# Luxaviation Europe
## Safety Matters

## Welcome to the Luxaviation Group Safety Matters Newsletter

We aim to publish this newsletter quarterly to enable information sharing across all Group entities. We will include safety reports submitted from across the Group as well as articles that we feel you may be interested in.

If you have any comments, suggestions or wish to contribute, please contact:

**Luxaviation Europe Safety Matters**

safetymatters@luxaviation.com                                    www.luxaviation.com

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# Staff Introduction

## SUZY GAUTREY

Welcome to the first Safety Bulletin of 2023. The safety department has undergone some significant changes in recent months as we say goodbye to some of our colleagues, namely Tassilo Lubec, formerly Group Safety and Compliance Manager and we wish him well in his new role. Following his departure, I am pleased to announce that I have taken on the role from May 1st 2023. Part of this role is to ensure that the safety bulletin continues to provide relevant and interesting content on a quarterly basis. Firstly though, I would like to introduce myself and the rest of the editorial team.

Many of you already know me as the Safety Manager for Luxaviation UK and I am formerly the Safety Manager for Luxaviation San Marino, Luxaviation Portugal and ExecuJet Europe and I joined the company in September 2017. I also operate as a First Officer on the Luxaviation UK Citation XL/XLS fleet and I am based in Bedfordshire in the UK.

I hold a Masters Degree in Human Factors and Safety Assessment in Aeronautics from Cranfield University and I am a trained Accident Investigator and Auditor. In my spare time, I am working towards my PhD in Emergency Preparedness of European Business Aviation Operators with Coventry University. Due to the number of changes, I would like to take this opportunity to introduce some of my colleagues on the editorial board.

## SOFIA FRANCISCO

Hello, my name is Sofia Francisco, and I am the Quality Manager and Safety Manager for Luxaviation San Marino.

I started my aviation career as an Operations Coordinator for international operations with a Portuguese airline, which enabled me to be involved in a variety of operational settings, which proved very useful in my current work.

I live in Lisbon, Portugal, love eating, traveling, and learning about new places and cultures.

## HERVE CLOAREC

Hello, I am Hervé Cloarec. I am 56 years old with 33 years experience in an aeronautical environment. I spent 16 years at a few OCCs in France (Leadair Unijet, Air Liberté, Star Airlines…) and also ETOPS Manager. Following this, I then spent 17 years in IR-OPS, PART M, PART CAMO and ISO quality environment, compliance and safety manager for both MROs and Airlines Companies. I joined Luxaviation in August 2022 as Compliance Manager for Lux France (UNIJET) and also Compliance and Safety Manager for Lux Malta.

# Staff Introduction (Cont.)

## ISABEL QUINA

Isabel joined Luxaviation EASA, based in Portugal, earlier this year. She has 27 years in aviation and has previous experience of working with the SATA GROUP Aviation Consultant acting as Regulatory Affairs. Prior to that, she was the Quality & Safety Director of TACV – CVA and also has extensive experience in fatigue risk management and safety promotion and regulation management. Isabel began her career as Cabin Crew in 1996.

## DARREN UNDERWOOD

Safety and Compliance Manager
Starspeed Ltd

Darren has 40 years' experience in aviation which includes Maintenance, Airworthiness and Flight Operations. Darren has held many Nominated Person roles for a variety of organisations both Fixed Wing (GA, Biz jet and Airline) and Rotary and has been an Airworthiness Surveyor with the UK CAA. He is a licenced Aircraft Maintenance Engineer and Holds a BEng(hons) degree in Aircraft Maintenance and Management

## PAUL GREEN

My aviation career started a while ago with a Royal Air Force aircraft engineering apprenticeship (airframe and propulsion). In the RAF I worked on Hawk, Puma and Tornado.

In the latter part of my Military service, I moved into Safety and Error Management, reviewing and risk assessing

all flight safety reports raised and where appropriate initiating safety investigations.

On leaving the RAF I took up the position of Safety and Compliance Surveyor at KLM UK Engineering in Norwich. Here I was the Safety Management System lead and a qualified auditor, carrying out SMS investigations and airworthiness audits ensuring compliance customer contracts and EASA Part 145.

I joined the ExecuJet as a Safety and Compliance officer in 2019 working for UK, CH and DK. I am now Safety Manager (Operations and CAMO) for ExecuJet Denmark and CAMO Safety Manager for Lux E.A., Portugal.

## BRENT VAN CAMPENHOUT

Hello! It's a pleasure to introduce myself. My name is Brent Van Campenhout, and I'm currently serving as the Safety Manager for Luxaviation Belgium. I have been flying for several years now at Luxaviation Belgium, and I currently fly the Global 5500 aircraft. Before that, I flew the Citation XLS for five years. My aviation journey began when I was just 15 years old, and I started flying at a small airfield near my hometown. In addition to flying, I also took a technical course to become an aircraft mechanic at the age of 15. I started my aviation career as a cabin crew member for a Belgian airline, and my first job with Luxaviation was in the dispatch department. One interesting fact about me is that prior to joining Luxaviation, I worked as a truck driver for two years to repay the loan I had taken out to finance my pilot's license. I'm passionate about aviation and In my spare time I perform maintenance and fly on my own Ultralight aircraft. The experience I gained during all the different roles I had in aviation is something that I would like to share with everyone in order to perform a safe and efficient operation.

## SERGE RONCERO

Serge Roncero joined UNIJET (Luxaviation France) in April 2011.

He has been a Safety officer since 2015 and currently the Safety Manager for Luxaviation France.
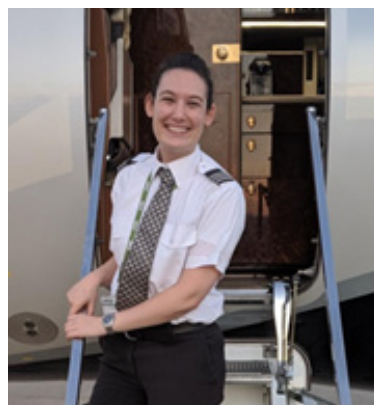
## JEREMY DURRANT

Jeremy is the Safety and Quality Assurance Manager for ExecuJet Asia Pacific, based in Sydney Australia. He joined ExecuJet in May 2018.

## VIRGINIA CASTELLVI

I am pleased to join you all as the new Deputy Safety Manager for Luxaviation UK and I would like to take this opportunity to introduce myself.

After becoming a pilot in Spain in 2009 I began my career in aviation as Customer Service Representative in several airports in Spain and UK. After 2 years I decided to finance a short stay in the USA to do time building and thanks to that I was able to gain my first flying job as Flight instructor in a Spanish ATO where I also taught Human Performance and Air Law. I also became their Chief Theoretical Knowledge Instructor until I joined in 2014 the apprenticeship scheme of a Malta based Charter company because working in Business Aviation has always been my dream.

During my apprenticeship I performed duties as Training and Operations Manager assistant, Customer services and Operations officer. When my apprenticeship ended in 2016, I joined the Legacy fleet as First Officer in the same company.

During the past years I have developed an interest in Safety and Compliance and I have performed courses in Audit techniques and Aircraft Accident and Incident investigation.

I joined Luxaviation UK in December 2021, in the Legacy 600 G-LEGC and I have been working in the Safety department as Flight Safety Officer since August 2022, now as Deputy in the same department, I look forward to continuing working with you all in this new role.

## MIKE KOKUZ

Hi All, My name is Mike, and I am the Flight Safety Officer for Lux UK and will primarily be focused on Ground Ops related issues.

I work full-time as a Senior Client Relations Executive for Lux UK and have been a member of the Operations Team for nearly 7 years.

Before I joined Luxaviation, I studied Air Transport Management (Bsc) at University where I obtained my PPL and worked for American Airlines on the Ramp at LHR.

Something you may not know about me is that I Race Karts Nationally.

# Flight Data Monitoring

Flight Data monitoring (FDM) program assists the operator to identify, quantify, assess, and address operational risks. It also allows us to compare Standard Operating Procedures (SOPs) with those achieved in everyday flights. Information like shown in the statistics chart is used to determine if an individual or fleet risk level is acceptable. If not acceptable, remedial action is followed by continued monitoring.

