



Civil Aviation Authority  
**SAFETY DIRECTIVE**  
Number: SD-2020/001



Issued: 20 February 2020

## State Helicopter Flight Recorder Requirements

At Annex A to this Safety Directive is an Operational Directive mandating action that is made to improve the level of safety of State helicopter operations. The Operational Directive is issued in accordance with Article 248 of the Air Navigation Order 2016.

Recipients must ensure that this Directive is copied to all members of their staff who need to take appropriate action or who may have an interest in the information (including any 'in-house' or contracted maintenance organisation and relevant outside contractors).

<b>Applicability:</b>	
<b>Aerodromes:</b>	Not primarily affected
<b>Air Traffic:</b>	Not primarily affected
<b>Airspace:</b>	Not primarily affected
<b>Airworthiness:</b>	Not primarily affected
<b>Flight Operations:</b>	All AOC and PAOC Helicopter Operators Conducting State aircraft Public Transport Operations
<b>Licensed Personnel:</b>	Not primarily affected

### 1 Introduction

- 1.1 This Safety Directive (SD) promulgates the Operational Directive (OD) (see [Annex A](#)) issued by the Civil Aviation Authority (CAA) which comes into force on 20 February 2020. It is applicable to operators conducting State emergency services Public Transport (PT) helicopter operations in the UK.
- 1.2 On 29 November 2013, an Airbus Helicopters (formerly Eurocopter) EC135 T2+ helicopter being operated by Bond Air Services Limited in support of Police Scotland crashed into the Clutha Vaults Bar in Glasgow. The three occupants of the helicopter and seven people in the bar were fatally injured. Eleven others in the bar were seriously injured.
- 1.3. The Air Accidents Investigation Branch (AAIB) conducted a comprehensive investigation into the causes of the accident and released its report [3/2015](#) in October 2015. Arising from its analysis into the causal factors, it made seven Safety Recommendations (SR); three were directed to the European Aviation Safety Agency (EASA) for action and the remaining four to the Civil Aviation Authority. Most of the SRs concern the provisioning and installation of crashworthy flight recording equipment meeting acceptable international standards.
- 1.4 This Safety and Operational Directive supersedes and revokes SD-2018/002 and contains revised compliance dates. These dates have been amended to reflect continuing challenges faced by the affected operators with the availability of equipment and progress of the procurement and implementation programmes. The extended period will assist in alleviating the need to withdraw line aircraft from UK emergency services cover during the process of upgrading.

## 2 Reason and Explanation

- 2.1 This SD is made in the interests of safety of operations for helicopters conducting State activities involved in the service of a police authority or under contract with the Maritime and Coastguard Agency (MCA) for the provision of Search and Rescue (SAR). It is made in response to the AAIB SRs 2015-032, -033 and -034.
- 2.2 In its report, the AAIB made reference to the lack of evidence to enable a complete understanding of the circumstances of the accident in this and in other previous police aircraft occurrences. The absence of flight recorders (FR) hampers an investigation and there are international moves to increase the range of new aircraft to which such devices should be fitted. This is being made more achievable and cost effective by technical advances and revised standards.
- 2.3 The CAA reviewed the report with its SRs and responded to the AAIB through the Follow-up Action on Occurrence Report (FACTOR) **FACTOR F6/2015** in December 2015 accepting the recommendations.
- 2.4 Subsequently, the CAA conducted a focussed consultation with the police and SAR operators and determined that in order to achieve the safety intent of the SRs, the mandating of specific flight recording capabilities should be put in place where such recorders are not already required by regulation. In particular, one of the significant areas commented on by the AAIB was the lack of information dealing with pilot actions and cockpit management leading up to the accident. This can be addressed by the inclusion of airborne image recorders that capture general cockpit views including crew activity. No such equipment is currently required by air operations regulations but is included in the International Civil Aviation Organization (ICAO) Standards and Recommended practices in Annex 6 Operation of Aircraft, Part III International Operations - Helicopters. Such information capture is now widely used in many other transport industries.
- 2.5 As a result of the feedback and liaison with the affected operators, new flight recorder requirements have been agreed and will be established through this SD. Additionally, it is recognised that images recorded by cameras in the cockpit should be afforded appropriate protection from misuse or abuse. Operators will be required to implement procedures to control the use of any recordings in a way similar to that used for Cockpit Voice Recorders (CVR). Likewise, following any accident or incident, it would be necessary for the investigating authority to ensure that the information is not used for purposes other than the safety investigation.

