

**EC135 T2+,
G-SPAO**

**Glasgow City Centre,
Scotland**

29 November 2013

Accident

Investigation Synopsis

The helicopter departed Glasgow City Heliport (GCH) at 2044 hrs on 29 November 2013, in support of Police Scotland operations. On board were the pilot and two Police Observers. After their initial task, south of Glasgow City Centre, they completed four more tasks; one in Dalkeith, Midlothian, and three others to the east of Glasgow, before routing back towards the heliport. When the helicopter was about 2.7 nm from GCH, the right engine flamed out. Shortly afterwards, the left engine also flamed out. An autorotation, flare recovery and landing were not achieved and the helicopter descended at a high rate onto the roof of the Clutha Vaults Bar, which collapsed. The three occupants in the helicopter and seven people in the bar were fatally injured. Eleven others in the bar were seriously injured.

Fuel in the helicopter's main fuel tank is pumped by two transfer pumps into a supply tank, which is divided into two cells. Each cell of the supply tank feeds its respective engine. During subsequent examination of the helicopter, 76 kg of fuel was recovered from the main fuel tank. However, the supply tank was found to have been empty at the time of impact. It was deduced from wreckage examination and testing that both fuel transfer pumps in the main tank had been selected off for a sustained period before the accident, leaving the fuel in the main tank, unusable. The low fuel 1 and low fuel 2 warning captions, and their associated audio attention-getters, had been triggered and acknowledged, after which, the flight had continued beyond the 10-minute period specified in the Pilot's Checklist Emergency and Malfunction Procedures.

The helicopter was not required to have, and was not fitted with, flight recorders. However, data and recordings were recovered from non-volatile memory (NVM) in systems on board the helicopter, and radar, radio, police equipment and CCTV recordings were also examined.

During the investigation, the EC135's fuel sensing, gauging and indication system, and the Caution Advisory Display and Warning Unit were thoroughly examined. This included tests resulting from an incident involving another EC135 T2+.

Despite extensive analysis of the limited evidence available, it was not possible to determine why both fuel transfer pumps in the main tank remained off during the latter part of the flight, why the helicopter did not land within the time specified following activation of the low fuel warnings and why a MAYDAY call was not received from the pilot. Also, it was not possible to establish why a more successful autorotation and landing was not achieved, albeit in particularly demanding circumstances.

The investigation identified the following causal factors:

1. 73 kg of usable fuel in the main tank became unusable as a result of the fuel transfer pumps being switched off for unknown reasons.
2. It was calculated that the helicopter did not land within the 10-minute period specified in the Pilot's Checklist Emergency and Malfunction Procedures, following continuous activation of the low fuel warnings, for unknown reasons.
3. Both engines flamed out sequentially while the helicopter was airborne, as a result of fuel starvation, due to depletion of the supply tank contents.
4. A successful autorotation and landing was not achieved, for unknown reasons.

The investigation identified the following contributory factors:

1. Incorrect management of the fuel system allows useable fuel to remain in the main tank while the contents in the supply tank become depleted.
2. The RADALT and steerable landing light were unpowered after the second engine flamed out, leading to a loss of height information and reduced visual cues.

3. Both engines flamed out when the helicopter was flying over a built-up area.

Seven Safety Recommendations have been made.

Safety Recommendation 2015-030

Safety Recommendation 2015-030

It is recommended that, when the European Aviation Safety Agency requires a radio altimeter to be fitted to a helicopter operating under an Air Operator's Certificate, it also stipulates that the equipment is capable of being powered in all phases of flight, including emergency situations, without intervention by the crew.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 23 March 2016

The legal framework on equipping helicopters with a radio altimeter is contained in Commission Regulation (EU) N° 965/2012 and related Acceptable Means of Compliance (AMC) and Guidance Material (GM), as follows:

- Annex IV Part-CAT (Commercial Air Transport operations): for flights over water under certain conditions (refer to CAT.IDE.H.145), and for 'coastal transit' operations (refer to CAT.OP.MPA.137 as further detailed in GM1 CAT.OP.MPA.137 (b)).

- Annex V Part-SPA (Specific Approvals): for operations with night vision imaging system (NVIS) (refer to SPA.NVIS.110)

The Agency certifies any radio altimeter installation proposed by applicants, whether it is required by the operational regulation or not. In this frame, the Agency investigates systematically the criticality of radio altimeter availability both in normal and emergency situations.