These have been the 2022 top events (event count and event name split by severity/level) and have been provided by L3 Harris as FDM data summary by quarter so as operators, in plain words, could monitor common risks and operational risks leading to for example Runway Excursions (RE), Mid-Air Collisions (MAC), Controlled Flight Into Terrain (CFIT), and Loss Of Control In Flight (LOC-I).

## 2022 Luxaviatin Group Stats
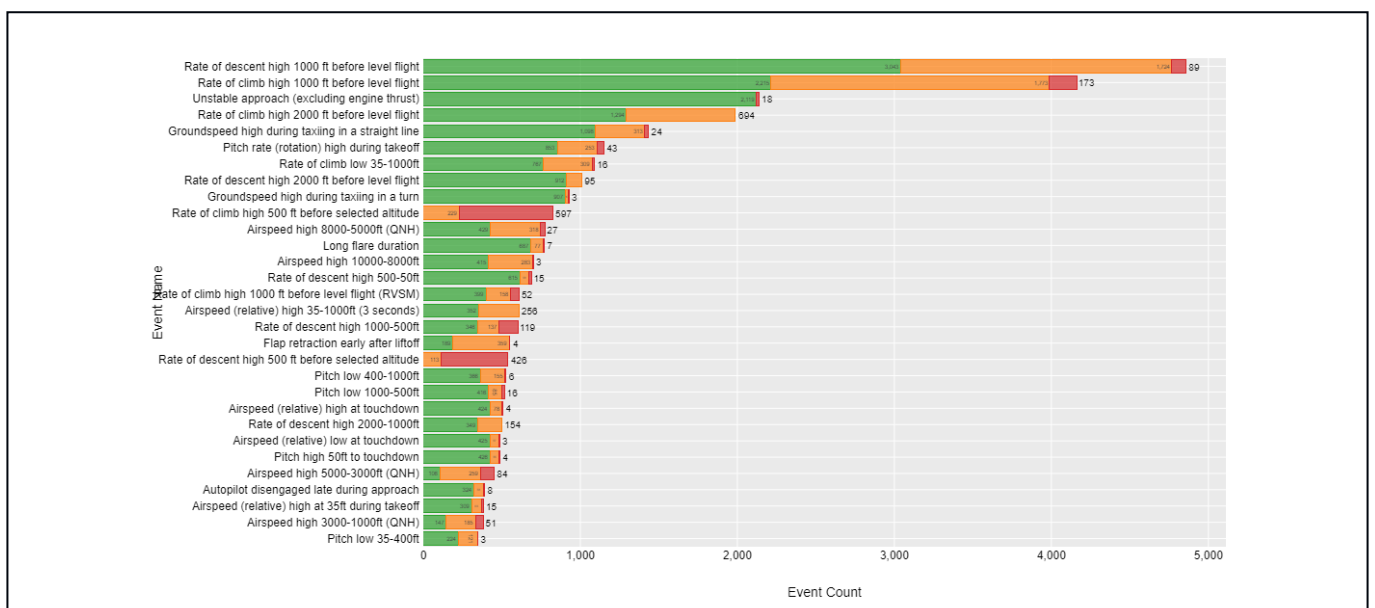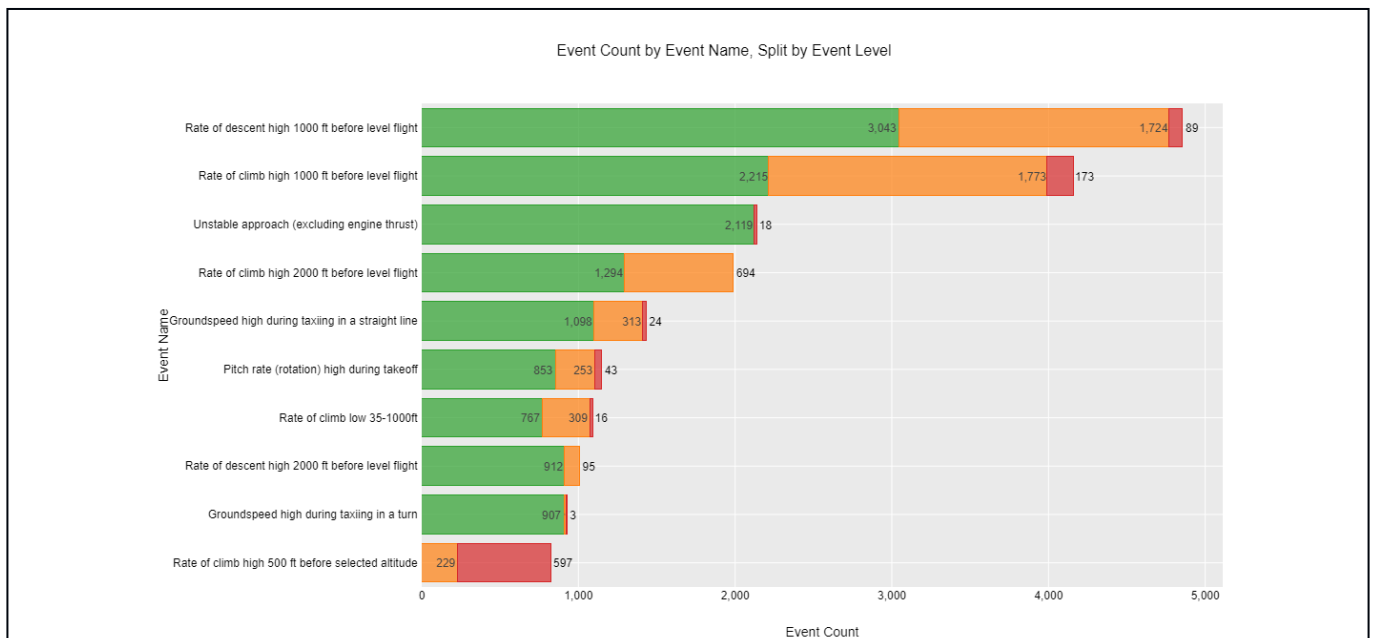
# Safety Survey 2022

Safety Culture is what people believe about the importance of safety; it has been described as "how an organisation behaves when no one is watching". Safety Surveys aim to review the safety culture within an organisation and make recommendations for improvements, where required.

The Group Safety Team issue an annual Safety Culture Index (SCI), which is a type of safety survey that issues a 'safety score', that can be compared across the industry. The higher the numerical value, the better the safety culture rating. Based on the average score, safety culture falls into one of the following three categories:

- Poor safety culture                   25 – 58
- Bureaucratic Safety culture            59 – 92
- Positive Safety culture                93 – 125

The latest survey was issued in December 2022 and the results have now been analysed. We would like to extend a big thank you to everyone who participated in this survey a summary of the results and recommendations are below.

**Safety Culture Index**

528 people completed the survey from across all entities. Overall, the Luxaviation Group SCI was 99. The histogram of scores identified that the range of scores of 27 at the lowest and 125 at the highest, with a skewed distribution towards the higher values, indicating a positive safety culture.
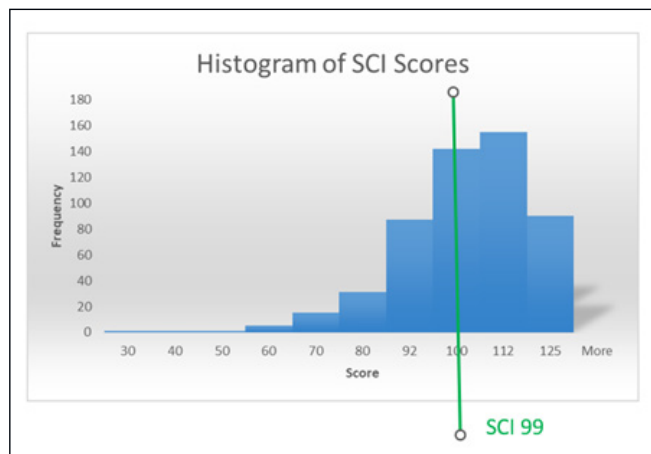


*Table 1: Histogram of SCI 2022*

Qualitative data was also collected which highlights suggested areas of improvement required and this has been distributed to the individual AOCs for further action. For full details of the report applicable to your specific AOC, please liaise with your Safety Manager, or contact the editorial team at safetymatters@luxaviation.com

# Coffee Pot SACA Finding

A recent ramp control by French DGAC in LBG (SANA control) raised the following finding:

Installation of equipment obviously non-compliant with applicable regulations Installation of equipment obviously non-compliant with applicable regulations

A commercial coffee machine is installed on a tray. Everything is unsecured and used in flight. The electrical risk being confirmed excluded by the fact that the electrical power source is certified and that the specification of the coffee maker (220-240 V, 50-60 Hz, max. 1300 W) complies with the maximum load tolerated on this socket (220 V, 60 Hz, 1397 W).

