procedures, please refer to the CBP Private Aircraft Arrival Information document or contact GASupport@cbp.dhs.gov

7/21/2021

## Got any more I can download?

As of Jan 2024, the NBAA is now hosting **more than 300 of these Factsheets** in a centralized database.

| | | | |
|---|---|---|---|
| Adirondack Regional Airport | KSLK | New York | 12/20/2022 |
| Akron-Canton Airport | KCAK | Ohio | 4/19/2022 |
| Albany International Airport | KALB | New York | 6/30/2021 |
| Albuquerque International Sunport | KABQ | New Mexico | 6/30/2021 |
| Anacortes Airport | K74S | Washington | 5/22/2023 |
| Antonio B. Won Pat International Airport | PGUM | Guam | 11/9/2023 |
| Appleton International Airport | KATW | Wisconsin | 9/12/2021 |
| Atlantic City International Airport | KACY | New Jersey | 12/15/2022 |
| Austin Bergstrom International Airport | KAUS | Texas | 9/5/2023 |

NBAA members can download them here.

If you're not an NBAA member, we still have a few knocking about from 2023 which you can download for free here:

KBFI/Boeing Field, WA
KBGR/Bangor, ME
KDAL/Dallas Love Field, TX
KELP/El Paso, TX
KFLL/Fort Lauderdale, FL
KFXE/Fort Lauderdale Executive Airport, FL
KHOU/Houston, TX
KHPN/White Plains, NY
KIAD/Washington Dulles, VA
KLAX/Los Angeles, CA
KMIA/Miami, FL
KOPF/Opa-locka Executive, FL
KPBI/Palm Beach, FL
KTEB/Teterboro, NJ
KTMB/Miami Executive, FL
KTUS/Tucson, AZ
TJIG/Fernando Luis Ribas Dominicci, San Juan
TJSJ/Luis Munoz Marin, San Juan
KRIC/Richmond, VA
KPDX/Portland, OR
KCLT/Charlotte, NC
KMEM/Memphis, TN
KSUS/St Louis, MO
KPTK/Oakland County, MI
KFAR/Fargo, ND
KAFW/Fort Worth, TX
KABQ/Albuquerque, NM
KMCO/Orlando, FL
KAUS/Austin, TX
KSJC/San Jose, CA

KMSY/New Orleans, LA

CBP update these Fact Sheets fairly regularly, so if you're heading somewhere and want the most up-to-date version, contact CBP at that specific airport and ask for the latest copy. **It's also nice to speak to them in person!** Tell them about your planned flight, and they'll tell you what you need to know.

You can email CBP at the address shown in the Fact Sheet, or else contact them at GASupport@cbp.dhs.gov

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# Slots required at all Paris airports until mid-Feb

David Mumford
5 January, 2024

France is slowly rolling out a new ATC system called 4-Flight, and from **Jan 9 to Feb 14** there's a live trial happening which is going to cause **delays at all four airports in the Paris area:** LFPB/Le Bourget, LFPG/De Gaulle, LFPO/Orly and LFOB/Beauvais.

During this period, the operational capacity for the entire airspace will be reduced by 30%. The real-world result of all this is that LFPG and LFPO will have fewer slots available, and **LFPB and LFOB will require slots** (normally they don't).

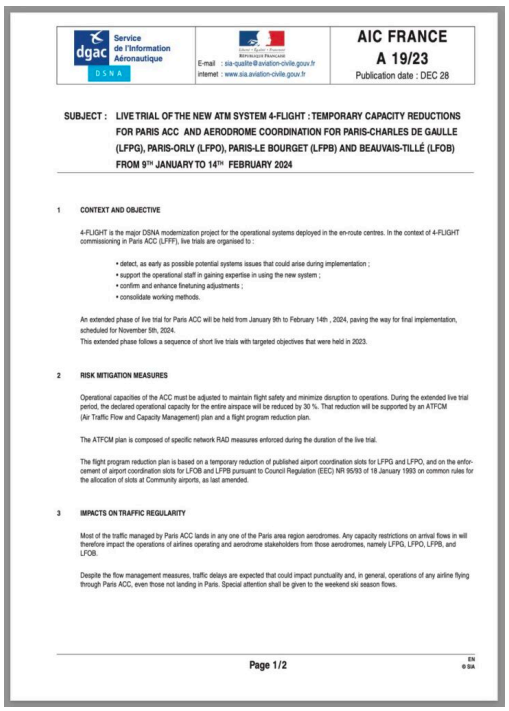
For GA/BA flights headed to any of these airports, you should request slots via your handling agent, and you need to make sure you add the slot ID number to your flight plan, in a very specific format:

```
RMK/ASL directly followed by the 14-character authorization number,
the first 4 of which are the ICAO code for the aerodrome for which
the slot has been issued :
RMK/ASL (14 CHARACTER AIRPORT SLOT ID).
```

Example :
**RMK/ASLLFPBA123456789** (arrival) or **RMK/ASLLFPBD123456789** (departure) for Paris-Le Bourget.

There may also be **some impact to overflights** through the Paris ACC – especially at weekends when it's busy with ski flights heading south to the Alps.

Check AIC 19/23 for more info.



Service de l'Information Aéronautique
DSNA

E-mail : sia-qualite@aviation-civile.gouv.fr
internet : www.sia.aviation-civile.gouv.fr

**AIC FRANCE**
**A 19/23**
Publication date : DEC 28

**SUBJECT : LIVE TRIAL OF THE NEW ATM SYSTEM 4-FLIGHT : TEMPORARY CAPACITY REDUCTIONS FOR PARIS ACC AND AERODROME COORDINATION FOR PARIS-CHARLES DE GAULLE (LFPG), PARIS-ORLY (LFPO), PARIS-LE BOURGET (LFPB) AND BEAUVAIS-TILLÉ (LFOB) FROM 9TH JANUARY TO 14TH FEBRUARY 2024**

**1 CONTEXT AND OBJECTIVE**

4-FLIGHT is the major DSNA modernization project for the operational systems deployed in the en-route centres. In the context of 4-FLIGHT commissioning in Paris ACC (LFFF), live trials are organised to :

- detect, as early as possible potential systems issues that could arise during implementation ;
- support the operational staff in gaining expertise in using the new system ;
- confirm and enhance finetuning adjustments ;
- consolidate working methods.

An extended phase of live trial for Paris ACC will be held from January 9th to February 14th , 2024, paving the way for final implementation, scheduled for November 5th, 2024.
This extended phase follows a sequence of short live trials with targeted objectives that were held in 2023.

**2 RISK MITIGATION MEASURES**

Operational capacities of the ACC must be adjusted to maintain flight safety and minimize disruption to operations. During the extended live trial period, the declared operational capacity for the entire airspace will be reduced by 30 %. That reduction will be supported by an ATFCM (Air Traffic Flow and Capacity Management) plan and a flight program reduction plan.

The ATFCM plan is composed of specific network RAD measures enforced during the duration of the live trial.

The flight program reduction plan is based on a temporary reduction of published airport coordination slots for LFPG and LFPO, and on the enforcement of airport coordination slots for LFOB and LFPB pursuant to Council Regulation (EEC) NR 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports, as last amended.

**3 IMPACTS ON TRAFFIC REGULARITY**

Most of the traffic managed by Paris ACC lands in any one of the Paris area region aerodromes. Any capacity restrictions on arrival flows in will therefore impact the operations of airlines operating and aerodrome stakeholders from those aerodromes, namely LFPG, LFPO, LFPB, and LFOB.

Despite the flow management measures, traffic delays are expected that could impact punctuality and, in general, operations of any airline flying through Paris ACC, even those not landing in Paris. Special attention shall be given to the weekend ski season flows.

Page 1/2 EN © SIA

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# Ops to Mexico? Prepare to get ramp checked!

David Mumford
5 January, 2024

Authorities have announced a **ramp check program** will be in place from now until mid-Jan 2024.

They had a similar surge in ramp checks last year during the same period – the official line then was that this was instituted to **ward off cabotage.**

Make sure you have **all the required docs on board** – big fines apply for anyone missing anything important. Local agents advise these checks are taking **up to 40 mins to complete.**


### Ramp Check Reports

We've had a few recent reports from OPSGROUP members who have been ramp checked at airports in

Mexico:

**MMZO/Manzanillo (Jan 2024)**

*Part 91 trip, Falcon. The Mexican ramp check/arrival was a bit more detailed than we've previously experienced. We frequent this airport and the customs/immigration officers opened every available panel, bag onboard, AND wanted us to open the avionics nose cone which was odd. We explained screwdrivers and a ladder were required – and they didn't make us open it. An important note: we were repositioning empty into the airport and leaving with Pax that the handler is quite familiar with (in a good way).*

*Airport Permit /paperwork was issued without problems, but every potential crew member will need to be listed on the aircraft's paperwork. Handler suggested operators should submit all possible names to prevent delays to their future ops. We requested the permit 48 hrs prior to landing and it came through just a few hours before we headed down there. Short notice trips will be unlikely. Permit good for 6 months, at this airport only.*

**MMTP/Tapachula (Oct 2023)**

*Part 91 customs stop, the whole process took exactly one hour from Block in to Block out. G600 with 15 pax and three crew.*

*– Upon arrival, the military and drug sniffing dogs were plane-side waiting for all the bags to come off(including crew bags).*
*– They were snapping photos nonstop.*
*– They did not want us to take our trash bags out. We just double bagged and left them in the lav.*
*– Myself, our FA, along with our pax and handler walked about 100 yards to the customs building, in a light drizzle.*
*– Bags got x-rayed and we waited while there was some back and forth between the customs agents. They stamped docs and permits which took a good 30-40 minutes.*
*– Walked back out to the jet and departed with no issues.*

**MMTO/Toluca (Aug 2023)**

*Part 91 operator came in from the Caribbean on our way to Toluca. The ramp and customs personnel were there waiting for us and marshalled us to an area of the GA ramp. 30 yards or so from a covered entrance to the terminal. We were able to Leave the APU running with a crew member onboard. Passengers and crew were escorted into the terminal to clear. They did an exterior sweep and came on board the aircraft. I do believe all bags came off and went through security in a private area. I don't recall any specific questions but the whole process took probably 25-30 minutes.*

Been to Mexico recently? How did it go? Please file a quick report here!



### What docs to carry onboard?

Here's the list of everything you should carry on board for trips to Mexico in case you get ramp checked:

***1)*** *Airworthiness Certificate*
***2)*** *Registration Certificate*
***3)*** *Worldwide and/or Mexican Insurance stating Private use when flying Far Part 91 and Charter use when flying Far Part 135. When flying Far Part 135, it is mandatory to have both insurances: worldwide and Mexican.*
***4)*** *Pilot's licenses: both sides and stating aircraft type rating.*
***5)*** *Pilot's medical certificates: valid document according to crew role (Pilot in Command or Second in Command), type of flight and according to pilot's age.*
***6)*** *If holding Multiple Entry Authorization (MEA), this document and its corresponding payment receipt, must be on board.*
***7)*** *For Charter operations, the following additional documents are required:*
*a. Valid Air Operator Certificate (AOC): Copies are accepted considering this document might include many tail numbers (fleet). Payment receipt should also be included.*
*b. FAA OST 4507 FORM copies are accepted considering this document might include many tail numbers. Alternatively, the appropriate exemption document, Certificate of Public Convenience and Necessity is also accepted.*
*c. If holding a Mexican Indefinite Blanket Permit (IBP), this should be accompanied by the Mexican AOC, and the Yearly Verification (including payment receipt) for it to be considered valid. Copies are accepted considering this document might have many tail numbers.*
***8)*** *The logbook (maintenance logbook) stating the most recent information about maintenance performed on the aircraft.*
***9)*** *The authorization to operate as a mobile radio aeronautic station; (Aircraft radio station license/authorization).*
***10)*** *The Flight Manual.*
***11)*** *Noise Certificate.*
***12)*** *The Minimum Equipment List (MEL) when the type certificate indicates it.*
***13)*** *Mexican AIP (for Private flights, a Jeppesen Airway Manual has been sufficient in the past for this. Charter operators, however, are required to carry a copy of the Mexican AIP – you will need to subscribe to the AIP through AFAC and carry electronic copies onboard).*
***14)*** *The preflight checklist.*
***15)*** *If full or partial (inbound/outbound Mexico) route involves overflying the ocean, then a life raft and/or life jackets are required to be on board, according to the type of aircraft. Please note this is also a usual requirement, but Mexican CAA will also be double checking for this.*
***16)*** *Weight and Balance Manifest.*

***17)*** *First Aid Kit.*
***18)*** *Jeppesen Manuals, (at least electronic format).*
***19)*** *If operating Far Part 91 – Private flights, it is required to present a document stating the purpose of the flight, to include the name of the lead passenger and to declare its connection with the aircraft (owner, employees, etc). If accompanied, letter must declare the relationship of the passengers with the lead passenger (family, friends, employees, etc). This will prove there is no commercial purpose under any circumstance. To present this letter, having it notarized is not necessary.*

### Private flights watch out!

Private flights to Mexico on aircraft that are used for both private and charter flights should watch out – the authorities in Mexico will likely require further proof that you are, in fact, a private flight. So if the aircraft is not registered in the name of the pilot or one of the pax, the best thing to do is prepare a notarized letter identifying the legal owner of the aircraft and that the owner is authorizing the crew and pax to be on board. **The letter should also clarify that the flight is a private, non-commercial flight.**

### Further Reading

For a look at some of the **long-standing challenges affecting General Aviation ops to Mexico**, as well as some of the more recent issues which maybe haven't been widely reported yet, check out our article.

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# 2023 Flight Ops Changes: The Big Ones

Chris Shieff
5 January, 2024

*"The only constant in life is change"* – once said a Greek philosopher… or maybe Russel Crowe in

Gladiator.

**Either way, it's been another busy year of change in the world of international flight ops!** Here are some of the big'uns from 2023…

### January

- **Beirut Gunfire Damage:** At OLBA/Beirut, two jets (and almost a person) were hit by falling bullets. Celebratory gun fire is common in Lebanon – including on New Years. Read
- **FAA Equipment Codes:** Addition of new equipment codes for Field 18 in international flight plans. Read
- **US Flight Grounding:** FAA grounded all flights due to a Notam system glitch. Read
- **Somalia Airspace:** US reg aircraft remain banned but now allowed to transit for flights to HDAM/Djibouti. Read
- **ICAO Doc 007:** New ICAO Doc 007 for the North Atlantic with significant changes. Read

### February

- **More ICAO Doc Updates:** ICAO updated more of their North Atlantic Docs, not just 007! Both NAT Doc 006 (the one about Contingency Situations) and NAT Doc 008 (the one about Separation Minima) too. Read.
- **Africa Airspace Risk:** Alert regarding border airspace between Rwanda and Congo DRC, after a military jet was shot at near FZNA/Goma. Read
- **US Arrivals:** The US FAA introduced continuous descent arrivals into eleven airports in Florida, Kansas City, Omaha and Reno. Read
- **Big Fuss Over Big Balloons:** And then other unidentified objects in the upper levels of North American airspace. Read
- **Ops Differences:** Comparison between ops in Europe and the US. Read
- **Haneda Airport Update:** Publication of a runway incursion hazard map for RJTT/Tokyo Haneda airport. Read

### March

- **Mali Warning:** Expanded airspace warning for Mali by the US FAA. Read
- **Oman's Open Skies:** Oman allows flights to overfly its territory, easing routes between Israel and Asia. Read
- **Private Flights to US:** Deeper insights for private operators to the US. Read
- **Aviation Safety in Indonesia:** Deteriorating security in Indonesia's Papua region and incidents targeting aircraft. Read
- **Global Reporting Format:** Insights on the Global Reporting Format for runway surface conditions. Read
- **China Reopens:** China reopened its doors to tourists after three years of border restrictions.

- **MAYDAYs:** Danger Club looked at why pilots are getting MAYDAYs wrong. Between us all, we did some figuring out. Read

**April**

- **NAT Datalink Exempt Airspace:** North Atlantic datalink exempt airspace boundaries changed – airspace over Greenland now requires it. Read
- **US Aviation Rules:** New rules for foreign operators doing P135 charter flights to the US. Read
- **Updated Risks on the South China Sea:** Recent incidents involving civil aircraft and military warships. Read
- **European Flight Planning:** Insights on planning flights in Europe without alternate routes. Read
- **Sudan Airspace Closure:** Sudan's airspace was closed following a military coup. Read

**May**

- **Circling Approaches:** We wrote about the dangers of circling approaches, and the difference between PANS OPS and TERPS. Read
- **Formidable Shield 2023:** North Atlantic airspace closures for Formidable Shield exercises. Read
- **FAA's Northeast Improvements:** The FAA finally finished its big North-East Corridor Improvement Project. Operators need to file preferred routes to avoid delays. Read
- **NOTAMs Fixed:** We hosted the Great Notam Sprint. Three hundred volunteers found an AI-based solution that fixes the Notam problem – a working model that ingests all NOTAMs for a flight, and outputs a simple, colourful, ranked and pilot-friendly briefing the way we want it. Read
- **US Airport CBP Fact Sheets:** With help from the NBAA, we built a collection of handy CBP cheat sheets. Read
- **NOPAC Routes Redesign:** Redesign of the North Pacific NOPAC routes by the FAA. Read
- **North Korea's Satellite Launch:** Potential risks to aircraft due to North Korea's recent satellite launch. Read

**June**

- **TCAS in North Atlantic:** We talked to Shanwick and Gander about whether TCAS was essential to cross the NAT. Read
- **5G Retrofit Deadline:** FAA's decision not to delay the 5G aircraft retrofit deadline. Read
- **Mexico Challenges:** Overview of challenges affecting bizav ops to Mexico. Read
- **ADS-B Mandates:** Changes and mandates for ADS-B globally. Read
- **China's Limits Lifted:** China's removal of domestic sector limits for foreign bizav flights.

Read

- **ATC Short Codes:** Inmarsat published an updated list of Short Codes for getting hold of various ATC & ACC centres worldwide. Read

**July**

- **NAT Region Changes SSR Transponder Procedures:** EGGX/Shanwick FIR updated, with other NAT FIRs to follow. Read
- **US Operators Can Overfly Venezuelan Airspace Below FL260:** Long-standing Notam cancelled, allowing overflight. Read
- **INMARSAT Device Registration for China:** You might need to register your INMARSAT device if headed to China.
- **Tightened Passport Control in Iceland:** Increased scrutiny during tech-stops. Expect to have to get off the plane for passport checks, even in grotty weather. Read
- **Air Traffic Controller Shortage in Australia**: Uncontrolled airspace due to staff shortage. Read
- **Portugal's New Punishment Tax:** New tax in Portugal, targeting business aviation and small aircraft. Similar costs can be expected for an Azores (LPAZ, LPLA for example) tech stop. Read
- **Mexico City Airport Safety Alert:** Several reports of loss of GNSS signal in the terminal area. Read
- **New Datalink Mandate in France:** If you're flying in France above FL195 and you have ATN CPDLC – you must use it! Read

**August**

- **US Operators Can Overfly Afghanistan at FL320:** Contingency routes in place, but risks persist. Read
- **Niger Airspace Closure Due to Coup:** Significant impact on Central Africa traffic. Read
- **ZSSS/Shanghai Off-Limits:** Bizjets had to re-route to ZSPD/Pudong for a few months. Read
- **Libya: Aircraft Evacuation Due to Clashes:** Reminder of ongoing risks here. Avoid! Read
- **Navigating NO FIR Airspace in Eastern Pacific** – Procedures for uncontrolled oceanic airspace. Read
- **Approved Airports for Flights to Israel:** Our guide on all things "ops to Israel" related. Read
- **CPDLC Gotcha – Clearance Busts:** In 2022, the FAA recorded 20 aircraft deviations due to issues with CPDLC and partial reroute messages. Here's what not to do! Read

**September**

- **Canada Mandates ADS-B Above FL180:** Flight plan requirements, exemptions, and application process. Read

- **Niger Airspace Reopens After Coup:** Major airlines resume traffic, but security concerns persist. Read
- **EU Temporary Admission of Aircraft:** OPMAS debunks myths about EU aircraft admission. Read
- **Armenia-Azerbaijan Airspace Risk:** Brief flare-up in the conflict, closure of cross-border waypoints, most East-West flights started avoiding the region and routed via Georgia's UGGG/Tbilisi FIR instead. Read
- **WATRS Renamed:** The US FAA officially renamed WATRS airspace to WAT. Existing B050 authorizations will be re-issued within 24 months. Read
- **GPS Spoofing in Iraq:** We several reports of enroute aircraft being targeted with fake GPS signals, leading to complete nav failures. Read

**October**

- **OPSGROUP Goes To Vegas:** We had the pleasure of meeting up with OPSGROUP members at NBAA-BACE 23 in Las Vegas! Read
- **New Rules for Outbound US Private Flights:** APIS updates for passenger changes and ETD. Read
- **EU-LISA Screening System Postponed:** The EES bit will be delayed to some time towards the end of 2024, and the ETIAS bit will start no earlier than 2025. Read
- **Tel Aviv Airspace Risk:** Israel is now an active war zone. The Safe Airspace assessment is at Level 1 – Do Not Fly. Operators should especially avoid LLBG/Tel Aviv, despite assurances from the authorities that the airspace is "safe". It isn't! Read
- **Bizav Clampdown at Amsterdam Airport:** Reduction in slots with potential future ban for bizav. Read
- **NAT Changes 2024 Announced:** No more Oceanic Clearances, simplified procedures, squawking changes. Read
- **US Border Overflight Exemptions:** We made a super simple How-to Guide. Read
- **More GPS Spoofing:** Watch out if you're in the Cairo, Nicosia, or Amman FIRs – at some point, your GPS sensor inputs may try to tell you you're overhead LLBG/Tel Aviv airport. Read

**November**

- **Bizav Roadblock: Turkey and Armenia:** Turkey blocks bizav overflights to/from Armenia. Read
- **GPS Spoofing Update and Types Identified:** GPS spoofing incidents detailed, including the Beirut scenario. Read
- **The Annual Shanghai Airports Meltdown:** Restrictions in November for bizav flights. Read
- **UK Airspace Warning for Red Sea and Gulf of Aqaba:** Caution urged due to increased military activity. Read
- **North Atlantic Volcanic Threat:** Iceland impending eruption may impact NAT traffic. Read

- **US Visual Approaches:** Ooh, people got angry about this one! A cautionary tale involving a crew of an a A350 inbound to KSFO who found themselves in a seemingly unnecessary last-minute diversion to Oakland after a long-haul flight. The incident highlighted issues with visual approaches in the US, particularly during late-night arrivals. Read
- **New GPS Spoofing Scenario – The Black Sea:** Several reports from members of GPS spoofing over the Black Sea in Turkish airspace. Read
- **Datalink Rules in Europe:** All your European Datalink questions answered! Plus there are now some additional places where Datalink logon will soon be mandatory. Read

**December**

- **UK Implements ETA for Passengers:** Electronic Travel Authorisation scheme for passengers. Read
- **US Domestic Enroute CPDLC Update:** CPDLC available with specific avionics. Read
- **New Approaches at KDEN/Denver:** RNAV/RNP Approaches introduced to mitigate TCAS RA events. Read
- **Niger Overflights:** Several reports of aircraft being denied entry into Niger airspace at short notice, even though a valid overflight permit was in place.
- **Anti-Aviation Protests:** Some anti-aviation protestors targeted a couple of airports in Belgium. Here's a look at some of the most notable incidents over the past few years. Read

As the year draws to a close, we wanted to say **a big "thank you" to everyone in OPSGROUP** for showing up, sharing stories, experiences, and information, and in turn keeping us all safe and up to date.

We'll be taking some time off from the Daily Brief and Bulletin emails over the holiday period. It's all fairly straightforward this year dates-wise, we'll basically be **closed from Mon 25 to Fri 29 Dec** – as this tasteful, festive postcard points out.


Happy Holidays everyone, and see you in 2024! ❤⚡✈✈

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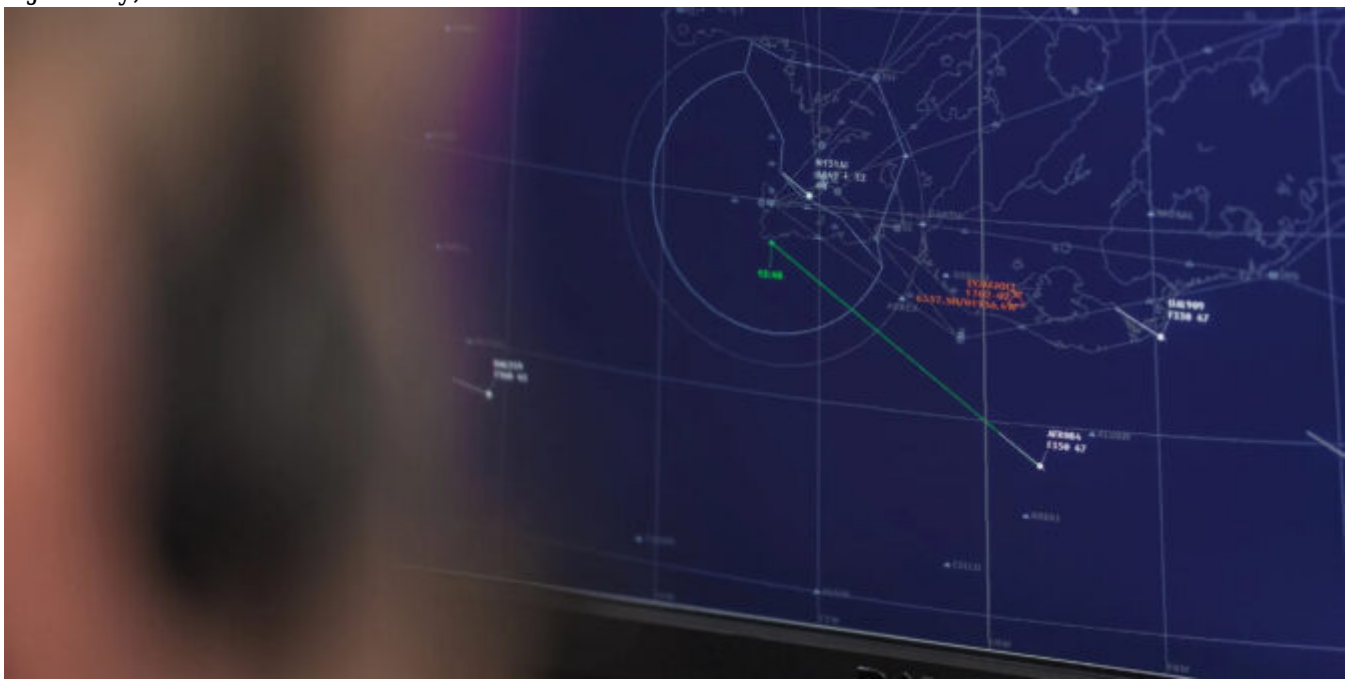
# Iceland ATC strikes at Keflavik

David Mumford
5 January, 2024



**Update 19 Dec 1230z – The ATC strike at BIKF/Keflavik on Dec 20 has been cancelled due to a volcanic eruption on the Reykjanes Peninsula.**

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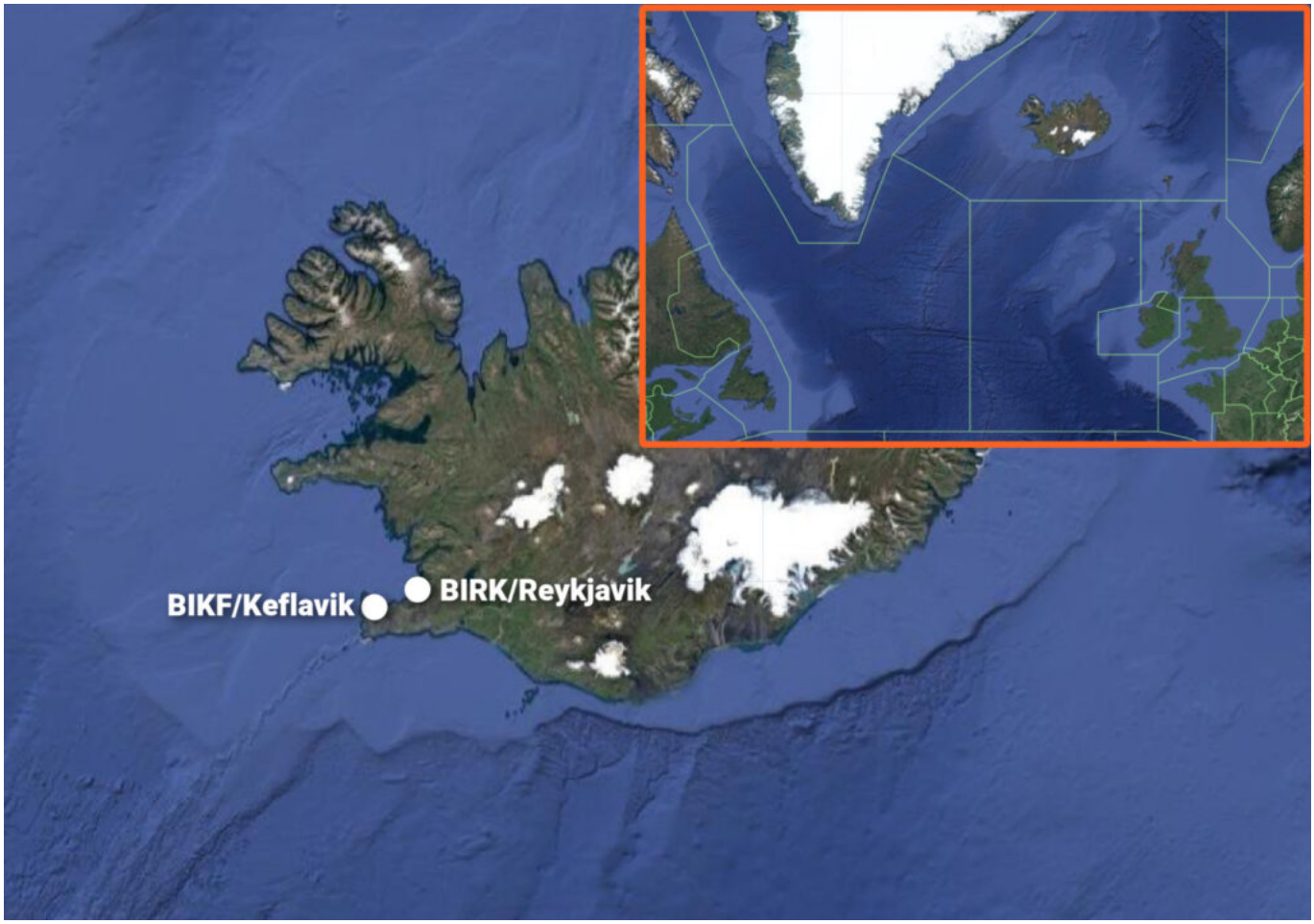
An Icelandic ATC strike took place on Dec 12, 14, and 18, with another planned for Dec 20 (now cancelled).