When a procedure is proposed which requires the pilot to use the radio altimeter, the procedure is assessed to check if it is feasible and can be performed by pilots without requiring exceptional piloting skills. If it appears that the radio altimeter must be available without pilot action, the Agency requires that the radio altimeter remains powered in the scenario considered, included emergency if applicable. There may be emergency scenarios where the main electrical generation is lost and it is preferable not to automatically power the radio altimeter, because it is not a critical system and the battery must be preserved in order to support continued safe flight and landing.

Furthermore, it is reminded that a radio altimeter only provides accurate information over flat surfaces, as opposed to congested areas covered with buildings and other obstacles. There is therefore no guarantee that its availability contributes to reduce the risk associated with an autorotation carried out over an area covered with obstacles like urban areas.

The Agency therefore considers that it is not appropriate to universally mandate an automatic powering of the radio altimeter in emergency situation.

The Agency considers that current certification specifications contain adequate provisions to ensure that, when equipment such as the radio altimeter is installed, it can be readily available and used by the flight crew without creating excessive workload in all phases of flight, including emergency situations.

Safety Recommendation Status

Closed

AAIB Assessment

Not Adequate

RESPONSE HISTORY

Response received: 15 February 2016

The Agency is reviewing the current regulatory provisions related to radio altimeter powering and will determine if these provisions are adequate or need to be improved to ensure an adequate level of safety.

AAIB Assessment – Partially Adequate Open

(SRIS Reference: GB.SIA-2015-0030)

Safety Recommendation 2015-031

Safety Recommendation 2015-031

It is recommended that, when the Civil Aviation Authority require a radio altimeter to be fitted to a helicopter operating under a Police Air Operator's Certificate, it also stipulates that the equipment is capable of being powered in all phases of flight, including emergency situations, without intervention by the crew.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 04 December 2015

The CAA accepts this recommendation and will review the requirements for the fitment of radio altimeters to helicopters operating under a Police Air Operator's Certificate, and where so required and subject to an impact assessment will amend the specifications to include the capability for the equipment to be powered in all phases of flight, including emergency situations, without intervention by the crew. Review and assessment for amendment to the specifications is expected to be completed by 3rd Quarter 2016.

Safety Recommendation Status Closed

AAIB Assessment Adequate

RESPONSE HISTORY

N/A

(SRIS Reference: GB.SIA-2015-0031)

Safety Recommendation 2015-032

Safety Recommendation 2015-032

It is recommended that the Civil Aviation Authority requires all helicopters operating under a Police Air Operators Certificate, and first issued with an individual Certificate of Airworthiness before 1 January 2018, to be equipped with a recording capability that captures data, audio and images in crash-survivable memory. They should, as far as reasonably practicable, record at least the parameters specified in The Air Navigation Order, Schedule 4, Scale SS(1) or SS(3) as appropriate. They should be capable of recording at least the last two hours of (a) communications by the crew, including Police Observers carried in support of the helicopter's operation, and (b) images of the cockpit environment. The image recordings should have sufficient coverage, quality and frame rate characteristics to include actions by the crew, control selections and instrument displays that are not captured by the data recorder. The audio and image recorders should be capable of operating for at least 10 minutes after the loss of the normal electrical supply.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 25 February 2021

The AAIB Safety Recommendations 2015-032 and 033 recommended that the CAA require certain helicopters operating under a Police Air operator Certificate to be fitted with flight recorders including cockpit image recorders (airborne image recorder (AIR)). Additionally, SR 2015-034 recommended that the CAA consider requiring State aircraft not already covered by SR 2015-032 and 033 to be fitted with flight recorders, including cockpit image recorders.

The CAA conducted a focussed consultation in 2016 with Police and SAR operators considering the various options for all the SRs and determined the way forward cognisant also of the feedback from industry. In response to SR 2015-034 specifically, it was decided not to pursue changes to State aeroplane equipment requirements but that it would be appropriate to align the requirements and meet the safety intent of the SRs for all State helicopters. The State SAR helicopters under contract with the UK Maritime Coastguard Agency (MCA) were already required to be equipped with FDR/CVR and therefore the alignment was limited to the fitment of airborne image recorders.

