

## Follow-up Action on Occurrence Report

### ACCIDENT TO HAWKER HUNTER T7, G-BXFI, NEAR SHOREHAM AIRPORT, WEST SUSSEX, ON 22 AUGUST 2015

CAA FACTOR NUMBER	:	F4/2016
FACTOR PUBLICATION DATE	:	09/06/2016
TYPE OF FLIGHT	:	Air Display
CAA OCCURRENCE NUMBER	:	201511517
AAIB SPECIAL BULLETIN	:	S1/2016

#### SYNOPSIS

From AAIB Special Bulletin S1/2016

The aircraft was taking part in an air display at Shoreham Airport during which it conducted a manoeuvre with both a vertical and rolling component, at the apex of which it was inverted. Following the subsequent descent, the aircraft did not achieve level flight before it struck the westbound carriageway of the A27.

#### Reference Material:

1. **Special Bulletin S3/2015** was published by the AAIB on 4 September 2015 to provide preliminary information about the accident gathered from ground inspection, radar data, recorded images and other sources.
2. CAA FACTOR F1/2016 was published on 8 April 2016 and was in response to the AAIB's **Special Bulletin S4/2015**, which was published by the AAIB on 21 December 2015. This Special Bulletin highlighted findings of the AAIB investigation regarding ejection seat safety and the maintenance of ex-military jet aircraft, and to assist the Civil Aviation Authority in its 'Review of UK Civil Air Displays' announced on 9 September 2015.

#### FOLLOW UP ACTION

##### Recommendation 2016-031

It is recommended that the Civil Aviation Authority review and publish guidance that is suitable and sufficient to enable the organisers of flying displays to manage the associated risks, including the conduct of risk assessments.

## **CAA Response**

The CAA has accepted the recommendation that it should review its guidance. It remains the responsibility of the organisers of flying displays to follow this guidance and conduct risk assessments that are suitable and sufficient to manage the risks associated with the air displays that they are organising.

The CAA reviewed its guidance and published updated guidance on 3 May 2016 in an updated version of the CAA's document '*Flying displays and special events: A guide to safety and administrative arrangements*'.

**CAA Status – Closed**

## **Recommendation 2016-032**

It is recommended that the Civil Aviation Authority specify the safety management and other competencies that the organiser of a flying display must demonstrate before obtaining a Permission under Article 162 of the Air Navigation Order.

## **CAA Response**

The CAA accepts this recommendation.

The CAA will specify the safety management and other competencies that the organiser of a flying display must demonstrate before obtaining a Permission under Article 162 of the Air Navigation Order. This will be completed by the end of March 2017.

**CAA Status – Open**

## **Recommendation 2016-033**

It is recommended that the Civil Aviation Authority introduces a process to ensure that the organisers of flying displays have conducted suitable and sufficient risk assessments before a Permission to hold such a display is granted under Article 162 of the Air Navigation Order.

## **CAA Response**

The CAA accepts this recommendation that organisers of flying displays must conduct suitable and sufficient risk assessments.

It remains the responsibility of organisers of flying displays to conduct suitable and sufficient risk assessments. The CAA has introduced a new risk assessment process for display applications together with a new risk assessment template and a revised display application form. These are designed to make it clearer to organisers of flying displays the nature of the risk assessment that must be completed. The revised process was published alongside the guidance '*Flying displays and special events: A guide to safety and administrative arrangements*' in March 2016.

**CAA Status – Closed**

### **Recommendation 2016-034**

It is recommended that the Civil Aviation Authority specify the information that the commander of an aircraft intending to participate in a flying display must provide the organiser, including the sequence of manoeuvres and the ground area over which the pilot intends to perform them, and require that this is done in sufficient time to enable the organiser to conduct and document an effective risk assessment.

#### **CAA Response**

The CAA understands the intent here is to define the area of ground over which the commander of an aircraft will be permitted to display that aircraft. This can be done in a number of ways. The CAA does not accept that it should specify information in the manner set out in the recommendation. The CAA has concluded that the FDD's risk assessment should be informed by and take account of both the manoeuvres to be flown and the area of ground over which they will be flown.

The CAA now requires pilots to confirm to the FDD well in advance of the display briefing that their air display conforms to the air display permission granted by the CAA. If the series of linked manoeuvres or the area of ground over which the aircraft will fly is outside the areas already risk assessed by the FDD, the FDD will be able to take this into account in their risk assessment and document it accordingly.

