

IBAC Technical Report Summary

Subject: NAT/CMA Scrutiny Group

Meeting: SG-18, Santa Maria, Azores, 12-16 March 2018

IBAC File:

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Summary:

The following is a summary primarily from a Business Aviation/GA perspective of the vertical and lateral error events reviewed at the NAT Scrutiny Group meeting for the period July through December 2017. Overall, a slight improvement for Biz Av/GA in for this six month review.

Considering all the events reviewed for this report period, the vertical errors, Large Height Deviations (LHD), were primarily Flight Crew errors (33%), ATC errors (26%) Weather Contingency Procedures (12%). The lateral errors, Gross Navigation Error (GNE) or events where corrective action by ATC prevented a deviation, again being predominantly operator errors (69%) with "Following the Flight-Plan Instead Of the Clearance" continuing to be the most prevalent error.

➤ **Vertical, Large Height Deviation (LHD) Errors:**

57 - Total events reviewed

50 - Airline

2 - Military

5 – Biz Av (1 – Flight Crew Error). Plus 1 below HLA that was not reviewed.

15 of 57 vertical errors were due to ATC errors

19 of 57 due to Flight Crew errors

10 of 57 Contingency procedures not applied or incorrectly applied

7 of 10 due to Weather avoidance

5 of 57 due to Conditional Clearances

5 of 57 due to Loss of communication (CPDLC and HF)

● **Biz Av/GA Errors:**

○ **1 was below High Level Airspace (HLA)**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
C650	9H-xxx	Crew Error ¹	F430/100

○ **5 within HLA**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
CRJ1	F-xxxx	ATC Coordination error	F350
GLF4	Nxxxx	Emerg Contingency Procedure ²	F430/270
GLF4	Nxxxx	CPDLC Malfunction ³	F400/430
GLF3	Nxxxx	Crew Error CWOC ⁴	F410/450
C750	9H-xxx	Crew Error CWOC ⁵	F410/450

¹ Initially at F430, descending, at F300 declared MAYDAY pressurization, descended to F100 cancelled Mayday

² Cracked windshield, executed emergency contingency procedure to reduce pressure, descended to F270

³ Apparent malfunction of their Satcom Direct CPDLC, thought they requested and received clearance to F430 when they were actually in a test mode.

⁴ CWOC, Climbed Without Clearance, Flight planned for a climb to F450 at 40W. No evidence of anyone issuing a clearance.

⁵ Out of VHF range, unable HF, climbed without clearance F410 to F450, thought they were cleared to F450

➤ **Lateral Deviation Errors:**

49 – Deviation events recorded

45 - Airline

4 – Biz Av/GA (4 - Crew Errors) plus 1 Crew Error above HLA not reviewed

37 – Gross Navigation Errors (10 NM deviation or more)

12 – Lateral deviations less than 10 NM

8 of 49 – ATC Coordination errors

5 of 49 – both ATC and Flight Crew errors

30 of 49 – Flight Crew Errors

9 of 30 – Flew Flight Plan Instead of Clearance

9 of 30 – Waypoint entry or deletion errors

7 of 30 – Weather deviation procedure either not applied or incorrectly applied

4 of 30 – UM79 Uplink message error

42 – Preventions/Interventions recorded

38 – Airline

3 – Biz Av/GA (3 Crew Errors) Plus 1 Crew Error above HLA not reviewed

1 – Military

8 of 42 – ATC errors

33 of 42 – Flight Crew errors

18 of 33 – Flying Flight Plan Instead of Clearance

11 of 33 – Waypoint update entry or deletion errors

3 of 33 – UM79 Uplink message error

• **BIZ AV/GA Errors:**

○ **Gross Navigation Errors (10NM or More) within HLA**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
C510	Nxxxx	Waypoint insertion error, NMPS approved not on FP, crew affirmed yes	F310
GLEX	Nxxxx	Waypoint insertion error (added a wpt for climb)	F400
FA7X	9H-xxx	Crew Error FFPIOC ¹	F400

○ **Gross Navigation Errors (10NM or More) Above HLA**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
GLF5	Bxxxx	Crew Error, Crew ran optimized FP on Jeppesen Flight Planner using two half degree waypoints Then gave flight plan to UV to file. UV did not file as half Degree, but crew used their Jeppesen generated Flt Plan	F450

○ **Lateral Deviation Error Less Than 10NM**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
GLEX	Nxxxx	Weather deviation without clearance	F410

○ **Preventions/Interventions Within HLA**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
GLEX	9H-xxx	Crew Error FFPIOC ¹	F400
GLEX	9H-xxx	Crew Error, reroute FFPIOC ¹	F410
CL60	S-xxxx	Crew Error, Waypoint insertion error	F330

○ **Preventions/Interventions Above HLA**

<u>Acft Type</u>	<u>Acft Registry</u>	<u>Issue</u>	<u>Altitude</u>
GLEX	9H-xxx	Crew Error, reroute FFPIOC ²	F410

¹ FFPIOC – Followed Flight Plan Instead Of Clearance, ATC Prevention by ADS-C Next + 1 Position Report.

² FFPIOC – Followed Flight Plan Instead Of Clearance, ATC Prevention by CPDLC, confirm assigned route.

Implications for Business Aviation:

There were 15 total Biz Av errors during this reporting period, 6 vertical and 9 laterals. Two of the events were above and one below HLA; therefore not reviewed and not included in formal SG report statistics.

Considerable improvement this report period in Crew Errors of Flying Flight Plan Instead Of Clearance and Climbing Without Clearance.

Three predominant errors causing most of the vertical or lateral deviations:

- Following Flight Plan Instead Of Clearance (FFPIOC)
- Climbing or descending without clearance
- Waypoint insertion or deletion errors

Crews need to be especially diligent in checking their entire Oceanic Clearance for a possible reroute. A reroute may be the entire route or possibly only one or two waypoints, and particularly oceanic exit points. Fortunately the ANSPs through conformance checks of the next+1 waypoint on position reports, and CPDLC check to confirm the assigned route are catching many of the errors on time and preventing an actual deviation.

The SG is working on several process improvements that should be beneficial. Response from operators to ATC occurrence notifications needs improvement. During this six month report period, 81 requests were sent to operators regarding errors, but only 50 replies were received. The Biz Av area was very good. From the 15 documented events this period, ATC sent eight requests to operators, and all eight replied with information to better understand what caused the error to occur. A standardized form is being worked on for all ANSPs to use to report error occurrences and request information for operators.

The Severity Classification Matrix is being revised (Risk Classification Matrix) to better capture potential risk during long duration deviations and deviations where no "Loss of Separation" occurred simply because no other airplane happened to be on an adjacent track in the proximity of the errant airplane.

Decisions Required:

Operators and pilots are invited to take account of and be guided by the above report.