The Dec 12/14 strikes affected both BIKF/Keflavik and BIRK/Reykjavik. But the Dec 18/20 strikes were only planned at BIKF/Keflavik – no flights were allowed to operate in or out from 04-10z/

```
BIKF A0802/23 - DUE TO INDUSTRIAL ACTION KEFLAVIK CTR IS CLOSED.
BIKF TWR SERVICES IS LIMITED TO AMBULANCE FLIGHTS, EMERGENCY FLIGHTS
AND FLIGHTS ON BEHALF OF THE ICELANDIC COAST GUARD.
18 DEC 04:00 2023 UNTIL 18 DEC 10:00 2023.
CREATED: 15 DEC 13:40 2023
```

The Notams said that emergency flights were exempt. We confirmed with Isavia that **all diversions were accepted**, including emergency, and that carrying **BIKF as an alternate (including ETOPS) was OK.**




The strikes have gone quite smoothly so far, with minimal disruption to flights. Negotiations between controllers and employers are ongoing… 

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# A Brief History of Anti-Aviation Protests at Airports in Europe

David Mumford
5 January, 2024


As expected, anti-aviation protestors targeted a couple of airports in Belgium this weekend.

- At **EBAW/Antwerp**, they tried to disrupt private jets by gathering at the aircraft parking area, but were stopped by police.
- And at **EBLG/Liege**, they tried to block a warehouse next to the airport to stop cargo planes from being unloaded and to stop trucks from leaving the site.


Recent protests like this at other airports in Europe have become increasingly aggressive, with protestors causing **damage to aircraft** and **disrupting airport ops** for several hours.

**Their focus is:**

1. **Stopping aviation entirely** (they don't like aircraft in general)
2. **Cargo ops** (too many unnecessary plastic items from China)
3. **Business Aviation** (which they call 'Luxury Flights').

When protests like these are planned, **a drop-and-go is a good option** if you must operate – longer-parked aircraft are often the target. If you absolutely have to operate to one of the airports threatened by protests, make sure you **park well away from the perimeter fences** – or ideally **park in a hangar** if one is available.

### A Brief History of Anti-Aviation Protests at Airports in Europe

Here's a look at some of the most notable incidents over the past few years.

**LEIB/Ibiza Airport, Spain (July 2023):**
Protestors vandalised an Embraer Phenom 300E at Ibiza Airport, causing damage to the aircraft.

**EDXW/Sylt Airport, Germany (June 2023):**
Protesters covered a Cessna Citation Mustang in paint, resulting in the aircraft being declared a write-off due to extensive damage.


**LFMD/Cannes-Mandelieu Airport, France (May 2023):**
Protestors used a remote-controlled car to block a private jet, releasing smoke as a decoy. The incident caused disruption and highlighted a failure in airport perimeter security but didn't result in significant damage to the aircraft.

**LSGG/Geneva Airport, EBACE, Switzerland (May 2023):**
Protesters breached security controls, causing damage to at least one displayed aircraft, leading to disruptions in airport ops, and flight diversions (not to mention increased fuel consumption due to the airport closure).

**EHEH/Eindhoven, Netherlands (March 2023):**
Protestors cut a hole in the perimeter fence, entered airside and blocked the area where private jets park. They did not enter the runway. More than 100 were subsequently arrested.

**Coordinated campaign across 13 countries, COP27 (November 2022):**
Multiple protests occurred during the COP27 climate-change conference, with security managing to keep most protesters outside the FBOs. The protests caused disruptions but didn’t lead to significant damage to the airports or aircraft. Protests took place outside several airport terminals at airports including Berlin, Milan, Stockholm, Trondheim, and London-area airports Farnborough and Luton.


**EHAM/Amsterdam Schiphol Airport, Netherlands (November 2022):**
Protesters breached the airport's fence, blocking private jets. Several individuals faced prosecution, but only a few were charged despite causing considerable damage to aircraft.

**EGLC/London City Airport, UK (October 2019):**
A sole protestor aimed to disrupt flights by climbing on top of a British Airways aircraft. Only two flights were cancelled, and the airport said they remained fully operational throughout the day.


**EGKK/Gatwick Airport, UK (Dec 2018):**
Gatwick Airport experienced a significant disruption due to drone sightings near the airfield. The airport was forced to close its runway for around 24hrs, leading to extensive flight cancellations and delays affecting tens of thousands of passengers over several days.

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For an excellent write-up on these recent protests, including the industry's response, legal complexities, security measures, and the global impact on business aviation, click here.

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# Computer Says No: Why FAA RVSM Approvals Matter in Europe

Chris Shieff
5 January, 2024

An OPSGROUP member recently received the following message after their N-Reg flight plan was **rejected** by Eurocontrol:

Error from Eurocontrol;
(R)PROF204 RS: TRAFFIC VIA ED EK LF LG LU LE LS LM GM LO:F285..F415 IS ON FORBIDDEN ROUTE REF:[EURORMA1A] NO RVSM APPROVAL STATUS HELD BY EURRMA

Or in other words **'computer says no – it seems you're not RVSM approved…'**

The issue stemmed from something called NAARMO – the North American Approvals Registry and Monitoring Organisation.

This is the agency responsible for monitoring the safe and proper use of RVSM throughout North American airspace including the US, Canada and Mexico. They maintain a list of **every US-registered commercial and turbine GA aircraft approved to operate in RVSM airspace.**

It may come as a surprise, but this same list is used across the pond by Eurocontrol (and its monitoring agency).

OPSGROUP has been advised that every three months, Eurocontrol carry out a flight plan audit using the FAA NAARMO list to identify **non-approved aircraft operating in RVSM airspace.**

If a registration is flagged, after further consultation, it may be added to a list of aircraft which will have their **flight plans rejected.** This was the case above.

Herein lies the problem: **if your aircraft's RVSM-status is recorded incorrectly on the US NAARMO list, you may find your flight plans getting bounced over in Europe.**

If this happens to you, here's how to fix it.

### Contact NAARMO directly.

Yep, even though it's a problem in European airspace **the solution rests with NAARMO** back in the US.

You'll need to figure out why your aircraft doesn't appear on the FAA's database, and get that corrected

first, before Eurocontrol can **remove your aircraft from their naughty list.** Once you get it corrected on the NAARMO database, they are apparently pretty good at sending Eurocontrol a specific notification so they can remove it from their list too (the day they receive the update, or the next working day).

You may not have been intentionally naughty either. There are some quite innocent reasons why this may be case – usually **missing information** related to airworthiness or other overlooked details.

To get in touch with NAARMO directly, use this form and email it to naarmo@faa.gov.

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# (No More) Danger in Denver

Chris Shieff
5 January, 2024

Back in 2022, the FAA issued a Safety Alert (SAFO) for KDEN/Denver, after a **high number of TCAS RA events** were recorded between aircraft landing on the parallel runways (16L/16R).

This was compounded by a number of factors:

- **High elevation**
- **Reduced separation**
- **Controller workload**
- **Possible complacency caused by regular nuisance TAs.**

It was a moody brew leading to the FAA becoming concerned about potential for a **midair collision.** If you're like to know more, here's an article we wrote at the time.

The good news is that last month, **new approaches** were introduced to alleviate the risk. Here's an update on what has changed.

## Offset Approaches

On November 30, Runway 16R received two new approaches **(offset by 3 degrees)** – the RNAV (Y) and RNP (Z).

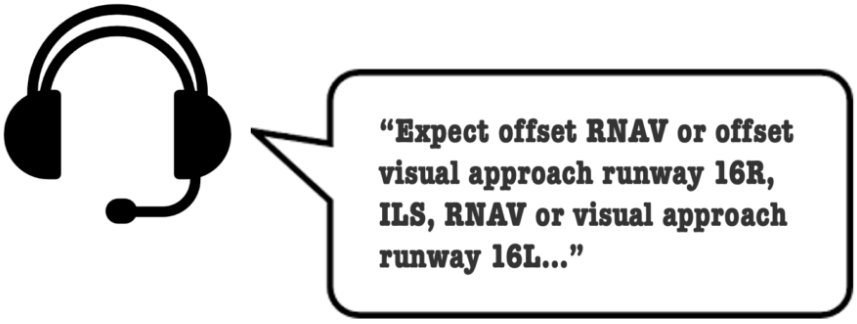
It was previously determined that 3-degrees would be enough to mitigate nuisance TCAS activations and allow operators to continue using full TA/RA mode throughout their approach and landing.

Along with these offset approaches, the FAA has published **new procedures** for their use found in this Information Note for Operators.

The procedures will be in use anytime Runways 16L and R are operating simultaneously, and **visual approaches are in use on at least one of the runways.**

## New Procedures

Listen out for the following phrase on the ATIS:




If you're landing on 16R, there are effectively now two scenarios:

**Instrument Approach** – Follow the RNAV (Y) or RNP (Z) charted procedure. Easy.

*or*

**Visual Approach** – Here's where things get a little more complicated. Even though the FAA regs say that an aircraft on a visual approach does not need to follow a specific track or vertical profile, in the case of KDEN, the FAA **strongly suggests** you do.

Aside from assuring you stay inside Class B airspace, it will also mitigate nuisance TCAS RA's that can lead to unstable approaches, go-arounds and level busts.

In their Info Note the FAA goes even further and says **don't fly a straight-in approach to 16R** (including via the existing ILS) unless **specifically cleared** to do so.

## So when can we line up with the runway?

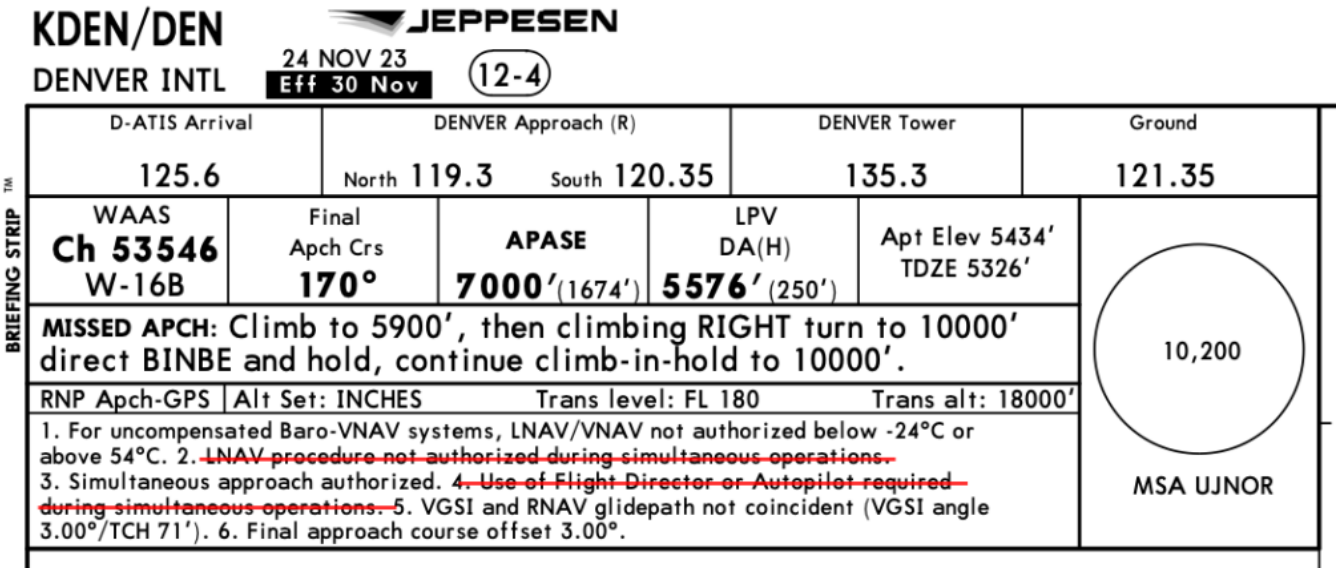
Whether you are on an instrument approach, or a visual, the FAA says don't break off the offset until you can see the runway and have **crossed the FAF.**

## Look out for these chart notes...

Because the above procedure will only be used when conditions permit a visual approach on at least one

of the two parallel runways, technically the whole deal doesn't fall within the realm of *'simultaneous IFR operations.'*

So, you can disregard the following two chart notes:



KDEN/DEN JEPPESEN
DENVER INTL 24 NOV 23 Eff 30 Nov (12-4)

| D-ATIS Arrival | DENVER Approach (R) | DENVER Tower | Ground |
|---|---|---|---|
| 125.6 | North 119.3 South 120.35 | 135.3 | 121.35 |

BRIEFING STRIP ™

| WAAS | Final Apch Crs | APASE | LPV DA(H) | Apt Elev 5434' TDZE 5326' |
|---|---|---|---|---|
| Ch 53546 W-16B | 170° | 7000'(1674') | 5576'(250') | |

**MISSED APCH:** Climb to 5900', then climbing RIGHT turn to 10000' direct BINBE and hold, continue climb-in-hold to 10000'.

RNP Apch-GPS | Alt Set: INCHES | Trans level: FL 180 | Trans alt: 18000'

1. For uncompensated Baro-VNAV systems, LNAV/VNAV not authorized below -24°C or above 54°C. 2. ~~LNAV procedure not authorized during simultaneous operations.~~ 3. Simultaneous approach authorized. ~~4. Use of Flight Director or Autopilot required during simultaneous operations.~~ 5. VGSI and RNAV glidepath not coincident (VGSI angle 3.00°/TCH 71'). 6. Final approach course offset 3.00°.

10,200
MSA UJNOR

…although the last one is still recommended by the FAA.

**Still have questions?**

You can get in touch with the folk at the Flight Technologies and Procedures Division at 9-AWA-AVS-AFS-400-Flight-Technologies-Procedures@faa.gov (yes, that's the real address) or on the phone via (202) 267- 8790.

Or talk to us! team@ops.group. We'd love to hear from you.

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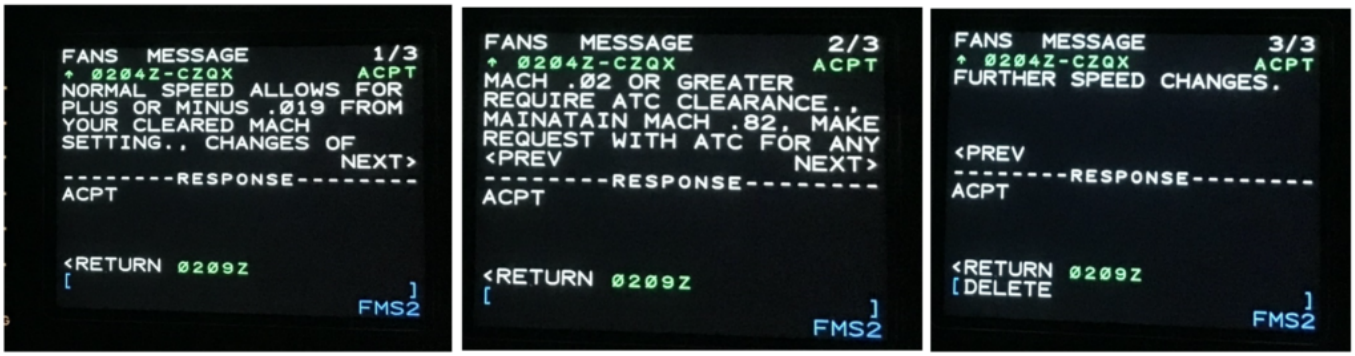
# "Resume Normal Speed" on the NAT

Chris Shieff
5 January, 2024

An OPSGROUP member recently reported some confusion with ATC during their eastbound crossing of the NAT, related to the CDPLC-issued instruction: ***RESUME NORMAL SPEED.***

After increasing their cruise speed by M0.02, they advised ATC as per ICAO procedures and received the following message from a controller who appeared to believe that they had just **busted their clearance**…




No paperwork was filed, but the crew involved were left scratching their heads as to **what exactly they'd done wrong.**

In the absence of any obvious explanation, we reached out to Gander directly who quickly replied. The answer was nothing – in this case, it was the controller who misinterpreted the rule.

Turns out the *RESUME NORMAL SPEED* instruction implies some pretty specific things. Here is exactly what you need to know next time you get this message on your NAT crossing.

### Operations Without a Fixed Speed

OWAFS been happening over the NAT since 2019. O-WTF, you might be saying. But it stands for *Operations Without An Assigned Fixed Speed.*

It works like this. You get a normal oceanic clearance, with a fixed mach number, like you always did. But then somewhere after the Oceanic Entry Point, you may get a CPDLC message saying *RESUME NORMAL SPEED.*

**Just reply with WILCO.** Happy days.

But what this actually means is this – fly ECON, or a cost index with variable mach. You can fly within 0.01 up or down of your cleared Mach number without saying a word. **But if it varies by 0.02 or more, you must advise ATC.**

The big thing to note here is *advise*. **No clearance is needed, you just need to tell them what you're doing.**

If you're looking for a reference, ICAO DOC 007 section 5.1.12 is where you'll find it.

### Keep Reporting

If a clearance has you scratching your head, please let us know. Chances are if you're confused, a lot of us will be too.

As this event illustrates, this can also help ATC who are human – just like us pilots. Misunderstanding between pilots and controllers, especially with respect to oceanic re-clearances, is one of the **leading causes of procedural errors on the NAT.**

You can reach us on team@ops.group, or if you're an OPSGROUP member, via the Crew Room.

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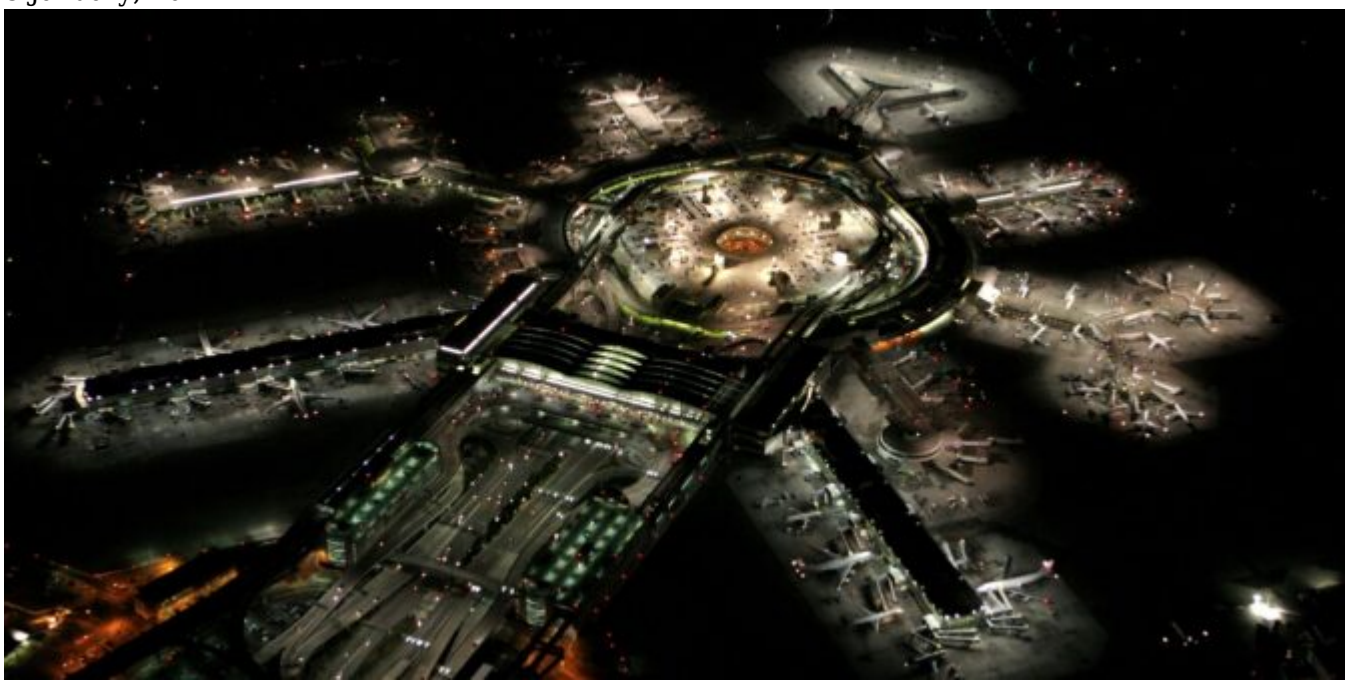
# US Visual Approaches: lessons from the LH458 incident

Andy Spencer
5 January, 2024



On October 16, the crew of a **Lufthansa A350** inbound to San Francisco found themselves in an unenviable situation: a seemingly unnecessary **last-minute diversion** to Oakland after a long-haul flight. The diversion was forced by ATC, following the crews inability to accept a visual approach. The incident

highlights issues with visual approaches in the US, particularly during late-night arrivals.

### LH458 – What happened?

Here's how it went down:

***ATC:* Expect a visual approach.**
***CREW:* We can't do visual approaches at night-time due to company procedures.**
***ATC:* In that case, expect delays.**

At this point in the story, instead of a visual approach on runway 28R, the crew were told to expect an **ILS approach on runway 28L**. They were then put into a hold – perfectly understandable for their integration into the approach sequence. After holding for 20 minutes, ATC advised there would be another 10-minute delay. 10 minutes go by.

4 minutes later:

***CREW:* If we can't land soon, we'll have to declare a fuel emergency.**
***ATC:*** *What's your diversion airport?*
***CREW:*** *Oakland.*
***ATC:*** *You need vectors to Oakland?*
***CREW:*** *Er, no. What's the problem here?*
***ATC:* I can't have this conversation with you***. Either divert to Oakland, or you can continue to hold, it's up to you.*
***CREW:*** *Okay, you promised me 10 minutes, that ran out four minutes ago. So how many more minutes?*
***ATC:*** *Conversation is over. You want to divert? Or you want to continue with the delay?*
***CREW:*** *We're diverting to Oakland.*

This resulted in a **flight time of over 12 hours**, landing in Oakland an hour after commencing the approach to KSFO (and at 7 am Munich local time – the crew's local time). After **one hour of turnaround**, the crew resumed their flight to KSFO, which took **another 45-minutes** block to block.

**The delays are crucial to this story.** It's not uncommon for delays to occur, but ATC announcing a 10-minute delay (which is essentially treated as an EAT or *Expected Approach Time*), and then not adhering to it (especially after 30 minutes of holding) is not great. This significantly alters the situation and could have had more severe consequences.

A video of the flight path, including part of the audio between the crew and ATC is here:

### What's the problem?

In terms of flight safety, one can question the wisdom of subjecting the crew to **signficiant extra fatigue after a long flight.** Was it really not possible to create an additional two or three nautical miles of spacing between two aircraft for over 30 minutes to accommodate this flight?

Long Haul operations entail heightened risks due to extended duties and activities during circadian lows. While instrumental in facilitating aviation, the prevailing attitude within the US ATC tends to **prioritize maximizing movements** without seemingly adequate consideration for the nature of specific operations. It's essential to **recognize that not all arrivals are equal**; when a pilot communicates inability, it's not mere difficulty but a conscientious acknowledgment of the immense responsibility for the safety of hundreds on their shoulders. After a lengthy night of flying, we would all find it challenging to justify opting for a visual approach as the safer choice.

The FAA prohibits visual separation on an ILS. Consequently, questions arise about the request made to the crew in this regard, as well as **the system that forces night-time visual approaches on all aircraft**, regardless of the fatigue level of the crews and their unique circumstances.

This is a systemic issue. But it does feel like there is room to hope for a more comprehensive systemic approach to avoid putting a crew in a potentially safety-compromising situation.

### Why was there a delay in the flight's approach?

While a delay in air traffic is understandable, adhering to the announced duration (which clearly had the characteristics of an *Expected Approach Time*) is crucial to ensure safety. In this case, the crew experienced confusion when their EAT was not met, leading to **concerns about fuel reserves and potential emergencies.** Efficient coordination between ATC and crews is essential to prevent such situations.

### Could the flight have been accommodated within the initially announced timeframe?

Considering that the flight had already spent over 30 minutes holding, it seems reasonable to think that they could have been inserted and provided with a few nautical miles in a thirty-minute sequence.

Based on the announcement of an additional 10-minute holding, this crew could have converted their diversion reserves into holding time, as allowed by regulations, and found themselves **unable to divert and potentially facing a fuel emergency.** This would have disrupted the sequence far more than adjusting a few nautical miles over 30 minutes.

Some aircraft, like the 777, may have to **land with reduced flap settings in case of low fuel quantity,** further diminishing margins. This outcome does not align with improved safety, and ATC should consider this for these long-haul approach flights.

It should be remembered that the pilots of this flight did all they could to communicate in a clear manner (*sans* the frustration at the end of the conversation) that they were unable to do what was initially conveyed. The fact that they were **forced into a corner of a very near fuel emergency by the actions of ATC** should highlight just how critical it is for us to **get this fixed, pronto.**

### What can be done to improve safety and coordination in such cases?

Air traffic management needs to communicate effectively with flight crews, announce and adhere to EAT's, and consider unique circumstances, especially for long-haul flights at night.