## 3 Implementation

- 3.1 The implementation of the measures to meet the safety intent of the SRs will vary depending on such factors as the size and age of the helicopter, the extant flight recorder requirements and the complexity and expense of retrofitting. Currently, PT helicopters with a maximum take-off mass (MTOM) between 2,730 kg and 3,175 kg have been exempted from the Air Navigation Order 2016 (ANO) flight data recorder (FDR) and cockpit voice recorder (CVR) equipment requirements due to alignment with the former JAR-OPS and now the EASA Air Operations Regulation. For such helicopters in the service of a police authority, this exemption (**Official Record Series 4 1346** as amended) will remain in place until revoked in line with the requirements of the OD to allow sufficient time for the development and procurement of FRs.
- 3.2 Additionally, it has been decided that the FDR function, for those police helicopters mentioned in 3.1, may be met by using a Class C airborne image recording system (AIRS) instead of attempting to retrofit a full FDR. This image system may also meet some aspects of the general image recording system (Class A) envisaged by the AAIB but it is considered disproportionate to try and provision for two types of camera systems and that the FDR function has priority.
- 3.3 State helicopters used for police and SAR operations that already have FDR/CVR fitted will be required to fit either a Class A airborne image recorder (AIR), if having an MTOM above 3,175 kg, or a Class A AIRS otherwise. The AAIB recommended the 1 January 2018 as a determining date based on the issuance of the first individual Certificate of Airworthiness and this was originally detailed in SD 2016/006. This date was chosen to delineate requirements from current to future aircraft and reflected the complexity of retrofitting in service aircraft from the more

appropriate expectation of having such features built in at manufacture. However, operators have subsequently identified difficulties beyond their control with achieving the planned implementation dates for both new aircraft and the modifications to the existing fleet. This has necessitated amendment to these dates which were previously revised by SD 2018/002 and are now further revised in the attached OD, in order to ensure continued operation of these services in the national interest.

- 3.4 Factors identified during the operator consultation, and subsequent discussions, have been incorporated into the requirements specified in the OD and the CAA will maintain close liaison with the operators during the implementation period. Means of compliance and equipment specifications were developed by the CAA as a Specification Note (SN) and provided to the operators to facilitate meeting the requirements. The SN was replaced by CAA Specification No. 23 in June 2018. [CAA Specification No. 23 - State Emergency Services Helicopter Flight Recorder Standards](#)
- 3.5 Compliance with the new requirements must be met for current in-service helicopters by 31 July 2021 and on delivery for all new helicopters with an individual Certificate of Airworthiness first issued on or after 01 January 2019. The operators must inform the CAA of their implementation plans together with early notification of any delay or deviation.

## 4 Additional Information

- 4.1 In order to ensure that images recorded by the AIR or AIRS are not misused, requirements drawn from Commission Regulation (EU) No. 965/2012 (The Air Operations Regulation) at CAT.GEN.MPA.195 (Handling of flight recorder recordings, preservation, production, protection and use) have been included in the direction and must be developed and implemented by the operator. Advisory and Guidance information is provided at [Annex B](#).

## 5 Definitions

- 5.1. In this Safety Directive and Operational Directive:
- (a) 'State aircraft has the same meaning as in Schedule 1 of the Air Navigation Order 2016.
  - (b) 'Class A airborne image recorder system' (AIRS) means an image recorder capable of recording a general cockpit view in accordance with Part III of EUROCAE ED-155 or an equivalent standard acceptable to the CAA.
  - (c) 'Class A airborne image recorder' (AIR) means an image recorder capable of recording a general cockpit view in accordance with Part III of EUROCAE ED-112A or an equivalent standard acceptable to the CAA.
  - (d) 'Class C' airborne image recorder system' (AIRS) means an image recorder capable of recording images of instrument and control panels in accordance with Part III of EUROCAE ED-155 or an equivalent standard acceptable to the CAA.
  - (e) 'Accident', 'serious incident' and 'occurrence' have the same meanings as in Regulation (EU) No 996/2010.

