

**CZAW SportCruiser,  
G-EWZZ**

**Kingarth,  
Isle of Bute**

**9 August 2014**

**Accident**

#### **Safety Recommendation 2015-006**

It is recommended that the European Aviation Safety Agency review the requirement for the placarding of aircraft fitted with a Ballistic Parachute Recovery System so that the warning placards contain information on the location of the rocket launcher and the actuating device, and can be read from a safe distance regardless of the stationary attitude of the aircraft.

**Date Safety Recommendation made:**

14 May 2015

#### **LATEST RESPONSE**

**Response received:**

8 July 2015

Ballistic Parachute Recovery Systems (BPRS) for EASA certified aircraft are regulated in the Certification Specifications for Light Sport Aeroplanes, CS-LSA, which refers to the ASTM F2316-12 international standard in its Subpart K.

The same reference standard can be applied to other small aeroplanes category certified by EASA through a Special Condition.

This ASTM standard requires providing three different types of placard or label ("danger", "identifying" and "warning" placards) in order to alert rescue or other personnel at the scene of an accident or incident. The minimum sizes of the labels and the colours to be used are addressed by this standard. These minimum sizes and colours are considered adequate to provide an alerting function when a personnel is approaching the aircraft at a reasonable distance. It includes the indication of the egress point of the rocket launcher.

The intent of this standard is that the placards should provide enough information to the rescue personnel to identify the presence of the equipment and find the contact information to seek advice from the manufacturer of the ballistic device. When installed according to such standard, the placards will quickly provide the needed information in most of the accident scenarios.

**AAIB Assessment – Partially Adequate - Closed**

#### **RESPONSE HISTORY**

N/A

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**Safety Recommendation 2015-007**

It is recommended that the European Aviation Safety Agency introduce the requirement that the rocket-launcher in an aircraft Ballistic Parachute Recovery System is fitted in a position where it can be readily disarmed following an accident.

**Date Safety Recommendation made:**

14 May 2015

**LATEST RESPONSE**

**Response received:**

8 July 2015

The design and the installation of a Ballistic Parachute Recovery System (BPRS) should comply with at least the following requirements: recovering of the airframe and its occupants at a survivable rate of descent; its activation system shall ensure a reliable deployment of the parachute, but it shall also mitigate inadvertent deployment; protection of the aircraft and its occupants against the associated inherent hazards (e.g. fire hazard).

Requiring that the installation of the rocket-launcher is such that it can be 'readily' disarmed in all possible after-crash scenarios, and with occupants on-board, could create design constraints that are not compatible with the functional requirements mentioned above.

In practice, rocket-launchers are installed so that they can be easily disarmed following the instructions of the BPRS manufacturer after most of the accidents, in particular the survivable ones.

**AAIB Assessment – Not Adequate - Closed**

**RESPONSE HISTORY**

N/A

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**Safety Recommendation 2015-008**

It is recommended that the European Aviation Safety Agency disseminate information for first responders and accident investigators to allow them to identify if an aircraft is equipped with a Ballistic Parachute Recovery System. This information system should include details on the actions required to make the system safe.

**Date Safety Recommendation made:**

14 May 2015

**LATEST RESPONSE**

**Response received:**

13 July 2015

A Ballistic Parachute Recovery System (BPRS) can be installed as part of the initial Type Certification, but it can also be installed (or removed) via a Supplemental Type Certificate (STC).

BPRS certified by EASA are regulated in the Certification Specifications for Light Sport Aeroplanes, CS-LSA, which refers to the ASTM F2316-12 international standard in its Subpart K. The same reference standard can be applied to other small aeroplanes category certified by EASA through a Special Condition.

The intent of the ASTM F2316-12 standard is that the placards installed on the aeroplane should provide information to the rescue personnel to identify the presence of the BPRS and find the contact information to seek advice from the manufacturer of the ballistic device.

**AAIB Assessment – Not Adequate - Closed**

**RESPONSE HISTORY**

**N/A**

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#### **Safety Recommendation 2015-009**

It is recommended that the Civil Aviation Authority review the requirement for the placarding of aircraft referred to in Regulation (EC) 216/2008 Annex II, fitted with a Ballistic Parachute Recovery System, so that the warning placards contain information on the location of the rocket launcher and the actuating device, and can be read from a safe distance regardless of the stationary attitude of the aircraft.

