Airworthiness Analysis
How many Approvals do Airworthiness oversee?
Question

How many Approvals do Airworthiness oversee?

1000

1250

1400
How many Q-Pulse events did we complete in 2015?

4045

5250

7400
Question

How many Q-Pulse events did we complete in 2015?

4045  5250  7400
Airworthiness manages approximately 1400 approvals located not only within the UK, but also all around the world. This includes 125 overseas approvals on behalf of EASA in such locations as Singapore, Australia and China and 130 approvals on behalf of the UK Military. Airworthiness also manages 260 approvals due to the recently created Bilateral agreements with the United States (FAA) and Canada (TCCA) and the soon to be completed agreement with Brazil. Beyond just approval oversight AW carries out over 1,000 SAFA inspections, 250 ACAMs, 200 CofAs &permits, Certification/design, MOR and training/consultation.

<table>
<thead>
<tr>
<th>1400 Approvals (Overview)</th>
<th>4045 Q-Pulse Inspections/Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK Pt 145 Maintenance</td>
<td>UK Pt 145 Maintenance</td>
</tr>
<tr>
<td>357</td>
<td>1049</td>
</tr>
<tr>
<td>UK Pt MG Continuing Airworthiness</td>
<td>UK Pt MG Continuing Airworthiness</td>
</tr>
<tr>
<td>214</td>
<td>374</td>
</tr>
<tr>
<td>UK Pt 21G production</td>
<td>UK Pt 21G production</td>
</tr>
<tr>
<td>176</td>
<td>406</td>
</tr>
<tr>
<td>UK Pt 147 Training Organisations</td>
<td>UK Pt 147 Training Organisations</td>
</tr>
<tr>
<td>65</td>
<td>417</td>
</tr>
<tr>
<td>Overseas Approvals (CAAi)</td>
<td>Overseas Approvals (CAAi)</td>
</tr>
<tr>
<td>125</td>
<td>493</td>
</tr>
<tr>
<td>Military (CAAi)</td>
<td>Military</td>
</tr>
<tr>
<td>130</td>
<td>208</td>
</tr>
<tr>
<td>UK BCAR</td>
<td>UK BCAR</td>
</tr>
<tr>
<td>77</td>
<td>97</td>
</tr>
<tr>
<td>FAA and TCCA</td>
<td>FAA and TCCA</td>
</tr>
<tr>
<td>252</td>
<td>373</td>
</tr>
</tbody>
</table>
This diagram demonstrates that the average base-line hours (Combination of Complexity/Performance) as planned for each approval, allocates our Resource proportionally.
These pie charts show the percentage of time our field force (not including SAFA) within AW spend for each activity. We now have a forward looking forecast and using metric’s the ability to measure what we actually achieved. With the dynamic nature of our operational workload and the limitation of job time recording, a mismatch between actual and forecast would be expected. Additionally the time periods for these charts also differ, but despite this, the data gives us a real insight into our workload;

**Oversight (Green)** – The Forecast is higher than the actual, limitations of job time recording (metric’s) as a results the 5 minutes used here and there relating to oversight tend not to get recorded correctly and get swept up into the **Management Other** (Bucket). Not all **unscheduled** tasks, which mostly consist of projects/working groups have their own metric’s code, so again they are swept up into the **Management Other** (Bucket). Overall confidence in our job time recording and forecasting is fairly high, especially within the context of known limitations. All of these activities except Management and Unscheduled are directly funded via charges/contracts. Airworthiness forecasted 78% directly funded activity and achieved 73%.
Findings Analysis 2015
Question

In 2014 AW raised 4414 findings, how many findings did we raise in 2015?

5,002  4,047  3497
Question

In 2014 AW raised 4414 findings, how many findings did we raise in 2015?

5,002  4,047  3497
3497 findings were raised by Airworthiness in 2015. At first glance it would appear that the number of findings raised in 2013 & 2014 is almost identical. Further investigation has revealed that 2013 did not contain a complete set of data, due to the phased introduction of Q-Pulse within Airworthiness that year. 2013 & 2014 contained general aviation data, with 2015 being the first year this data has been completely separated, which helps to explain the drop off in the number of findings raised.

