

Analysis of Infringements in NATS-Controlled Airspace

First, the Summary:

Did you know that for a couple of years now, pilots who have had an airspace infringement in **NATS-controlled** airspace the UK have been asked by NATS to fill out a survey against a number of questions about the incident? This has allowed data to be collected to provide information and guidance on where resources can be targeted to help reduce future problems for all. With nearly 400 responses by the end of 2012, here is some of the analysis.

There were a total of **396** infringements for which questionnaires were received and processed by the end of 2012, **14%** of infringements were caused by aircraft within the **Birmingham CTA** (54), **10%** within the **London TMA** (40) and **7%** of infringements were caused by aircraft within the **Southampton CTA** (26).

The top 5 Causal Factors are:

- **Navigation** – Misidentification of Land Features
- **Distraction** – Pilot Workload
- **Planning** – Poor/Incorrect Pre-Flight Briefing
- **Navigation** – Misread Map
- **Pilot Actions** – Pilot Complacency

The 3 most Common "Lesson Learning" Factors identified by the pilots or suggested for their future flying following infringements in 2012 are:

- Making (better) use of an ATC service
- Improve flight planning
- Undertaking further instruction (nav, preflight planning, R/t, GPS)

Some extracted titbits:

- **52%** of the causal factors identified within the Birmingham CTA were **Navigation or Planning**. This is more than any other region.
- Of all infringements involving a student, **45%** gave **Misidentification of Land Features** as a causal factor.
- '**Misident of Land Features**', '**Poor/Incorrect Pre-flight Briefing**' and '**Misread Map**' were the most frequent causal factors noted by pilots with **100+** hours flying time.
- For aircraft equipped with **GPS without an airspace alerting device (AAD)**, **22%** of infringements identified '**Misread Map**' as a causal factor.
- For aircraft equipped without either a **GPS or an airspace alerting device (AAD)**, **31%** of infringements indicated **Misident of Land Features** as a causal factor.

Now for some data:

Causal Factors – top level

Analysis of the data showed that infringement causes could be assigned to eight high level groups. The numbering is merely for reference, and is not order of importance:

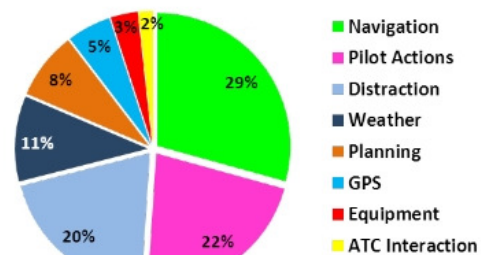
- Distraction** (with 6 more detailed sub groups)
- Pilot Actions** (with 6 more detailed sub groups) _
- Navigation** (with 5 more detailed sub groups)
- Planning** (with 2 more detailed sub groups)
- Weather** (with 2 more detailed sub groups)
- ATC Interaction** (with 3 more detailed sub groups)
- Equipment** (with 3 more detailed sub groups)
- GPS** (with 4 more detailed sub groups)

You can see all these sub-groups with their respective 'counts' on the next page

All Causal Factors by Group

1) Distraction	125	4) Planning	52
1a) Passenger - Sickness	9	4a) Poor/Incorrect Pre-flight Briefing	51
1b) Passenger - Other	11	4b) Unaware of TMZ	1
1c) Aircraft Technical Issue	27	5) Weather	66
1d) Pilot Workload	51	5a) Unplanned Change in Route/Altitude	36
1e) Instructor Workload	23	5b) Loss of Visual Clues	30
1f) Insufficient Monitoring of Student	4	6) ATC Interaction	11
2) Pilot Actions	138	6a) Pilot Assumption that ATC Clearance has been given	4
2a) Poor Aircraft Handling	12	6b) ATC/Controller Error	1
2b) Incorrect Pressure Setting	10	6c) Poor Understanding of ATC Procedures	6
2c) Pilot Complacency	42	7) Equipment	21
2d) Incorrect/Insufficient Decision Making	35	7a) Unfamiliarity with Aircraft Equipment	11
2e) Unplanned Change in Route/Altitude	39	7b) Unfamiliarity with Radio Equipment	3
2f) Intentional	0	7c) Radio/Communication Issue	7
3) Navigation	186	8) GPS	34
3a) Misident of Land Features	76	8a) Misread GPS	4
3b) Misread Map	50	8b) Incorrect GPS Input	2
3c) Incorrect Interpretation of MET Data	16	8c) Unfamiliarity with GPS	8
3d) Misread/Failed to Follow Pilot Log	9	8d) Over Reliance on GPS	20
3e) Inadequate Knowledge of Airspace	35	Unknown	2

Top 5 Causal Factors	Count
3a) Misident of Land Features	76
1d) Pilot Workload	51
4a) Poor/Incorrect Pre-flight Briefing	51
3b) Misread Map	50
2c) Pilot Complacency	42



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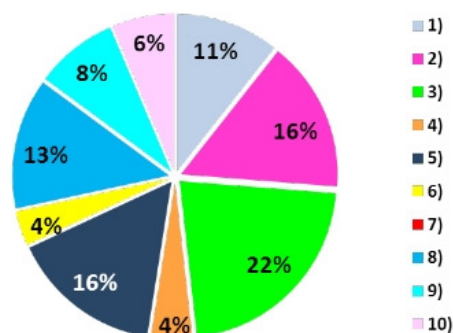
Operational Analysis

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Lessons Learning Factors

Lessons Learning	Count
1) Purchase an airspace warning device	15
2) Improve flight planning	22
3) Make (better) use of an ATC service	31
4) Contact D&D or an ATC unit if lost or unsure of position	6
5) Undertake further instruction (navigation, flight planning, r/t, GPS)	22
6) Propose alterations to VFR charts to improve clarity	5
7) Use ¼ mil map	0
8) Make better use of a GPS navigation system	19
9) Avoid CAS by a wider margin	12
10) Take action to reduce pilot distraction	9



Lessons learning factors have only been assigned to infringements that have occurred since 1st January 2012.

Up to 3 lessons learning factors can be identified for each infringement.

There have been 141 lessons learning factors identified in a total of 104 infringements.

Slide 2

Operational Analysis

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