A risk assessment was then conducted including the following aspects.

- Risks caused by a leak/overflow of water on staff and passengers (burns, falls)

- Risks related to a malfunction of the coffee maker (overpressure)

- Risks related to water spillage on surrounding equipment

- Risks related to water spillage on the aircraft structure

- Water retention capacity in case of leakage/overflow

- Display of instructions for use of the coffee maker

- Full details of the risk assessment available on request, by emailing safetymatters@luxaviation.com
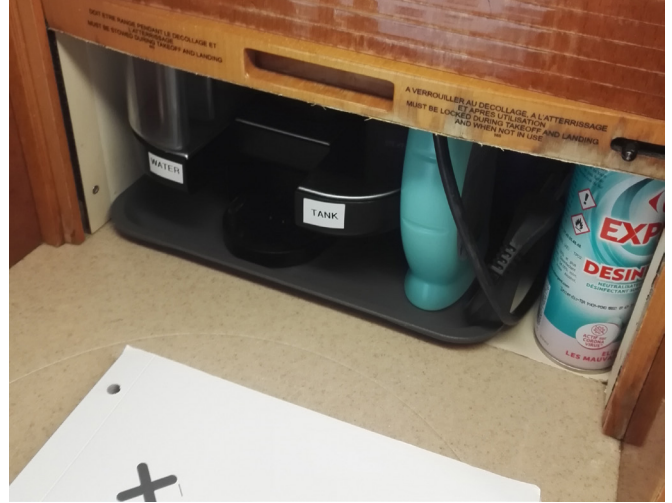
# Foreflight – Spring 2023 Update

As most of you may already be aware, we are entering a period of transition with our Dispatch interface as we look move away from PPS Flight Planning software and replace it with Foreflight. However, managing this change is crucial to ensuring a smooth transition; avoiding disruption to the operation and helping employees adjust to new systems and flight documentation. This should in theory address the shortfalls and constraints of the previous software and assist in meeting the goals and needs of both Ground & Flight Ops for a more successful outcome.

So, what is Foreflight? Foreflight was founded in 2007 with the aim of creating software that makes flight planning easier. Joining forces with Boeing in 2019, the company has gone on to produce revolutionary software to meet the needs of pilots and flight planning departments across the personal, business, military and commercial segments of the industry. The company has a wide range of products suitable for handled and desktop devices, giving flight crews and dispatchers up to date information on Weather, NOTAMs, Weight & Balance and Performance information in real time allowing for routes to be planned, filed and released in one complete package.



In the past, PPS raised many reports that highlighted irregularities with the system and most of its limitations. From missing waypoints and ETP's to erroneous fuel figures and system crashes, there have been unsolvable issues in the past which has meant dispatchers needed to spend extra time applying workarounds to file and release flights whilst aircraft have been sitting on the ramp with the APU running and passengers onboard.

Foreflight has the ability to improve the efficiency of these processes when most crucial and should therefore produce higher quality flight plans with reduced errors. The system can provide Dispatchers with the latest information from the Jeppesen Charts and Airways Manuals as well as the latest airspace and airport constraints whilst allowing the user to add additional information to the Operational flight Plan. For example, foreflight can calculate Critical Points for enroute diversion alongside the ETPs for medical emergencies or depressurisation whilst ETOPs planning which could not be done on PPS.
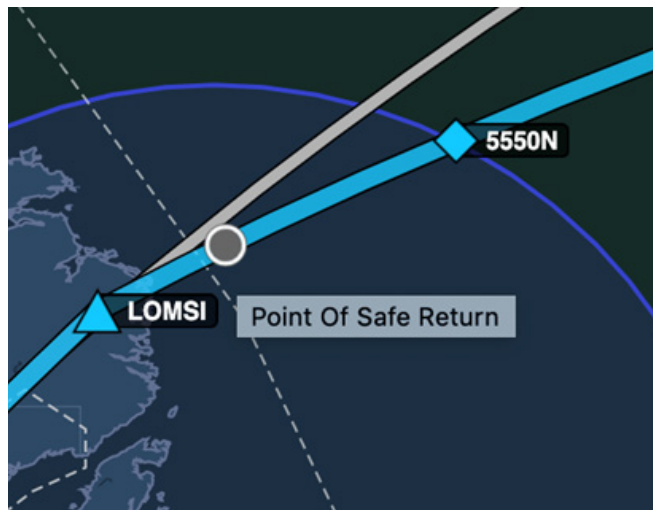


As of the 1st of March, we went live and are trialling Foreflight Dispatch in parallel with PPS. This Trial will be closely monitored to ensure the product meets our requirements and all the relevant data entries for our aircraft are correct and working as intended but initial feedback is positive. If all goes to plan, the full implementation of Foreflight Dispatch will take place in early April, followed by the rollout of the Electronic Flight Bag App and the Performance Analysis, Weight & balance module later in 2023.

It's safe to say that many of us are excited and looking forward to using Foreflight, however it is important for all staff to highlight anomalies whilst we learn the new system and identify the root causes at the beginning of this journey in order to adjust training and/or the system to meet our requirements.

# What is an Electronic Technical Log?

Jorge Pestana Group / CAMO Coordinator

According to EASA M.A.306 for Commercial Air Transport (CAT) operations, and equivalent National Aviation Authority (NAA) Regulations, the Operator must use a Technical Log System, mostly known as Aircraft Technical Log (ATL), defined and approved through the Continuing Airworthiness Management Exposition (CAME), or equivalent manual.

This Record System combines the aircraft utilisation fields included on the Journey Log, listed in ICAO Annex 6 Part I, 11.4 (also on EASA ORO.MLR.110), with Certification and Maintenance records, containing the aircraft's technical and operational information and activity and providing full awareness of the current Operational and Airworthiness status of the aircraft to all relevant entities. This includes:

- Maintenance and repair information: With records of all maintenance and repair work performed on the aircraft, including scheduled maintenance, unscheduled repairs, and component replacements. It also includes information about any defects or issues that were identified during ground or flight work and the aircraft current status

- Flight information: It contains information about each flight, including departure and arrival times, flight duration, flight origin and destination, fuel consumption, among others

- Operational information: Includes information about the crew, operation types and any incidents or anomalies that may have occurred

As such, this Record System is one of the key processes of an AOC, being the primary communication channel between the Flight Crew, the Continuing Airworthiness Management Organisation (CAMO) and the Maintenance Teams.

On the Luxaviation Group, although many records are already being made on Management/Maintenance Information Systems (MIS), such as on Flightware, Centrik, Jeppesen and CAMP, and with additional integration projects also on going, the ATL is still defined and in use in the paper format, although a computerised or hybrid version is predicted on the regulations (see AMC1 ORO.MLR.110, AMC M.A.306(b) or AC 120-78A).
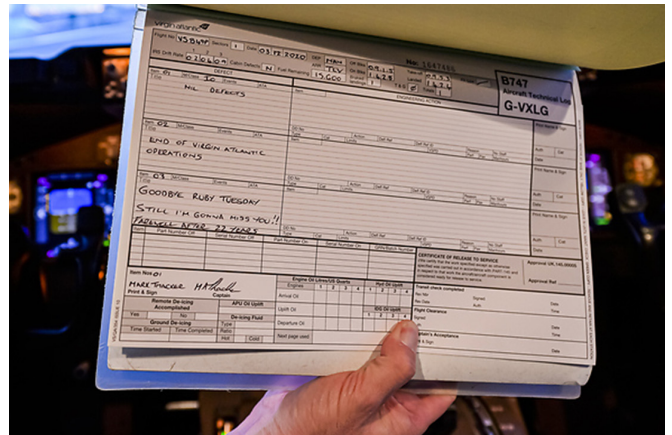


*Image used as reference:*

*https://www.airteamimages.com/boeing-747_G-VXLG_virgin-atlantic-airways_373371.html*



*This printscreen is one of our techlog pages – full rights*

The Digitalisation (digital transformation) of all the record systems has been highly promoted in the aviation industry, with one of the most relevant initiatives being IATA PAO:TO - Paperless Aircraft Operations in Technical Operations. Specifically for the ATL, the digital solution is known as Electronic Technical Log (ETL) and it is possible to find online the several ETL products available on the market and many articles documenting the transition journeys taken by different Operators, as the one from Thomas Cook back in 2016, with all the benefits taken and lessons learned.