Warning- Management Information can lead to incorrect conclusions without the narrative/intelligence that gives the necessary context.
9 level 1 findings were raised by Airworthiness during 2015. All level 1 findings have been individually reviewed, as trending is difficult for such a small set of data.

2 level 1 findings against Pt 147 training schools, regarding examination irregularities has identified that might be prevalent across the sector.
Safety Severity adds greater granularity to findings beyond just recording the level. High Safety severity has a direct link to safety, Moderate has a potential link to safety and Low has no link to Safety.

Are more Moderate/high Safety Severity findings raised against the Corporate jet Sector?
Safety Severity adds greater granularity to findings beyond just recording the level. High Safety severity has a direct link to safety, Moderate has a potential link to safety and Low has no link to Safety.

Are more Moderate/high Safety Severity findings raised against the Corporate jet Sector?
Very few high safety severity findings were raised against Part 21G production or Part 147 Training organisations, these findings can be difficult to directly link to safety.
Correct Root Cause identification and resolution leads to longer term improvements, with fewer repeat findings.

Process and Documentation are still recorded as the top 2 Root causes. This is possibly due to the symptom being identified rather than the Root Cause. Significantly Competence or capability, might add weight to the perception that there is an industry skills shortage.
Closure Performance

Closure Performance is a Q-Pulse drop down menu that records whether a finding has occurred before (repeat finding) and the quality of the organisation’s first response. This was limited to the organisation’s first response for a very good reason! If it wasn’t measured at a single point in time, then the data would be lost (as the status of the performance field got updated, eventually all findings would end up accepted). For 2015 76% of findings responses were accepted first time, 12% rejected, 8% late and 4% late/rejected. Rejecting an organisation’s response should be seen as evidence that the CAA is ensuring that the Root Cause has been correctly identified and fully addressed. It also allows us to measure the effectiveness of the Organisation quality system.
All UK Pt145 - Maintenance

145.A.65(b&c) Main issues relate to; the independence of the Quality system and audit programme, the content of the plan, the completion of the plan, the scope of the audits and procedures.

145.A.40(b) Main issues relate to; Tool control, which is backed up by MOR data.

145.A.25 With Low S/S findings removed Facilities is number 3, Issues with suitability of facilities/environment for safe completion of maintenance IAW the requirements of the approved data.

Corporate Jet Sector

- High
- Moderate
- Low

- 145.A.65 Quality
- 145.A.30 Personnel
- 145.A.40 Tools
- 145.A.35 Staff
- 145.A.45 data
- 145.A.25 Facility
- 145.A.70 MOE
- 145.A.41 Component
- 145.A.50 Certification
- 145.A.55 Records
- 145.A.47 Planning
- 145.A.50 MOR
M.A.712(a&b) Main issues relate to; the independence/effectiveness of the Quality system and audit programme, the content of the plan, the completion of the plan, the scope of the audits and procedures.

M.A.302 Main Issues relate to; the control, review and content of the maintenance programme.

M.A.708(b) Main issues relate to; the management of continuing airworthiness tasks, including mass & balance, maintenance programmes, Airworthiness Directives and modifications. Although overall management is an issue, no trend exists for any particular element.
ACAM – Aircraft inspections

M.A.403 & M.A.301(2) Main issues relate to the correct recording and deferral of defects, damage and unserviceable Components. Heavily featured in all D category findings (Fuselage, wings, tail, cabin, LG).

M.A.302 Main Issues relate to; the control, review and content of the maintenance programme.

M.A.305 & M.A.306 Main Issues relate to; the control, review and content of the CAW records system including the tech log.
Summary Overview

Top 3 findings with Low Safety Severity findings removed

Part 145
- Quality System
- Tools
- Facilities

Part 21
- Quality System
- Requirements
- Obligations

Part M
- Quality System
- CAW Management
- Maintenance Programmes

Part 147
- Quality System
- Personnel
- Exposition

ACAM
- Defect Management
- Records
- Maintenance Programme