The FAA's Safety Alert for Operators (SAFO) 21005 states that 'it is the pilot's responsibility, according to 14 C.F.R. § 91.3, to advise ATC as soon as possible if a visual approach is not desired.' This SAFO recommends 'Communicating "UNABLE" to ATC when, in the judgment of the pilot-in-command, compliance with a specific instruction, request, or clearance may reduce safety.'

Ultimately, a crew adhering to the FAA's SAFO should not find themselves in a situation that compromises the safety of their flight by subjecting them to additional fatigue**.** The situation is even more concerning given the example of this flight and its implications for the crew, substantial financial consequences for the airline, and potentially for some passengers. This may make **future crews hesitant about declining a visual approach**, even when safety would necessitate it, as emphasized by the SAFO.

### Why are visual approaches important?

Visual approaches allow for increased airport efficiency when weather conditions permit.

At KSFO/San Francisco, efforts were made in 2016 to enhance airport efficiency through new approach

procedures, such as the RNP to GLS study. Being the seventh busiest airport in the US at the time, the airport could, during good weather conditions, sequence arrivals to runways 28L and 28R using visual separation, resulting in a peak arrival rate of 56 per hour. However, less favourable weather conditions necessitated instrument approach procedures, reducing airport efficiency to 28 to 36 arrivals per hour. This highlights the critical role of visual separation in maximizing KSFO's capacity, despite runways being only 750 feet apart.

However, we must remember that **separations primary objective is safety**, as evidenced by recent updates in the FAA's Order on Simultaneous Dependent Approaches to Closely Spaced Parallel Runways, which consider Consolidated Wake Turbulence (CWT) procedures.

The visual approaches involve reducing the spacing between arriving aircraft, which can lead to higher traffic capacity and profitability. But they also **shift some responsibility to the flight crew**, particularly the captain, who must accept the risk of wake turbulence and become responsible for maintaining proper spacing to benefit the system.

This dual nature of visual approaches underscores the delicate balance between efficiency and safety in aviation operations.

### How does the US differ from international standards regarding visual approaches?

The US aviation regulations **do not strictly adhere to the ICAO standards** regarding visual approaches. In the US, air traffic controllers may initiate a visual approach **without the explicit consent of the pilot**, unlike standard ICAO procedures, which require pilot agreement. This difference in approach procedures can lead to unique challenges. For more info, have a read of this IFALPA Bulletin.

### Key Issues

This recent incident in San Francisco highlights several issues:

1. **Crew's Spacing Responsibility:** Visual approaches in airports enhance efficiency but shift responsibility to flight crew for maintaining spacing and managing risks.
2. **US vs ICAO Practices:** There is a discrepancy between US aviation practices and ICAO standards.
3. **ATC-Crew Safety Coordination:** The incident shows the need for precise coordination between air traffic management and flight crews to ensure the safety of operations.
4. **Night Approach Restrictions:** Certain airlines have procedures that prohibit crews from conducting night visual approaches, and ATC needs to be aware of and accommodate these restrictions.
5. **Managing Approach Delays:** The delay in the flight's approach raises questions about managing holding times and adhering to announced durations.
6. **Risks in Night Approaches:** Long-haul flights arriving at night using visual approaches might pose safety risks, considering crew fatigue and FAA's SAFO.
7. **Safeguarding Flight Operations:** A comprehensive systemic approach is required to prevent compromising situations for flight crews, emphasizing effective communication, adherence to EAT's, and crew judgment.
8. **ATC Safety Guidelines:** ATCs must be aware of safety guidelines (SAFOs) to ensure crew adherence and avoid jeopardizing safety.
9. **Crew Safety Priority:** Prioritizing safety over convenience is essential for flight crews.

This final point – ensuring flight crews are not hesitant to prioritize safety over convenience – is vital to maintaining the highest level of aviation safety. The KSFO incident serves as a reminder that **aviation is a delicate balance of safety, efficiency, and coordination.**

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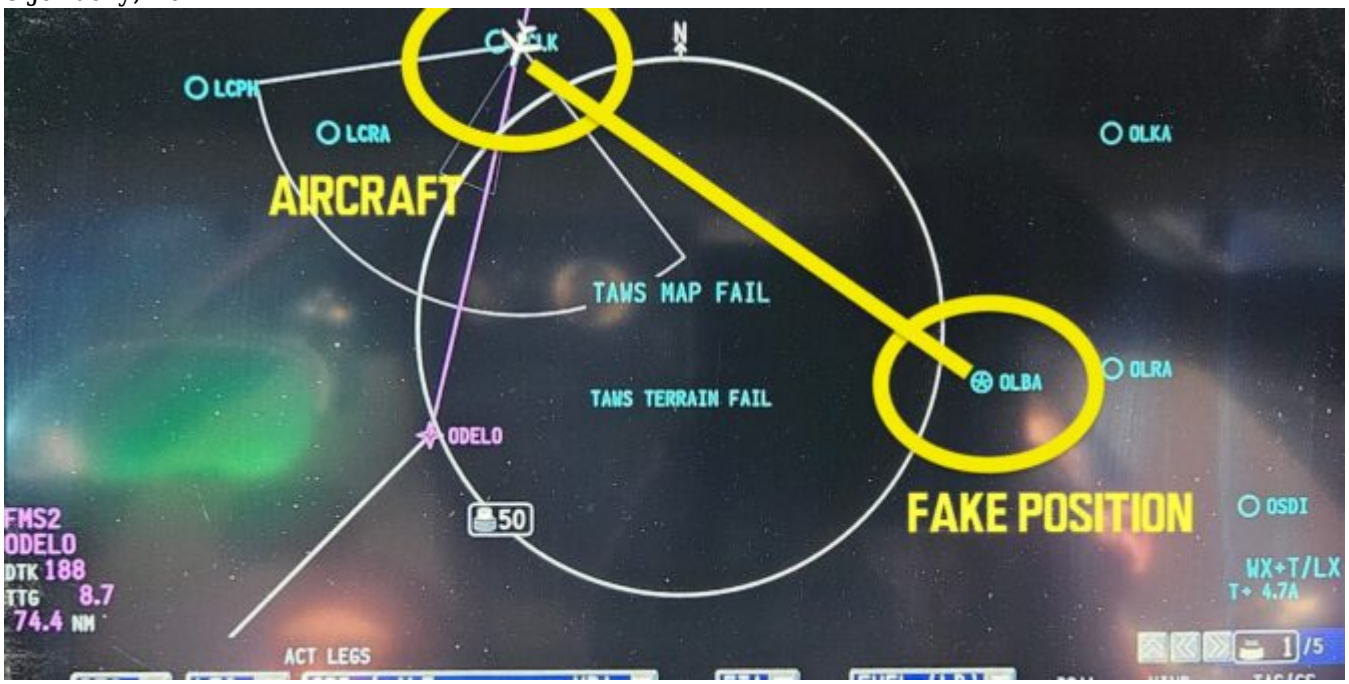
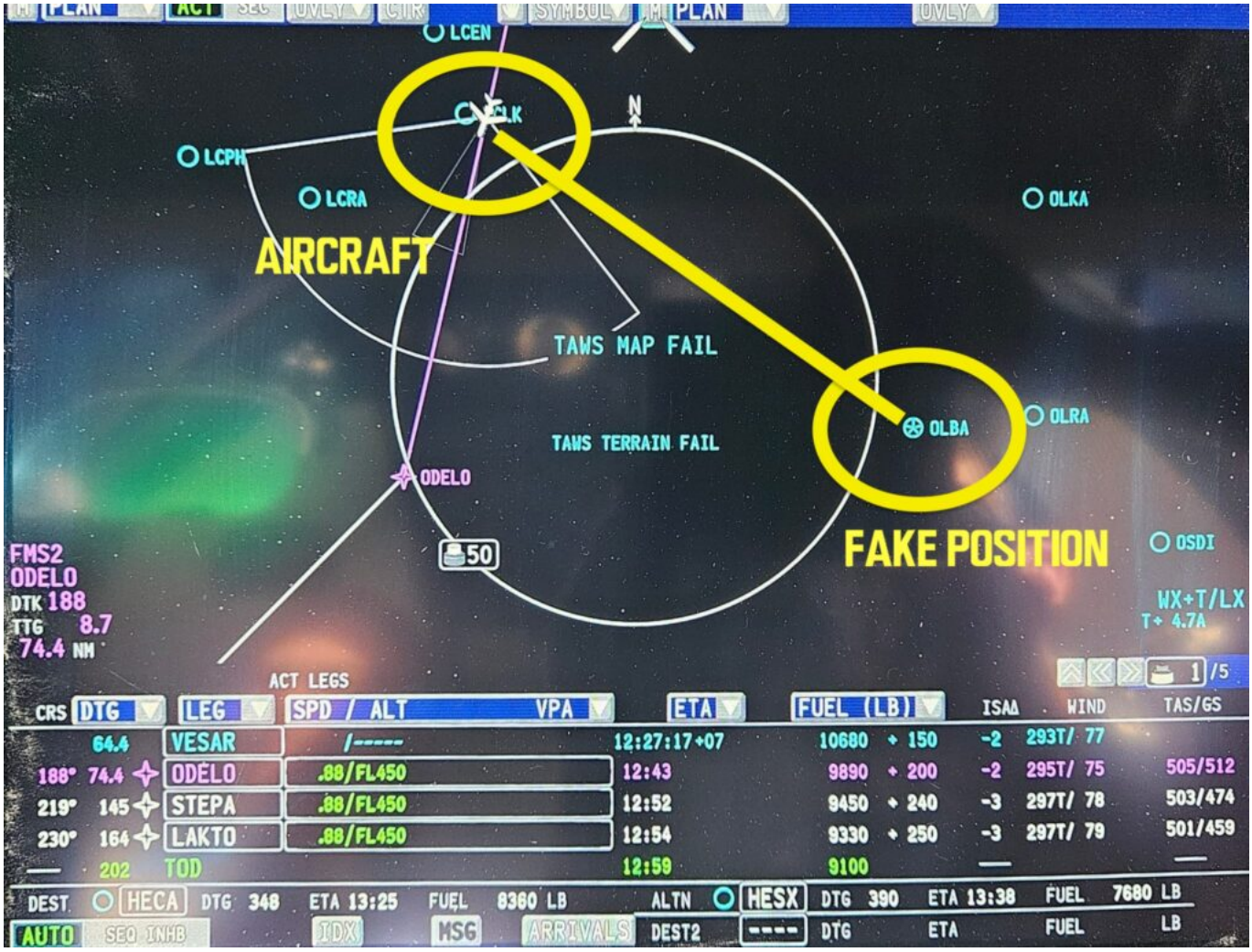
# New GPS spoofing incident shows how it works

OPSGROUP Team
5 January, 2024




An OPSGROUP member reported a new **GPS spoofing encounter** yesterday in the Ankara FIR, while flying southbound between UDVET and INPOR.

The encounter began around 1200Z, when both selected GPS positions **began to show the aircraft position as being over OLBA**/Beirut – approx **120nm away**.




The crew had disabled GPS inputs prior to the area, but briefly selected them again on the PNF side – when the spoofing began. The route flown during the event was essentially a straight line from LTAF/Adana to LCLK/Larnaca.

The aircraft was a Global Express 7500 at FL470. OLBA/Beirut is in one of the three hotspot areas for GPS spoofing, but this one over Adana is perhaps the furthest away yet to report the problem.

### Analysis

This is a great example of how GPS spoofing works. The Nav Display shows the fake **GPS position** with the star symbol – located exactly at OLBA/Beirut airport.

The **aircraft position** however – thanks to the crew disabling GPS sensors – is correctly shown over LCLK/Larnaca.

If the crew had not proactively disabled those sensors, the aircraft position would also be shown as over OLBA – and if the spoofing was subtle, the FMS would tend to start suggesting a right turn back to the track inbound ODELO.

**Further reading:**

- GPS Spoofing Hotspots

- GPS Spoofing QRH – Pilot Guide
- Nov 8 update – Maps, Scenarios, Guidance
- Special Briefings on GPS Spoofing (with reports)

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# North Atlantic Volcanic Threat

Chris Shieff
5 January, 2024

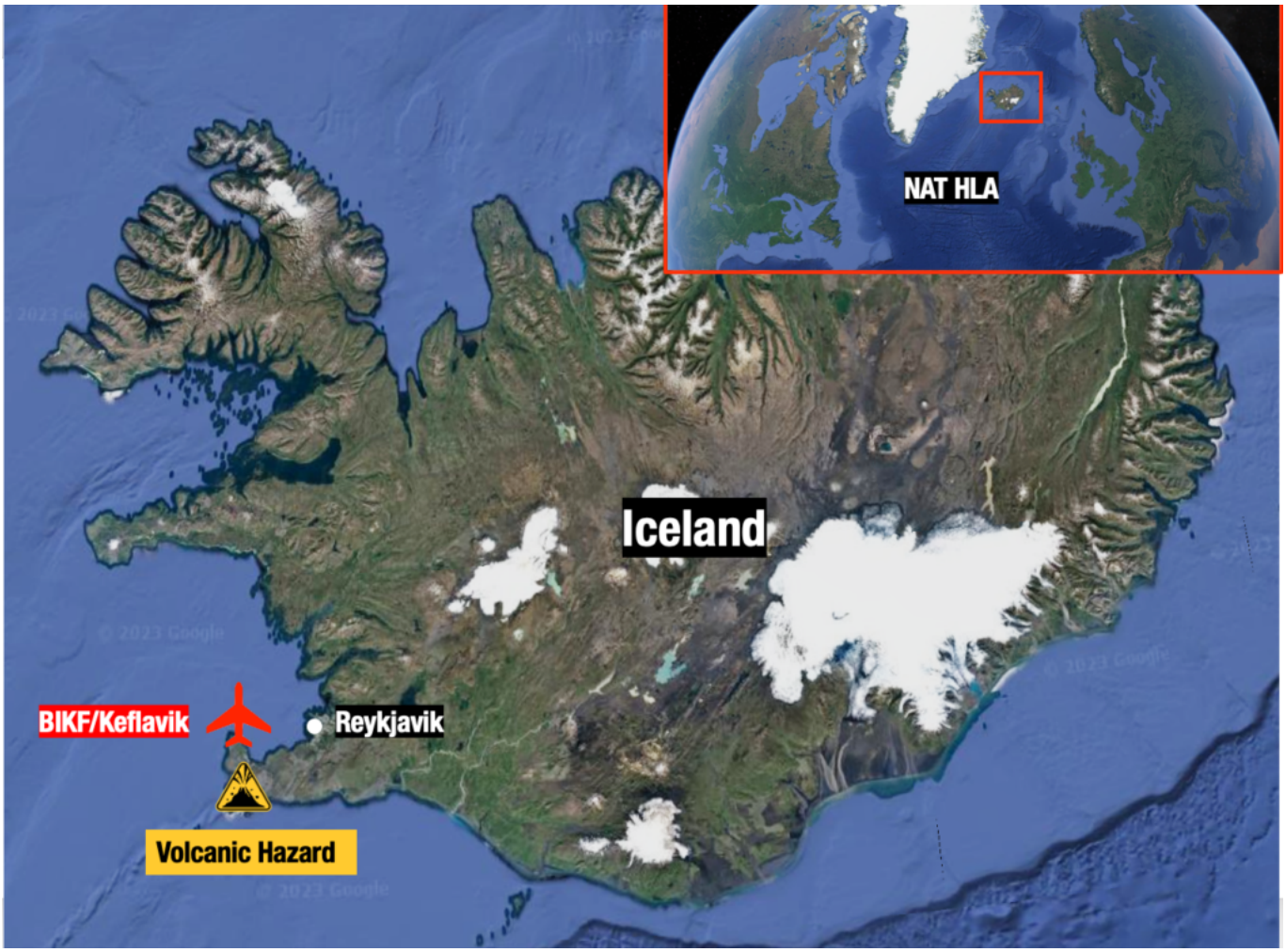
**Key Points**

- **One of Iceland's volcanoes (10nm southwest of BIKF/Keflavik) is showing signs it's about to erupt.**
- **If it does, NAT crossing traffic is likely to be affected at short notice.**
- **ICAO have a Contingency Plan ready to go if it does erupt (PDF below).**
- **Pilots and Operators: There is a list of things to watch out for if you do fly through volcanic ash, and a recommended procedure to follow.**

Iceland is on high alert for an imminent eruption at one of the volcanoes on the Reykjanes Peninsula – a stone's throw southwest of Keflavik. If it does erupt, it has **potential to seriously impact North Atlantic traffic.**

The last time this happened in 2010, the (try pronouncing this one) Eyjafjallajökull volcano closed almost every country's airspace in Western Europe in the weeks that followed. **Nearly 100,000 commercial flights were grounded.**

### Where are we talking about?




### What happens if it erupts?

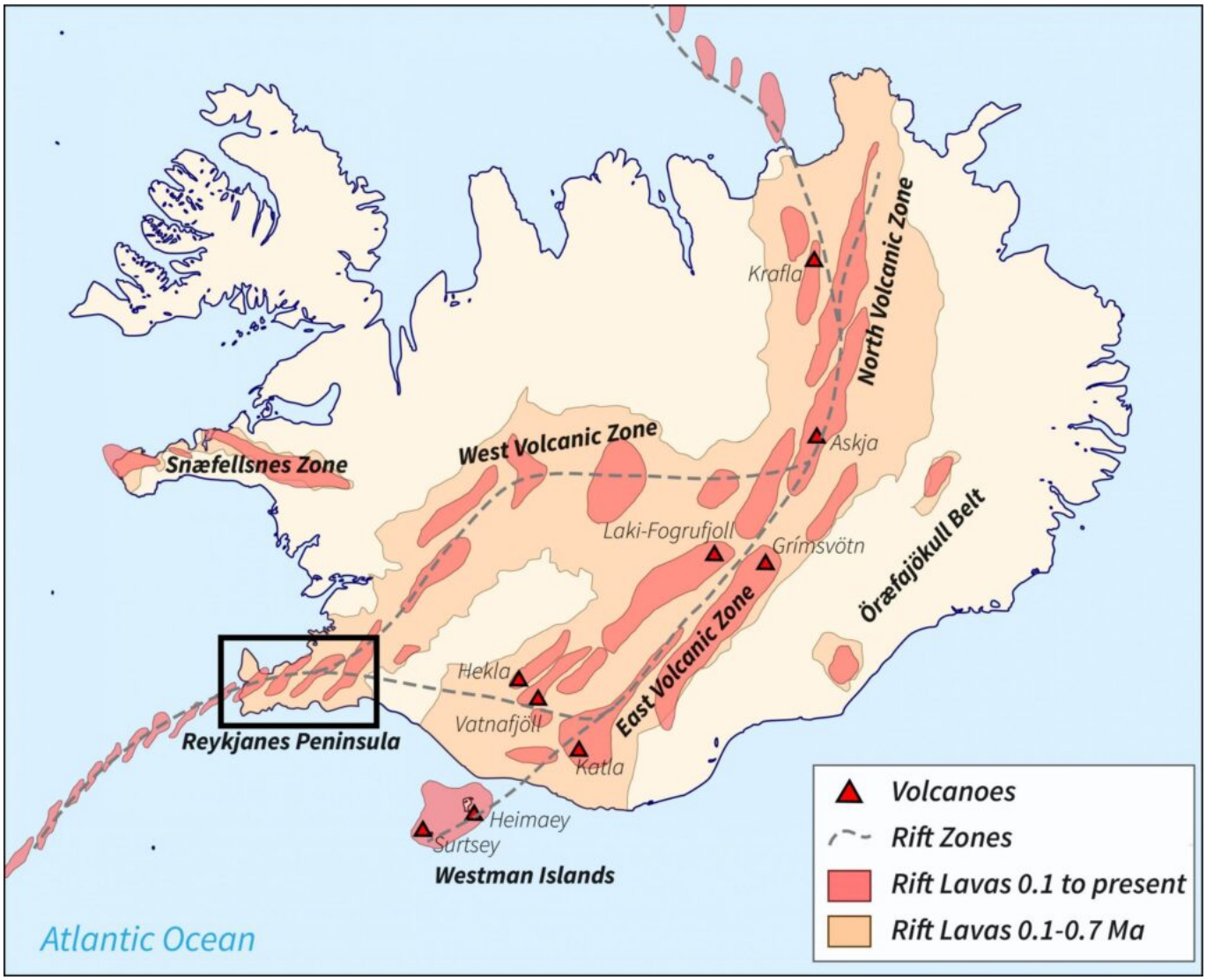
So far, it's just a warning. But it's credible enough for Iceland to declare a state of emergency. Recent earthquakes in the area are an ominous sign. If it does erupt, there are several possible scenarios that could affect air traffic.

- **BIKF/Keflavik may close.** Unlike previous eruptions, this one is just 10nm away from the airport and a little further from the Icelandic capital, Reykjavik. Aside from being a major airport in its own right, BIKF is a commonly used ETOPS/EDTO alternate for traffic crossing the NAT.
- **Part of the NAT HLA may become unusable depending on the spread of ash.** More southerly routes than usual may become a requirement which means extended flight times and more fuel.
- **Major airspace closures could occur for an extended period of time.** The European mainland may once again be in the firing line, thanks to the mid-latitude westerlies.

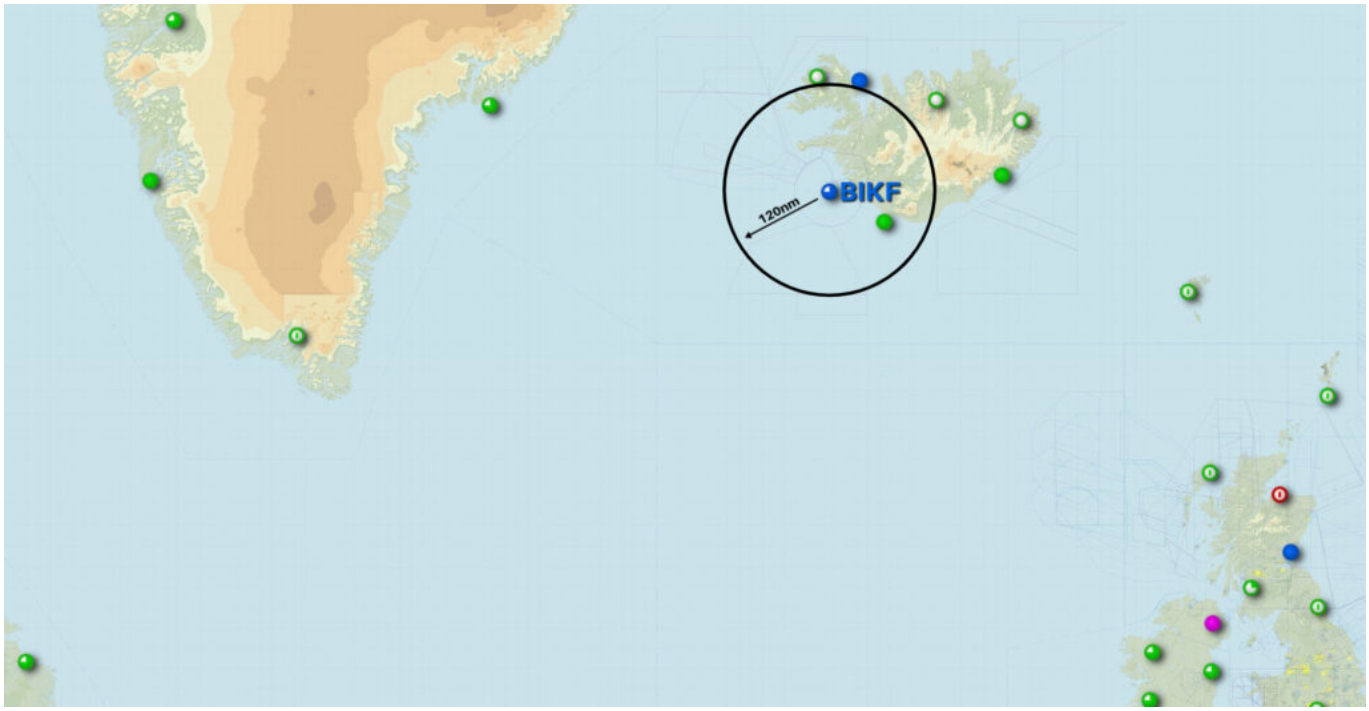
### Yeah but what ACTUALLY happens?

If the volcano warning goes to code **RED** (it's currently code **ORANGE**), that basically means an eruption has started. In this case, **the airspace within a 120nm radius will close**, until they confirm there's no ash cloud. They currently think there is a 15km long line where magma is flowing and moving towards the

surface – an eruption could happen anywhere close to that line.




120nm of closed airspace around BIKF/Keflavik airport (remember, the volcano is just up the road) would look something like this:




There's also a thing called the Volcanic Ash Contingency Plan that ICAO put together. This doc is the one you want to read – there are a few more scattered around online, but they're all older versions of this one.

This doc sprang from the misery caused by the eruption in 2010, and aims to set out what actually happens if a big volcano erupts.

**Essentially, it goes like this:**

1. **Volcano erupts. There's ash all over the place.**
2. **Volcanic ash people issue a volcanic ash warning.**
3. **Notam people issue a Notam.**
4. **Pilots/Operators read the Notam and don't fly into the ash. ATC help them.**

### What should I do if I fly through ash?

Don't fly through ash.

But if you do, then do this:

1. **Reduce thrust.**
2. **Do a 180 degree turnback.**
3. **Put masks on.**
4. **Declare MAYDAY.**
5. **Panic a bit as you do whatever emergency tasks you need to do.**
6. **Divert somewhere pronto.**

Or as it says in more official language in the Contingency Plan:

*Appendix 1 (page 2 of 2)*
— Anticipated Flight Crew Issues when Encountering Volcanic Ash —

4. Depending on the severity of the encounter, the reaction of the flight crew will be as follows:

a) Carry out the emergency drill for a volcanic ash encounter. This generally has the following elements:

i. Reduce thrust to idle if possible. *By reducing thrust, the temperature in the combustion section will be lower and less ash will deposit in the engine. Also lower thrust requires lower airflow (and ash) through the engine. To maintain a safe speed, the aircraft will have to descend. The resulting descent rate will be less that during an emergency descent due to pressurisation failure.*

ii. Execute a descending 180 degree turn. A turnback is usually the quickest route out of an ash cloud.

iii. Don oxygen masks if required. This may make communication on the flight deck and with ATC difficult.

iv. declaration of an emergency (MAYDAY MAYDAY MAYDAY) or request for an immediate reclearance possibly accompaniment by an urgency signal (PAN PAN; PAN PAN; PAN PAN). **Note:** the manoeuvre above may commence prior to an emergency or urgency being declared.

v. Carry out various emergency/non-normal drills as required, such as engine relight, unreliable airspeed, system failure drills.

vi. Communication with Cabin crew and passengers.

b) Diversion to the nearest suitable aerodrome.

c) If an aerodrome is contaminated with ash, the deceleration will be less than usual despite the use of maximum braking, resulting in a longer ground run. This may be aggravated by limited use of reverse thrust to avoid blowing up ash from the runway surface. If reverse thrust is necessary to bring the aircraft to a stop, a dust cloud may be raised.

***Flight crew expectations from ATC***

5. What the flight crew may require from ATC:

a) An immediate reclearance, laterally and/or vertically.

b) If carrying out the escape manoeuvre, ensuring other traffic is kept clear.

c) vectors to an area clear of ash if possible.

d) Information on the nearest suitable aerodrome and its weather and condition, including braking action. An aerodrome with a long runway.

e) vectors to an alternate and a priority landing.

f) If the windscreen is obscured, an autoland.

g) Emergency services for landing and provision of medical assistance for passengers and crew.