To implement the necessary requirements, the CAA issued Safety Directive 2016-006 detailing the type and level of equipment to be fitted to current and future helicopters operating as State aircraft. CAA Specification 23 was also introduced to provide detailed information on the technical requirements for the equipment and fitting. However, due to some difficulties experienced by the operators in procuring and fitting the equipment, the compliance dates had to be extended and SD 2018-002, now superseded by 2020-001, were issued. The operators are now meeting the following equipment requirements mandated by the SD:

1. 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).
2. 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 AAIR

The CAA will incorporate these requirements into amendment of the scales of equipment for such operations in the Air Navigation Order at the next suitable opportunity. Once done, this will provide for the SD to be revoked.

Safety Recommendation Status **Closed**

AAIB Assessment **Partially Adequate**

Action Status **Planned Action Completed 01 September 2021**

Feedback rationale

The AAIB acknowledges the considerable work done by the CAA in relation to the Safety Recommendation. The classification of Partially Adequate reflects that a means to continue operation for at least 10 minutes after the loss of the normal electrical supply has not been required by the CAA. (EU Regulation 996/2010 article 18 refers).

RESPONSE HISTORY

Response received: 04 December 2015

The CAA accepts this recommendation and, subject to an impact assessment and liaison with the police operators, will require all helicopters operating under a Police Air Operators Certificate with a maximum take-off mass (MTOM) of more than 2,730 kg and first issued with an individual Certificate of Airworthiness before 1 January 2018, to be equipped with a recording capability that captures data, audio and flight deck images in crash-survivable memory. In order to put any change into effect, the CAA will need to amend General Exemption E4111 for the fitment of recorders to helicopters with a MTOM between 2,730 and 3,175 kg and the requirements for police helicopters with a MTOM greater than 3,175 kg. The CAA will work with the affected operators to agree a means of compliance for individual types in line with ICAO standards and recommended practices and ensure that appropriate protection provisions are afforded for image recordings. The CAA will also review, and amend as necessary, associated CAPs and CAA Specifications, for flight recorders. Introduction of amended requirements is expected to be completed by 3rd Quarter 2016.

AAIB Assessment – Adequate Closed

(SRIS Reference: GB.SIA-2015-0032)

Safety Recommendation 2015-033

Safety Recommendation 2015-033

It is recommended that the Civil Aviation Authority requires all helicopters operating under a Police Air Operators Certificate, and first issued with an individual Certificate of Airworthiness on or after 1 January 2018, to be fitted with flight recorders that record data, audio and images in crash-survivable memory. These should record at least the parameters specified in The Air Navigation Order, Schedule 4, Scale SS(1) or SS(3), as appropriate. They should be capable of recording at least the last two hours of (a) communications by the crew, including Police Observers carried in support of the helicopter's operation, and (b) cockpit image recordings. The image recordings should have sufficient coverage, quality and frame rate characteristics to include control selections and instrument displays that are not captured by the other data recorders. The audio and image recorders should be capable of operating for at least 10 minutes after the loss of the normal electrical supply.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 25 February 2021

The AAIB Safety Recommendations 2015-032 and 033 recommended that the CAA require certain helicopters operating under a Police Air operator Certificate to be fitted with flight recorders including cockpit image recorders (airborne image recorder (AIR)). Additionally, SR 2015-034 recommended that the CAA consider requiring State aircraft not already covered by SR 2015-032 and 033 to be fitted with flight recorders, including cockpit image recorders.

The CAA conducted a focussed consultation in 2016 with Police and SAR operators considering the various options for all the SRs and determined the way forward cognisant also of the feedback from industry. In response to SR 2015-034 specifically, it was decided not to pursue changes to State aeroplane equipment requirements but that it would be appropriate to align the requirements and meet the safety intent of the SRs for all State helicopters. The State SAR helicopters under contract with the UK Maritime Coastguard Agency (MCA) were already required to be equipped with FDR/CVR and therefore the alignment was limited to the fitment of airborne image recorders.

To implement the necessary requirements, the CAA issued Safety Directive 2016-006 detailing the type and level of equipment to be fitted to current and future helicopters operating as State aircraft. CAA Specification 23 was also introduced to provide detailed information on the technical requirements for the equipment and fitting. However, due to some difficulties experienced by the operators in procuring and fitting the equipment, the compliance dates had to be extended and SD 2018-002, now superseded by 2020-001, were issued. The operators are now meeting the following equipment requirements mandated by the SD:

1. 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).