It remains the responsibility of the organisers of flying displays to follow this guidance and conduct risk assessments that are suitable and sufficient to manage the risks associated with the air displays that they are organising.

**CAA Status – Closed**

### **Recommendation 2016-035**

It is recommended that the Civil Aviation Authority require operators of Permit to Fly aircraft participating in a flying display to confirm to the organiser of that flying display that the intended sequence of manoeuvres complies with the conditions placed on their aircraft's Permit to Fly.

#### **CAA Response**

The CAA accepts this recommendation. The CAA now requires operators of Permit to Fly aircraft participating in a flying display to confirm to the organiser of that flying display that the intended sequence of manoeuvres complies with the conditions placed on their aircraft's Permit to Fly.

As set out in the March 2016 edition of the CAA's guidance "*Flying displays and special events: A guide to safety and administrative arrangements*", all pilots participating in a flying display must supply the FDD of the air display with a certificate confirming that the display that they intend to perform complies with the conditions placed on the aircraft's Certificate of Airworthiness and Permit to Fly. A template for the certificate is at Appendix B of the guidance.

**CAA Status – Closed**

### **Recommendation 2016-036**

It is recommended that the Civil Aviation Authority remove the general exemptions to flight at minimum heights issued for Flying Displays, Air Races and Contests outlined in Official Record Series 4-1124 and specify the boundaries of a flying display within which any Permission applies.

#### **CAA Response**

The CAA accepts the recommendation to remove the general exemptions to flight at minimum heights issued for Flying Displays, Air Races and Contests outlined in Official Record Series 4-1124. The CAA has removed the general exemptions.

Official Record Series 4-1124 was removed on 6 June 2016.

The AAIB recommends also that the CAA specify the boundaries of a flying display within which any Permission applies. The CAA does not accept this recommendation. The CAA currently specifies a display line or display area in Section 1 of each Permission that it issues. This means that while the pilot is flying on the specified display line or within the specified display area the rules of the Permission apply. When the pilot is not flying on the specified display line or within the specified display area then the normal rules of the air apply.

**CAA Status – Closed**

### **Recommendation 2016-037**

It is recommended that the Civil Aviation Authority require that displaying aircraft are separated from the public by a sufficient distance to minimise the risk of injury to the public in the event of an accident to the displaying aircraft.

#### **CAA Response**

The CAA understands that this recommendation relates to members of the public attending a flying display.

The CAA accepts this recommendation.

The MAA has commissioned an independent study into crowd separation distances. This research is ongoing and should report in 2017. As the MAA research is ongoing, the CAA decided in its review of UK civil air displays that, as an interim measure, where current MAA crowd separation distances are higher it would align with them. The increased distances were announced in April this year in the final report of the CAA's Review of UK Civil Air Displays. The CAA will confirm crowd separation distances after the independent study commissioned by the MAA into crowd separation distances reports in 2017.

**CAA Status – Open**

### **Recommendation 2016-038**

It is recommended that the Civil Aviation Authority specify the minimum separation distances between secondary crowd areas and displaying aircraft before issuing a Permission under Article 162 of the Air Navigation Order.

## **CAA Response**

The CAA does not accept this recommendation. It is the responsibility of the flying display organiser and FDD to identify all the risks to which the public may be exposed, from wherever they may choose to view the air display, and to mitigate or manage those risks. Details of how the flying display organiser and FDD have identified the risks and then intend to mitigate or manage them must be set out in the risk assessment they submit to the CAA when requesting Permission to hold an air display.

**CAA Status – Closed**

## **Recommendation 2016-039**

It is recommended that the Civil Aviation Authority require the organisers of flying displays to designate a volume of airspace for aerobatics and ensure that there are no non-essential personnel, or occupied structures, vehicles or vessels beneath it.

## **CAA Response**

The CAA does not accept this recommendation.

The CAA expects the organisers of flying displays and in collaboration with FDDs to identify and then mitigate or manage all the risks to the public arising from their air display. It is for the organiser of the display and the FDD to decide what course of action is necessary and how they will implement it. Furthermore the pilot is responsible for performing their display in accordance with the Permission granted under Article 162 of the Air Navigation Order and their own display authorisation.