Overall, the use of ETL in aviation can provide significant benefits such as increased efficiency, improved data accuracy, improved safety, and cost savings. In detail:



*https://www.nvable.com/resources/index.html*

- Increased Efficiency: The ETL is designed to streamline the maintenance and operational process. They provide real-time updates on the status of the aircraft, enabling Maintenance Teams to quickly and efficiently identify and resolve issues, which can reduce delays and minimize downtime. This also includes the ability to integrate with other aviation systems, such as aircraft maintenance software, flight operations software, and scheduling software, enabling aviation companies to better manage their fleet, reduce maintenance costs, and optimize aircraft performance

- Improved Data Accuracy: The ETL ensures that all maintenance and operational data is recorded accurately and in a standardized format. This improves the accuracy of the data and reduces the risk of errors and inconsistencies. The ETL is typically accessed through tablets or other mobile devices, which are carried by pilots and maintenance personnel during inspections and flights

- Improved Safety: Accurate and up-to-date maintenance records are essential for ensuring the safety of the aircraft and passengers. The ETL enables the timely and accurate recording of maintenance information, which can improve safety

- Cost Savings: The ETL can reduce costs associated with paper-based systems, such as printing, storage, and manual data entry. They can also reduce costs associated with aircraft downtime and maintenance delays
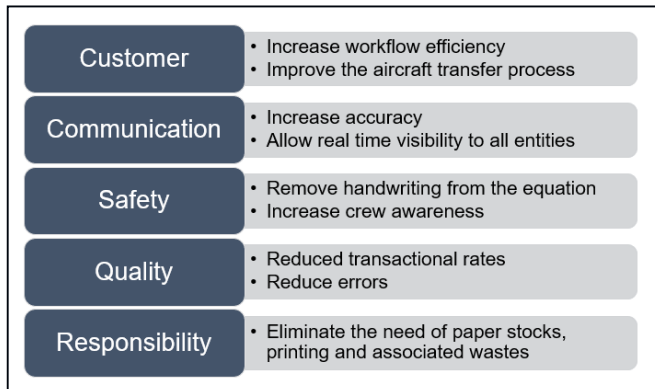
For the Luxaviation Group, it is easy to align one or more Core Values with the most relevant advantages of the ETL:

| | |
|---|---|
| **Customer** | • Increase workflow efficiency<br>• Improve the aircraft transfer process |
| **Communication** | • Increase accuracy<br>• Allow real time visibility to all entities |
| **Safety** | • Remove handwriting from the equation<br>• Increase crew awareness |
| **Quality** | • Reduced transactional rates<br>• Reduce errors |
| **Responsibility** | • Eliminate the need of paper stocks, printing and associated wastes |

But not everything is easy and advantageous. Some relevant challenges of this digital system include

- **Implementation:** Implementing an ETL can be a complex and time-consuming process. And effective approach to its implementation is required

- **Training:** Training the staff to use the new system can be challenging, particularly if they are used to working with traditional paper-based systems

- **Connectivity**: The ETL relies on an internet connection to upload data in real-time. Connectivity issues can delay the upload of maintenance and operational information, which can result in delays and increased costs

- **Information Security:** The ETL contains sensitive information about the aircraft and its maintenance history. Maintaining data security and preventing unauthorized access to the ETL is crucial

- **Technical:** The ETL is a digital system and, therefore, is susceptible to technical issues such as hardware failures, software bugs, and system crashes

Being a mission critical system, the ETL is subject to strict regulatory requirements, and aviation authorities such as the FAA and EASA have specific guidelines and standards for their use. These guidelines include requirements for data accuracy, data security, and system reliability. So, when contracting and implementing an ETL System, as these are often offered as a System as a Service (SaaS) solution, all of these challenges need to be accounted on the contracted Service Level Agreement (SLA) and on the Operator's Standard Operational Procedures (SOP). And, because of this, one of the most relevant learned lessons from the ETL implementation projects available online is to limit the scope to a Fit For Purpose solution, where a direct replacement of the Paper ATL should be actioned to increase the project success rate. Additional features and capabilities should and can be initially considered but to be implemented after.

Overall, the use of an ETL can provide significant benefits but it is essential to address the potential challenges associated with implementing and maintaining these digital systems.

*"It is now time to inform that Luxaviation Group has taken the first step towards this advanced solution by selecting Nvable as the SaaS provider of Converge Electronic Techlog, specifically tailored to our dedicated #BusinessAviation needs and requirements, to be implemented on iPad Devices across the worldwide AOCs, marking a significant milestone in our pursuit of operational excellence.*

*Follow Us for more updates on this exciting Project."*

Jorge Pestana
Group Camo Coordinator

# Incorrect Baro Altimeter

In aviation, vertical navigation based on barometric altimetry and vertical references on navigation charts traditionally rely on the use of local barometric pressure, i.e., QNH (or QFE); hence, operating with an incorrect altimeter setting could lead to flying closer to terrain or obstacles than expected. It may also lead to a loss of separation with other aircraft. In the worst-case scenario, having an incorrect barometric altimeter setting could lead to a loss of adequate terrain clearance and in the worst case, a CFIT.

An incorrect barometric altimeter setting is a known vulnerability that, in some cases, has proved to degrade pilots' situational awareness. An incorrect QNH/QFE below the transition level/altitude could result in minimum safe altitudes being infringed, including minimum vectoring altitudes, published decision altitudes, step-down altitudes, etc.

In particular, an incorrect barometric altimeter setting could affect the safety margins that protect a variety of approach procedures that rely on barometric altimetry for vertical navigation (e.g., RNP APCH down to LNAV/VNAV minima, RNP AR APCH) or that are flown using the CDFA technique that rely on a BARO-VNAV equipment onboard to compute the vertical profile and to provide vertical guidance along the descent (e.g., NDB, VOR, LOC, RNP APCH down to LNAV).

*It is particularly worth highlighting that when using barometric altimetry for vertical navigation, altitude/ distance cross checks in the standard operating procedures do not detect an incorrect barometric altimetry setting.*

On the other hand, vertical guidance provided by ILS, SBAS or GBAS is not vulnerable to an incorrect barometric setting and, contrary to vertical guidance based on barometric altimetry (e.g., supported BARO-VNAV equipment), errors in barometric altimeter settings can be detected through altitude (glide path) checks.

In particular, when vertical navigation relies on barometric altimetry, a precise barometric altimeter setting is paramount; otherwise, an incorrect vertical profile will be flown, i.e., either lower or higher than desired, depending on whether the incorrect QNH (or QFE) is, respectively, greater or lower than the actual QNH (or QFE).
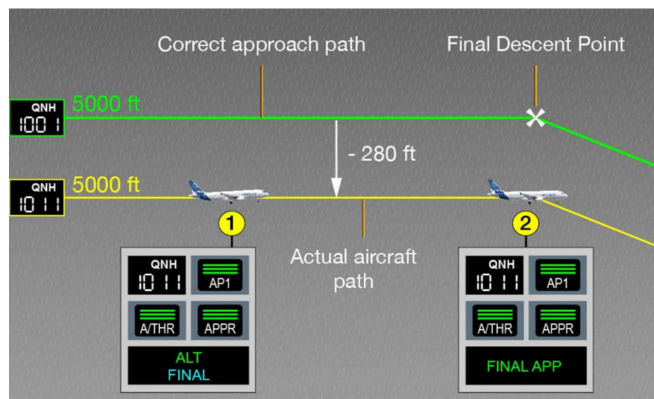


The diagram below helps to highlight what the situation might look like from a practical perspective.

On the figure, a 10 hPa error in altimeter setting translates into 280 ft altitude error. This means that the altitude displayed may differ significantly from the actual altitude.