2. 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 AAIR.

The CAA will incorporate these requirements into amendment of the scales of equipment for such operations in the Air Navigation Order at the next suitable opportunity. Once done, this will provide for the SD to be revoked.

Safety Recommendation Status **Closed**

AAIB Assessment **Partially Adequate**

Action Status **Planned Action Completed**

Feedback rationale

The AAIB acknowledges the considerable work done by the CAA in relation to the Safety Recommendation. The classification of Partially Adequate reflects that a means to continue operation for at least 10 minutes after the loss of the normal electrical supply has not been required by the CAA. (EU Regulation 996/2010 article 18 refers).

RESPONSE HISTORY

Response received: 04 December 2015

The CAA accepts this recommendation and, subject to an impact assessment and liaison with the police operators, will require all helicopters operating under a Police Air Operators Certificate and first issued with an individual Certificate of Airworthiness on or after 1 January 2018, to be equipped with a recording capability that captures data, audio and images in crash-survivable memory. To achieve this in the suggested timescale, the CAA will consider making a Direction to that effect but will also, as part of a wider review of the Air Navigation Order (ANO), prepare amendments to the flight recorder requirements that align with ICAO standards and recommended practices and European standards including the appropriate protection provisions for image recordings. The CAA would anticipate this change being addressed within the planned 2016 ANO amendment cycle.

AAIB Assessment – Adequate Closed

(SRIS Reference: GB.SIA-2015-0033)

Safety Recommendation 2015-034

Safety Recommendation 2015-034

It is recommended that the Civil Aviation Authority considers applying the requirements of AAIB Safety Recommendation 2015-032 and AAIB Safety Recommendation 2015-033 to State aircraft not already covered by these Safety Recommendations.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 25 February 2021

The AAIB Safety Recommendations 2015-032 and 033 recommended that the CAA require certain helicopters operating under a Police Air operator Certificate to be fitted with flight recorders including cockpit image recorders (airborne image recorder (AIR)). Additionally, SR 2015-034 recommended that the CAA consider requiring State aircraft not already covered by SR 2015-032 and 033 to be fitted with flight recorders, including cockpit image recorders.

The CAA conducted a focussed consultation in 2016 with Police and SAR operators considering the various options for all the SRs and determined the way forward cognisant also of the feedback from industry. In response to SR 2015-034 specifically, it was decided not to pursue changes to State aeroplane equipment requirements but that it would be appropriate to align the requirements and meet the safety intent of the SRs for all State helicopters. The State SAR helicopters under contract with the UK Maritime Coastguard Agency (MCA) were already required to be equipped with FDR/CVR and therefore the alignment was limited to the fitment of airborne image recorders.

To implement the necessary requirements, the CAA issued Safety Directive 2016-006 detailing the type and level of equipment to be fitted to current and future helicopters operating as State aircraft. CAA Specification 23 was also introduced to provide detailed information on the technical requirements for the equipment and fitting. However, due to some difficulties experienced by the operators in procuring and fitting the equipment, the compliance dates had to be extended and SD 2018-002, now superseded by 2020-001, were issued. The operators are now meeting the following equipment requirements mandated by the SD:

1. 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 2,73 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).
2. 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 AAIR.

The CAA will incorporate these requirements into amendment of the scales of equipment for such operations in the Air Navigation Order at the next suitable opportunity. Once done, this will provide for the SD to be revoked.

Safety Recommendation Status **Closed**

AAIB Assessment **Adequate**

Action Status **Planned Action Completed**

RESPONSE HISTORY

Response received: 04 December 2015

The CAA accepts this recommendation and will consider whether the requirements of AAIB Safety Recommendation 2015-032 and AAIB Safety Recommendation 2015-033 should be applied to civil registered State aircraft not already covered by these Safety Recommendations and in particular the suitability of the introduction and/or retrofitting of image recorders. Due to their size, all current civil Search and Rescue helicopters are fitted with flight data recorders and cockpit voice recorders. The CAA anticipates determination of this issue by 3rd Quarter 2016.