***Note:*** *While carrying out an escape manoeuvre, and associated emergency/non-normal drills, the flight crew workload and the priority to control the aircraft may limit the ability of the crew to communicate to ATC and comply with ATC instructions.*

## If I do fly through ash, how scary will it be?

Very scary. Don't do it. Here's a list of nightmarish things that will probably happen if you do:

1. **Smoke, fumes or dust may appear in the cockpit. Get those masks on.**
2. **Engine malfunctions, stalls, over-temperature, thrust loss, engine failure.**
3. **Reduced visibility due to the abrasive effects of ash on windshields and landing lights.**
4. **Pitot tubes may become blocked, so airspeed indications may become unreliable.**

*Advice: disconnect the autopilot, set engine thrust to an appropriate value and maintain the aircraft's pitch attitude manually. This will keep the aircraft at a safe speed, but will probably result in difficulty to maintain the assigned altitude. Increased separation is required (above and below).*

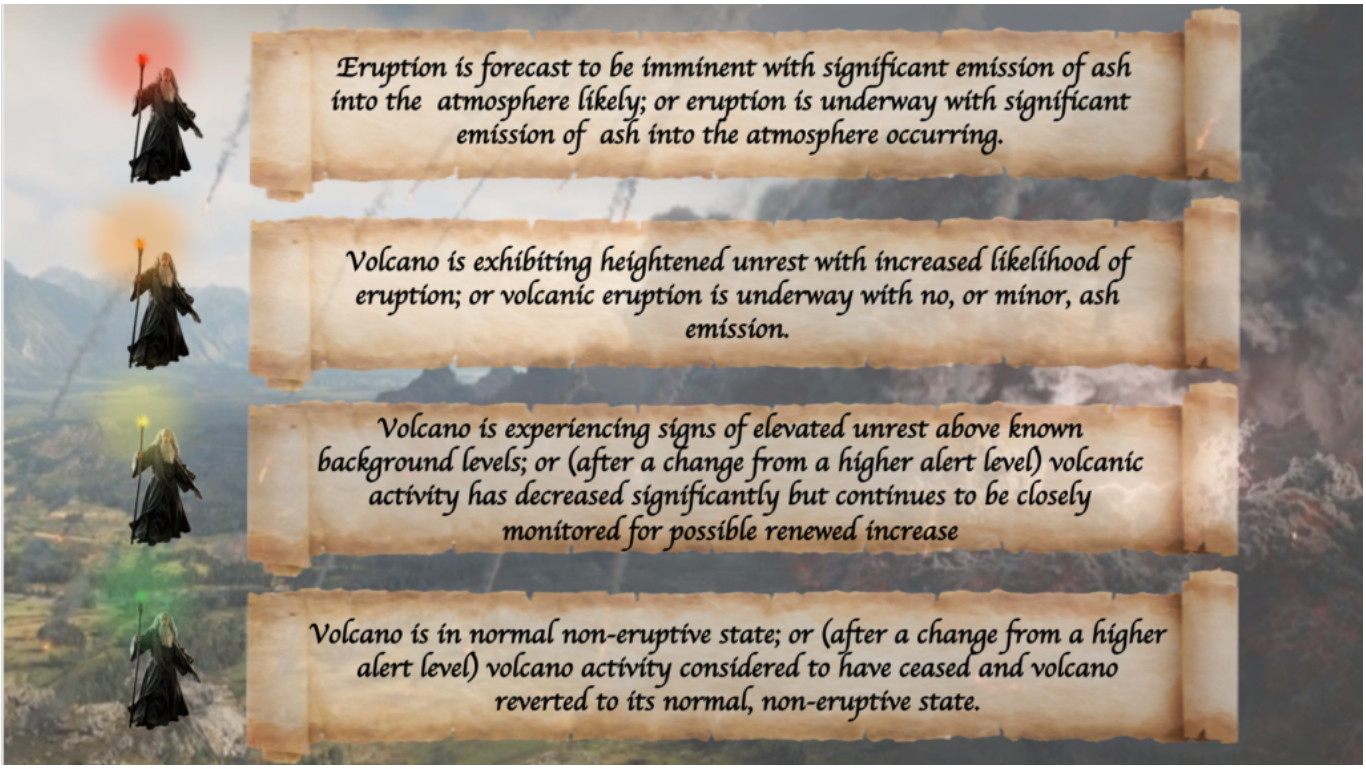
### Advisories and Warnings

The London Volcanic Ash Advisory Center (VAAC) is responsible for issuing any ash advisories for this region. You can access those here.

The current alert level is **Orange**. Verbatim, this means that the volcano is *'exhibiting heightened unrest*

*with increased likelihood of eruption; or that an eruption is underway with minor ash emission…'* Or in other words, it may be about to erupt.

If you're not familiar with the volcanic alert scale, here's how it works:




All traffic crossing the NAT or operating over Western Europe right now should be keeping a close eye on this one.

**What's the latest at BIKF/Keflavik Airport?**

We've had a couple of reports from members who have been through there recently. If you've got anything to add, please file a report at Airport Spy! For info from the airport, you can contact the local handlers at jetcenter@icelandair.is or ops@southair.is.

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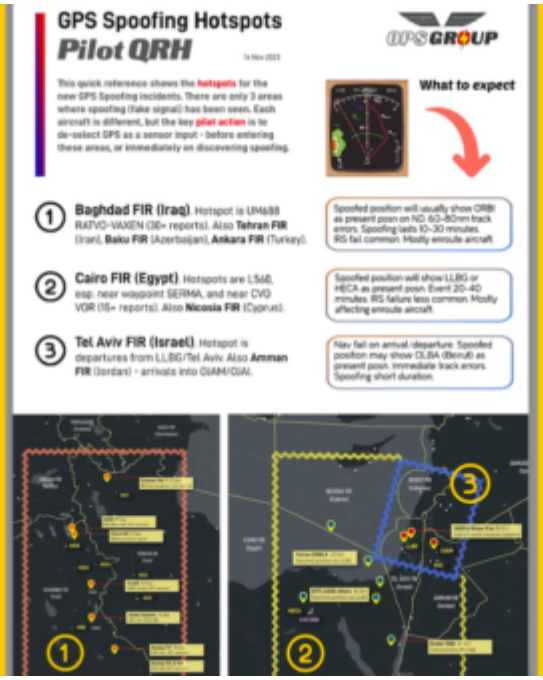
# GPS Spoofing: Pilot QRH – Hotspots and What To Expect

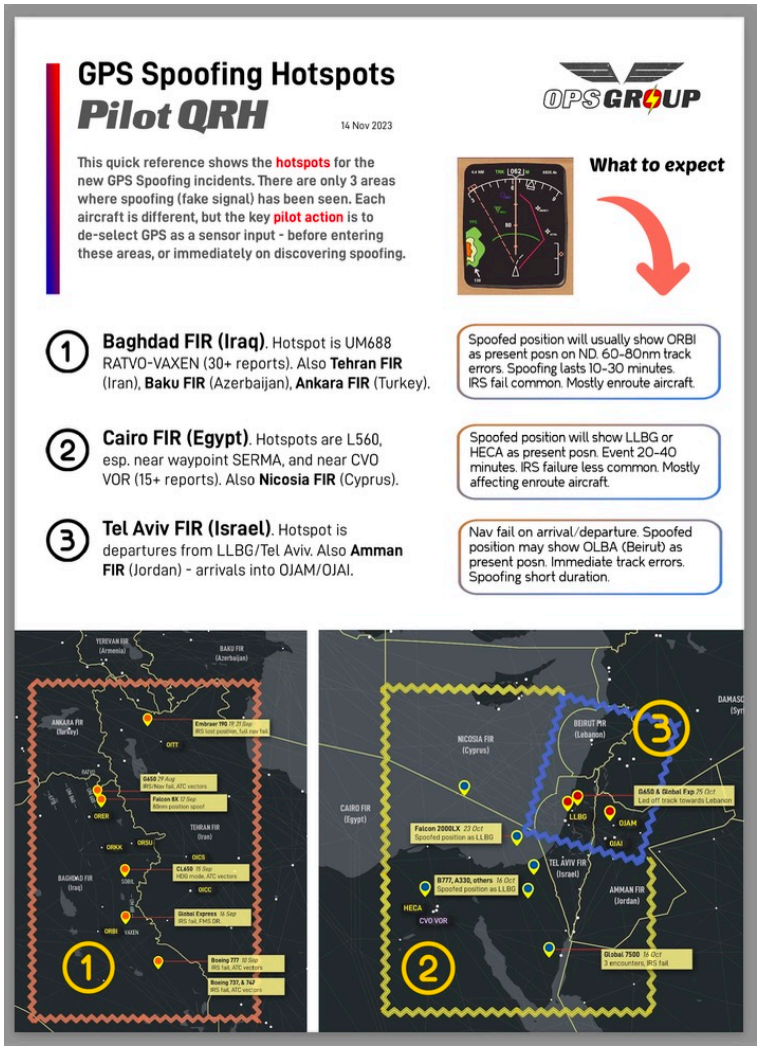
OPSGROUP Team
5 January, 2024




This quick reference shows the hotspots for the new GPS Spoofing incidents.

There are only 3 areas where spoofing (fake signal) has been seen. Each aircraft is different, but the key pilot action is to de-select GPS as a sensor input – before entering these areas, or immediately on discovering spoofing.

**Download** the OPSGROUP GPS Spoofing Hotspots – Pilot QRH (14 Nov 2023)




**For further on this topic:**

- GPS Spoofing update (Nov 8, 2023)
- GPS Spoofing: FAA warning (Sep 28, 2023)
- GPS Spoofing: First reports (Sep 26, 2023)

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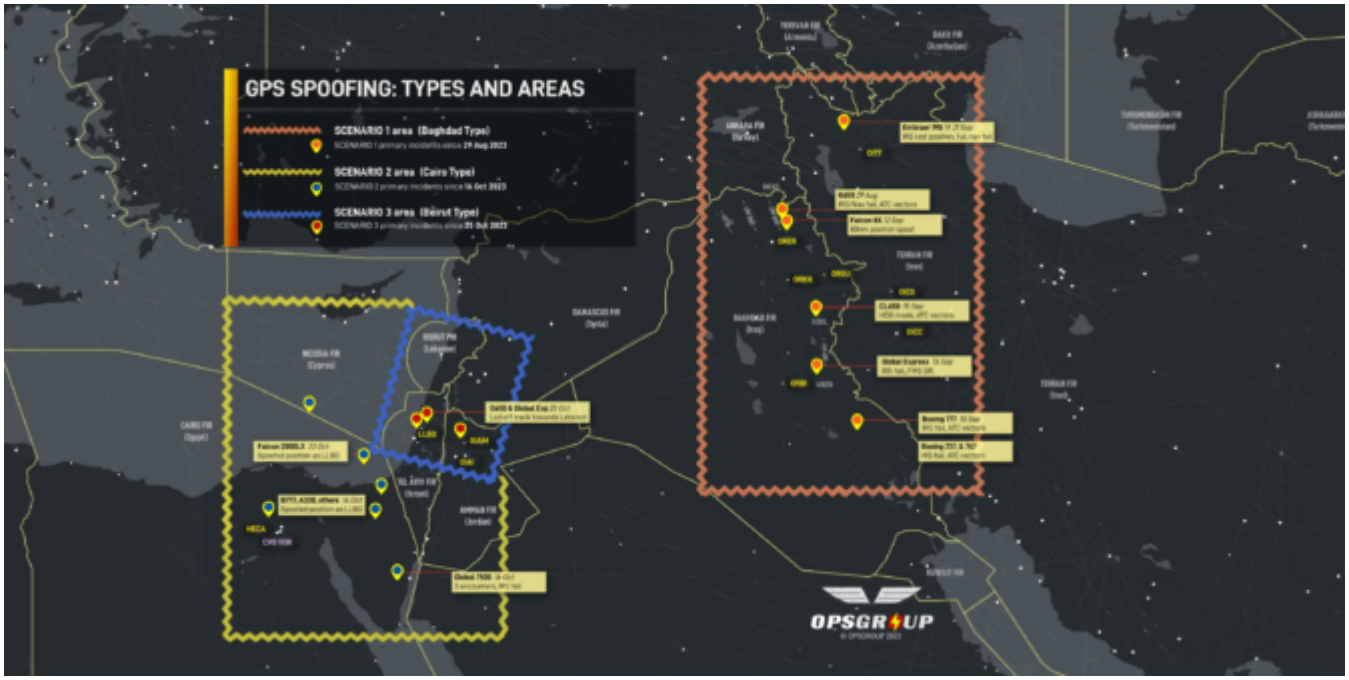
# GPS Spoofing Update: Map, Scenarios and Guidance

Mark Zee
5 January, 2024




**Key points in this update**

- **Two new types of GPS spoofing being reported, one leading to new critical nav failures**
- **Three distinct scenarios (Baghdad, Cairo, and Beirut types) – Spoofing Map published**
- **ALL CALL summary available in your Dashboard**

It's been 5 weeks since the real-world discovery of a **fundamental flaw in avionics design**: If a GPS position signal is faked, most aircraft are incapable of detecting the ruse. For many, it has lead to total navigation failure. For others, it has led to subtle and undetected erroneous tracking.

In the worst cases, the impact has been severe: complete loss of on-board nav requiring ATC vectors, IRS failure, and unnoticed off-track navigation towards danger areas and hostile airspace. The industry has been slow to come to terms with the issue, leaving flight crews alone to find ways of detecting and mitigating GPS spoofing.

**Two entirely new types of GPS spoofing** have been reported in other areas since the first GPS Spoofing **report** we published on 26 September. These include **critical nav failures on departure from Tel Aviv leading aircraft towards Lebanon**, and spoofed signals received by multiple aircraft in the **Cairo FIR** showing a stationary position over LLBG. We have now identified three distinct spoofing scenarios, shown on the map below and detailed in this briefing.

On Friday last, we asked OPSGROUP members for a group **ALL CALL** to gather the latest intel that we have in the community. This article will summarize at high level what we know. Full details are in your members dashboard (Special Briefings section).

***Note:*** This summary article is being continuously updated as we get more information. If you have anything to add or comment on, please **email the team**.

### Three scenarios: different types of spoofing

The GPS Spoofing reports received by OPSGROUP can be divided into three main scenarios, which correspond to the areas on the map below.

### Key Flight Crew concerns

- **Uncertainty** as to the best way to mitigate GPS spoofing activity
- Wide concern over **IRS spoofing**, previously thought to be impossible
- Potential for the issue to recur in other geographic areas
- Potential for **surprise and startle effect** with sudden loss of nav capability
- **Lack of useful guidance** from aviation authorities, OEM's and avionics manufacturers

### Worst case reports

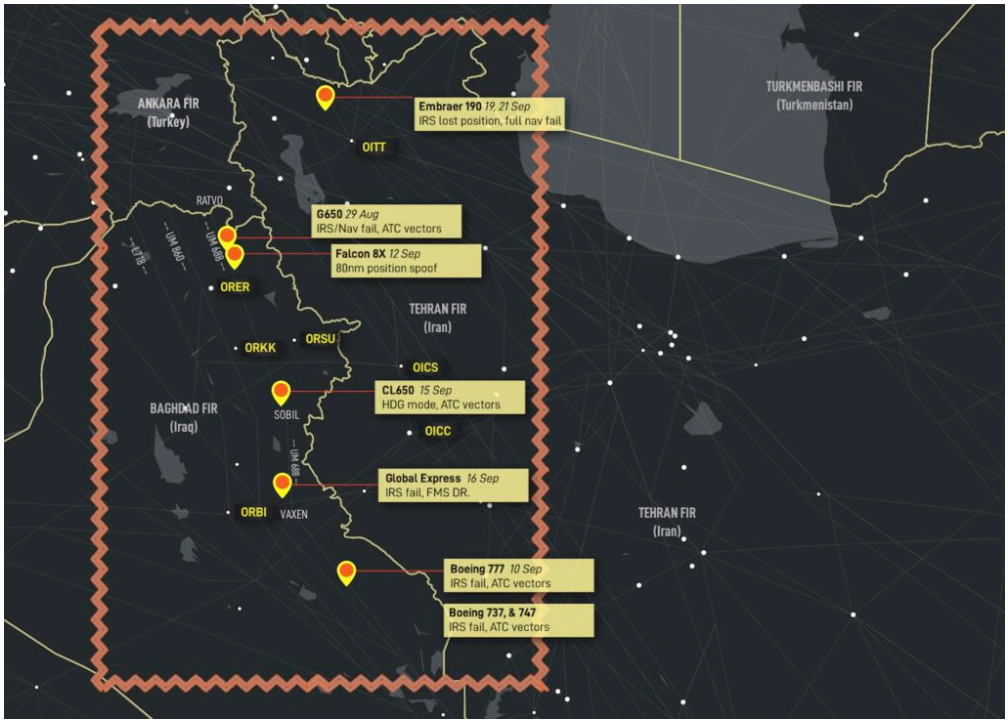
In all, OPSGROUP has received close to 50 reports of GPS spoofing activity. Further down, we identify **three distinct spoofing scenarios** reported by flight crew. First, we highlight the most troubling reports to show how critical the impact can be.

- A **Gulfstream G650 experienced full nav failure** on departure from LLBG/Tel Aviv (25 Oct). The crew reports, "ATC advised we were off course and provided vectors. Within a few minutes our EPU was 99.0, FMS, IRS, and GPS position were unreliable. The navigation system thought it was 225nm south of our present position." [Full report – Members Dashboard].
- A **Bombardier Global Express** was spoofed on departure from LLBG/Tel Aviv (16 Oct). A false GPS position showed position as overhead OLBA/Beirut. Crew advises "The controller warned us that we are flying towards a forbidden area". [Full report – Members Dashboard].
- A **Boeing 777** experienced a 30 minute GPS spoofing encounter in the Cairo FIR (16 Oct). A false GPS position showed the aircraft as stationary overhead LLBG for 30 minutes.
- A **Bombardier Global 7500** was spoofed 3 separate times in the Cairo FIR (16 Oct 2023). Crew advises: "The first took out one GPS, the second took out a GPS and all 3 IRS's, and the third time took both GPS's and all 3 IRS's." The distance from LLBG was roughly 220-250 miles, and the spoofing stopped once we were approx 250nm west of LLBG.
- An **Embraer Legacy 650** enroute from Europe to Dubai. They tell us, "In Baghdad airspace, we lost both GPS in the aircraft and on both iPads. Further, **the IRS didn't work anymore**. We only realized there was an issue because **the autopilot started turning to the left and right**, so it it was obvious that something was wrong. After couple of minutes we got error messages on our FMS regarding GPS, etc. So we had to request radar vectors. We were showing about 80 nm off track. **During the event, we nearly entered Iran airspace (OIIX/Tehran FIR) with no clearance.**
- A **Bombardier Challenger 604** experienced spoofing in the Baghdad FIR and required

vectors all the way to Doha. “Nearing north of Baghdad something happened where we must have been spoofed. We lost anything related to Nav and the IRS suggested we had drifted by 70-90 miles. We had a ground speed of zero and the aircraft calculated 250kts of wind. The FMS’s reverted to DR (Dead Reckoning) and had no idea where they were.We initially took vectors to get around the corner at SISIN. Nav capability was never restored, so **we required vectors all the way from Iraq to Doha for an ILS**. We never got our GPS sensors back until we fired up the plane and went back to home base two days later.

**Scenario 1: Baghdad type.**

**Affected area:** Primarily **Northern Baghdad FIR,** especially on airway UM688. Also, northern **Tehran FIR**, **Baku FIR**

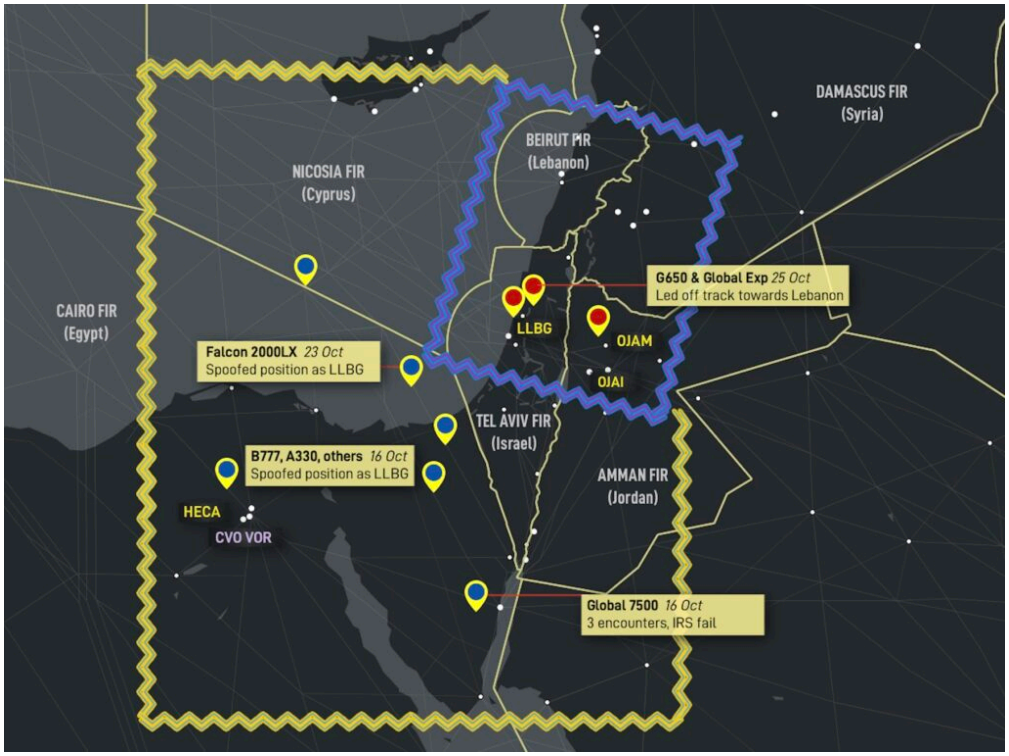



The **Baghdad** spoofing type involves GPS spoofing of enroute aircraft, nav failures follow. This was the first type of spoofing, initially reported on August 29, 2023, with a large amount of further reports starting in September 2023.

**Dashboard:** See full briefing on this type, with the original full crew reports.

**Scenario 2: Cairo type**

**Affected area:** Primarily within the **Cairo FIR** (L560, and locations near CVO VOR), also **Nicosia FIR** (Cyprus), **Amman FIR** (Jordan)

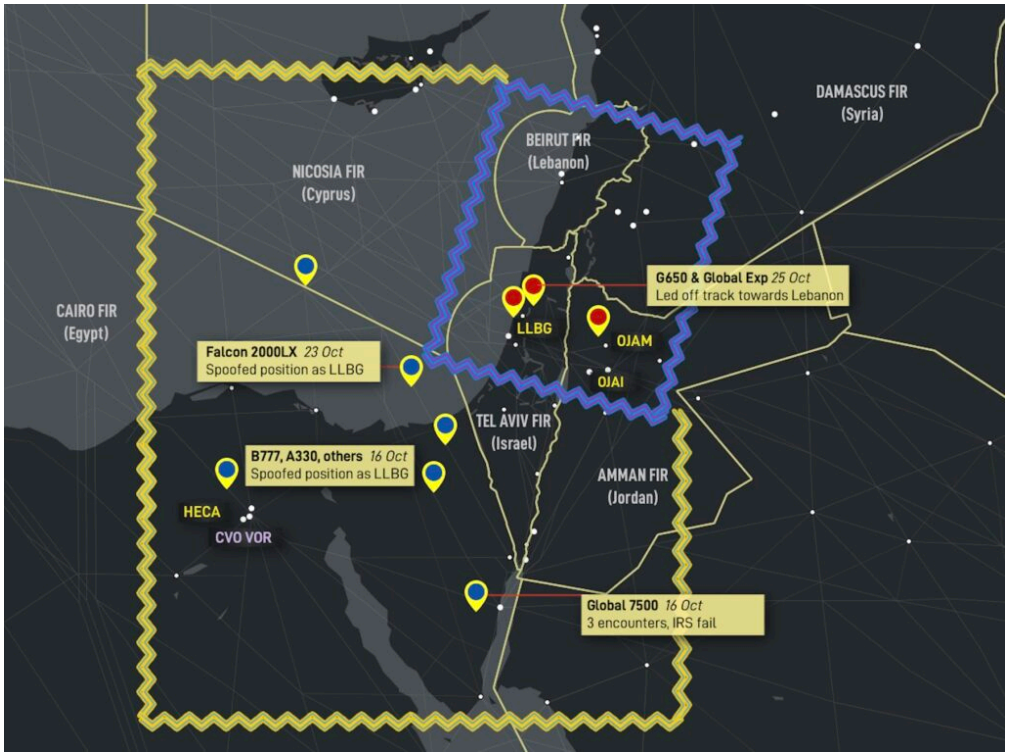



These reports first surfaced around Oct 16. Most reports are within the Cairo FIR. All crew reported similar circumstances, where a false or spoofed GPS position is received by the aircraft, incorrectly showing the aircraft position as being over LLBG/Tel Aviv. Locations vary from airways over the eastern Mediterranean, Egypt, and also on approach into Amman, Jordan (OJAM). Reports range from 100nm to as far as 212nm from LLBG.

**Dashboard:** See full briefing on this type, with the original full crew reports.

#### Scenario 3: Beirut type.

**Affected area:** Primarily within the **Tel Aviv FIR**, also **Nicosia FIR** (Cyprus), **Amman FIR** (Jordan)




Here, the spoofed position shows the aircraft over OLBA/Beirut, or creates subtle tracking towards OLBA. This type has been responsible for wayward tracking on SID departures from LLBG since October 25.

**Dashboard:** See full briefing on this type, with the original full crew reports.

## How to identify spoofing

The big question for flight crew is: how do I know this is happening to us? As always, **we are in the front line of dealing with this**. What will you do at 2am over the Middle East when the aircraft starts drifting off course and saying “Position Uncertain”? With almost zero guidance, we’re largely on our own to figure things out.

The following are based on the reports submitted to OPSGROUP by crews that have experienced spoofing:

1. **Sudden increase in EPU** (Estimated Position Uncertainty). GPS jamming will not create this, but a spoofed position will cause a “jump” and hence EPU values have jumped from 0.1nm to 60nm, and >99nm in quick order.
2. An **EFIS warning** relating to Nav. Some aircraft have gone straight to “DR” mode (Dead Reckoning).
3. A sudden large change in the aircraft clock UTC time. Reports vary from a couple of hours to 8 hour and 12 hour changes in the aircraft clock time.

Obviously, every aircraft has different system architecture and will behave differently, but these tell-tale indicators should help to identify the first signs of spoofing.

### Mitigation – BEFORE entering known areas

At base level, there is no effective way to prevent the actual GPS spoofing from happening. If it exists, a false signal will be received by the aircraft. As mentioned above, most aircraft are not able to understand that this is happening – there is no software logic that detects large sudden jumps in GPS position as being potentially false.

1. The critical first step is **knowing** when you are entering a potential GPS spoofing area (see locations above)
2. Consider **de-selecting GPS as a sensor input to the FMS** (to avoid nav uncertainty)
3. Consider, if possible, **de-selecting GPS updating to the IRS** (to avoid loss of IRS)
4. Monitor ATC for any other aircraft comments that indicate spoofing (time checks, position checks)
5. Identify conventional navaids that can be used instead (VOR, NDB)
6. **Departure** – there is uncertainty as to whether de-selecting GPS inputs on the ground before departure into known spoofing areas is sensible. Some OEM's have said this may lead to other issues.

**Mitigation – DURING active spoofing**

If you experience GPS spoofing

1. As soon as possible, de-select any GPS inputs (FMS, IRS). Crew reports suggest that **quick action here** (within 60 seconds) can prevent wider nav failure
2. Switch to using conventional navaids (VOR, NDB)
3. If you know that for your aircraft type the IRS is not capable of being spoofed, obviously IRS navigation is preferable for accuracy.
4. Report the occurance to ATC, primarily to warn other flight crew on the same frequency.