## 6 Queries

- 6.1 Any queries or requests for further guidance from AOC holders as a result of this communication should be addressed to the assigned Flight Operations Inspector in the first instance.
- 6.2 Otherwise, queries should be addressed to the following e-mail address:  
[FSTechnicalSupportTeam@caa.co.uk](mailto:FSTechnicalSupportTeam@caa.co.uk).

## **7 Cancellation**

- 7.1 This Directive comes into force on the 20 February 2020 and will remain in force until revoked by the CAA.

J Hanafin  
*for the Civil Aviation Authority*  
**20 February 2020**

**Annex A:** Operational Directive

**Annex B:** Advisory and Guidance Information

## Annex A: Operational Directive (OD)

### To: Operators conducting Police or Search and Rescue helicopter operations.

1. The Civil Aviation Authority (CAA), in exercise of its powers under article 248 of the Air Navigation Order 2016 ('the Order'), directs the operator ('a specified operator') of any helicopter which is:
  - (a) registered in the United Kingdom; and
  - (b) a State aircraft conducting public transport operations:
    - (i) in the service of a police authority under the terms of a Police Air Operator's Certificate; or
    - (ii) under contract to the UK Maritime and Coastguard Agency (MCA) for the provision of Search and Rescue (SAR) within the terms of an Air Operator's Certificate;

to comply with the requirements set out in paragraphs 3, 4 and 5.

2. This OD is made in the interests of ensuring the safety of operations for helicopters conducting State aircraft activities described in paragraph 1. It is made in response to the Air Accidents Investigation Branch (AAIB) Safety Recommendations (SR) 2015-032, -033 and -034 and for the reasons stated in the associated SD-2020/001.

### Requirements

3. Helicopters with an individual Certificate of Airworthiness first issued **before 1 January 2019** shall from **1 August 2021**:
  - (a) for those with a maximum take-off mass (MTOM) of more than 2,730 kg but not more than 3,175 kg, be fitted with a Class A airborne image recording system (AIRS) except those which have a Class C AIRS; or
  - (b) for those with a MTOM more than 3,175 kg, be fitted with a Class A airborne image recorder (AIR).
4. Helicopters with an individual Certificate of Airworthiness first issued **on or after 1 January 2019** shall:
  - (a) for those with a MTOM of more than 2,730 kg but not more than 3,175 kg, be fitted with a Class A AIRS; or
  - (b) for those with a MTOM more than 3,175 kg, be fitted with a Class A AIR.
5. Operators must ensure that:
  - (a) operational checks and evaluations of AIR/AIRS recordings are conducted to ensure the continued serviceability of the recorder;
  - (b) the recordings are saved for the period of operating time of the AIR/AIRS, except that, for the purpose of testing and maintaining the recorders, up to one hour of the oldest recorded material at the time of testing may be erased;
  - (c) following an accident, a serious incident or an occurrence the original recorded AIR/AIRS data is preserved for a period of 60 days or until otherwise directed by the investigating authority;
  - (d) any image recorder recording that has been preserved is made available, if so determined by the CAA;
  - (e) without prejudice to any requirements relating to their disclosure or use under regulations regarding the investigation of accidents and incidents:
    - (1) except for ensuring the AIR/AIRS serviceability, AIR/AIRS recordings are not disclosed or used unless:

- (i) a procedure related to the handling of AIR/AIRS recordings is in place;
  - (ii) all crew members and maintenance personnel concerned have given their prior consent; and
  - (iii) they are used only for maintaining or improving safety.
- (2) AIR/AIRS recordings are only used for purposes other than for the investigation of an accident or an incident which is subject to mandatory reporting, if such records are:
- (i) used by the operator for airworthiness or maintenance purposes;
  - (ii) used by the operator in the operation of a flight data monitoring program;
  - (iii) de-identified; or
  - (iv) disclosed under secure procedures.
- (3) when an AIR/AIRS recording is inspected for ensuring the serviceability of the flight recorder, then:
- (i) those images shall not be disclosed or used for purposes other than for ensuring flight recorder serviceability; and
  - (ii) if body parts of crew members are likely to be visible on the images, the privacy of those images is protected.
- (f) on any flight on which an AIR/AIRS is required by to be carried, the recorder must always be in use from the time the rotors first turn for the purpose of taking off until the rotors are next stopped; and
- (g) if, before take-off, the equipment required under paragraphs 3 or 4 is found to be unserviceable, the helicopter is only be flown in accordance with arrangements approved by the CAA.
6. Operators are to inform the CAA of their implementation plan and progress and are to ensure that any deviation or delay is communicated without delay.