**CAA Status – Closed**

## **Recommendation 2016-040**

It is recommended that the Civil Aviation Authority require Display Authorisation Evaluators to have no conflicts of interest in relation to the candidates they evaluate.

## **CAA Response**

The CAA does not accept this recommendation as it is impractical to achieve in the relatively small air display community and maintain a working display evaluation system.

The CAA believes that it is better to identify any potential conflicts of interest, such as personal or commercial connections, and manage them. In its Action Report of its Review of UK Civil Air Displays, published in January 2016, the CAA strengthened the display authorisation process by requiring, after the first two years, a pilot holding a display authorisation to be revalidated by a different DAE, selected by the CAA. The CAA believes this will reduce the risks of conflicts of interest.

**CAA Status – Closed**

## **Recommendation 2016-041**

It is recommended that the Civil Aviation Authority require a Display Authorisation to be renewed for each class or type of aircraft the holder intends to operate during the validity of that renewal.

## **CAA Response**

The CAA does not accept this recommendation.

From January 2016 the CAA has required that, display pilots authorised to perform above standard level aerobatics in more than one aircraft category must renew the display authorisation in each category, rather than type.

In the action report the CAA set out the six categories for renewal purposes:

- Jet powered aircraft;
- Turboprop;
- Multi-engine piston (MEP);
- Single-engine piston (SEP);
- Helicopters; and
- Others.

In the final report of its Review of UK Civil Air Displays, published in April 2016, the CAA further strengthened the requirements placed on display pilots authorised to perform standard level aerobatics. Display pilots authorised to perform standard level aerobatics in multiple categories, including jet powered and helicopter categories, must now renew in those categories at least every two years. Where that authorisation also includes one or more turboprop, MEP or SEP categories they must rotate their renewal across those categories year on year. The CAA retains the right to specify the type of aircraft within a category that a pilot is permitted to renew on.

## **CAA Status – Closed**

### **Recommendation 2016-042**

It is recommended that the Civil Aviation Authority publish a list of occurrences at flying displays, such as 'stop calls', that should be reported to it, and seek to have this list included in documentation relevant to Regulation (EU) No 376/2014.

## **CAA Response**

The CAA does not accept this recommendation.

The CAA is developing a positive reporting culture - a Just Culture – for the air display community. Within the air display sector the CAA believes that this is the most effective way to identify and address potential safety issues before they lead to accidents.

In support of this, from April this year the CAA required all event organisers and FDDs to submit, within seven days, a post-air display report to the CAA. This report must include what went well at the display, as well as information on any lapses or breaches from the required standards. Pilots must also report any aspect of their display that could have

caused a significant safety risk. The CAA will record all this information. Key information will be shared with the civil air display community through briefings, the pre- and post-season seminars that the CAA jointly hosts with BADA and the MAA, and the annual seminar that the CAA organises for DAEs.

**CAA Status – Closed**

#### **Recommendation 2016-043**

It is recommended that the Civil Aviation Authority introduce a process to immediately suspend the Display Authorisation of a pilot whose competence is in doubt, pending investigation of the occurrence and if appropriate re-evaluation by a Display Authorisation Evaluator who was not involved in its issue or renewal.

#### **CAA Response**

The CAA accepts this recommendation.

In its final report of its Review of UK Civil Air Displays, published in April 2016, the CAA announced that where a stop is called because an FDD, or member of the Flight Control Committee, has reason to doubt the fitness or competence of a pilot that pilot will be subject to a provisional suspension of their display authorisation pending an investigation by the CAA of the circumstances leading to the stop being called. In its investigation, the CAA will determine whether the suspension of the display authorisation should be withdrawn or further regulatory enforcement action taken against the pilot concerned.

**CAA Status – Closed**

#### **Recommendation 2016-044**

It is recommended that the Civil Aviation Authority establish and publish target safety indicators for United Kingdom civil display flying.

#### **CAA Response**

The CAA does not accept this recommendation. The CAA does not believe that a safety target for UK civil display flying is appropriate.

Air display flying carries inherent risks. The purpose of the CAA's comprehensive review of UK civil air displays has been to assess whether it is possible to minimise further the risks at and around civil air displays in the UK. The series of improvements that the CAA has put in place as a result of its review of UK civil air displays will further enhance public safety.

**CAA Status – Closed**