Please also **report** the occurance to OPSGROUP, to continue building a picture of where these events are occuring. All reports are anonymous and de-identified.

#### ALL CALL Summary – GPS Spoofing

An ALL CALL to the group pools our knowledge on particular topics. This ALL CALL went out on Nov 2. View the **original email**, or scroll to the end of this post. If you have anything to add, please email news@ops.group. As we get updates, we'll post them here.

**View the live-updates in the ALL CALL response here**.

- New crew GPS Spoofing reports following ALL CALL
- Member comments on GPS Spoofing
- **OEM guidance:** Dassault
- **OEM guidance:** Gulfstream
- **OEM guidance:** Boeing
- **OEM guidance:** Bombardier
- **OEM guidance:** Embraer
- Aviation Authority guidance (EASA)
- **Update on GPS issues in Shanwick OCA**

**Further reading**

- First report on GPS Spoofing, OPSGROUP – “Flights Misled over position, nav failure follows” (26 Sep 2023)
- Update, FAA warning, OPSGROUP – “FAA warning issued” (28 Sep 2023)
- **Download**: RISK WARNING (**V2/28SEP**) – **Fake GPS signal attacks** (PDF, 1.7 Mb)
- **Member Briefing**: GPS Spoofing, Nav Failures
- **Member Briefing**: GPS Spoofing Scenarios (Baghdad, Cairo, Beirut types)
- **Member ALL CALL summary**: GPS Spoofing 02 Nov. (Live updates)

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# New Airspace Warning: The Red Sea

Chris Shieff
5 January, 2024

With the Israel-Gaza conflict ongoing, a lot of traffic is re-routing well clear of the LLLL/Tel Aviv FIR via parts of the **Sinai Peninsula**, the **Red Sea** and into Saudi Arabia via the **Gulf of Aqaba.** Especially those flights bound for Amman, Jordan.

The problem is that spill-over risks from the conflict are now extending beyond the boundaries of Israeli airspace and into this **busy corridor.** We’ve reported a number of these instances in the past few weeks.

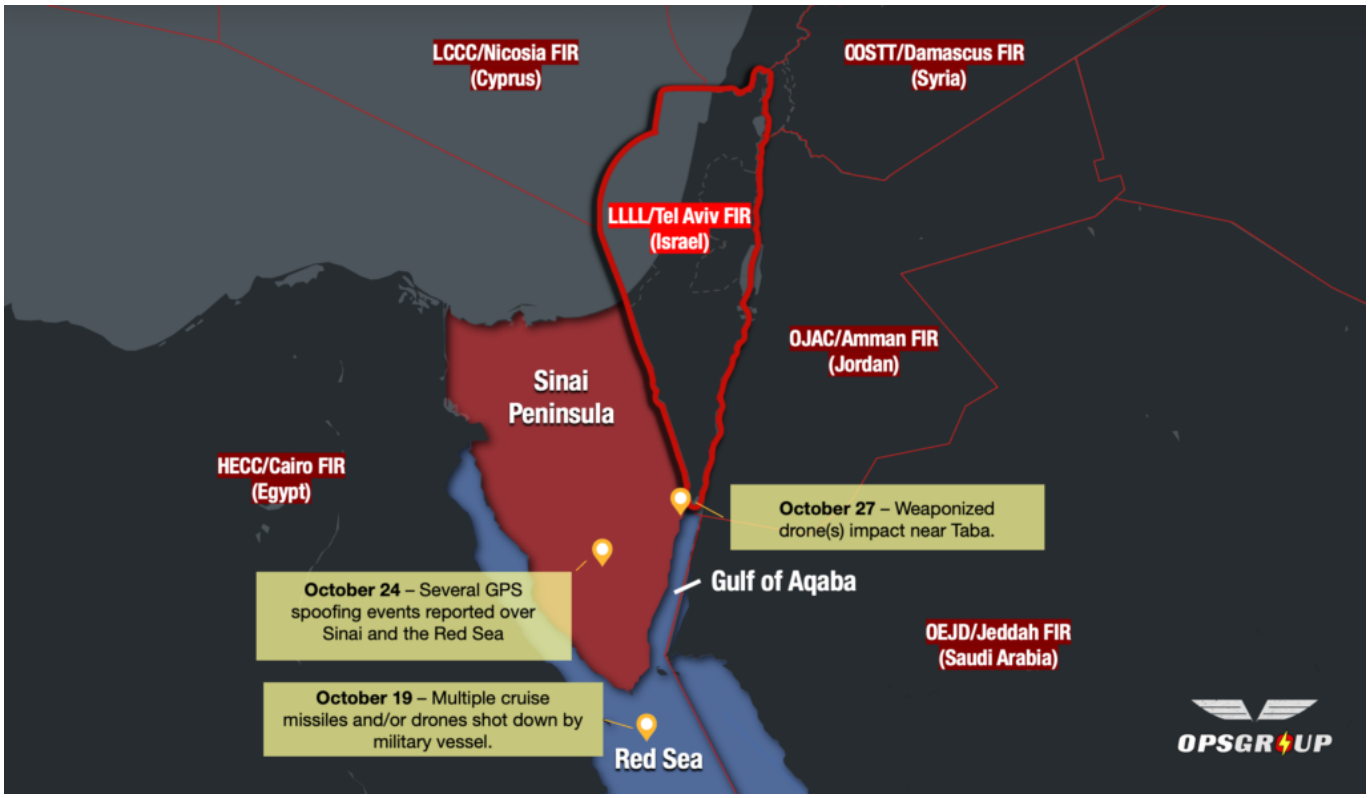
On Nov 1, the UK CAA published a new airspace warning via Notam:

AIRSPACE SECURITY WARNING ISSUED BY THE UK DEPARTMENT FOR TRANSPORT. CIVIL AIR OPERATORS ARE ADVISED TO TAKE POTENTIAL RISK INTO ACCOUNT WHEN OPERATING OVER THE WATERS OF THE RED SEA AND THE GULF OF AQABA DUE TO POTENTIAL RISK FROM HEIGHTENED MILITARY ACTIVITY. FOR MORE INFO UK DEPARTMENT FOR TRANSPORT 0207 082 6639 OR 0207 944 3111 OUT OF HOURS. AR 2023-38309/AU4. SFC - UNL, 01 NOV 15:00 2023 UNTIL 30 JAN 23:59 2024 ESTIMATED

Airspace warnings aren't new for the Sinai Peninsula – but are for the Red Sea and Gulf of Aqaba. So, what has made the UK issue this one now?

### Recent Events

- **Oct 27 –** a weaponised drone struck a town near Egypt's border with Israel near Taba. This was likely launched by Yemen's Houthi group from Yemen, or the Red Sea itself.
- **Oct 24 –** Several OPSGROUP members reported GPS spoofing events resulting in the aircraft showing its position over Tel Aviv, Israel. Several hotspots were identified, including over the Sinai Peninsula and Red Sea. You can read more about those here.
- **Oct 19 –** At least one cruise missile or drone was shot down by a US Naval vessel over the Red Sea, reportedly launched from militants in Yemen and targeting Israel.




While militant activity on the Sinai Peninsula and adjacent regions is a **known threat**, the conflict in Israel has **changed the risk picture**. These groups have suddenly become more active and their attacks more sporadic. This may not be evident in existing airspace warnings issued by Germany and the US FAA – the latter having been around for years.

### Is it safe enough to overfly?

There is no definitive answer to this question – as the UK Notam above alludes to, potential risks need to

be taken into account and the appetite for those will vary from operator-to-operator.

Here's what we do know though:

***It is better to fly higher.*** All existing warnings for the Sinai Peninsula (and now adjacent regions including the Red Sea) advise operators to **stay above FL250/260.** This is likely due to the risk of militant groups with access to anti-aircraft weaponry such as man portable air defence systems (MANPADS).

***The chance of misidentification by the military is low, but not zero.*** Military vessels active in the Red Sea are equipped with sophisticated and long-range air defence systems capable of reaching all levels. It is extremely unlikely that a civil aircraft would be misidentified – but history has shown that accidents can happen.

***Know what to do if you are spoofed.*** As opposed to GPS jamming, spoofing is insidious and potentially confusing. Your aircraft may not even alert you that something has gone wrong. **We have a Briefing, Guide and Map on GPS spoofing which you can access here.** In the worst cases, the impact has been severe: complete loss of on-board nav requiring ATC vectors, IRS failure, and unnoticed off-track navigation towards danger areas and hostile airspace.

***Think about diversions.*** If you need to land in a hurry (especially in Sinai), you are exposing yourself to increased risk of anti-aircraft fire, small arms fire and mortar attacks by groups with a known intent to attack civilian interests, possibly motivated by current events.

### Alternative Routes?

Flight tracking shows major airlines are still overflying Southern Sinai and the Red Sea. The only option to avoid the region completely involves a long diversion south.

Unfortunately for those bound for **Jordan** and perhaps **Kuwait**, this means extended flight times. If you do decide to overfly the Sinai and Red Sea region, know that just because airways are open (and well used) doesn't mean they are completely safe.

### Updates

For more info and updates, check Safeairspace.net – our Conflict Zone & Risk Database.

# Philadelphia Reopens for International Bizav Flights

OPSGROUP Team
5 January, 2024

**Key Points**

- **Customs (CBP) is available again for international bizav flights wanting to use KPHL/Philadelphia.**
- **CBP is only available for a few hours each day.**

International bizav flights can land at Philadelphia again for the first time since Dec 2022, now that CBP has reopened its processing facility at the airport.

However, the Atlantic Aviation FBO report that **CBP is only available for a few hours each day: between 09-12 local time until Nov 15.** Then after that, who knows...

You can contact the FBO at phlfrontdesk@atlanticaviation.com, or call CBP direct at +1-215-863-4200.

### Where else can you go?

If you need to get into the Philly area then here are the other options available.

### KTTN/Trenton Mercer

- KTTN has 2 runways – 06/24 which is 6006′ and  16/34 which is 4800′. You have an ILS 6 or various RNP options (GPS and AR).
- CBP is available.

- 2 FBO options: FlightServ fbo@flightserv.net / Signature ttn@signatureflight.com.

**KPNE/Northeast Philadelphia**

- KPNE also offers 2 runways – 06/24 at 7000′ and 15/33 at 5000′. Runway 24 has an ILS, but otherwise you're looking at an RNAV (GPS) approach.
- They have CBP, but it is by PPR only. The airport is also closed to Part 121 and Part 135 operators. So check in advance that they can accept you seems to be the story here.
- FBO: Atlantic Aviation angie.pearce@atlanticaviation.com

**KILG/Wilmington**

- Runways 09/27 and 01/19 are both over 7000′ and they have a shorter third runway 14/32 offering only 4602′. Runway 1 is the only runway with an ILS, the rest are RNAV only.
- FBO: Atlantic Aviation mark.anderson@atlanticaviation.com. Or try Fly Advanced at ilgfrontdesk@flyadvanced.com.
- This is another PPR for CBP airport so get in touch in advance to arrange.

**KACY/Atlantic City**

- If you're looking for a longer runway then KACY's 13/31 offers you 10,000′ and an ILS, so a good option for the bigger aircraft.
- Signature ACY@signatureflight.com

**KEWR/Newark**

A bit further afield, but it's there if you need it. And we're sure you have all the info on Newark already, and the many other New York are airports that you have as options if you don't mind taking a train after.

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**If you know a better alternative** then drop it in the comments and let everyone know!

And of course, there are a whole bunch of very decent regional airports to consider if you're local to the US.

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# The Annual Shanghai Airports Meltdown

David Mumford
5 January, 2024

**Key Points**

- **Shanghai's ZSSS/Hongqiao and ZSPD/Pudong airports are effectively off-limits to bizav flights at the start of November, unless you're heading to the China International Import Expo event.**
- **Operators will need to consider nearby airports instead: ZSWX/Wuxi, ZSHC/Hangzhou, ZSNJ/Nanjing and ZSNB/Ningbo.**

You won't find it on the Notams, but there are some restrictions coming up in November at Shanghai's ZSSS/Hongqiao and ZSPD/Pudong airports which effectively ban most business/private flights.

It's the same meltdown every year in Shanghai. It's all to do with the annual China International Import Expo event (CIIE) – which this year will be held from Nov 5-10.

Here are the restrictions at the main airports to watch out for this year:

### ZSSS/Hongqiao

From Nov 2-8, no business/private flights allowed, including those flights participating in CIIE.

### ZSPD/Pudong

From Nov 2-13, the airport will only accept participating CIIE business/private flights. Quick turns (if not participating in CIIE) are not allowed.

It's also worth noting these two extra restrictions at ZSPD which apply year-round:

- Take-off and landing is prohibited between 07-09 local time (23-01z).
- Business/private flights are not allowed to have two peak hour slots between 09-22 local time (01-14z). So you can land during that period, but then you have to wait until 22 local time before you can depart!

### Where else to go?

For non-CIIE flights wanting to go to Shanghai during this period, the alternative options may be limited, as parking will fill-up quickly at nearby airports **ZSWX/Wuxi, ZSHC/Hangzhou, ZSNJ/Nanjing and ZSNB/Ningbo.**


Here's the lowdown on those four airports:

### ZSWX/Wuxi

Operating hours? H24. But bizjets can only go here between 0700-2300 local time (and Customs are only open from 0830-2300). Outside those hours, you need permission from the airport authority.
Does it have an FBO? Yes, but only for domestic flights.
Driving time to Shanghai? 2hrs (130km)
Other restrictions? You need permission from the military to operate here. Overnight parking is generally not allowed (and there's no hangar for bizjets).

### ZSHC/Hangzhou

Operating hours? H24.
Does it have an FBO? Yes, but only for domestic flights.
Driving time to Shanghai? 2hrs 30mins (180km)
Other restrictions? They don't issue arrival/departure slots to business/private flights between 0700-0859 local time. We also heard from one handler that there is a 72hr parking limit in place at the moment.

### ZSNJ/Nanjing

Operating hours? H24.
Does it have an FBO? Yes.

Driving time to Shanghai? 3hrs 30mins (300km)
Other restrictions? They don't issue arrival/departure slots to business/private flights between 0700-0859 local time.

### ZSNB/Ningbo

Operating hours? H24.
Does it have an FBO? Yes, but for domestic flights only.
Driving time to Shanghai? 3hrs (220km) – providing you take the road over the Hangzhou Bay Bridge

Know a secret airport somewhere near Shanghai where bizav flights can operate to during this period? Let us know!

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# Bizav Clampdown at Amsterdam

Chris Shieff
5 January, 2024

**From March 2024, the number of slots available for GA/BA at EHAM/Amsterdam Schiphol will almost halve.** And apparently, it's just the tip of the iceberg – the ultimate goal is for them to be banned altogether.

Just like with Portugal's new Bizav Punishment Tax, the small jets are getting the big heat – often unfairly.

### Go Away, GA...

The news came out in the airport's latest capacity declaration – the maximum number of 'small business aviation' flights will be **capped** at 12,000 next year (down from 17,000).

It's all part of a master plan that Schiphol announced back in April to make the airport 'quieter, cleaner and better.'

The biggest news is that a **complete ban on business aviation** is planned from 2025. And until then, GA/BA will increasingly feel the squeeze.

### So, what happens after the ban?

With no more slots available to business jets, operators will need to look elsewhere. Here are the **current closest alternatives** with customs:

- **EHRD/Rotterdam** (24nm) – For handling, contact: Jet Aviation FBO, rtmfbo@jetaviation.com
- **EHEH/Eindhoven** (56nm) – For handling, contact: Viggo Eindhoven, info@viggo.eu
- **EHGG/Groningen** (82nm) – For handling, contact:  Ground Ace, info@groundace.eu

Across the border, don't forget about **EBBR/Brussels** either.

### Look out for other restrictions too

**1. Night curfew:** The same plan includes banning all aircraft movements between midnight and 6am (5am for departures). This will severely restrict available slots for late evenings and early mornings.

**2. No new runway:** The airport has decided that the existing six runways should just about cover it. Plans have officially been scrapped for lucky number seven – a twin sister for Kaagbaan (yes, the runways have names!)

**3. Noisy rides:** From this coming Summer, Schiphol has announced that eighty-seven aircraft types will no longer be welcome. The good news is most of them are old.

**4. Airport fees:** The quieter and cleaner your ride, the cheaper the airport fees will be moving forward. Operators using louder and more polluting aircraft will pay up to five times as much.

### I want to go to Schiphol anyway

The doors haven't quite closed on business aviation just yet. But with the new capacity restrictions, slots are going to be hard to come by – so **get in early.**

The latest guidance of how it all works, along with fees and charges can be found in Schiphol's latest charges and conditions doc.

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# US: New Rules For Outbound Private Flights

David Mumford
5 January, 2024

**Key Points**

- **US CBP have made some changes to APIS procedures for private flights departing from the US.**
- **You now need a new APIS for any pax changes, or ETD change of more than 60mins.**
- **CBP will also reportedly be increasing spot checks and in-person clearances.**

### Departing the US

CBP are tightening up the rules private flights departing the US. In a nutshell, the new rule is this:

**If you have any pax changes, tail number change, or departure time changes of more than 60 minutes, you now have to file a new APIS – and this needs to be done no later than 60 minutes prior to departure.**

These changes are reflected in the new text operators receive when they file their APIS:

United States Customs and Border Protection (CBP) is in receipt of your APIS manifest transmission.

Based upon the APIS manifest information transmitted, private aircraft departure clearance is approved for:

. the travelers identified within this manifest,
. the conveyance details provided,
. with a tolerance of +/- 60 minutes from the departure time manifested in your APIS transmission, but
. not within 60 minutes of transmission.

You must present yourself for inspection before departure if contacted by CBP.

Unless otherwise exempted, this permission to depart applies only to private aircraft departures. (Permission to depart for commercial aircraft must be requested by the aircraft commander or agent to the director of the port of entry nearest the final departure airport.)

Previously secured permission to depart (clearance) applies only to the previously submitted APIS manifest details. Changes in manifested details such as tail number changes and traveler additions or substitutions require updated or amended APIS transmissions and a direct (re)confirmation of CBP approval and permission to depart.

For departure time changes greater than 60 minutes, operators must re-transmit an APIS manifest no later than 60 minutes prior to departure and call the local CBP port associated with your departure to cancel the original flight clearance request, and, in cases where time is a limiting factor, to request manual departure clearance for the amended flight.

This receipt message and approval for U.S. departure clearance is based on the manifest information submitted and does not confirm that the submitted manifest information is correct, valid, accurate, and/or complete, or that the manifest was submitted within specified timeline requirements. The submission of manifests within 60 minutes of departure or the submission of incorrect, invalid, inaccurate and/or incomplete manifest data may be subject to penalty or other appropriate enforcement action. This email was sent from a notification-only address that cannot accept incoming email.

So if you do have to file a new APIS, it must be filed **at least 60 mins prior to departure.** The new procedure says that if you're pushed for time you can request **"manual departure clearance."** This basically means a phone call to CBP at your departure airport to request permission to depart – and it's always a good idea to get the name, initials or badge number of the officer you speak to, just in case the early departure is questioned.

## ~~Unsolved~~ SOLVED Mysteries!

*Thanks to our friends at the NBAA IOC we now have answers to some of the big questions operators had regarding these changes.*

**1. Just before departure, another pax gets added to the flight. What do we do?**
*File a new APIS with all the pax info. Remember, your ETD needs to be at least 60mins from the time you file the new APIS, as per the new rules. If you want to leave early, you need to call CBP and ask for manual departure clearance.*

**2. What if you're departing overnight or early in the morning when the CBP office is closed, and you have no one to call for manual clearance?**
*If you can't call CBP because the office is closed, you just have to wait 60mins to depart. There's no out-of-hours fall-back option here. So watch out when planning departures when CBP will be closed! And let your pax know in advance that any last-minute changes are going to cause delays!*

**3. If one of our pax shows up with a different passport than the one we filed on APIS, must we submit a new one?**

*Yes. And then, same as above, you have to wait 60mins to depart, or else try calling for manual clearance.*

**4. If we file with 5 pax but only 4 show up, do we have to file a new APIS?**
*At the moment, the simple answer is no. This may change in the future though.*

**5. If our flight cancels altogether, must we call CBP to tell them so?**
*Yes. If you can't do this because they are closed, call them in the morning.*

**6. Can anyone make calls to CBP? (to ask for manual clearance, etc)**
*Yes. PIC, SIC, handler, or trip support provider are all fine.*

**7. What if we push back on time but get an ATC delay or something, and have to sit around on the taxiway waiting to depart. If it looks like our departure will fall outside of the 60 minute window, must we file a new APIS and then potentially have to wait another hour?**
*Ooh, trickiest of trickies! This is a slightly grey area. CBP define your "departure" as being the time you are wheels-up. After you push-back, if you get delayed before you actually depart – there's no clear cut answer to when you have to depart by. You just have to be able to show that whatever you do is "reasonable and responsible". CBP will only pursue penalty action if you fail to do this. If you do end up departing after the 60 mins due to delays, make a proactive call to CBP afterwards to explain why. Give them the answer before they ask the question!*

### Spot checks!

CBP will be increasing random departure inspections on aircraft departing from the US. The name of the game is simple: **always update departure times with CBP!**

If they arrive and you've departed already, you could be subject to **penalty action.**

### Many of the recent penalty actions are falling into the following categories

*Thanks to Rick Gardner of CST Flight Services for providing this info:*

- **Not obtaining Permission To Land.** When returning to the US, once you have filed APIS and received the receipt email from DHS, you need to contact CBP at the port of entry and obtain permission to land. This is spelled out in the text of the receipt email from CBP. I always urge pilots to carefully read the receipt email to make sure the airports, dates and numbers of crew and passengers match what you think you transmitted. Yes, pilots are being penalized for failing to do this.
- **Missing Manifest.** Some pilots are just failing to file APIS. CBP becomes aware through a variety of different methods so this is not a matter to take lightly.
- **Missing people.** The people who were submitted on the manifest are missing and people not on the manifest are on board.
- **Arriving or departing outside the +/- 60-minute tolerance** as specified on Airport Fact Sheets or on the Departure receipt email from DHS. In the past pilots did not pay a lot of attention to complying with the times they submitted on departure manifests. CBP has their own ways of detecting non-compliance including the fact that they do randomly conduct departure inspections. If you depart from the US outside of that tolerance, you can be subject to penalty action.

**What should you do if you become subject to penalty action?**

- **Don’t ignore it.** If you get a notification from CBP that a penalty action has been initiated, address it quickly, it’s not going to go away. Penalties can be initiated via a number of different channels within CBP, but the notification will come from CBP General Aviation Headquarters.
- **Own up.** By notifying you of a pending penalty action, CBP wants to give you the opportunity to give your side of the story. Explain what you did and why you did it. If you made a mistake, identify what caused the mistake to occur. As PIC you are solely responsible and CBP will not look favorably on attempts to shirk that responsibility by blaming others or by omitting facts. Be honest, tell them what happened, how it happened and why it happened.
- **Corrective action!** If you did something wrong, tell CBP what you are doing to ensure that this mistake does not happen again. Outline an action plan on how you are changing your procedures to ensure that you achieve compliance going forward.

Doing this does not guarantee that CBP will withhold the penalty action, CBP handles penalty actions on a case-by-case basis. However, **a very significant percentage of penalty actions are resolved** during the initial interaction with CBP headquarters. CBP’s expectation of pilots is that we demonstrate that we are trying to act reasonably and responsibly. CBP is looking for compliance, not finding blame.

Professional pilots have a lot on the line because if we receive a penalty, not only can there be a sizeable fine but we also **lose our Border Overflight Exemption privileges** for any operator we are flying with. In addition, we can **lose our Global Entry** as well.  If sharing this knowledge from our industry collaboration and ongoing operations keeps just one pilot from getting into trouble, then it is worth it.

**More info**

For more info on on private flights to the US, check this article.

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# Oct 2023: Airspace risk: Tel Aviv is still busy, and it shouldn’t be

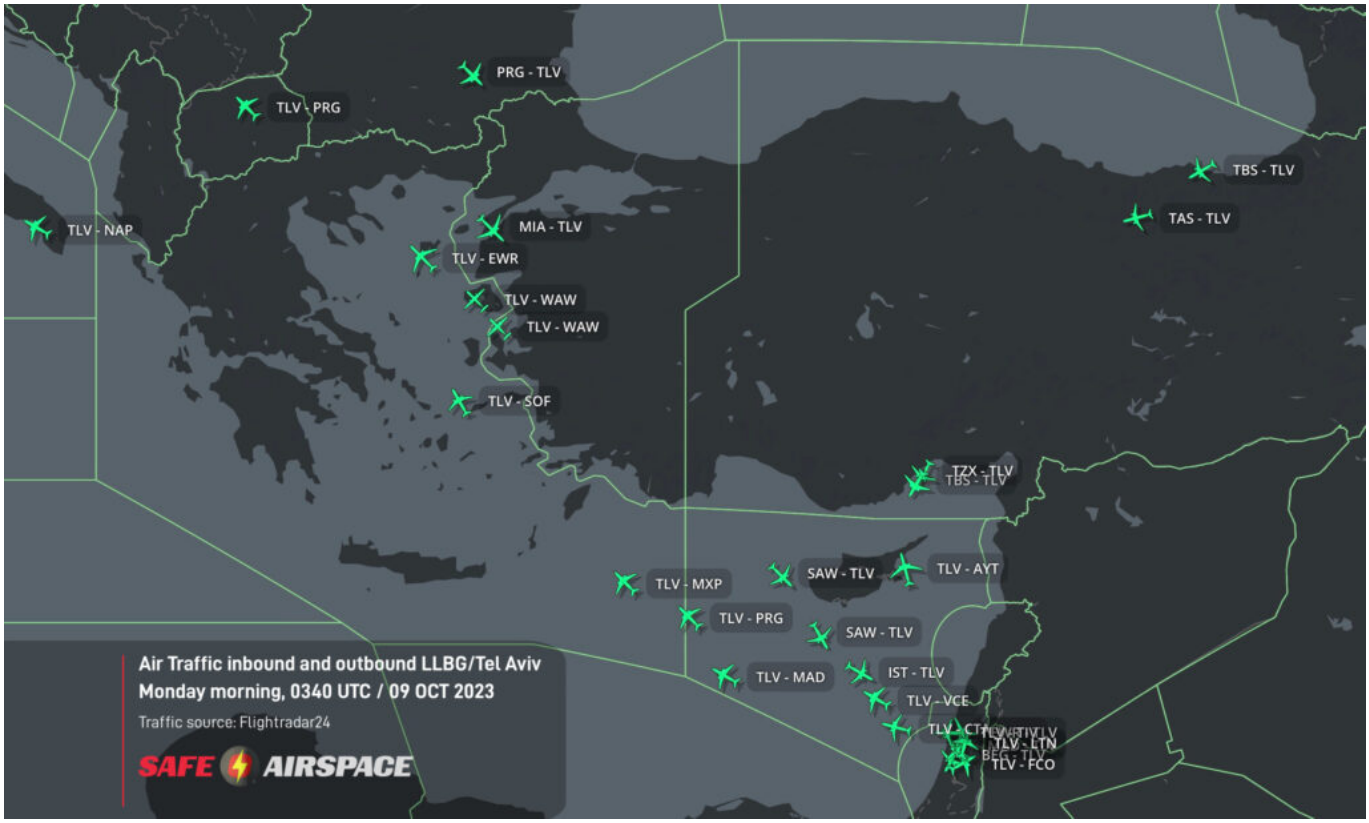
OPSGROUP Team
5 January, 2024


**Airspace Risk: Israel Level 1 – Do Not Fly**

- Key message to operators and flight crew: **LLBG/Tel Aviv is still busy – and it shouldn't be**.
- **Safe Airspace Risk – Israel Level 1 – Do Not Fly** (Full warning text)
- **Civil Shootdown risk high**: Lessons of MH17 and UIA752 need to be applied

### Significant traffic levels still operating to Tel Aviv (Monday morning, 0340z)

Israel is now an active war zone, and therefore the **Safe Airspace** warning is at **Level 1 – Do Not Fly**. The Israeli cabinet officially declared war against Hamas on Sunday Oct 8th. As such, all lessons learned regarding civil operations in conflict zones over the last nine years since MH17 need to be applied. **The risk of a passenger aircraft becoming a casualty of this war is high.**




In the nine years since **MH17** was shot down, we have made many advances in recognizing **Conflict Zone risk to civil aviation**. It's time to apply that understanding, and avoid another civil aircraft catastrophe.