It is worth noting that the effects of an incorrect barometric altimeter setting are like those associated with very low or high temperatures, whose mitigation requires error corrections on barometric altimeters readings (temperature corrections).

### Some Real Examples

Recently IFALPA has released some recommendations base in two fairly recent 'near accidents' and there are some lessons to be learnt.

### Background

On 6 June 2020 a Boeing 787-10, performing the RNP-Y approach for runway 31L at Abu Dhabi (OMAA), using standard QNH 1013 instead of actual QNH 999, descended below the approach vertical profile. The aircraft descended to 210 feet AGL, 1.3 NM from the runway threshold, approximately 350 feet below the correct altitude, according to the approach profile, when the flight crew acquired the PAPI, indicating 4 red, and initiated a go-around.

The aircraft was cleared to climb to 4,000 ft and leveled off at 3,700 ft (indicating 4,000 ft to the flight crew, due to the incorrect QNH). When ATC queried the altitude, the error was resolved, and the aircraft positioned for an ILS approach without further incident.

# Incorrect Baro Altimeter (Cont.)

On 23 May 2022 an A320 performed two consecutive RNP approaches with VNAV minima to runway 27R at Paris Charles De Gaulle (LFPG) on the wrong QNH setting. During the first descent, the approach controller provided a wrong QNH (1011 instead of 1001), which was not recognized by the crew. The approach was therefore performed below the glide path and eventually triggered a Minimum Safe Altitude Warning (MSAW) at the air traffic controller's workstation, who then queried the crew.

In response, a go-around was initiated at 405 ft AGL (indicating 6 ft RA) without having acquired visual contact with the ground and the flight positioned for another approach. The second approach was also performed below the glideslope. The crew, however, acquired visual contact, corrected their trajectory, and landed without further incident.

See also the below video link explaining how this error can and probably did happen of this last event along with the chain of events that led to it, albeit based on a preliminary report.

*SIX FEET from disaster (& the pilot's didn't know)*

An important and key piece of information is that in both occurrences and both approaches no aircraft hardware alert was provided to the flight crew, as the respective flight paths were outside the EGPWS activation envelope, either slightly too close to the runway or too high for the system to trigger.

Take a look at the QNH Checking/Setting recommendations at the bottom of the article. Refer to our OM's and consider how we do mitigate this threat with Radio Altimeter calls and altimeter setting procedures etc.

For instance, setting the standby altimeter to QNH when you have received the ATIS before top of descent. Know your BARO/ANG differences in VNAV approaches and keep up a good working practice to combat these errors known as QNH Blunder.

**Note:** Reporting is very important! To help your organisation and the wider aviation system have the best picture of safety risks, it's important to keep reporting occurrences and hazards, when they are identified.

## Possible Errors

- The provision of the local barometric pressure by the meteorological service provider

- The broadcasting of the local QNH (or QFE) through ATIS (where available) or the radio transmission of the local QNH (or QFE) by the ATS unit

- Finally, the altimeter setting by the flight crew

## Barriers to Mitigate The Risk

- Effective Communication: Standard Phraseology, Readback/ Hearback, Active Listening, Use of English.

- Effective use of ATM systems: e.g., the minimum safe altitude warning (MSAW) system or an approach path monitoring (APM) system

- Pilot Monitoring of ATS Messages

- Use of Approach Lights

- Robust SOPs

- Terrain Awareness and Warning System (TAWS) Software updated

- FDM program to identify wrong altimeter setting problems, and analysis of data to determine and prevent possible patterns

**References:**

EASA SIB No. 2023-03 Incorrect Barometric Altimeter Setting

IFALPA SAFETY BULLETIN 23SAB01 3 January 2023

BEA2022-0219_9H-EMU_preliminary_report_for_publication_EN_finalise (1).pdf

# Safety Reports Summary Q1 2023

A positive reporting culture is an important indication of an effective safety culture. Therefore colleagues are encouraged to report hazards pro-actively so that they can be assessed and monitored. There were a total of 222 safety reports submitted in Centrik in Q1.

*Figure 1: Total number of reports submitted in Centrik in Q1 2023*
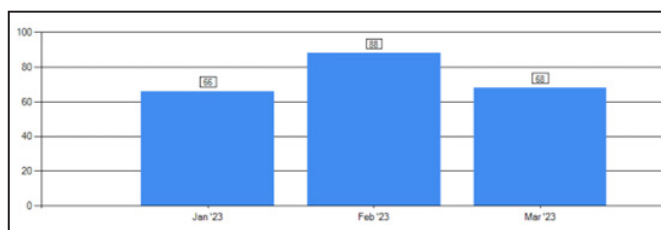


There are 11 entities reporting in Centrik and the following shows the breakdown of those reports by entity. The following figure identifies the total number of reports broken down by entity (*excludes ExecuJet Asia Pacific and South Africa.)

*Figure 2: Reports broken down by Entity*
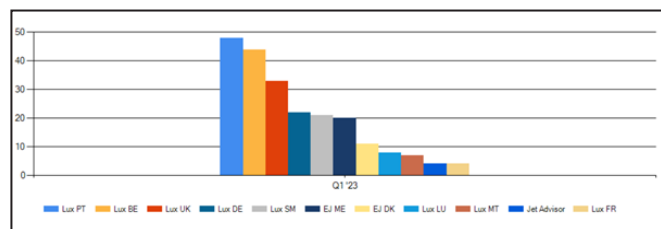


The following is a breakdown of the reports broken down by operational area.
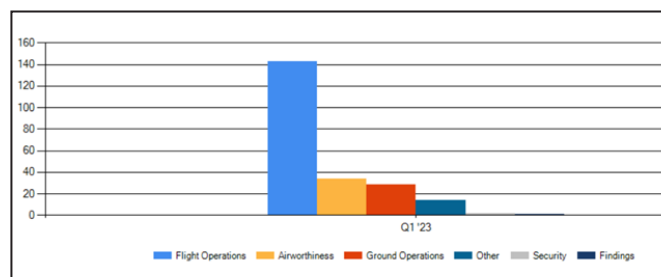


**Summary of Reports**

The section below gives some examples of the safety reports submitted across the group in Q1 2023. Comments from the respective AOC's safety department are added, where appropriate.

# Safety Reporting

## Go Around From Approach to Mid Deck (Ultramarine)

We had been conducting sightseeing trips throughout the day near Harry Island on the Antarctic Peninsula. The wind direction became rather sporadic in the late afternoon. Vessel heading was 290 degrees. Wind direction reported at red 20 degrees and 20 knots.

During the approach to mid-deck (with no pax and last flight of the day), the wind was observed at green 30 degrees and gusting 30knots. I went around and requested that the vessel was re-positioned to an area that offered a degree of shelter from the wind. Subsequent approach carried out 20 minutes later without incident.

Safety Comments

The PIC elected to ask the ship to reposition as the conditions were not ideal and in fact outside of the published limits in the helideck operating manual.

This report has been and is being used to demonstrate to crews what action should be initiated when wind is out of limits. The report has been linked to the hazard and risk register - HOFO and deck landings.
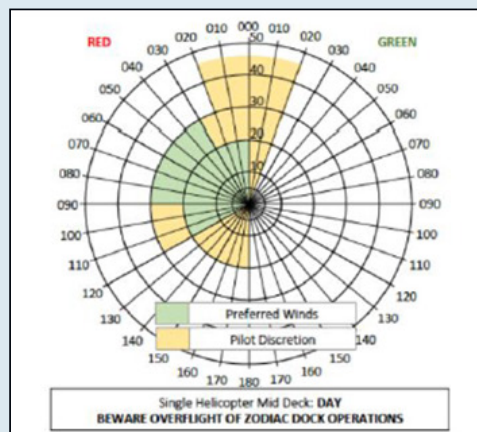
## Safety Report Ambiguous ATC Clearance

After taking off from HESH airport (Sharm El Sheih) RWY 04R, following departure KUPTI1L, a clearance were given to climb FL220 with high rate of climb (without instruction CLIMB VIA KUPTI1L FL220). Approaching point SH643 passing FL155, the controller reminded us about the restriction of FL120 at SH643. ATC cleared us to continue climbing FL220. To prevent further confusion, the airport brief should remind crew FL120 at SH643 is mandatory irrespective of the cleared FL. The ATC clearance was not available until the aircraft was taxing to the holding point. During the debrief the crew agreed further clarification should have been sought regarding the cleared FL.