**Date Safety Recommendation made:**

14 May 2015

#### **LATEST RESPONSE**

**Response received:**

8 November 2017

The CAA has reviewed the requirement for the placarding of BRS-equipped Annex II aircraft and is taking the following actions:

-Retain existing requirements in Section S of the British Civil Airworthiness Requirements (BCAR Section S) for:

- placards applied to the aircraft structure to be positioned such that at least one should remain visible regardless of the stationary attitude of the aircraft.
- the parachute release control to be identified and placarded; and

-Amend Section S to introduce:

- a requirement to identify the area through which the rocket launcher exits the airframe;
- standards for colours, minimum size and placement of placards and labels that align with those set out in International Standard Specification for Airframe Emergency Parachutes (ASTM F2316-12). The CAA and EASA consider these standards to be adequate to alert approaching personnel of the presence of a ballistic parachute recovery system from a reasonable distance and to quickly provide the information needed in most accident scenarios.

The proposals to amend BCAR Section S are currently being consulted upon by the BCAR Section S Working Group, which includes representatives from both the CAA and industry. The outcome of this consultation, and our proposal to amend BCAR Section S, will be completed by the end of November 2017. The CAA will then apply the agreed requirements to the wider Annex II fleet by means of Airworthiness Directives and Mandatory Permit Directives as applicable.

**AAIB Assessment – Partially Adequate - Open**

#### **RESPONSE HISTORY**

**Response received:**

31 July 2015

The CAA accepts this recommendation, and undertakes to review requirements regarding placarding relative to location of BRS and actuating device fitted. However, it should be noted that current UK requirements are broadly harmonised with those applied by FAA to Cirrus (via Special Condition) and EASA (Proposed Special Condition for CS-VLA), and in the current climate of proportionality, the CAA would seek to align with the requirements of the latter where possible. This action is planned to be completed by January 2016.

**Previous AAIB Assessment – Partially Adequate - Open**

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#### **Safety Recommendation 2015-010**

It is recommended that the Civil Aviation Authority introduce the requirement that, for aircraft referred to in Regulation (EC) 216/2008 Annex II, the rocket-launcher in an aircraft Ballistic Parachute Recovery System is fitted in a position where it can be readily disarmed following an accident.

**Date Safety Recommendation made:**

14 May 2015

#### **LATEST RESPONSE**

**Response received:**

8 November 2017

The CAA has reconsidered its response to this Safety Recommendation in light of the EASA response to 2015-007, which notes that requiring the rocket-launcher to be installed such that it can be readily disarmed in all possible post-crash scenarios could create design constraints that are incompatible with the proper functioning of the system. The CAA has therefore developed an amendment to BCAR Section S advising installation designers (in conjunction with system manufacturers) to:

- consider how (if it is achievable without compromising the basic functioning of the system) the rocket can be safely disarmed following an accident in which it was not fired
- provide clear information (available for first responders via contact details provided on warning placards) on how this may be achieved.

The proposals are currently being consulted upon by the BCAR Section S Working Group, which includes representatives from both the CAA and from industry. The outcome of this consultation and our proposal to amend BCAR Section S will be completed by the end of November 2017.

**AAIB Assessment – Partially Adequate - Open**

#### **RESPONSE HISTORY**

**Response received:**

31 July 2015

The CAA accepts this recommendation, and will compile some Administrative & Guidance Material to BCAR Section S (Sub-Section K), relating to location and ease of disarming of such systems. This action is planned to be completed by January 2016.

**Previous AAIB Assessment – Partially Adequate - Open**

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### **Safety Recommendation 2015-011**

It is recommended that the Civil Aviation Authority introduce an information system, for aircraft operating in the UK that allows first responders and accident investigators to identify if an aircraft is equipped with a Ballistic Parachute Recovery System. This information system should include details of the type of system fitted, the location of the major components, routing of the actuator cable and the actions required to make the system safe.

**Date Safety Recommendation made:**

14 May 2015

### **LATEST RESPONSE**

**Response received:**

8 November 2017

The CAA has completed a review to determine practicality of expanding G-INFO so that owners may add details appropriate to modifications to their specific aircraft. This review included consultation with an independent fire and rescue subject matter expert and UK Fire and Rescue Service National Operational Guidance Programme.