In January 2020, OPSGROUP became concerned at the heightened risk in the Baghdad and Tehran FIR. Despite issuing an alert the previous day, we were unable to prevent the shootdown of **Ukraine International UIA752** on January 8th, 2020. This morning, looking at the traffic levels in the Tel Aviv FIR, **we feel the same sense of unease and concern**.

It should be noted that about 30% of the traffic shown in the radar image is operated by El Al, who are running normal service in order to repatriate reservists called up for duty, and citizens wishing to leave Israel. This may give operators even a sense that ops are normal – but bear in mind that these El Al flights are to some degree troop transport movements, and in fact **may increase the appetite for making civil aircraft a target**.

The ultimate sentiment from MH17 still echoes: "**What were they doing flying over a war zone**"? We truly hope the same question doesn't need to be asked in Tel Aviv airspace this week.

### OPSGROUP recommends full avoidance of Israeli airspace

- **Avoid** all Israeli destinations (LL**), especially LLBG/Tel Aviv
- **Avoid** overflight of Tel Aviv FIR (LLLL)
- Carefully consider route choices into OJAI/Amman, Jordan and other OJ** airports

### Primary Risk : Complacency

The **primary risk** is not just the threat of missiles (hundreds are being directed at LLBG as this is being written) or anti-aircraft weaponry, but also **complacency** (or a false sense of security). For decades, we have seen sporadic conflict in Israel – even in quieter periods, rocket attacks on Israel are the norm. As such, operations to LLBG/Tel Aviv continued, and operators have become used to raised threat levels in Israel.

**This situation is absolutely not routine.**

**Further risk** comes from a multitude of factors from operating in a conflict zone: misidentification, debris from air defences, GPS spoofing, false EGPWS alerts (now common in Israeli airspace), and reduced route and diversion options in the event of an aircraft emergency.

### Risk Assessment, no authority guidance

**Despite the elevated risk, no prohibitions or restrictions have been issued by any national aviation authority, the FAA, or EASA**. One exception: the Russian FATA has restricted their operators to daylight ops only.

**Israeli CAA warning:** A golden rule in Conflict Zone understanding has been written on the Safe Airspace portal since it first launched in 2015: "*Operators should note that in general, the Civil Aviation Authorities of the countries whose airspace is determined to be unsafe **are (very) unlikely to issue reliable guidance***." The Israeli CAA issued NOTAM A1092/23 on Sunday, which draws attention to the security risk, but does not provide any guidance, closures, or restrictions. In fact, the omission of any restrictions present the connotation that routine operations can be expected other than "delays and fuel" issues. **This is misleading**.

An FAA FDC NOTAM (FDC 3/2050) advises operators to exercise extreme caution **when operating within the Tel Aviv FIR**. An EASA "Conflict Zone Information Bulletin" simply says to check the Israeli NOTAM, and that "The fact that Israel has issued and is maintaining NOTAMs regarding its airspace and its main airports demonstrates that the Civil Aviation Authority of the state of Israel is actively managing the risk to

civil aviation. At present, there are no indications that these mitigation measures are not efficient or inadequate." **This is also misleading – the risk to civil aviation is not being managed.**

The standard line now is "**carry out a risk assessment**". For many operators, risk assessment is extremely challenging to get right. Commercial and political pressures go against the normal '*err on the side of caution*' principle in flight operations. Larger operators may have the ability to complete dedicated risk assessments, but **the majority of flight crew and operators need better guidance from aviation authorities**.

Consider that in the 2014 Hamas rocket attacks – a far less intense event – the FAA responded with a 2 day prohibition for LLBG and EASA advised operators to suspend flights. The current situation in Israel is only going to escalate in the coming days, as the country begins their return offensive against Palestine.

**It would be helpful to many flight crew and operators if the same duty of care was extended to them again in this situation.**

**Resources:**

- **Safe Airspace**: **Israel – Level 1: Do Not Fly**
- **Israel information page**: current NOTAMs, prohibitions, restrictions
- **OPSGROUP Crewroom** (Members): Latest Alerts, Discussion
- Contact **team@ops.group** for any questions

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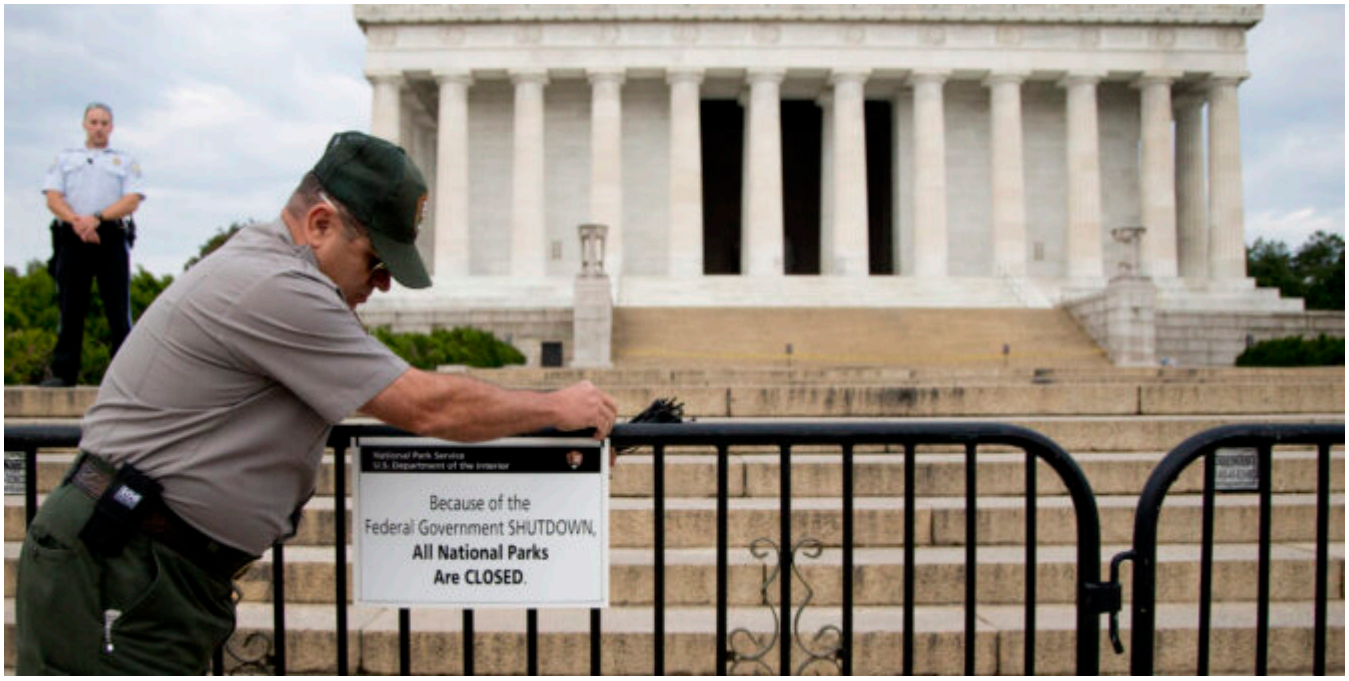
# US Federal Govt Shutdown Risk – Why it Matters to Aviation

Chris Shieff
5 January, 2024




It's been a big week for US politics. On September 30, a **Federal Government shutdown** was narrowly avoided by a last-minute funding stopgap that has delayed the problem until November 17.

The situation was **front page news** across several aviation websites – but you might still be wondering, why?

As is often the case, **politics and aviation don't mix.** Until they do. And then we're forced to take notice – this one of those times. There was widespread concern for what a shutdown might mean for the US aviation sector, and some of those problems could cause a real hangover.

With the problem delayed, **but not gone**, we may find ourselves in the exact same position again come November. Here's a look at what is giving the issues wings (pun only slightly intended).

### How can the Federal government just 'shut down?'

A shutdown happens when Congress **doesn't approve funding** for the Federal Government by the time the new fiscal year kicks off on October 1.

The crisis can temporarily be averted by a **short-term funding bill** which is what has just happened. But it only buys more time.

If a shut-down goes ahead, various government operations grind to a screeching halt. **The world won't end** (essential services continue) but federal agencies (including the FAA) are left scrambling without funding. They need to rely on contingency procedures including furloughing staff or relying on them to work for a period of time with no pay.

### Staffing

The impact on of a shut-down would primarily impact two large groups of aviation professionals – TSA staff and Air Traffic Controllers. Then of course, there's the FAA itself…

### TSA

TSA workers are **federal employees**, and work for the Department of Homeland Security. There's 47,000 of them and they're responsible for screening passengers and baggage at 450 of the nation's airports along with other essential functions such as air marshals.

During a shutdown, they won't get paid. There is fear of what the impact will be on the US NAS, if they (understandably) don't want to work.

The TSA itself has allayed some fears with a recent statement. Essentially a commitment that their staff will continue working. While admirable, **they are human** – one shutdown once lasted well over a month . If similar occurred, how long we can rely on this promise isn't known as the strain grows.

### ATC

The majority of 14,000 controllers in the US work for the FAA, and so are also federal employees.

The impact of an **extended period without pay** could be significant – not to mention contributing greatly to a system known to be heavily burdened by staff shortages already.

Planes aren't about to start flying into each other. But a major consequence of a shutdown is that the FAA would send home 1,000 controllers **currently in training.**

And we need them. Right now, the US is about 3000 controllers short of the mark. And the goal of recruiting an extra 1800 in the next year and half could become extremely optimistic. This shortage has been well publicized, and a shutdown would like exacerbate the problem.

### Don't forget about the FAA, either.

It never rains, but it pours.

The FAA has been dealing with a **double whammy.** Asides from the uncertainty of a Federal Government hiatus, it's five-year funding bill has also expired.

A temporary re-authorization has scared the wolf away from the door, but it cannot operate properly without **cashflow**. And various disputes over pilot retirement age and minimum experience requirements has tapped the brakes on the entire process.

It's a very complex agency and a suspension of its functions will take a long time to recover from for all of us.

### Lessons Learnt

Federal Government Shutdowns have happened before – the most recent was in 2018 and lasted for 35 days.

There were several impacts on aviation that the NBAA usefully summarized in their article here. It likely serves as a **preview** of what we can expect again should a funding agreement not be reached in the new deadline in November.

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# FAA warning issued, further serious navigation failures reported

OPSGROUP Team
5 January, 2024

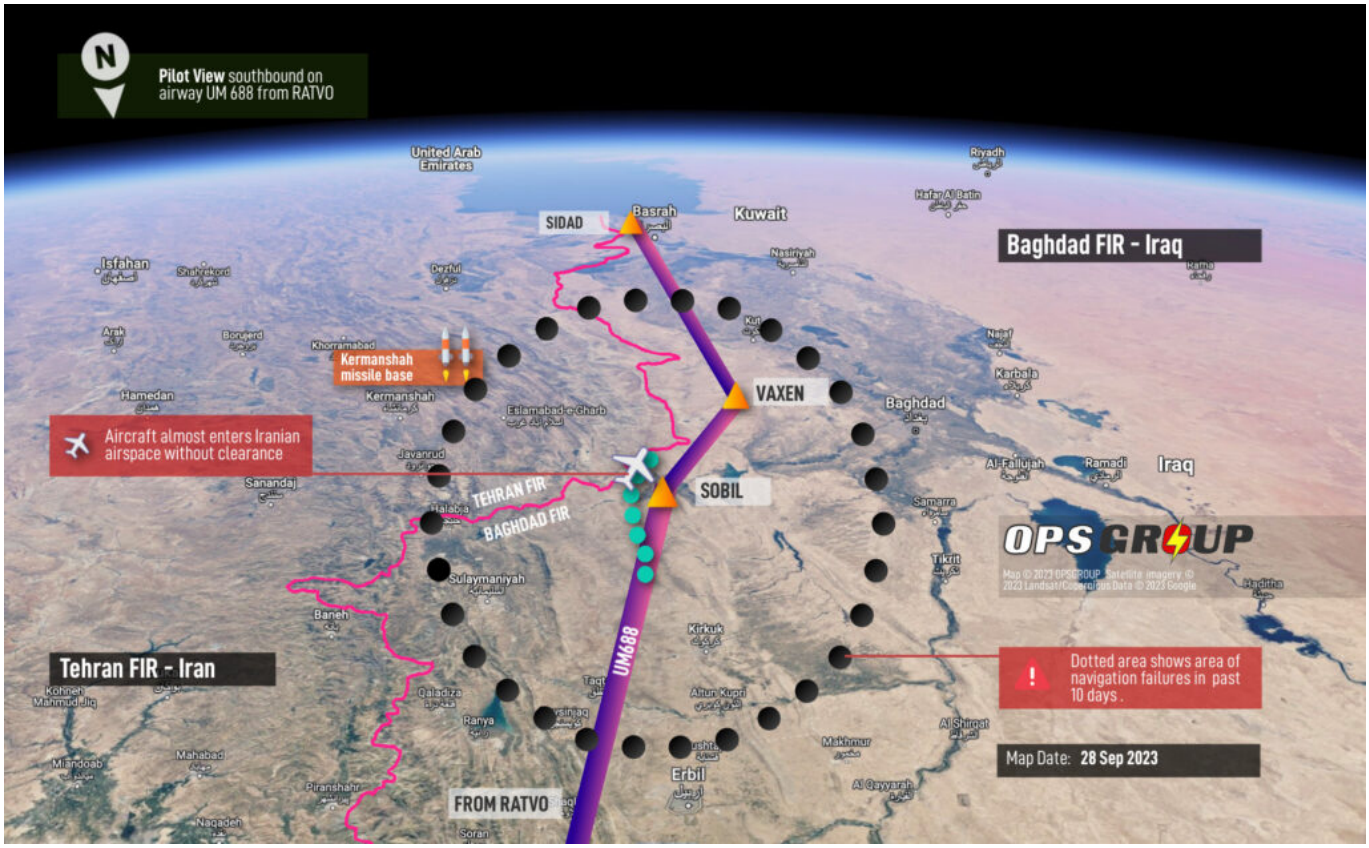

Since publishing Monday's **risk warning** on complex navigation failures following fake GPS signals, we have received further concerning reports from operators, mirroring the same events. The impact of the nav failures is becoming clearer, with one operator **almost entering Iranian airspace without clearance**, and another left **requiring ATC vectors all the way to their destination in Doha**.

In total we now have **20 reports** of almost identical situations. Full reports are in **Version 2** of our **Risk Warning** (PDF), see further down.

On Wednesday evening, the **FAA issued a warning memo** to aircraft operators as a result of the situation, warning of increased "safety of flight risk to civil aviation operations".

### Embraer Legacy 650: We nearly entered Iran airspace with no clearance

One of the new reports received since Monday was from an Embraer 650 crew enroute from Europe to Dubai. They tell us, "In Baghdad airspace, we lost both GPS in the aircraft and on both iPads. Further, **the IRS didn't work anymore**. We only realized there was an issue because **the autopilot started turning to the left and right**, so it it was obvious that something was wrong. After couple of minutes we got error messages on our FMS regarding GPS, etc. So we had to request radar vectors. We were showing about 80 nm off track. **During the event, we nearly entered Iran airspace (OIIX/Tehran FIR) with no clearance.**




### Challenger 604: Required vectors all the way to Doha

Another new crew report received since our first warning informs us: “Nearing north of Baghdad something happened where we must have been spoofed. We lost anything related to Nav and the IRS suggested we had drifted by 70-90 miles. We had a ground speed of zero and the aircraft calculated 250kts of wind. The FMS’s reverted to DR (Dead Reckoning) and had no idea where they were.

We initially took vectors to get around the corner at SISIN. Nav capability was never restored, so **we required vectors all the way from Iraq to Doha for an ILS**. We never got our GPS sensors back until we fired up the plane and went back to home base two days later.

### Concern grows over flight risk

With these additional reports, OPSGROUP has increased concerns over the situation:

- **Security risk**: Navigation failures are occuring in close proximity to the Iranian border. One aircraft reported almost straying into Iranian airspace (Tehran FIR, OIIX) without a clearance. This area of the border is considered sensitive by Iran: there are two large missile bases just across the boundary: one at **Kermansah** (a huge facility with dedicated anti-aircraft weapons), and another at **Khorramabad**. For context, Iran shot down a passenger aircraft in 2020 in Tehran (accidentally), and has been heard in September 2023 **issuing warnings on 121.5** with threats to shoot down aircraft entering the FIR without a clearance.
- The **Navigation failures are severe**. The second report above highlights how the crew had no option but to request radar vectors – all the way to their final destination. In many other reports, most aircraft have no reliable on board navigation, for periods of 20-30 minutes and in some cases an hour or more.

- **Compounding failures**. Individually these incidents can mostly be resolved with the help of ATC. Consider however, an ATC comms failure, ATC radar failure, or an emergency situation: engine failure, decompression, or even a medical divert. The workload would quickly become extreme, and diverting at night (when most flights are transiting the area) without basic navigation capability is not a scenario we want to deal with.
- **Inadequate guidance for crews**: Current FCOM/AOM procedures available to aircrew are insufficient to capably deal with this new GPS spoofing issue. Having been shown to be possible, there is potential for it to occur elsewhere in the world.

#### FAA warning issued

On Wednesday evening, the FAA released a memo for aircraft operators titled "**Iraq/Azerbaijan – GPS Jamming and Spoofing Poses Safety Risk**"."

The memo advised that "**Potential spoofing activities reported by various civil air operators in Iraq and Azerbaijan pose a safety of flight risk to civil aviation operations** in the Baghdad (ORBB) and Baku (UBBA) Flight Information Regions (FIR)."

"The recent opensource reporting regarding spoofing incidents, if confirmed, would pose increased safety of flight risks, due to potential loss of aircraft situational awareness and increased pilot and regional air traffic control (ATC) workload issues, which can lead to potential accidents and/or loss of life."

**"FAA recommends that U.S. civil air operators transiting ORBB and UBBA** monitor regional NOTAMs, put additional emphasis on maintaining continuous communications with appropriate air traffic control authorities while **monitoring aircraft equipment performance closely for any discrepancies or anomalies**, and to be prepared to operate without GPS navigational systems."

## Geopolitical background, analysis from experts

Earlier, Matthew Borie of **Osprey Flight Solutions** provided background context for our members: "Iran has recently deployed additional military forces to its northwest border with the Iraqi Kurdistan Region and Iraq has deployed security forces to this area as well as part of a border security pact reached between the two countries in March. Both the Iran and Iraq have Electronic Warfare equipment capable of GPS jamming and spoofing and may have these deployed to the northern border area.

The US military is present at several bases in northern Iraq (Erbil, Harir & Sulaymaniyah). Turkey has military bases on its side of the Iraq border as well as inside Iraqi territory in several areas (Amadiya, Harkuk & Bashiqa). These deployments are enduring and not new – both the US and Turkey have electronic warfare (EW) equipment capable of GPS jamming and spoofing and they may have these deployed to Iraq.

Iran has also recently deployed additional military forces to its northwest borders with Armenia and Azerbaijan in wake of the Azerbaijani military operation in Nagorno-Karabakh. In addition, tensions between the Armenian military and Azerbaijani armed forces remain high on the border between the two countries at present in wake of the Azerbaijani military operation in Nagorno-Karabakh. Iran, Armenia and Azerbaijan all have EW equipment capable of GPS jamming and spoofing and may have these deployed to border areas"

An intelligence brief from **Dyami Intelligence Services** issued in repsonse to Monday's reports, adds information about this new form of GPS spoofing affecting aircraft: "The surge in GPS jamming and spoofing incidents within the Iraqi FIR, along with their widespread occurrences, strongly indicates the involvement of an airborne platform (UAV). In the past, Iran has successfully intercepted a drone by GPS spoofing. Spoofing provides an attack vector that enables control over the target UAV (aircraft) without compromising the flight control software or the command-and-control radio link. Furthermore, a GPS spoofing attack can be carried out by an attacker who is equipped with an RF transmitter that can be ground or airborne-based."

## This is not jamming: Inadequate NOTAMs

It's clear in the initial discussions of these events that because we are used to GPS jamming, crews may make make the initial assessment that these are the same routine GPS jamming events. While there are NOTAMs issued for many FIR's in the region, they only warn of the routine GPS jamming that crews have experienced since 2018 in the Middle East and Mediteranean areas.

The **key difference** between the jamming events we are used to, and these **new GPS spoofing attacks** is the rapid impact on our on-board navigation. Some very alert crews have been able to quickly de-select GPS and isolate the input, but for most – and depending on aircraft and avionics types – this has not been possible. In the vast majority of the pilot reports received, crews have had to resort to radar vectoring from ATC.

**OPSGROUP calls on the Iraqi CAA** to issue a **new NOTAM warning crews of the specific risk of complete navigation failure**, due to spoofed GPS signals that many aircraft systems interpret as valid information.

## Aircraft manufacturer and avionics responses

OPSGROUP has received confirmation from several aircraft manufacturers involved that they are taking the issue very seriously, and are working on a solution. We will keep members updated on this.

**Bombardier** is actively working on a new FON (Flight Operations Notification ) concerning GNSS Spoofing; we will keep members updated on this once we hear more from them.

## "The IRS can't be spoofed" – until it can

Quite astonishing for many of us as flight crew is the idea the IRS (Inertial Reference System) can be subject to outside interference.

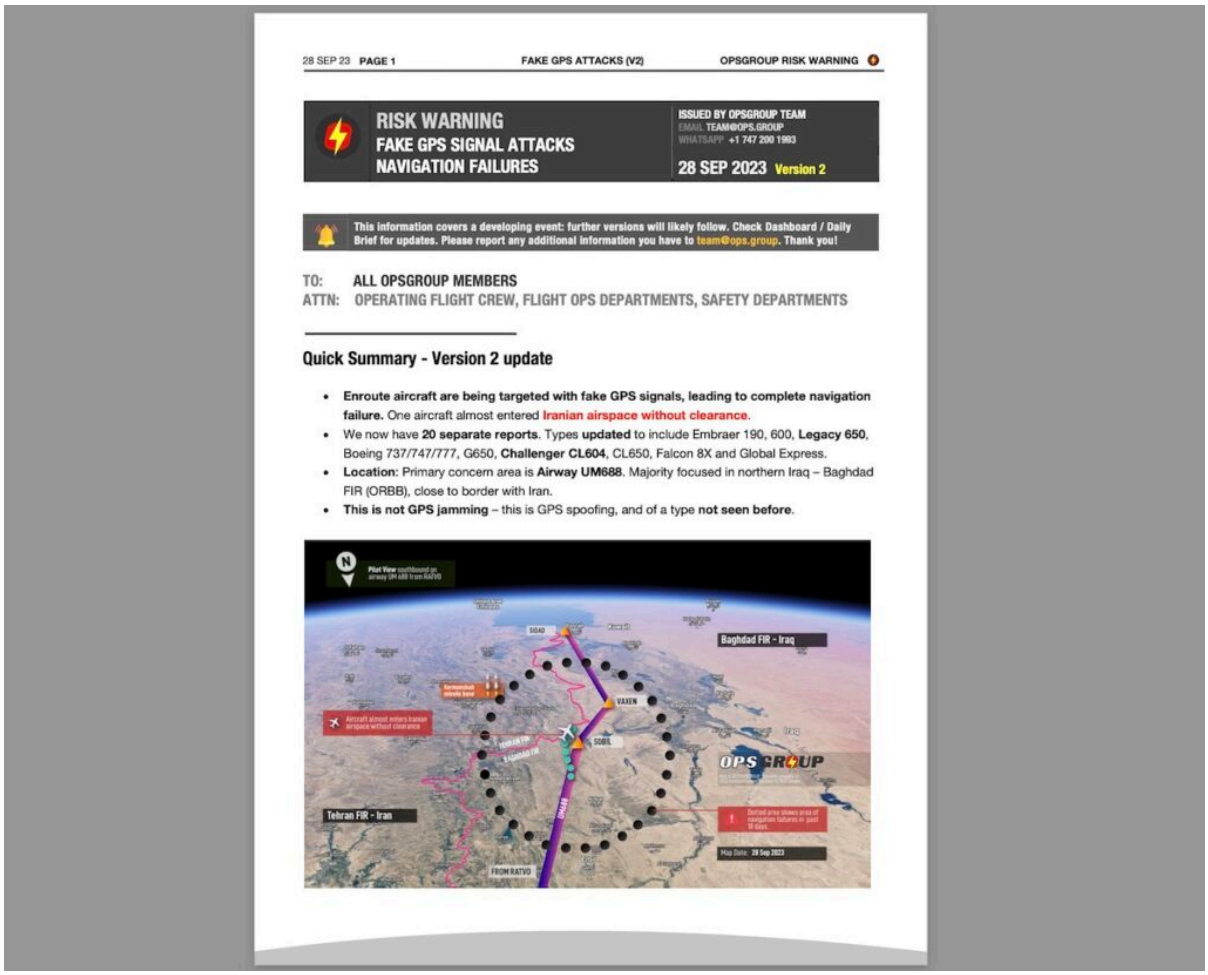
Exactly where the avionics problem arises as a result of these GPS spoofing signals is something that OEM's and Avionics providers are working on. However, **many modern IRS platforms include GPS updating while enroute, to correct drift**.

Previously, jammed or degraded GPS signals were neatly ignored with no impact on the IRS. What seems to be happening in these cases, is that the spoofed GPS position is a strong signal, and the IRS doesn't know that it's incorrect. The technical details are unclear, and we await clarification from subject experts on this.

Regardless of exactly what is happening internally, the impact on navigation systems is clear.

**OPSGROUP Member resources – update**

**Updated version** of **Risk Warning: Fake GPS Signal attacks (28SEP/V2)** is now available in your Dashboard.



28 SEP 23 PAGE 1 FAKE GPS ATTACKS (V2) OPSGROUP RISK WARNING

**RISK WARNING**
**FAKE GPS SIGNAL ATTACKS**
**NAVIGATION FAILURES**

ISSUED BY OPSGROUP TEAM
EMAIL TEAM@OPS.GROUP
WHATSAPP +1 747 200 1983

**28 SEP 2023** Version 2

This information covers a developing event: further versions will likely follow. Check Dashboard / Daily Brief for updates. Please report any additional information you have to team@ops.group. Thank you!