AAIB Assessment – Adequate Closed

(SRIS Reference: GB.SIA-2015-0034)

Safety Recommendation 2015-035

Safety Recommendation 2015-035

It is recommended that the European Aviation Safety Agency mandate the ICAO Annex 6 flight recorder requirements for all helicopter emergency medical service operations, regardless of aircraft weight. The last two hours of flight crew communications and cockpit area audio should be recorded. The cockpit area audio recording should continue for 10 minutes after the loss of normal electrical power.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 02 December 2019

At the time of the recommendation issue, Commission Regulation (EU) No 965/2012 on air operations contained the following provisions on Flight Data Recorders (FDRs) and Cockpit Voice Recorders (CVRs) for Commercial Air Transport (CAT) operations with helicopters [including Helicopter Emergency Medical Services (HEMS)]:

CAT.IDE.H.190 Flight data recorder

- (a) The following helicopters shall be equipped with an FDR that uses a digital method of recording and storing data and for which a method of readily retrieving that data from the storage medium is available:
- (1) helicopters with an MCTOM (Maximum Certified Take-Off Mass) of more than 3,175 kg and first issued with an individual CofA (Certificate of Airworthiness) on or after 1 August 1999;
 - (2) helicopters with an MCTOM of more than 7,000 kg, or an MOPSC (Maximum Operational Passenger Seating Configuration) of more than nine, and first issued with an individual Certificate of Airworthiness (CofA) on or after 1 January 1989 but before 1 August 1999.

CAT.IDE.H.185 Cockpit voice recorder

- (a) The following helicopter types shall be equipped with a cockpit voice recorder (CVR):
- (1) all helicopters with an MCTOM of more than 7,000 kg; and
 - (2) helicopters with an MCTOM of more than 3 175 kg and first issued with an individual CofA on or after 1 January 1987.
- (b) The CVR shall be capable of retaining the data recorded during at least:
- (1) the preceding two hours for helicopters referred to in (a)(1) and
 - (a)(2), when first issued with an individual CofA on or after 1 January 2016.

The recommendation to mandate the installation of flight recorders for all HEMS operations regardless of aircraft weight, was considered within the framework of the European Union Aviation Safety Agency (EASA) rulemaking tasks RMT.0271 and RMT.0272 'In-flight recording for light aircraft'.

EASA Opinion No 02/2019, published on 22 February 2019, contained proposed amendments to the air operations regulation stemming from RMT.0271 and RMT.0272. The Opinion was subsequently adopted; and the associated Commission Implementing Regulation (EU) 2019/1387 of 01 August 2019, amending Commission Regulation (EU) No 965/2012, was published on 05 September 2019.

This includes a new rule extending the flight recorder carriage requirements to helicopters with an MCTOM (Maximum Certified Take-Off Mass) of 2 250 kg or more, when they are turbine-engined, commercially operated and first issued with an individual certificate of airworthiness on or after 05 September 2022 (see CAT.IDE.H.191 of the air operations regulation). This includes the Airbus helicopter H135 (previously designated as Eurocopter EC135), for example.

The outcome of the impact assessment conducted under RMT.0271 and RMT.0272 was that voluntary installation of in-flight recording systems (also capable of recording cockpit audio) was the most appropriate way forward for all other cases (refer to EASA notice of proposed amendment 2017-03).

In order to facilitate such voluntary installation, issue. 2 of the certification specifications for standard changes and standard repairs (CS-STAN) introduced a new sub-paragraph SC-104a on the installation of lightweight in-flight recording systems (see Executive Director Decision 2017/014/R of 30 March 2017), aimed at facilitating the voluntary installation of in-flight recording systems on board light aircraft (such a system can be installed by the means of a standard change, i.e. by a qualified maintenance engineer, without requiring change approval by the relevant authority).

The issue of an alternate power source for the CVR was considered within the framework of RMT.0249 'Recorders installation and maintenance thereof- certification aspects' As a result, EASA published CS-29 (Certification Specifications and Acceptable Means of Compliance for Large Rotorcraft) amendment 7 through ED Decision 2019/013/R of 15 July 2019, which contains a new requirement for the CVR to have an alternate power source (refer to para (d)(6) of CS 29.1457 Cockpit voice recorders):

- (i) that provides at least 10 minutes of electrical power to operate both the recorder and the cockpit mounted area microphone; and
- (ii) (ii) to which the recorder and the cockpit-mounted area microphone are switched automatically in the event that all other power to the recorder is interrupted either by a normal shutdown or by any other loss of power.