**Safety Comments**

Following investigation, the root cause was identified as concerned about security in this region as well as a late change in departure issued by ATC. On previous occasions, crew had been cleared to climb through this level and not be required to level off at SH643. Therefore, it is advised that any last-minute changes should be reviewed and briefed and any clarification required obtained by ATC. The airfield brief was updated, and awareness raised through publication in the safety bulletin.

# Safety Reporting (Cont.)

## Safety Report TAWs Activation on Final

On a stabilized ILS final for runway 07L in VHHH at around 200 ft, just after minima height, we had the "TOO LOW TERRAIN" warning until touchdown. This is due to the high terrain in the vicinity, and it was the second time we experienced this during landing on the same runway a few months ago. This excludes a nuisance.

Both time we were visual and we could disregard the message, but since rwy 07L has the possibility to fly CAT2 the warning could come in IMC before reaching the minima, and that's a very dangerous situation.

**Safety Comments**

The investigation into the root cause of this event is ongoing and so far it has been identified that the database was up to date. Hong Kong has a new runway and this has been recorded in the database. If you have also experienced a similar issue with this airport, please advise us by emailing safetymatters@luxaviation.com.

## Diversion After Hydraulic Issue

After gear retraction at an altitude of around 500ft AAL HYD 2 lo press CAA msg was displayed. After completing the QRH and in coordination with the company it was decided to divert to BIG. ATC was informed and assisted the request without declaring any status. We requested deviation to a minor technical malfunction, which was fulfilled without any further exchange. During the approach - as to limited field length - a threshold landing was briefed and commenced leading to a brief activation of the GS TAWS. After landing at the postflight inspection, traces of skydrol were dripping from the right engine's pylon.

**Safety Comments**

Following investigation, the hydraulic system 2 leak was traced to chafing hoses in the right-hand pylon area, the pressure hoses were replaced and the ops tests were performed without any further findings. Due to the right-hand system leak it was recommended by CRC to inspect the left-hand side for similar issues. When inspecting the hoses they found that there was a lack of clearance between the hoses but no damage evident. The hoses were adjusted to create an adequate gap between the two of them. The aircraft was jacked so that the Bombardier team could check the gear swings and landing gear system bleed. there were no further issues.

## Missing Maintenance Tasks in Work Package

While closing the work packs it was realised that in both the 50hr work packages (CHQ/8019/22 R0, CHQ/8045/22 R0) **the following tasks had not been carried out;**

Main Rotor Tension Link. Do a DI for presence of cracks of the droop stop support.

Rotor Brake Cover. Do a GVI for condition and integrity of attachments.

Tail Rotor Installation. Do a GVI of tail rotor installation components.

Automatic Low Cycle Fatigue (LC) Counting.

Carry Out Eng. SOAP Samples.

Corrosion Control Program Tasks: CP000-02, -05, -06, -07, -08, CP400-01, -02, -05, -07, -09

Lubricate the Droop Stop / Main Rotor Sliding Ring.

**Safety Comments**

The last fully completed 50 hour was performed on 30th September 2022 @ 478.35 hours. There was another 50 hour inspection performed on 20 October 2022 @ 514.55 hours and these tasks were not performed during this inspection.

The next 50 hour was performed on 14 November @ 563.55 hours and again these tasks were not performed during this inspection.
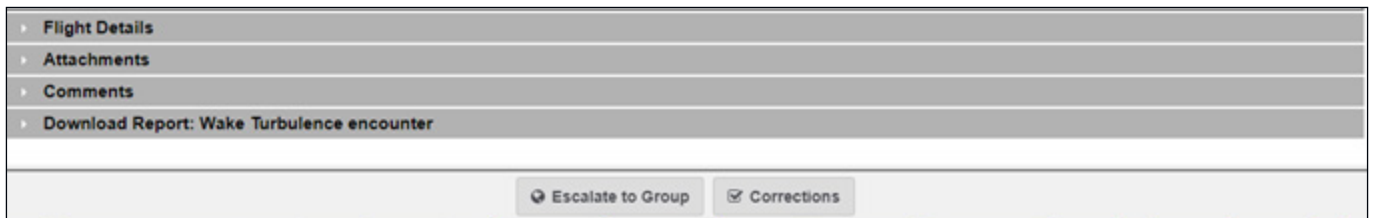
The error was picked up at 569.05 hours (19/11/22) and the missing work was carried out at that point. The work had overflown by approximately 40 hours before the error had been identified.

The method of creating a maintenance program was changed from Word to Excel (approx 18 months ago) but it was realised that in doing this the ability to create a single task card for a package of work was no longer possible. To correct this issue, the spreadsheet was formatted so that a highlighted section could be printed into a task card, however the required tasks for a package appear in several tabs within the spreadsheet so a single task card was no longer possible leading to the potential for some of the workcards to be missed. An index cover page is now in use so that it is clear how many pages make up the inspection requirement.

# Escalate to Group Function

Some of you may have noticed that when you have submitted a safety report, that there is an option to 'Escalate to Group'. But what exactly does this mean? Well, your AOC's safety team are fully equipped to conduct any safety investigations of course, however, this feature is for information sharing. So if you have a report that you would like to share with others, for example, there was ambiguous ATC clearance at a particular location that lead to confusion, or perhaps a recent maintenance inspection identified an issue that other AOCs may benefit from knowing about, click on that escalate to group button and this will be shared in the next edition of the safety bulletin. Your AOC's Safety Manager may also feel that the report is worthy of sharing and select the escalate to group also, but do not be concerned, all identifying features, such as name and AOC, will be removed, unless prior permission from you is obtained, as is the case in the safety award (see next feature). It is all part of the information sharing and continuous safety performance.

| Flight Details |
|---|
| Attachments |
| Comments |
| Download Report: Wake Turbulence encounter |

⊘ Escalate to Group    ☑ Corrections

# Dangerous Goods Change

From the 1st January 2023, the regulation concerning the transport of Dangerous Goods has changed. Now, you need to have the approval from your own Civil Aviation, if you are carrier or not, for Competency-Based Training. It is an Assessment is a critical feature of competency-based training, it ensures that training is efficient and effective in developing the level of proficiency/competency required to perform the function competently.

The goal of competency-based training and as goods training programs under the competency-based assessment is to produce a competent workforce by provide training and assessment (CBTA) approach as described in focussed training. It does so by identifying key competencies and the level of proficiency to be achieved, determining the most effective way of achieving them and establishing valid and reliable assessment tools to evaluate the achievement.

# Good Call

Welcome to this edition's Good Call, where we recognise and celebrate pro-active, safe behaviour. All nominees for the good call have been contacted in advance of publication and have given their permissions for the details to appear in the bulletin. Nominees will each receive a Luxaviation travel mug. If you know someone who goes out of their way to promote safety or acts proactively to prevent arising safety issues, then please let us know by sending your nomination to safetymatters@luxaviation.com.

There are two nominations for the safety award this quarter. The first goes to the crew of T7- DYN who experienced unreliable airspeed due to ice.

During cruise, the crew noticed that the mach numbers between left and right showed .78 and .82. Additionally, the Altimeters which usually shows the RH approximately 20 feet lower, was now showing 20 feet higher. Thus initiating an EFIS COMP MON - IAS warning. The OAT at this stage was -62C.

-The crew used the cruise tables in the performance section of the QRH to try and determine which ASI was correct. The crew also increased and reduced thrust during cruise, but this did not have the expected effect on any of the IAS so they concluded that it was likely a problem in all 3 systems. The wind vectors showing on the MFD were also very different at one stage showing more than 200 kts.

During all phases of flight the crew monitored the angle of attack on the Stall Protection Panel. All warnings had disappeared until shortly before the approach, the left and right IAS's showed a difference again initiating the EFIS COMP MON - IAS warning again. GS indications were used as reference during the approach and landing.

During the maintenance check of the Pitot Static system, water was found in the tubes of all 3 systems.

The second nomination goes to the crew of OO-PAR who experienced an engine failure on the approach to Malaga airport.