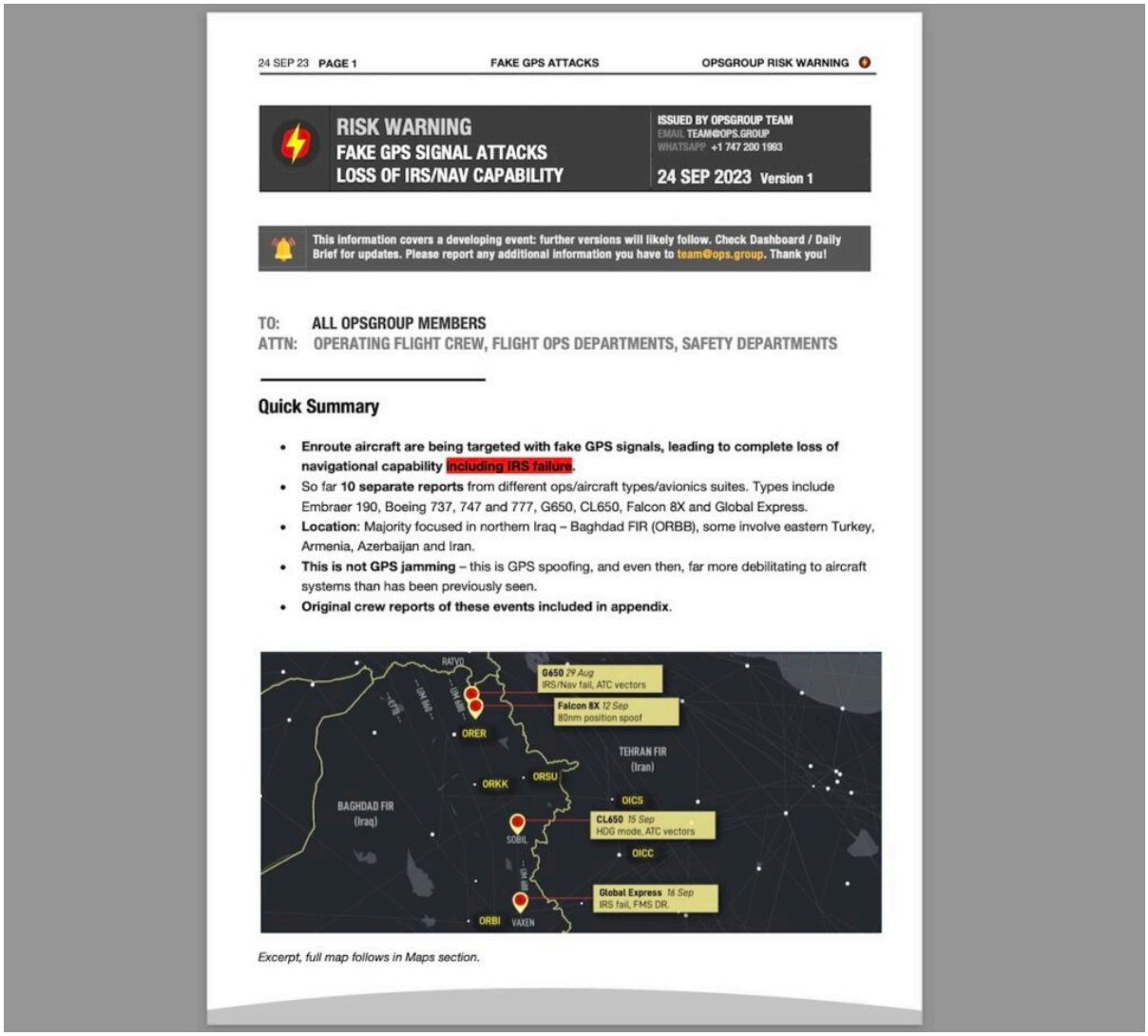
TO: ALL OPSGROUP MEMBERS
ATTN: OPERATING FLIGHT CREW, FLIGHT OPS DEPARTMENTS, SAFETY DEPARTMENTS

**Quick Summary - Version 2 update**

- **Enroute aircraft are being targeted with fake GPS signals, leading to complete navigation failure.** One aircraft almost entered **Iranian airspace without clearance**.
- We now have **20 separate reports**. Types **updated** to include Embraer 190, 600, **Legacy 650**, Boeing 737/747/777, G650, **Challenger CL604**, CL650, Falcon 8X and Global Express.
- **Location:** Primary concern area is **Airway UM688**. Majority focused in northern Iraq – Baghdad FIR (ORBB), close to border with Iran.
- **This is not GPS jamming** – this is GPS spoofing, and of a type **not seen before**.



Earlier version: OPSGROUP members provided analysis of the events, and recommended guidance. This work has been collated into **Briefing: RISK WARNING 24SEP/V1**, available to all members in your Dashboard. Direct links are below.



24 SEP 23 **PAGE 1** FAKE GPS ATTACKS OPSGROUP RISK WARNING

**RISK WARNING**
**FAKE GPS SIGNAL ATTACKS**
**LOSS OF IRS/NAV CAPABILITY**

ISSUED BY OPSGROUP TEAM
EMAIL TEAM@OPS.GROUP
WHATSAPP +1 747 200 1993
**24 SEP 2023** Version 1

This information covers a developing event: further versions will likely follow. Check Dashboard / Daily Brief for updates. Please report any additional information you have to team@ops.group. Thank you!

TO: ALL OPSGROUP MEMBERS
ATTN: OPERATING FLIGHT CREW, FLIGHT OPS DEPARTMENTS, SAFETY DEPARTMENTS

**Quick Summary**

- **Enroute aircraft are being targeted with fake GPS signals, leading to complete loss of navigational capability including IRS failure.**
- So far **10 separate reports** from different ops/aircraft types/avionics suites. Types include Embraer 190, Boeing 737, 747 and 777, G650, CL650, Falcon 8X and Global Express.
- **Location:** Majority focused in northern Iraq – Baghdad FIR (ORBB), some involve eastern Turkey, Armenia, Azerbaijan and Iran.
- **This is not GPS jamming** – this is GPS spoofing, and even then, far more debilitating to aircraft systems than has been previously seen.
- **Original crew reports of these events included in appendix.**



*Excerpt, full map follows in Maps section.*

- **Download** Briefing: RISK WARNING – **Fake GPS signal attacks** (PDF, 0.7 Mb)
  - Situation report
  - **Key information for Flight Crew**
  - Analysis from OPSGROUP members
  - **Original Crew reports** of GPS spoofing/Nav & IRS failures (First 10 reports listed)
  - **Guidance and Procedures**
    - Awareness of risk locations
    - Recommended Procedure – entering risk area
    - Recommended Procedure – active GPS spoofing

- **Download** : LOCATION MAP showing **report locations of Fake GPS signal attacks**

**Further information**

- Initial report: **Flights Misled Over Position, Navigation Failure Follows** (26 SEP)
- Contact **team@ops.group** or WhatsApp **+1 747 200 1993**

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# Flights misled over position, navigation failure follows

Mark Zee
5 January, 2024



**Update – Thursday Sep 28**

Since publishing Monday's **risk warning** on complex navigation failures following fake GPS signals, we have received further concerning reports from operators, mirroring the same events. The impact of the nav failures is becoming clearer, with one operator **almost entering Iranian airspace without clearance**, and another left **requiring ATC vectors all the way to their destination in Doha**.


In total we now have **20 reports** of almost identical situations. Full reports are in **Version 2** of our **Risk Warning** (PDF).

On Wednesday evening, the **FAA issued a warning memo** to aircraft operators as a result of the situation, warning of increased “safety of flight risk to civil aviation operations”.

**See new Briefing (28SEP) – “FAA Warning Issued, Further Serious Navigation Failures Reported”**

*Original article follows:*

**Key points**

- **New RISK WARNING: Enroute aircraft are being targeted with fake GPS signals, leading to complete nav failures**
- **~~12~~ 16 separate reports – types include Embraer 190, 600, Boeing 737, 747 and 777, G650, CL605, CL650, Lear 45, Falcon 8X and Global Express.**
- **This type of GPS spoofing has not been seen before – IRS is quickly “infected” by false position**
- **OPSGROUP Members: Suggested Guidance and Procedures, and original crew reports, in Briefing PDF below**

## Situation

A troubling new development in enroute airspace is emerging: **aircraft are being targeted with fake GPS signals**, quickly leading to complete loss of navigational capability. **12 separate reports** have been now received by OPSGROUP, and **in most cases the IRS becomes unusable**, VOR/DME sensor inputs fail, the aircraft UTC clock fails, and the crew have been **forced to request vectors from ATC to navigate**.

Most reports have been in the last 7 days. Aircraft involved include various Boeing types (B777, B747, B737), Embraer (190, 600), Gulfstream 650, Challenger 650, Global Express, and a Falcon 8X. The location for the majority is also quite specific: Airway **UM688** in Iraq, close to the Iranian border.

This immediately sounds unthinkable. The IRS (Inertial Reference System) should be a standalone system, unable to be spoofed. The idea that we could loose all onboard nav capablity, and have to ask ATC for our position and request a heading, makes little sense at first glance – especially for state of the art aircraft with the latest avionics. **However, multiple reports confirm that this has happened**. The key issue appears to be the way the IRS uses GPS updates to update its position during flight. Analysis from other OPSGROUP members is contained in the Briefing (Risk Warning) below.

In the Baghdad FIR, the crew of a 777 enroute were essentially forced to ask "***What time is it, and where are we?*** ". Almost all incidents we've seen result in requiring ATC vectors to navigate. Clearly, in the areas that these events are occuring, this is disconcerting.

The location of reports received is mapped out below. The primary area of concern at the moment is **Airway UM688** in northern Iraq. Most crews have reported the nav failures in the vicinity of ORER/Erbil, ORSU/Sulaimaniyah, and ORBI/Baghdad.

It's important to highlight is that this **not traditional GPS jamming** – which we all experience almost as routine in these areas. We have become very used to GPS dropping out in Turkish and Iraqi airspace. These recent reports are GPS spoofing – and even then, **not like anything we've seen before**.

In most reports received, the situation plays out the same. **A spoofed GPS signal is directed at the aircraft**, or at least, received by the aircraft. The GPS position shifts by 60nm. The onboard systems start to react. Some crews have been able to quickly disable GPS inputs, but for the majority, the spoofed signal quickly leads to a nav failure.

One of the crew reports for an **Embraer 190** (see below), tells us, "*I have been on the aircraft for 13 years. I tried everything I know, but nothing helped. Two IRS's, which are updated from GPS, lost position. FMS disagree messages appeared. The main point is to disable GPS inputs at the very beginning of spoofing. If you miss a moment, you will lose navigation capability!*" This crew member is also Technical Pilot for the E190 type.

## Worrying scenario

Of all locations that we fly through, the one place we don't want to have any navigation issues would be

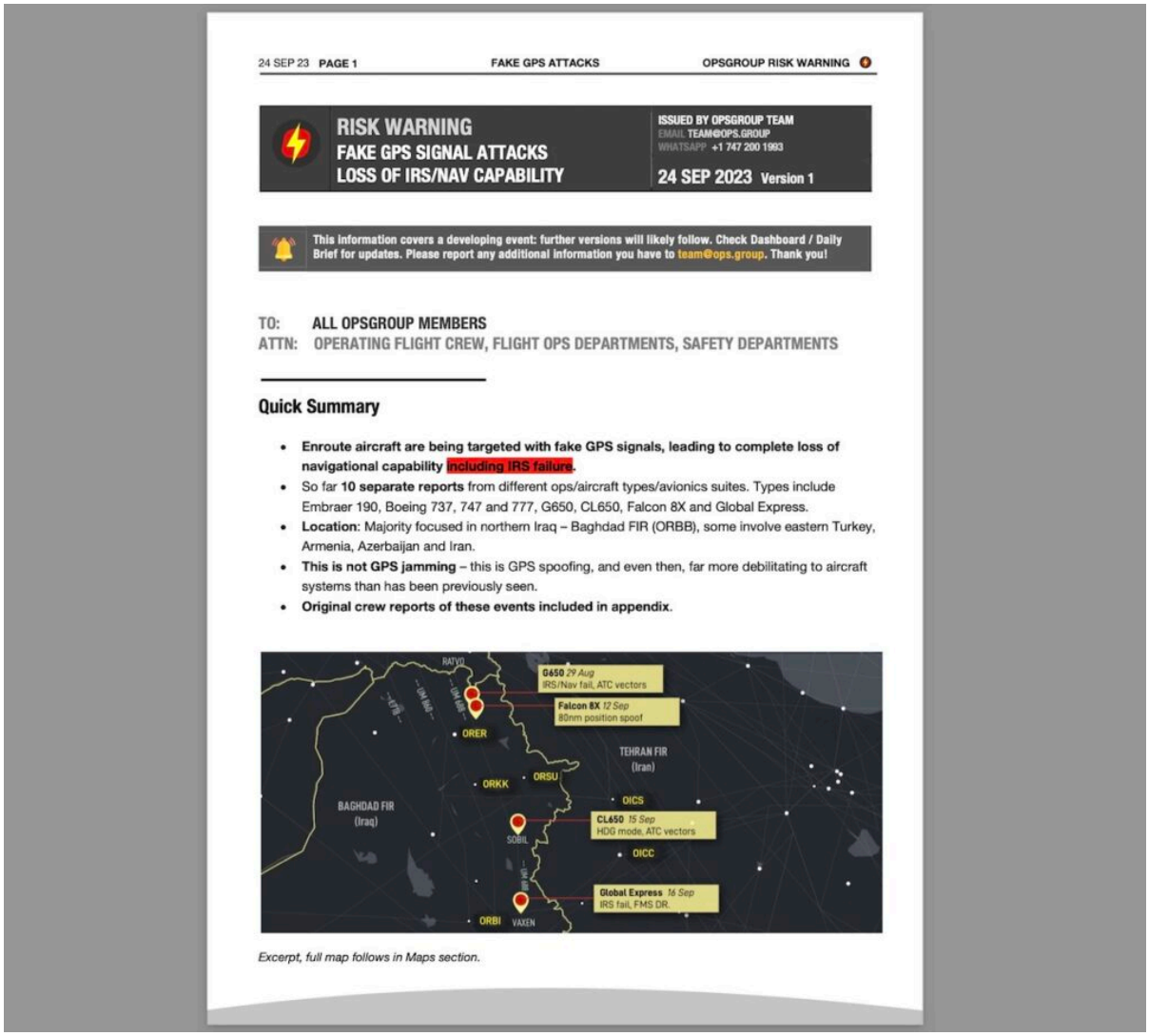
**along UM688**. This airway runs southbound through Iraq, **above an active conflict zone**, and extremely close to the border with Iran. Any indavertent straying into Iranian airspace without a flight plan risks action by the Iranian military.

And yet it is precisely here that most of these events in the last week have been happening. As such, **the risk to routine flight operations is extremely elevated**.

OPSGROUP recommends that all operators using airway **UM688**, or entering the Iraq/Iran/Turkey region, **review this new risk as soon as possible**. Flight Crew should be made aware of the potential for fake GPS signals, the likely impact on aircraft systems, and a plan of action should this occur.

#### OPSGROUP Member resources

Over this past weekend (23-24 September), OPSGROUP members provided analysis of the events, and recommended guidance. This work has been collated into **Briefing: RISK WARNING 24SEP/V1**, available to all members in your Dashboard. Direct links are below.



24 SEP 23 PAGE 1 FAKE GPS ATTACKS OPSGROUP RISK WARNING

**RISK WARNING**
**FAKE GPS SIGNAL ATTACKS**
**LOSS OF IRS/NAV CAPABILITY**

ISSUED BY OPSGROUP TEAM
EMAIL TEAM@OPS.GROUP
WHATSAPP +1 747 200 1993
**24 SEP 2023** Version 1

This information covers a developing event: further versions will likely follow. Check Dashboard / Daily Brief for updates. Please report any additional information you have to team@ops.group. Thank you!

TO: ALL OPSGROUP MEMBERS
ATTN: OPERATING FLIGHT CREW, FLIGHT OPS DEPARTMENTS, SAFETY DEPARTMENTS

**Quick Summary**

- **Enroute aircraft are being targeted with fake GPS signals, leading to complete loss of navigational capability including IRS failure.**
- So far **10 separate reports** from different ops/aircraft types/avionics suites. Types include Embraer 190, Boeing 737, 747 and 777, G650, CL650, Falcon 8X and Global Express.
- **Location**: Majority focused in northern Iraq – Baghdad FIR (ORBB), some involve eastern Turkey, Armenia, Azerbaijan and Iran.
- **This is not GPS jamming** – this is GPS spoofing, and even then, far more debilitating to aircraft systems than has been previously seen.
- **Original crew reports of these events included in appendix.**



*Excerpt, full map follows in Maps section.*

- **Download** Briefing: RISK WARNING – **Fake GPS signal attacks** (PDF, 0.7 Mb)
    - Situation report

    - **Key information for Flight Crew**
    - Analysis from OPSGROUP members
    - **Original Crew reports** of GPS spoofing/Nav & IRS failures (First 10 reports listed)
    - **Guidance and Procedures**
        - Awareness of risk locations
        - Recommended Procedure – entering risk area
        - Recommended Procedure – active GPS spoofing

- **Download** : LOCATION MAP showing **report locations of Fake GPS signal attacks**

### IRS failures

An excerpt of analysis from the **Briefing Document** above helps us understand the issue better:

"Most avionics suites are now engineered such that the **IRS position is regularly GPS updated** to ensure the highest accuracy, if the GPS fails!

Therefore if the GPS is *jammed*, then the IRS works from its last known position. However if it receives a ***spoof position***, the system still believes the GPS input received to be accurate as all sources "say" the same thing, and this spoof position is then updated to the IRS(s) to match. Most avionics system know that a shift/gross-error has happened as ground based updates do not compute the correct position, and will flag a navigation/map/position warning.

However, all primary navigation systems end up being corrupted as a result. **It has the potential to be very dangerous**, and is part of the reason why pilots should back up navigation still, with "green needles" / ground based aids wherever possible. Our dependance on GPS is not always good!

I would recommend using conventional ground based navaids (DME/VOR/NDB) as far as practical, otherwise request assistance from ATC. Some platforms may allow IRS systems to be disconnected from GPS auto-updating, but most now do it in the background with no optional pilot interaction.

Unless the IRS systems are completely independent (the old fashioned ones that have to be initialised at startup location), GPS integration for frequent position updates, is sadly the issue due to its vulnerability to spoofing. For those that can disable the updating, they may wish to consider turning this function off, however it may impact on navigation capability, AFM requirements and operational approvals.

**I would recommend that pilots and operators reach out to their OEMs for their recommendations on dealing with spoofing on their platform."**

Another member (767 operator) spoke to an IRS expert for perspective – also arguing that "**the IRS system is "stand alone" and the only mixing between GPS and Inertial is inside the FMS and thus, the IRS couldn't be spoofed**. He assured me it could. Not enough to lose the alignment platform, but enough to confuse the present position and thus, none of the radio navaids are where they're supposed to be."

### Updates

This information covers a developing event: further versions will likely follow. Check your members Dashboard / Daily Brief for updates.

Much of the information is compiled from member feedback. If you have any expertise to share, or information to add – please email **team@ops.group**, or send a *WhatsApp* message to **+1 747 200 1993**.

Thank you!

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# Private Flights to the US

David Mumford
5 January, 2024

**Update Sep 29:**

- **There are some changes to APIS procedures for private flights departing from the US.**
- **If you change any pax details or the ETD by more than 60mins, you now have to cancel the old APIS and file a new one – and the new one needs to be filed at least 60mins before departure.**
- **Also, CBP will reportedly be increasing spot checks and in-person clearances.**

**Article from March 2023:**

*This article is from Rick Gardner of CST Flight Services. We asked if he could talk to us about **Private flights to the US** – not the standard stuff, but some of the real **tips and gotchas** that international pilots might want to know about.*

Private flights to the US… **you probably know the basics already:** maybe get a TSA Waiver, file your APIS, contact CBP to get your Permission to Land, and if you're coming from the south make sure you land at one of the Designated Airports (or else get a Border Overflight Exemption).

But after many years of working with US Customs and Border Protection (CBP) to collaborate on General Aviation issues – here's a bit of a deeper dive into some of **the most common topics and gotchas that private aircraft operators to the US should be aware of…**

## Arriving from the South

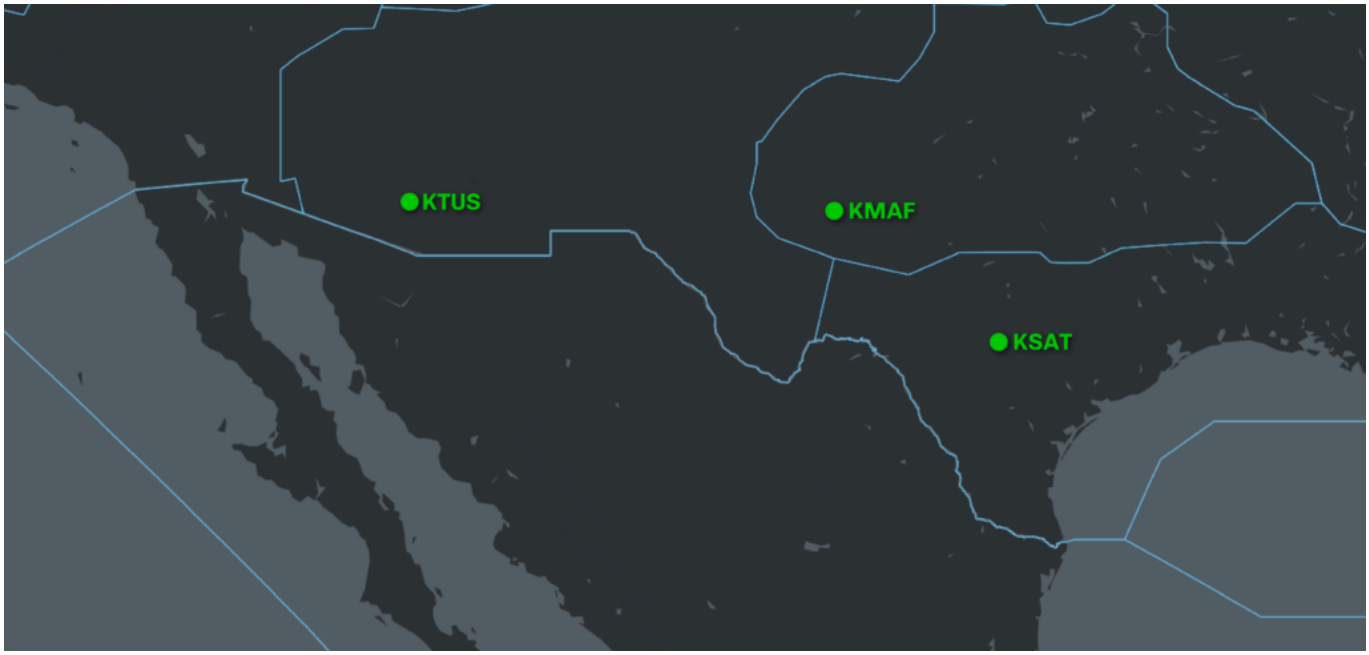
CBP differentiates between aircraft arriving from places "south" of the US versus other countries. Basically, every country in the Western Hemisphere, with the exception of Canada and Bermuda, is considered "south"!

When arriving from one of these countries "south" of the US **we must make our first landing at a CBP "Designated" airport closest to our point of border or coastline crossing** – unless we have obtained a Border Overflight Exemption (BOE). (More on BOEs in a moment.)

There is a specific list of 32 "Designated" southern airports of entry in the regulations (actually, there are only 31, because KNEW/New Orleans Lakefront is not longer a Designated airport), and that not all CBP airports in Florida or along the Gulf of Mexico coastline nor the US-Mexico border are "Designated" airports. Again, we must make our first landing at the Designated Airport closest to where we cross the US-Mexico border or the US coastline.

**However, there are a few exceptions:**

**KTUS/Tucson, KSAT/San Antonio, KMAF/Midland**
While these airports are Designated Airports, you cannot get to them without overflying another Designated airport. Nonetheless, if you are granted Permission to Land, you may use these airports as your closest airport to the border.




**KMTH/Marathon**

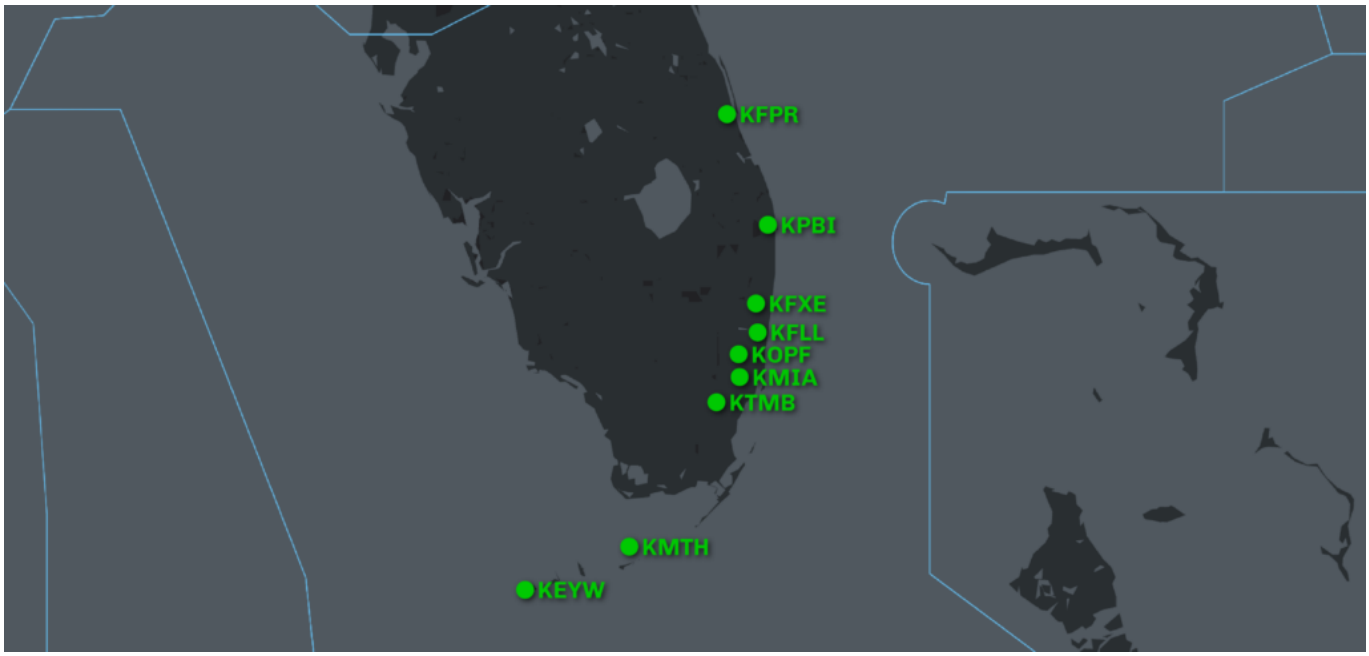
While not on the list of Designated Airports, KMTH/Marathon is a CBP port and can be used in lieu of a Designated Airport. Be sure to contact CBP at the airport to obtain Permission to Land. (More on Permission to Land in a moment.)

**Miami Field Office Airports**

So we're talking about 8 airports here: KEYW/Key West, KTMB/Miami Executive, KMIA/Miami International, KOPF/Opa Locka, KFXE/Fort Lauderdale Executive, KFLL/Fort Lauderdale International, KPBI/Palm Beach, KFPR/Fort Pierce.

The CBP Miami Field Office (MFO) has established that "Flights which are required to land at a nearest designated airport to the border or coastline crossing point **may proceed directly to any of the eight designated airports… without an overflight exemption,** even if the airport of intended landing is not the one closest to the US coastline crossing point."

So, if you were returning to the US from Cancun, Mexico, you could overfly Key West and continue up the east Florida coastline all the way to Fort Pierce and you would be in compliance. **What you cannot do when returning from The Bahamas is to overfly any of these MFO airports and land in KTPA/Tampa** even though Tampa is one of the 32 Designated airports!




## Border Overflight Exemptions (BOE)

One way to avoid having to deal with Designated Airports is to obtain a BOE from CBP.

**How it works**

One of the great things that CBP Headquarters has accomplished is to get rid of the old Forms 442 and 442A and to **centralize the BOE approval process.** In addition, they have eliminated the previous requirements of having to list all aircraft, foreign ports, crew and passengers that would be authorized under the BOE. Today, all you have to do is **identify the operator to whom the BOE will be issued** and any aircraft, crew, passengers and foreign ports are all systematically vetted through APIS when the manifest is transmitted.

Per CBP regulations, BOE's can take **up to 30 days to process**, so don't waste time. For more information regarding the application process, contact GAsupport@cbp.dhs.gov.