EASA Status: Closed - Partial agreement

Safety Recommendation Status **Closed**

AAIB Assessment **Partially Adequate**

RESPONSE HISTORY

Response received: 08 October 2018

Commission Regulation (EU) No 965/2012 on air operations contains the following provisions on Flight Data Recorders (FDRs) and Cockpit Voice Recorders (CVRs) for Commercial Air Transport (CAT) operations with helicopters (including emergency medical services):

CAT.IDE.H.190 Flight data recorder

(a) The following helicopters shall be equipped with an FDR that uses a digital method of recording and storing data and for which a method of readily retrieving that data from the storage medium is available:

- (1) helicopters with a Maximum Certified Take-Off Mass (MCTOM) of more than 3 175 kg and first issued with an individual CofA on or after 1 August 1999;
- (2) helicopters with an MCTOM of more than 7 000 kg, or a Maximum Operational Passenger Seating Configuration (MOPSC) of more than nine, and first issued with an individual Certificate of Airworthiness (CofA) on or after 1 January 1989 but before 1 August 1999.

CAT.IDE.H.185 Cockpit voice recorder

(a) The following helicopter types shall be equipped with a cockpit voice recorder (CVR):

(1) all helicopters with an MCTOM of more than 7 000 kg; and

(2) helicopters with an MCTOM of more than 3 175 kg and first issued with an individual CofA on or after 1 January 1987.

(b) The CVR shall be capable of retaining the data recorded during at least:

(1) the preceding two hours for helicopters referred to in (a)(1) and (a)(2), when first issued with an individual CofA on or after 1 January 2016.

In addition, the Agency published for public consultation, on 03 April 2017, Notice of Proposed Amendment NPA 2017-03 under rulemaking task RMT.0271 'In-flight recording for light aircraft'. The comments received were reviewed with the help of a stakeholder's group. The UK AAIB was represented in this group. The stakeholder's group supported the lightweight flight recorder carriage requirements as proposed in NPA 2017-03, as summarised below:

The NPA included a proposal to mandate the carriage of lightweight flight recorders capable of recording flight parameters for turbine-engined helicopters with an MCTOM greater than or equal to 2 250 kg (for example, the Airbus Helicopters EC135), when the helicopter is newly manufactured, is commercially operated (commercial air transport and commercial specialised operations), and is not currently required to carry a flight data recorder. However, the benefit of recording cockpit audio was not considered sufficient to mandate it. The impact assessment concluded that voluntary installation (through safety promotion channels) of in-flight recording systems (also capable of recording cockpit audio) is the most appropriate way forward for all other cases (except for balloons).

The issue of an alternate power source for the CVR has been considered within the framework of rulemaking task RMT.0249 'Recorders installation and maintenance thereof - certification aspects'. Under this rulemaking task, the Agency published NPA 2018- 03 on 27 March 2018 for public consultation. This NPA proposed mandating an alternate power source for new type certificates of aeroplanes with a Maximum Take-Off Weight of over 5 700 kg (through an amendment to the certification specifications for large aeroplanes) and for newly manufactured aeroplanes with an MCTOM of 27 000 kg (through an amendment to the rules for air operations). While the need for alternate power sources for CVRs appears to be well-supported by investigations of accidents involving aeroplanes with an MCTOM of over 27 000 kg, this is not indicated for lighter aeroplanes or helicopters.

The comments received on NPA 2018-03 which were related to the alternate power source were reviewed and this review did not lead to an extension of the applicability of the alternate power source requirements.

The proposals in NPA 2018-03 related to rules for air operations were recently transferred to rulemaking task RMT.0296, in particular the proposal to require an alternate power source. The next RMT.0296 deliverable, an EASA Opinion, is planned to be published Q1/2019.

AAIB Assessment – Partially Adequate Open

Response received: 05 May 2017

Commission Regulation (EU) No 965/2012 contains the following provisions on CVR recording duration for Commercial Air Transport (CAT) operations with helicopters (including emergency medical services):

CAT.IDE.H.185 Cockpit voice recorder

(a) The following helicopter types shall be equipped with a cockpit voice recorder (CVR):

(1) all helicopters with an MCTOM of more than 7,000 kg; and

(2) Helicopters with an MCTOM of more than 3,175 kg and first issued with an individual CofA on or after 1 January 1987.

