

Transfer of Behaviours and Error Path Study

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AAIB Recommendation 2017-006:

It is recommended that the Civil Aviation Authority undertake a study of error paths that lead to flying display accidents and integrate its findings into the human factors training it requires the holders of display authorisations to undertake.

CAP1694


Civil Aviation Authority



CAP1694: Human Factors in Air Displays: Transfer of Behaviours and Error Path Study

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Reference:	CAP1694
Title:	Human Factors in Air Displays: Transfer of Behaviours and Error Path Study
Description:	This is an independent report from the Health and Safety Laboratory, on human factors in air displays - transfer of behaviours and error path study.
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So what is different with this study?

Focussed on:

- SEP and JPA CAA groups/categories
- Expert / Skilled based behaviour
- Wide range of display pilots interviewed
- Major stakeholders consulted (BADA/HAA)
- New training material direct from report
- Full report available via CAA website

What we'll look at....

- Main findings
- Wider issues
- Recommendations

Main findings (5)

- There are important operating and handling differences between and within types and categories of SEP and JP aeroplanes that could impact safety
- There is potential for negative transfer of behaviours between types and categories of aeroplanes

Main findings (cont)

- There are numerous error pathways that cannot be entirely eliminated, but problems arising from negative transfer of behaviours were perceived as a) often recoverable and b) as being normally mitigated by a number of measures
- Many pilots have developed strategies for minimising the likelihood of error (including those caused by negative transfer)

Main findings (cont)

- Currency on aeroplane, time pressures, distractions on display day (e.g. weather), stress and pressures to display were all considered factors that could influence pilot performance on the day of display.

Wider issues (4)

- The role of the Display Authorisation Evaluator (DAE) and the Display Authorisation Evaluation process to ensure display pilots were suited to display flying in terms of their attitude, skills, behaviour and knowledge
- Flying Display Directors (FDDs) activities, roles, and responsibilities including the variation in content and delivery of display briefs

Wider Issues (cont)

- Event organisation and how it can vary significantly in terms of how well pilots' needs are considered, which in turn can impact safety and performance
- The role of the regulator, their relationship with the display community and how information is shared

Recommendations (10)

- 1. CAA should work with FDDs to improve the quality and quantity of reporting and feedback provided by FDDs following airshows
- CAA should also consider ways in which this information can be shared... Sharing information from FDD reportswould be of benefit to the entire display community

Recommendations (cont)

- 2. CAA and the Air Accident Investigation Branch (AAIB) should promote more consideration of human factors in accident investigations through application of human factors expertise
- This would enable deeper and broader learning to help reduce the likelihood of high consequence events

Recommendations (cont)

- 3. CAA should develop a human factors training programme based on knowledge sharing techniques to ensure there is an exchange of expertise across the display community
- Engaging with the display community as a resource could bring about improvements in safety practices far beyond traditional training

Recommendations (cont)

- 4. CAA should consider a blended learning solution comprising a combination of self-taught learning and reflection, online learning and face-to-face training, delivered in a modular format

Recommendations (cont)

- 5. All display pilots, not just those flying multiple aircraft, should be required to participate in the proposed training programme
- This includes pilots seeking initial display authorisation and display authorisation renewal. The inclusion of other critical support and management roles in training is also recommended in order to support a more holistic / systematic approach to enhancing safety for air displays

Recommendations (cont)

- 6. To further facilitate the transfer of learning, the CAA should work to set up a community of practice to help ensure that the taught elements of the training are embedded into long term practice and delegates can share their own expertise
- This could serve as a repository for human factors references and relevant information.

Recommendations (cont)

- 7. CAA should use face-to-face sessions in human factors training to activate the expertise within the display community
- Face-to-face sessions should include further identification and discussion to optimise pilot performance. The outputs of such sessions could be defined as recommended safe practices which could be extracted and published in the community of practice

Recommendations (cont)

- 8. CAA should work with FDDs to standardise the inclusion of human factors in FDD briefs and debriefs

Recommendations (cont)

- 9. CAA should consider how to effectively engage with the display community, including DAEs, FDDs, event organisers, and other stakeholders (e.g. British Air Display Association, Historic Aircraft Association) to improve safety and regulatory compliance

Recommendations (cont)

- 10. CAA should consider the pace of change of regulation and the timing of changes and how that may impact pilots in the display season

It's well worth a read and a ponder....


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