**Gotchas**

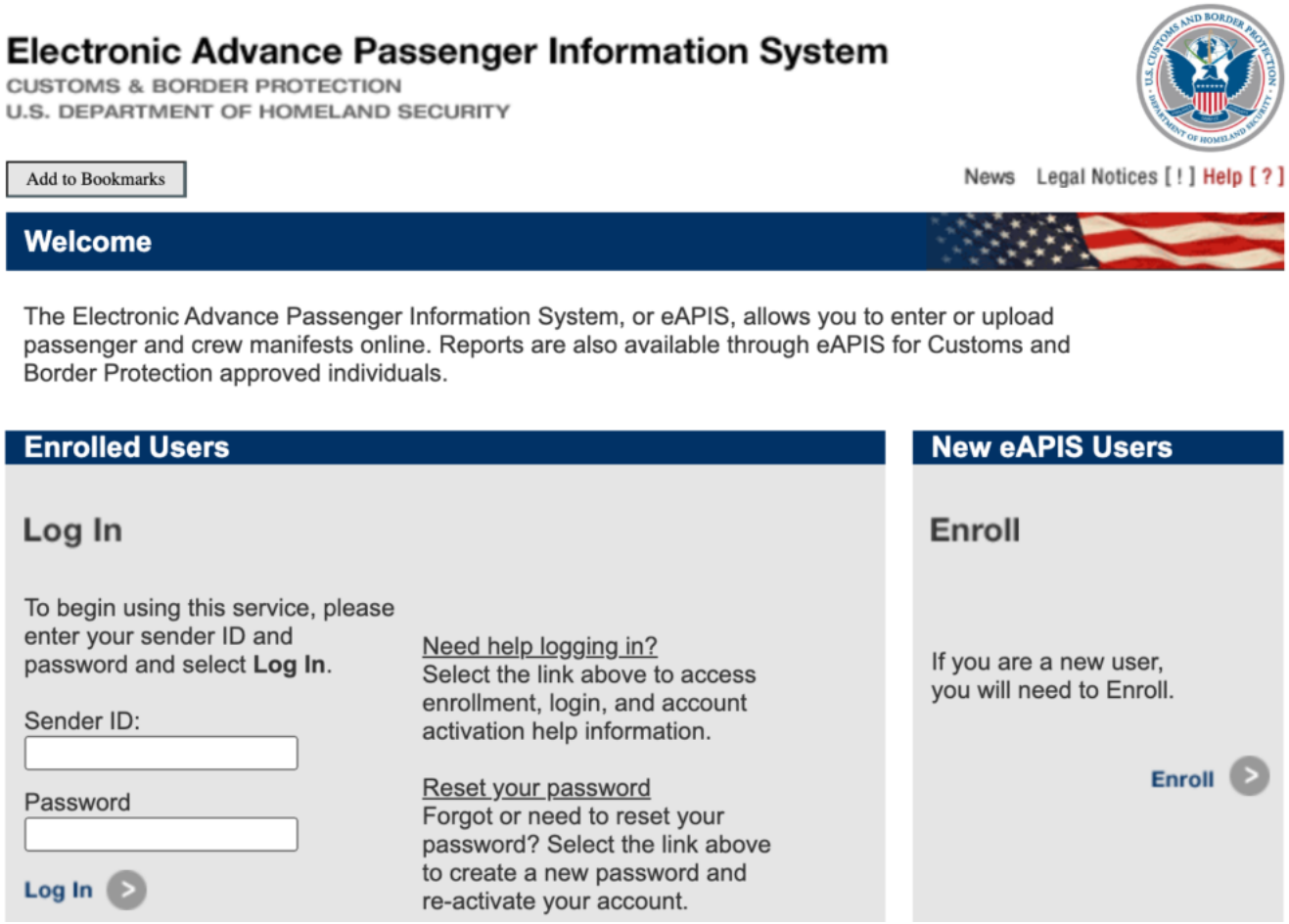
A BOE holder has to ensure that the Operator specified in the APIS manifest MUST be the Operator to

whom the BOE was issued. In addition, to legally use a BOE, the flight must be **under IFR, fly above 12,500 feet and not make any intermediate stops.**

A BOE is obtained by demonstrating **a history of compliance.** If you are subject to an enforcement action, the pilot can lose their BOE privileges for 6 months and repeated violations can result in the Operator losing their BOE privilege also.

## Advanced Passenger Information System (APIS)

Since Nov 2008, operators of private flights have been required to file a DEPARTURE APIS manifest using the Electronic Advanced Passenger Information System (eAPIS) portal when departing the US for a foreign country, and an ARRIVAL APIS manifest when returning to the US from a foreign country.




**How it works**

DEPARTURE and ARRIVAL APIS manifests must be filed and authorization from the Department of Homeland Security (DHS) must be received **no later than 1 hour prior to departure** from the US or foreign country. This DHS authorization comes in the form of a receipt email which contains a summary of the date, time, departure and arrival airports.

As there is no limitation on how early an APIS manifest may be submitted, I recommend that you submit it as soon as possible once your itinerary and crew/passenger information is established.  CBP always advises, "Transmitting for next week is fine if your plans have firmed up but next Christmas is too far away."  Leaving things to the last minute just invites Murphy's law.

You should never be asked to provide Personally Identifiable Information (PII) such as DOB, passport number, SSN, etc. via FAX or email. If you do get such a request, ask for the supervisor, contact CBP headquarters or contact us at +1 786 206 6147.

**Gotchas**

Double check that the information in the DHS receipt email is accurate! **Failing to get the receipt email from DHS means you have not received authorization to depart so you definitely should not depart.** Sometimes failing to receive a DHS receipt email may be due to issues with the CBP systems or typos in your email address. Check your SPAM folder to make sure that the email was not sent there. If you share the eAPIS account you are using with someone else, check to see if they changed the email address and ask them to forward the authorization to you. **One last resort is to contact CBP** at the port and ask if they can determine if the authorization was issued, write down the officer's name or initials (they might only be willing to give you their badge number) in the event that there is ever a question about whether you received authorization.

The rules also require that if you add/remove/substitute crew and/or passengers or if you make a change to the travel calendar date in either a DEPARTURE or ARRIVAL manifest then you **must resubmit a new manifest to CBP.** Any authorizations related to the originally submitted manifest are no longer valid and you must wait for a new authorization from DHS. Changes to departure time, arrival time or arrival location may be made by phone.

Another gotcha is failing to make sure that the **passenger names on the filed APIS exactly match the names on the passports.**

## Arriving in the US

In addition to submitting an ARRIVAL APIS manifest and getting the receipt email from DHS, the regulations specifically require us to also **contact CBP at the arrival airport and obtain Permission to Land** (sometimes referred to as, "Landing Rights").

**Recent changes to how it works!**

Historically, different CBP ports have implemented varied procedures for requesting and granting Permission to Land, however that is now becoming more standardized through the efforts of CBP headquarters.

One significant change is that CBP will no longer grant Permission to Land unless you have **successfully submitted your APIS ARRIVAL manifest first.** When you are granted Permission to Land by CBP at the arrival port, you should receive an email from CBP (in addition to the one sent by DHS) confirming that Permission to Land has been granted and any specific instructions that CBP may have. If you are denied Permission to Land, you will also receive an email from the port confirming that Permission to Land was denied.

Failing to receive the email confirming Permission to Land is an indication that either the port has **not yet adopted the new procedure** or that Permission to Land was **not properly issued** by the CBP officer who responded to your request and a follow up request would be advisable. Be prepared to prove who gave you permission to land – the receipt email from DHS alone does not grant you Permission to Land.

**Check those attachments!**

The email granting Permission to Land will have several attachments. The first attachment is called **"CBP Private Aircraft Arrival Information"** which contains an overview of what the operator of a private aircraft is expected to do in order to comply with CBP regulations.

In addition, you may also find attached a **"General Aviation Airport Fact Sheet"** which contains detailed information on what you need to know about the CBP requirements for the specific airport you are landing at. Not only do these two documents clarify what is expected of you, they serve as proof to a CBP officer that you have followed procedures correctly.

Lastly, there is a third document called **"Tip of the month"** which is a review of important topics that pilots should be aware of and this document is updated monthly. Of the 392 airports where CBP is present,

approximately 250 have published Airport Fact Sheets.

**Changes to your schedule**
The Permission to Land email messages grant permission based on what you have transmitted in APIS and also include **port-specific time tolerances**; a +/- time allowance based on port operations. If you need to ARRIVE in the US at a time significantly different from that submitted in your ARRIVAL manifest, you need to contact CBP to re-secure Permission to Land for your new arrival time. Many aircraft land at Designated Airports and CBP must ensure that they have the space and manpower to receive and process inbound aircraft.

**When you arrive**
When arriving in the US, CBP procedures may vary slightly, depending on where you land.

**CBP at many airports expect you to keep the door closed until authorized to open it by the CBP Officer.** At KTEB/Teterboro, for example, if you deplane before authorized you will be subject to a hefty fine. CBP officers at some airports may not come out to meet the aircraft and may wait inside the building until the crew/PAX come inside. Other airports may have signs with instructions – follow them.

In all cases, especially where health and safety concerns present or exist, CBP always emphasizes to exercise reasonable and responsible judgement. If your aircraft Auxiliary Power Unit (APU) exhaust is 8 feet or higher above the ground, you do not have to power it down. However, CBP can require you to shut down the APU, though, in cases of enforcement actions.

## Departing the US

You do not need to depart the US from an airport where CBP is present – **you can depart from any airport in the US.**

**How it works**
In your APIS DEPARTURE manifest you should **enter the airport code of the nearest CBP airport** to the departure site and then in the "Actual Departure Location Description" field, describe the actual place from which the aircraft will depart. This is an optional field which should be used only when the location of actual departure differs from the airport listed in the "CBP Airport" field. The "City" field should be the actual city from which the aircraft is departing.

When you submit an APIS DEPARTURE manifest to CBP and you receive DHS authorization to depart, the authorization is based on the information that you have submitted, including the departure time.

**Spot checks!**
On occasion, CBP conducts random departure inspections on aircraft departing from the US (it has happened to me) and officers will be dispatched to your departure airport location. If they arrive and you have departed before the time you specified or if you are nowhere to be found and then depart after the time specified, you could be subject to enforcement action. **Always update departure times with CBP!**

## Canceling or postponing a flight

You are required to advise CBP if you are going to cancel your flight or postpone it to another date (which will require that you file a new manifest). This is important because CBP plans their workload and staffing based on manifests that they can see in the system.

**How it works**
Under CBP's updated procedures, when you cancel an APIS manifest, you will also receive an email confirming that your APIS manifest has been canceled. **If you transmitted multiple APIS manifests for the same date, the CBP port may cancel the unnecessary manifests which can trigger an email saying that the "APIS was cancelled".** Remember that each submitted APIS manifest has a unique

eAPIS number as does the DHS receipt email and CBP cancellation email so you can match them. If you are ever in doubt, you should contact the port to confirm.

## Transporting currency

Another important point is that you must always report if you are taking into, or out of, a country **more than $10,000 USD.** It is not illegal to transport more than that amount, but failing to report it is illegal.

### The nitty gritty

When you transport, attempt to transport, or cause to be transported (including by mail or other means) currency or other "monetary instruments" in an aggregate amount exceeding $10,000 or its foreign equivalent) at one time from the US to any foreign country, or into the US from any foreign country, **you must file a report with US Customs and Border Protection.** This report is called the Report of International Transportation of Currency or Monetary Instruments, FinCEN Form 105. This form can be obtained at all U.S. ports of entry and departure or on the Web at FinCEN Form 105 (Rev. 7-2003).

Alternatively, the report can be filed electronically, an eCMIR, at this website. Travelers will be able to enter information into an eCMIR up to three days prior to travel, creating a provisional document on the CBP.gov website. Foreign countries will also have their own documents and procedures. Failing to report can result in seizure of the monetary instruments, fines, or worse.

## CBP officer says it's OK

One topic that comes up repeatedly is that a CBP officer "Buddy" says its OK to land without a BOE or approves some other deviation from the rules.

### Don't do it!

CBP headquarters has made it very clear that no CBP officer has the authority to override US law. Doing so could get both you and the officer into trouble. **Don't succumb to the temptation of listening to what you want to hear versus what you need to know!** Enforcement actions can cost you money, ruin your reputation with CBP and cause you to lose BOE privileges.

## Visa Waiver / ESTA

Part of the joy of having a private aircraft is to share the experience with family and friends…

### Visa Waiver gotcha

If any of those are citizens of Visa Waiver countries and they do not have a US Visa, then **they cannot fly into the US on a private aircraft unless you are a signatory carrier** or under some very isolated and specific circumstances. Contact CBP before you attempt to do so to avoid unpleasant surprises. If there is any chance that you may transport citizens from Visa Waiver countries, submit your request to become a signatory carrier now, while there is time.

## PIC Responsibility

Yep, you know this already. **As PIC you are ultimately responsible for compliance with all the regs.** In the case of CBP, the PIC is responsible for ensuring that valid passports are brought aboard the aircraft that match the APIS manifest information submitted to CBP and that authorizations to depart are properly received.

### Getting it wrong

If you ever do face an enforcement action, **best to just be honest.** CBP is not out to get us, what they want is compliance and have repeatedly demonstrated a willingness to work with General Aviation to achieve it. Work with them and they will work with you. This is not a guarantee that CBP will not take enforcement action, those determinations are made on a case-by-case basis and much depends on the

nature and circumstances of the violation as well as the way you handle it. **Violations are usually the result of either an oversight or wilful intent** – you don't want to give CBP the reason to believe that you are part of the latter if that isn't the case!

## Illegal Charters

Unless you have a burning desire to find out more about both the US and foreign legal systems, **do not misrepresent yourself** as a private aircraft flight when in fact you are operating as a commercial aircraft operator!

### Understanding the Regs

CBP defines a "commercial aircraft" as "any aircraft transporting passengers and/or cargo for some payment or other consideration, including money or services rendered" as per 19 CFR 122.1 (d). Note that CBP's definition of private and commercial are different from those used by the FAA.

Some US pilots believe that US regs apply to them when flying internationally, but 14 CFR 91.703 (a) (2) clearly states that they must abide by the laws of the foreign countries where they operate. Many of these countries also have much more basic definitions of commercial and non-commercial operations.

Bottom line – **don't try to walk a fine line with Part 91 definitions** as this could land you in hot water with the CBP as well as with the civil aviation authorities of foreign countries.

## Puerto Rico and US Virgin Islands

Time for some bulletpoints, all *nicely* colour-coded…

- Flights between the continental **US** and **Puerto Rico** are considered domestic flights as long as the flight is conducted under IFR, the flight is above 12,500 feet and there are no intermediate stops.
- Flights from **Puerto Rico** to the **US** require a US Department of Agriculture (USDA) inspection in **Puerto Rico** prior to departure.
- Flights from the **US** and **Puerto Rico** to the **US Virgin Islands** are considered domestic flights BUT flights from the **US Virgin Islands** to the **US** and **Puerto Rico** are treated as international flights.
- When departing the **US Virgin Islands** to the **US**, always go through the pre-clearance process with CBP in the **US Virgin Islands** before departing. APIS must be transmitted as an ARRIVAL into the **US**.

## Other Gotchas!

### Check those pesky passports again

The PIC should verify that the doc that were used for the submission of the APIS manifest are on board the aircraft. **This can maybe be a bit awkward, but it is the PIC's reputation with CBP** and a possible enforcement action and loss of BOE privileges that are at stake. Some of the more common issues that arise are:

- Missing passport, the passenger forgot to bring it
- Bringing a different passport form the one use in the APIS manifest, passenger has 2 passports
- Bringing spouse's or child's passport by mistake

- Bringing a passport card instead of a passport, passport cards are not valid for use on an aircraft

Remember, an APIS manifest needs to contain verified and accurate information, the PIC must validate that what they have submitted is correct. CBP has told us repeatedly that **transmitting bad data is always grounds for enforcement action.**

**Guns**
Another common gotcha is trying to reenter the US with firearms after a hunting trip. You should present firearms to CBP along with CBP Form 4457 before leaving the US.

**Diamonds are a ~~girl's~~ CBP officer's best friend**
Same as above! Any high value item such as camera/video equipment, jewelery, etc need to be declared to CBP before leaving the US.

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## Q&A

**1. General Aviation Airport Fact Sheets. These sound interesting! Are these fact sheets located anywhere on the CBP website? Or elsewhere on the internet?**
*CST Flight Services has all the CBP Fact Sheets. If you email us we can send you the latest for the airport you need: customersvc@cstflightservices.com. We plan to have a self-serve web page up and running shortly, where you can access the files 24/7.*

**2. Can operators start the BOE process before 45 days? Just to ensure they have this before it expires and they have to stop somewhere that's inconvenient?**
*You can try but it will almost certainly be rejected. CBP does not want any renewal requests that are more than 30-45 days out with 45 days being the upper limt.*

**3. When arriving in the US, do all your FPL alternates also need to be airports with CBP on site? What would happen if you had to divert somewhere else?**
*Safety of flight always comes first, however you can expect some tough questions like "why didn't you select a planned alternate where CBP is present?"*
*If the diversion is a true emergency (smoke in the cockpit, engine failure, medical emergency), I think CBP would work with you. An emergency due poor flight planning such pushing the aircraft's range or something similar may not go so well.*
*In the 20 years of working with CBP headquarters the mantra has been "reasonable and responsible." If you can demonstrate that your actions were reasonable and responsible then you should be OK, if you cannot, then it probably will not be OK!*

**4. The same question, but for a flight arriving from the south, without a BOE. Can they only list Designated Airports as their FPL alternates?**
*Same answer as above. The reality is that with the exception of KILM/Wilmington, the Designated Airprots are along the US-Mexico border, Gulf of Mexico shoreline and South Florida. There are a plethora of possible alternates that are Designated Airports, so you may have a hard time explaining why you didn't choose one of those.*

## Anything we missed?

If you have questions about any of the above, or if you think there's something we missed, let us know!

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***About the author:***
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# Niger Military Coup: Airspace Reopens

David Mumford
5 January, 2024


**Update: 25 Sep 2023**

Updated Notam for overflights – the airspace of Niger remains open at all levels for international flights following a coup back in July. However it now **excludes French-registered aircraft, or those chartered by French interests** due to a political dispute. DRRR Notam A1168/23 refers.

**Update: 4 Sep 2023**

Niger's airspace officially **reopened** for the first time since early August, following a military coup in July. The **Niamey FIR is now available at all levels** – as long as your transponder stays on. Security on the ground is still a problem. The US continues to advise against all travel there.

Major airlines flying between Europe and West Africa have resumed overflying the DRRR/Niamey FIR.

**Timeline of closures:**

- **4 Sep: Airspace reopens**
- **7 Aug – 4 Sep: Airspace closed.**
- **31 July – 7 Aug: Airspace reopened.**
- **26 July – 31 July: Airspace closed.**

## Background

Niger's airspace and airports were closed to all flights on July 26, following a **military coup.**

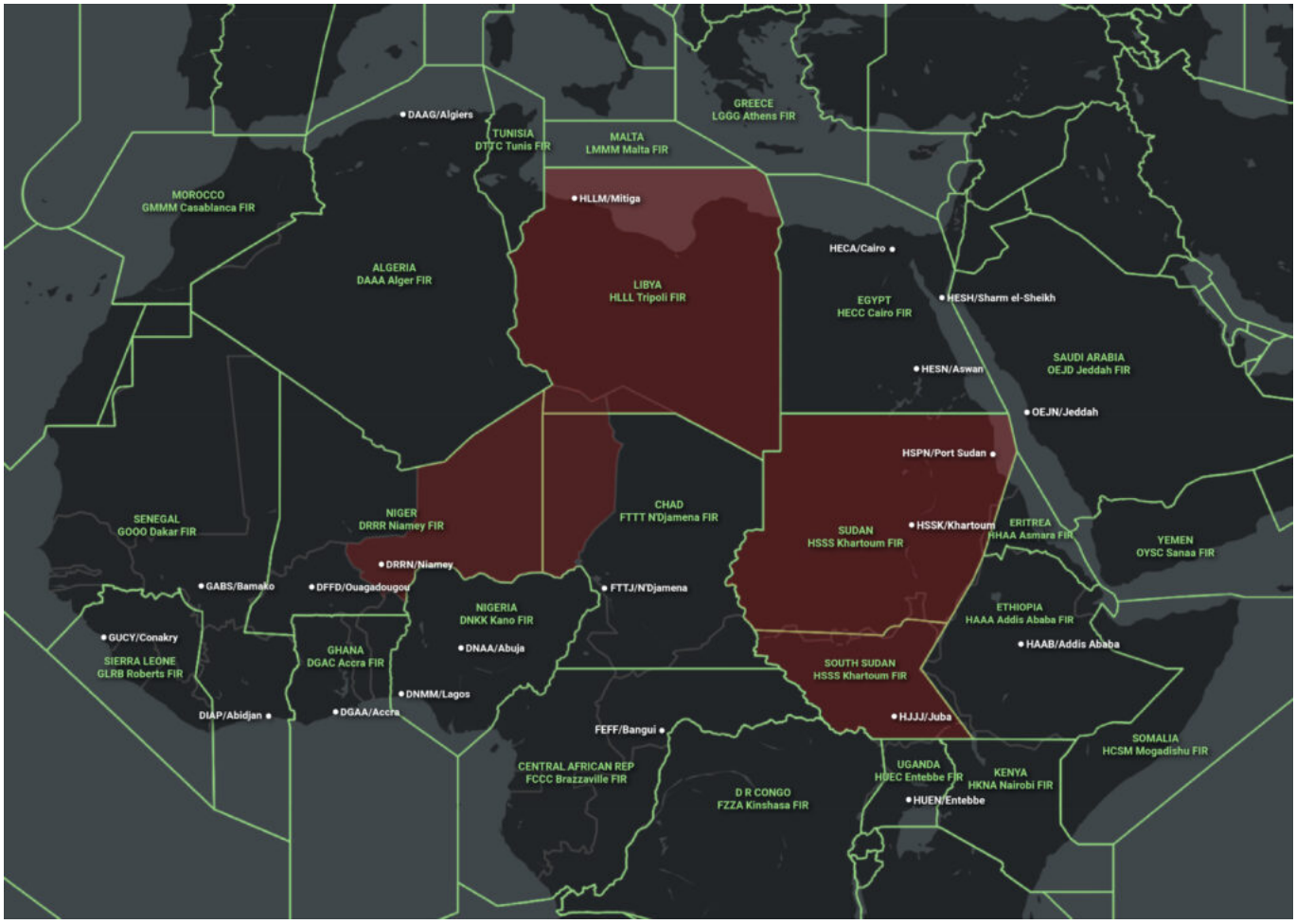
Troops announced a coup on national TV after **detaining the president**. They said they had dissolved the constitution, suspended all institutions and **closed the nation's land and air borders.** Soon after the announcement, the several Notams appeared advising that the airspace over Niger was closed, along with all airports in the country.

Niger straddles two FIRs – DRRR/Niamey (controlled by Niger) and FTTJ/N'Djamena (controlled by Chad). **But it was just the territory of Niger itself that was closed, not the whole DRRR/Niamey FIR:**

This closure made African routings quite challenging – a region already plagued with various airspace closures and risk warnings:

- **Sudan:** Airspace remains closed to all civilian flights following a military coup in April 2023. More info.
- **South Sudan:** Air navigation services remain suspended above FL245 following the coup in Sudan. More info.
- **Libya:** Flight ban for US and UK operators (several other countries have warnings in place) due to risks associated with the civil war that has been ongoing since 2014. More info.

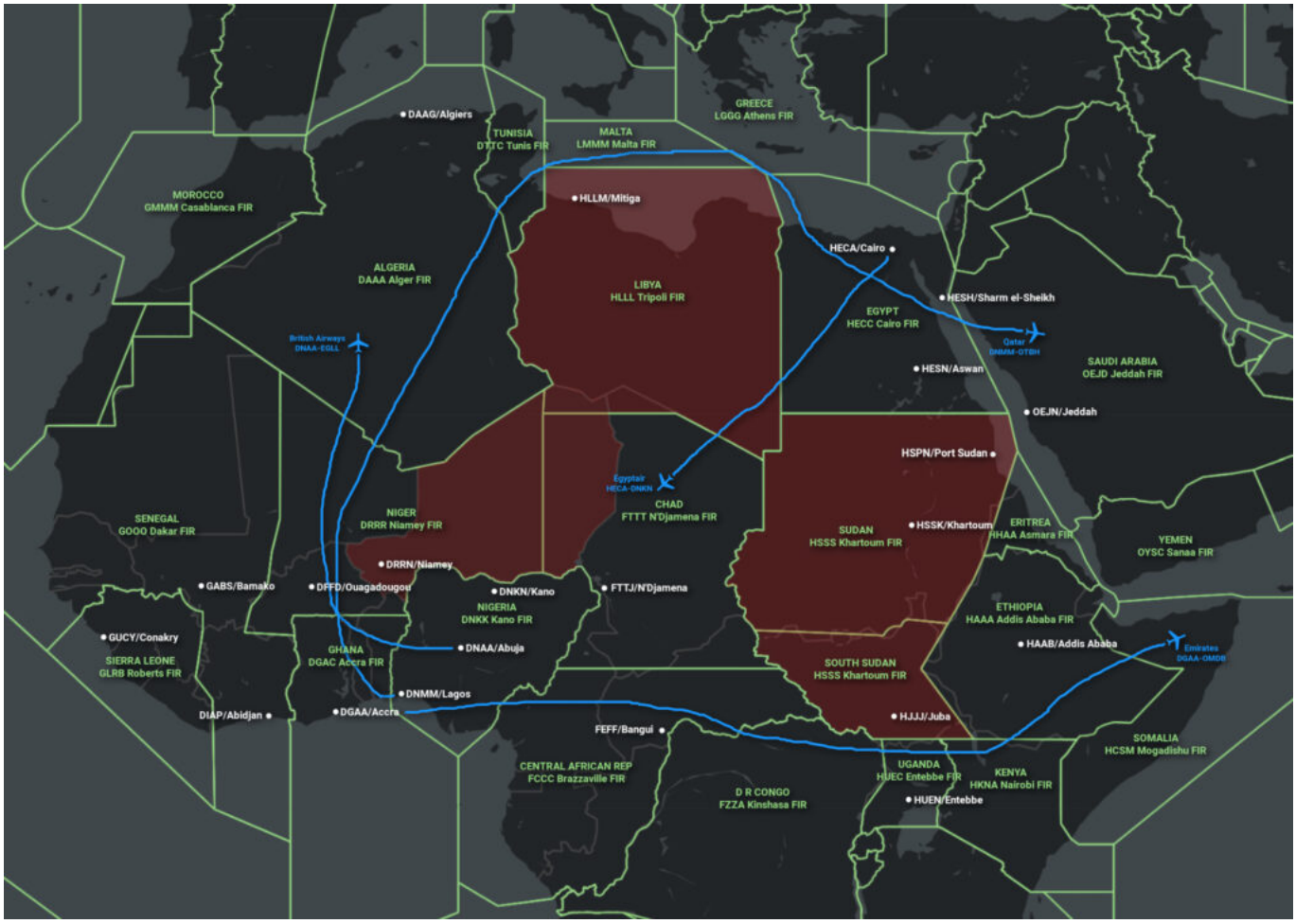
The map below shows the issue:




**Flights from Europe to West Africa and beyond** had to route around Niger, via Mali and Burkina Faso in the western part of the DRRR/Niamey FIR, or via the GOOO/Dakar FIR *(British Airways DNAA-EGLL in the map below)*.

**Flights between West Africa and the Middle East** also had this extra dogleg around Niger if electing to fly the northerly route across Africa *(Qatar DNMM-OTBH)* or else chose the southerly route avoiding Sudan and Yemen *(Emirates DGAA-OMDB)*.

And yep, there were still the likes of Egyptair **overflying Libyan airspace** on some flights!




We will update this article with further info as we get it. If you have anything to share, please let us know.