(b) The CVR shall be capable of retaining the data recorded during at least:

(1) the preceding two hours for helicopters referred to in (a)(1) and (a)(2), when first issued with an individual CofA on or after 1 January 2016;

In addition, the Agency published, on 03 April 2017, Notice of Proposed Amendment NPA 2017-03 under rulemaking task RMT.0271 'In-flight recording for light aircraft'.

The NPA includes a proposal to mandate the carriage of lightweight flight recorders capable of recording flight parameters for turbine-engine helicopters with a Maximum Certified Take-Off Mass (MCTOM) greater than or equal to 2,250 kg, when the helicopter is newly manufactured, is commercially operated (commercial air transport and commercial specialised operations), and is not currently required to carry a flight data recorder. This includes the Airbus Helicopters EC135, for example. However, the benefit of recording of cockpit audio was not considered sufficient to mandate it.

The impact assessment concluded that voluntary installation (through safety promotion channels) of in flight recording systems (also capable of recording cockpit audio) is the most appropriate way forward for all other cases.

The next RMT.0271 deliverable, an EASA Opinion, is planned to be published in 2018. Pending adoption of the Opinion and publication of the related amending regulation to Commission Regulation (EU) No 965/2012, an Executive Director's Decision containing the associated Acceptable Means of Compliance and Guidance Material will be published.

The issue of an alternate power source for the CVR is currently being considered within the framework of RMT.0249 'Recorders installation and maintenance thereof - certification aspects' which was launched on 18 September 2014 with the publication of the Terms of Reference. The Notice of Proposed Amendment (NPA) from this rulemaking task is planned to be published in the first half of 2017.

AAIB Assessment – Partially Adequate Open

Response received: 15 February 2016

This safety recommendation will be considered within the framework of rulemaking task RMT.0271 'In-flight recording for light aircraft'. The associated Notice of Proposed Amendment is expected to be published in the Summer of 2016.

AAIB Assessment – Partially Adequate Open

Response received: 29 December 2015

This safety recommendation will be considered within the framework of rulemaking task RMT.0271 'In flight recording for light aircraft', which was launched by EASA on 25 July 2014 with the publication of the associated Terms of Reference.

AAIB Assessment – Partially Adequate Open

(SRIS Reference: GB.SIA-2015-0035)

Safety Recommendation 2015-036

Safety Recommendation 2015-036

It is recommended that the European Aviation Safety Agency mandate image flight recorder requirements for all helicopter emergency medical service operations, regardless of aircraft weight. The image recordings should have sufficient coverage, quality and frame rate characteristics to include actions by the crew, control selections and instrument displays that are not captured by a data recorder. The recording should be of the last two hours of operation, including at least 10 minutes after the loss of normal electrical power to the flight recorder.

Date Safety Recommendation made: 19 October 2015

LATEST RESPONSE

Response received: 29 December 2015

A consultation with Contracting States, conducted by the International Civil Aviation Organization (ICAO) in 2009 and 2010, revealed that most States had not implemented any legislation to protect the contents of cockpit image recorders from improper use, and that many States were concerned that safety data collection might be adversely impacted by the misuse of image recordings.

Legal protection of cockpit image recorder data at a global level through ICAO Standards and Recommended Practices is an essential prerequisite to mandating the carriage of cockpit image recorders. In addition, while the protection of cockpit image recorders in the context of a safety investigation is addressed in ICAO Annex 13, there is no equivalent ICAO provision addressing their use in day-to-day operations.

ICAO is currently considering this during work to establish standards on the carriage of cockpit image recorders and the legal protection of the associated data (refer to ICAO State Letter of AN 6/1.2-15/13 of 24 March 2015, containing proposed amendments to ICAO Annex 6 and Annex 13). EASA is actively engaged with ICAO in this work.

While a mandatory action is for the time inappropriate given the insufficient legal protection of cockpit recorder data at the global level, voluntary initiatives are already taking place with manufacturers fitting their helicopter with cockpit image recorders.

Safety Recommendation Status Closed

AAIB Assessment Not Adequate

RESPONSE HISTORY

N/A

(SRIS Reference: GB.SIA-2015-0036)