When starting the descend towards Malaga airport, the crew observed a R GEN FAIL, immediately followed by a R ENG Failure. A Pan-Pan was initially declared and they continued towards the planned destination. One Engine Restart attempt was performed, but no light-off followed. A small NITS briefing was performed for the passengers. Upon change of frequency toward Malaga Approach a May-day was declared and the crew continued the approach. Abnormal checklists were completed, together with the normal checklist. A normal (single engine) landing was performed without any further issues. The Tower and Fire Brigade were watching and no further smoke/fire/damage was reported, so they vacated and taxied towards the closest apron next to the runway. Passengers were disembarked in a regular way and the crew relayed with the fire brigade for further inspection to exclude any further danger.

The Safety Team commend all the crew members involved in these two events for their effective CRM and management of the emergency events to bring the aircraft to a safe landing.

# Jamming vs. Spoofing

Virginia Castellvi Collazo / Deputy Safety Manager Luxaviation UK

While GPS spoofing is primarily the work of military operations, GPS jamming is something anyone can do with relative ease. A jammer is a device that confuses the receiver by emitting radio signals at the same frequency as the GPS. This interference hampers the ability of the GPS device to determine its correct position.

While they may cause some similar fallout, spoofing and jamming are two very different processes. Spoofing requires the attacker to be able to recreate signals from more than one satellite and transmit them to a specifically targeted receiver. As long as the targeted receiver can't tell the difference between the legitimate signals and the spoofed ones, the attack may go unnoticed.

Coordinating and carrying out a spoofing attack is a lot more complicated than jamming GPS, especially in an intentionally covert scenario. If the attacker wants to avoid discontinuity, they must synchronize the false signal with the satellite one at the physical location where they will attack the receiving antenna.

If the attacker cannot physically install the spoofer on the vehicle that carries the target receiver unit, they must find another way to determine and track the location of the receiver. There are a few different ways to achieve this, all of which are technically complex. With this wrinkle to consider, it makes perfect sense that there are fewer reports of spoofing than there are of GPS jamming incidents.

## The Impacted Areas

In the current context of the Russian invasion of Ukraine, the issue of Global Navigation Satellite Systems (GNSS) jamming and/or possible spoofing has intensified in geographical areas surrounding the conflict zone and other areas.

Eurocontrol, Network of Analysts and open-source data reports analysed by EASA indicate that since 24 February 2022, there are four key geographical areas where GNSS spoofing and/or jamming has intensified, namely:

- Kaliningrad region, surrounding Baltic sea and neighbouring States

- Eastern Finland

- The Black Sea

- The Eastern Mediterranean area near Cyprus, Turkey, Lebanon, Syria and Israel, as well as Northern Iraq
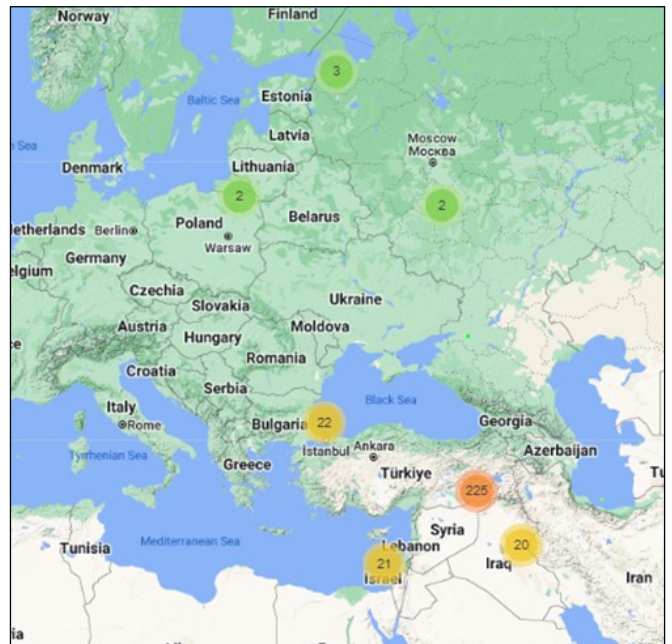


*Luxaviation Group Fleet Zoom in data from 2020-2023 (Provided by FDM system, L3 Harris).*

The Eastern Mediterranean area near Cyprus, Turkey, Lebanon, Syria and Israel, as well as Northern Iraq is where Luxaviation group Fleet has experienced an increment in GPS signal loss events.
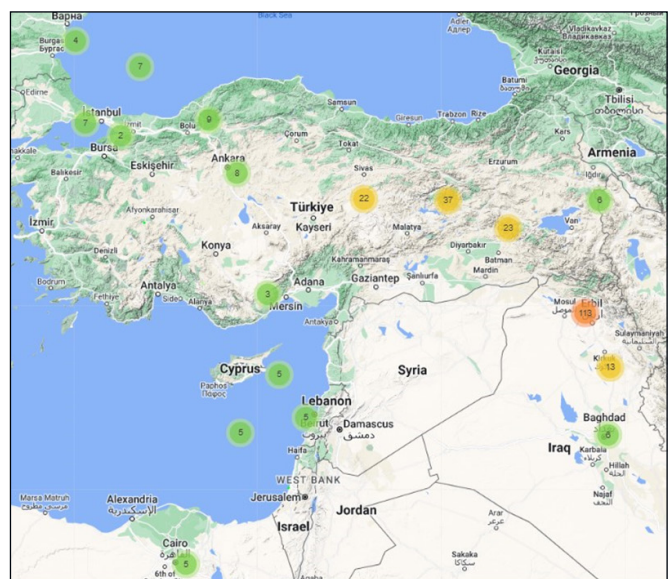


*Luxaviation Group Fleet Zoom in data from 2020-2023 (Provided by FDM system, L3 Harris).*

## The Issues That GNSS Jamming and/or Spoofing Could Lead To

The effects of GNSS jamming and/or possible spoofing can be experienced by aircraft in various phases of their flights, in certain cases leading to re-routing or even to change the destination due to the inability to perform a safe landing procedure. Under the present conditions, it is not possible to predict GNSS outages and their effects. The magnitude of the issues generated by such outage would depend upon the extent of the area concerned, on the duration and on the phase of flight of the affected aircraft.

The following non-exhaustive list includes some potential issues that a degradation of GNSS signal could generate:

- Loss of ability to use GNSS for waypoint navigation

- Loss of area navigation (RNAV) approach capability

- Inability to conduct or maintain Required Navigation Performance (RNP) operations, including RNP and RNP (Authorization Required) approaches

- Triggering of terrain warnings, possibly with pull up commands

- Inconsistent aircraft position on the navigation display

- Loss of automatic dependent surveillance-broadcast (ADS-B), wind shear, terrain and surface functionalities

- Failure or degradation of ATM/ANS/CNS and aircraft systems which use GNSS as a time reference

- Potential airspace infringements and/or route deviations due to GNSS degradation

## How Does It Look Like in The Aircraft?

Recently, a Luxaviation crew reported the following:

"After entering Turkish airspace, in cruise, loss of both GPS abeam TALIL. Quickly checked the source and discovering a time change on our clock and a wrong altitude. As per Dassault recommendations, we deselected the GPS sensors to avoid any EGPWS spurious warnings. Followed the checklist and checked FMS limitations. When exiting Turkish airspace, GPS 12 was in acquiring mode and had 12 tracking satellites. However, it never came back online. The GPS 1 failed. We continued the flight with IRS & DME/DME being always within the 2NM EPU and 1NM EPU during approach.

Executed an ILS in ZRH and no further event reported. After a complete power down and reset on ground, both GPS came back online."

The report represents a significant hazard to flight safety due to the potential consequences of erroneous position, which is potentially catastrophic. In this case, the barriers were effective where the crew recognised the situation and continued to navigate on alternate systems.

## The Recommended Actions?

GNSS jamming and/or spoofing has intensified in recent months. Encountering these types of events should be considered a possibility; we should verify the aircraft position by means of conventional navigation aids when flights are operated in proximity to the affected areas; check that the navigation aids critical to the operation for the intended route and approach are available; and remain prepared to revert to a conventional arrival procedure where appropriate and inform air traffic controllers in such a case.

Finally, when revising the flight planning and execution phase, we should check the availability of alternative conventional arrival and approach procedures (i.e., an aerodrome in the affected area with only GNSS approach procedure should not be considered as destination or alternate).