The review found that the proposed updates to G-INFO would be unlikely to deliver significant safety benefits at the scene of an accident. The CAA was advised that G-INFO was unlikely to be used by first responders and would not assist a developing incident due to dynamic nature of any such event.

Additionally the CAA found a number of practical impediments to implementation of the proposed changes, including the difficulty in collating and ensuring that information remains current due to the reliance on aircraft owners/maintainers to declare modifications.

CAA has therefore determined that it would be of greater safety benefit to support and seek to enhance existing hazard control methods set out for UK fire and rescue services.

Guidance provided by the National Operational Guidance Programme to assist first responders in the safe and effective response to incidents states that 'the first priority is to identify, from the exterior of the aircraft, the location and condition of the ballistic recovery systems on the aircraft, using signage, known locations, etc.'

Under Safety Recommendation 2015-009, the CAA is proposing to enhance requirements for the placarding and identification of ballistic parachute recovery systems so as to increase awareness and visibility and assist first responders and accident investigators in identifying the presence of these systems following an accident. To further assist accident investigators the CAA will also explore the possibility of using G-INFO's photo upload facility to display information on ballistic parachute recovery installations in the future.

The CAA position is similar to that taken by the Federal Aviation Administration following the publication of National Transportation Safety Board (NTSB) Safety Recommendation A-12-064, which called for similar action to be taken:

'TO THE FEDERAL AVIATION ADMINISTRATION: Require aircraft owners, during each triennial re-registration with the Federal Aviation Administration's aircraft registry, to identify the presence and type of safety devices (such as ejection seats, ballistic recovery systems, or inflatable restraints) that contain explosive components on the aircraft.'

The FAA found a number of practical impediments to implementation of the recommendation as written and after consideration of various alternative measures found responder training, education, and the placarding required to be sufficient.

**AAIB Assessment – Not Adequate - Closed**

## **RESPONSE HISTORY**

**Response received:**

31 July 2015

The CAA accepts this recommendation and will undertake a review to determine the practicality of expanding G-INFO so that owners may add details appropriate to modifications to their specific aircraft. It should be noted that the CAA are not necessarily made aware of the embodiment of such modifications on an individual aircraft so could not guarantee its veracity, however in this way we may encourage owners to provide appropriate up to date information to potentially aid in their own rescue. This action is planned to be completed by September 2015.

**Previous AAIB Assessment – Partially Adequate - Open**

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**Safety Recommendation 2015-012**

It is recommended that the Civil Aviation Authority takes action to ensure that information on the risks from Ballistic Parachute Recovery Systems is disseminated to the emergency services operating in the United Kingdom.

**Date Safety Recommendation made:**

14 May 2015

**LATEST RESPONSE**

**Response received:**

8 November 2017

The CAA has determined that that it would not be practicable to expand G-INFO to address Safety Recommendation 2015-011 as originally intended and that G-INFO is not, in any case, used by first responders. The CAA has therefore reconsidered its response to this Safety Recommendation.

Information on the hazards associated with aircraft ballistic recovery systems is made available to UK fire and rescue services by the National Operational Guidance Programme, which provides guidance to assist in the safe and effective response to incidents. Guidance is also provided to the police, emergency services and airfield operators by the AAIB.

Additionally, the CAA, under CAP 699 has published a framework for the competence of aviation rescue and fire fighting services personnel, much of the content of which draws on National Occupational Standards, developed by Skills for Fire and Rescue in collaboration with the UK Fire and Rescue Services. This document advises that training programmes for aviation rescue and fire fighting services personnel should include initial and recurrent instruction in the recognition of aircraft ballistic parachute systems during emergency operations.

The CAA participated in the development of National Operational Guidance (NOG) for transport incidents involving aircraft. This NOG includes information on the hazards arising from aircraft ballistic parachute systems and the control measures. The NOG is subject to a periodic review cycle in which CAA will participate.

**AAIB Assessment – Adequate – Closed**

**RESPONSE HISTORY**

**Response received:**

31 July 2015

The CAA accepts this recommendation. When and if action in response to recommendation 2015-011 is in place, it will undertake to issue an Information Notice to promote awareness. This action is planned to be completed by March 2016.

**Previous AAIB Assessment – Partially Adequate - Open**