### Definitions

7. In this OD the terms defined in paragraph 5 of the associated SD-2020/001 apply.

### Revocation and Commencement

8. This Directive comes into force 20 February 2020 and will remain in force until revoked by the CAA.

## Annex B: Advisory Information

*Drawn from AMC/GM for CAT.GEN.MPA 195(f)*

1. USE OF IMAGE RECORDINGS FOR MAINTAINING OR IMPROVING SAFETY
  - (a) The procedure mentioned in paragraph 5(e)(i) of the OD should be documented and signed by all parties involved (aircraft operator, crew member representatives nominated either by the union or the crew themselves, maintenance personnel representatives if applicable). This procedure should take into account Regulation (EU) 2016/679 (GDPR) and, as a minimum, define the following aspects:
    - (1) the method to obtain the consent of all crew members and maintenance personnel concerned;
    - (2) an access and security policy that restricts access to the image recordings to authorised persons identified by their position;
    - (3) a retention policy and accountability, including the measures to ensure the security of the image recordings and their protection from misuse;
    - (4) a description of the uses made of the image recordings;
    - (5) the participation of flight crew member representatives in the assessment of the image recordings;
    - (6) the conditions under which advisory briefing or remedial training should take place; this should always be carried out in a constructive and non-punitive manner; and
    - (7) the conditions under which actions other than advisory briefing or remedial training may be taken for reasons of gross negligence or significant continuing safety concern.
  - (b) Each time a recording file containing images of the flight crew compartment is read out for purposes other than ensuring the serviceability of the flight recorder, the operator should retain, and when requested, provide the competent authority with:
    - (1) information on the use made (or the intended use) of the recording files; and
    - (2) evidence that the crew members concerned consented to the use made (or the intended use) of the flight crew compartment images.
  - (c) The safety manager or the person identified by the operator to fulfil this role should be responsible for the protection and use of the recordings of flight crew compartment images, as well as the assessment of issues and their transmission to the manager(s) responsible for the process concerned.
  - (d) In case a third party is involved in the use of recordings of flight crew compartment images, contractual agreements with this third party should, when applicable, cover the aspects enumerated in (a) and (b).
2. IMAGE RECORDING INSPECTION FOR ENSURING SERVICEABILITY
  - (a) When images of the flight crew compartment recorded by a flight recorder are inspected for ensuring the serviceability of the flight recorder, and any body part of a crew member is likely to be visible on these images, then:
    - (1) the privacy of the image recordings should be ensured (e.g. by locating the replay equipment in a separated area);
    - (2) access to the replay equipment should be restricted to authorised persons;

- (3) provisions should be made for the secure storage of the image recording medium, the image recording files and copies thereof;
  - (4) the image recording files and copies thereof should be destroyed not earlier than 2 months and not later than 1 year after completion of the image recording inspection; images that do not contain any body part of a person may be retained for enhancing the image recording inspection (e.g. for comparing image quality); and
  - (5) only the accountable manager of the operator and, when identified to comply with ORO.GEN.200, the safety manager should be entitled to request a copy of the image recording files.
- (b) The conditions enumerated in (a) should also be complied with if the inspection of the image recording is subcontracted to a third party. The contractual agreements with the third party should explicitly cover these aspects.

### 3. FLIGHT CREW COMPARTMENT

- (a) If there are no compartments to physically segregate the flight crew from the passengers during the flight, the term 'flight crew compartment,' in paragraphs 1 and 2 of this Annex, should be understood as the area including:
- (1) the flight crew seats;
  - (2) aircraft and engine controls;
  - (3) aircraft instruments;
  - (4) windshield and windows used by the flight crew to get an external view while seated at their duty station; and
  - (5) circuit breakers accessible by the flight crew while seated at their duty station.