Although the Flight Data monitoring is capturing some of these interferences it is highly recommended to report these events first to ATC and then after the flight through Centrik-Occurrence.

---

### 🇪🇬 Cairo International Airport (HECA)

A0322/20 NOTAMR A0136/20
Q) HECC/**QGAXX**/I/NBO/A/000/999/3007N03125E010
A) HECA B) 2009280930 C) 2103280800 EST
E) DUE TO **GPS JAMMING** WI RADIUS 10NM CENTRE CAIRO ARP 300641N0312450E,RNAV (GNSS) APCH SHOULD NOT BE PLANNED AT CAIRO INTL AP.

### 🇱🇧 Beirut-Rafic Hariri International Airport (OLBB)

A0069/21 NOTAMR A0009/21
Q) OLBB/**QGAAU**/I/NBO/A/000/999/3349N03529E005
A) OLBA B) 2104280618 C) 2107152200
E) BE AWARE OF POSSIBLE **LOSS OF GNSS SIGNAL** WITHIN BEIRUT FIR DUE TO UNFORSEEN REASON.
- CONVENTIONAL STARS AND APPROACH PROCEDURES ARE RECOMENDED
- RNAV (GNSS) STARS AND APPROACH PROCEDURES STILL POSSIBLE UNDER PILOTS DISCRETION.

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# Jamming vs. Spoofing (Cont.)

Virginia Castellvi Collazo / Deputy Safety Manager Luxaviation UK



## DON'T GET JAMMED
### REPORT, RISK ASSESS, TAKE ACTION

**Reporting**
- Report any observed interruption or degraded performance of GNSS equipment or related avionics via a special air report (AIREP) to air traffic control (ATC).
- Once you land, report full details of what happened through your organisation's occurrence reporting system.

**Risk Assess**
- Depending on your route and level of reliance on GNSS based systems, asses the risk jamming might pose to your flight.
- Consider the availability of alternative, conventional arrival and approach procedures.
- Think about the impact that any operational limitations caused by dispatch the aircraft with inoperative radio navigation systems in accordance with the Minimum Equipment List.

**Take Action**
- Be aware of possible GNSS jamming and/or spoofing.
- Verify the aircraft position by means of conventional navigation aids when flights are operated in proximity to the affected areas.
- Check that the navigation aids critical to the operation for the intended route and approach are available and;
- Be ready to revert to a conventional arrival procedure where appropriate and inform air traffic controllers if such a situation arises.

**EASA**
European Union Aviation Safety Agency

**together 4safety**

### References

Real case from Centrik provided by Luxaviation Group.

Luxaviation Group Flight data monitoring Systems, L3 Harris.

EASA SIB 2022-02R1, referring to Global Navigation Satellite System Outage Leading to Navigation / Surveillance Degradation.

CAA SN-2023/001: Global Navigation Satellite System Outage Leading to Navigation / Surveillance Degradation

GADM IDX program by IATA

# What is in a Name
ICAO code change for Kuwait International Airport

```
NOTAM A0048/23: Kuwait International Airport (OKBK)

A0048/23 NOTAMN
Q) OKAC/QFATT/IV/BO/A/000/999/2914N04759E005
A) OKBK B) 2302230001 C) 2303091200
E) TRIGGER NOTAM- PERM AIRAC AIP AMDT 01/23 EFFECTIVE DATE 23 FEB
2023.
-FOUR LETTERS LOCATION INDICATOR OF KUWAIT INTERNATIONAL AIRPORT
WILL BE CHANGED FROM OKBK TO OKKK .
CREATED: 09 Feb 2023 10:24:00
SOURCE: OKNOYNYX
```

Kuwait international changed their four-letter ICAO code on Wednesday 22nd February from OKBK to OKKK.

# Feedback to Your Safety Report

An effective feedback system is a key element of a successful SMS and safety culture implementation. The reporting system in our companies ensures not only a collection of the information, but also an open and transparent feedback system to participants in the safety reporting.

If you wonder, why you never receive feedback from your safety department? Do you have any doubts if your report reached the right person and is dealt with? Would you like to receive more information on your submitted report?

## "Secret" Tips

We would like to share few "secret" tips which are already in place for you in Centrik. However, let us re-assure you, that Safety Department is always happy to discuss any report or provide feedback for you personally – our door is wide open for everyone.

### CAPTURE

Once you submit a safety report, Centrik sends out an automatically generated email to keep you informed. You will be notified by an automated email from "Luxaviation Group Centrik" when:

- Report was classified and risk level assigned

- Report has a comment added to "Classify Risk" step; and

- Report has been closed by the Safety Department

A new comment was added to Report 'SR-2020-001477 - test report'

**LG** notification=centrik.luxaviation.com@centrik.net on behalf of Luxaviation Group Centrik <notification@centrik.luxaviation.com>
To  Ugne Maciejauskaite

Dear Pilot Test,

A new comment was added to Report "SR-2020-001477 - test report" by Ugne Maciejauskaite on 13/05/2020 11:29:49.

Please use the following link to access this Report:

In Web Browser: https://protect-eu.mimecast.com/s/8tK_Cq7pDi16OJ5fZJEng

In the Centrik App: https://protect-eu.mimecast.com/s/14VECr8qXsr3A4vUzkYrm

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Alternatively, you are kindly invited to check your report directly in your Centrik account.

No matter whether your report was already closed or is still in progress/open, your report can be always accessed and reviewed in Centrik, Safety Reporting Module/ My Cases:

In this step you will find how we risk assessed your event/report, who the report was assigned to for further actions, etc. In addition, feedback from the Safety Department is provided in a comment section in the same area.
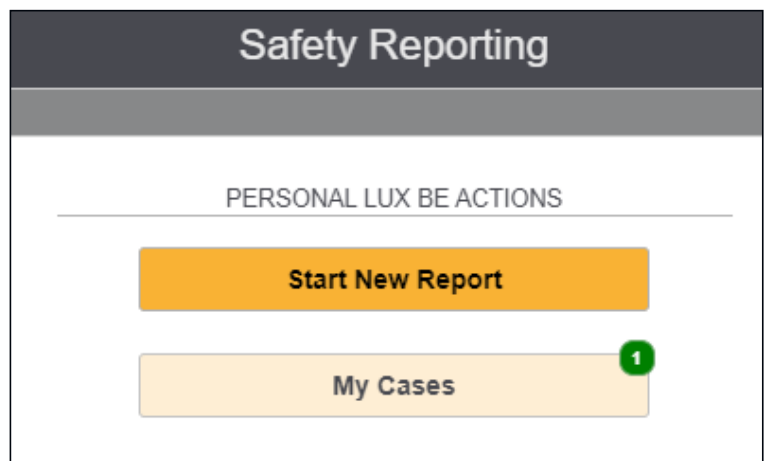


You are given un-restricted access to the "Classify Risk" and "Close" steps, where you can see all the details entered by the Safety Department or Responsible Manager to your report.
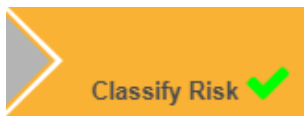
**CLASSIFY RISK**

In this step you will find how we risk assessed your event/report, who the report was assigned to for further actions, etc.

In addition, feedback from the Safety Department is provided in a comment section in the same area.



**Risk Level Meaning**



"**Acceptable**" – No actions required. Keep in the database for monitoring purposes.

"**Tolerable**" – Investigation will be open to determine preventive/mitigation/corrective actions.

"**Not Acceptable**" – Investigation will be open to determine preventive/mitigation actions Immediate corrective actions required.

## CLOSE

Here you can see when your report was closed, and a summary of actions taken in the comment area, if any.

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These are difficult times and the aviation industry recognises the need for increased investment in mental health and well-being services.

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For further information visit www.talktoapeer.com or scan the QR code.

# REPORT IT!

All Luxaviation regions have established Hazard and Incident reporting mechanisms. In the interest of yourself, your colleagues, the company, our clients and the broader aviation community please avail yourself of this medium.

There is no telling what the outcome of your report might be and how many injuries or even deaths it might prevent.

Remember that when reporting a hazard you have done your part. However when you see a hazard and choose not to report it you then take ownership of that hazard and all which might result from it.

Luxaviation. Experienced privately since 1964.

luxaviation