

EC225 LP,
G-REDU

The Eastern Trough Area
Project (ETAP) Central
Production Facility
Platform in the North Sea

18 February 2009

Accident

Safety Recommendation 2009-064

It is recommended that the Civil Aviation Authority review the carriage and use in commercial air transport helicopters of any radio location devices which do not form part of the aircraft's certificated equipment.

Date Safety Recommendation made:

24 June 2009

LATEST RESPONSE

Response received:

12 August 2009

Acceptance of these devices is predicted on establishing a low risk of their inadvertent activation or by on-aircraft testing to show that transmissions from such devices do not cause interference with the aircraft or its systems.

These radio location devices are not intended for use on board the aircraft, being part of the offshore industry's overall safety strategy, and CAA's responsibilities are limited to the determination that the carriage and use of such devices does not cause interference with the aircraft or its systems. However, the CAA recognises that such devices may be used as a locating device for search and rescue purposes and has therefore issued guidance to operators to help ensure that the transmissions from these devices do not compromise the operation of any Emergency Locator Transmitters (ELTs) required by the relevant aviation operating rules.

In addition, the CAA has issued a Flight Operations Communication (FODCOM 22/2009) which highlights the need for training in the use of emergency equipment such as ELT/PLB devices.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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18 February 2009

Accident

Safety Recommendation 2009-065

It is recommended that the Civil Aviation Authority advise the European Aviation Safety Agency of the outcome of the review on the carriage and use in commercial air transport helicopters of any radio location devices which do not form part of the aircraft's certificated equipment.

Date Safety Recommendation made:

24 June 2009

LATEST RESPONSE

Response received:

12 August 2009

The CAA accepts this recommendation and has written to EASA on the subject of PLBs and provided a copy of both the AIRCOM and the FODCOM.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

Safety Recommendation 2009-066

It is recommended that European Aviation Safety Agency require manufacturers of Emergency Locator Transmitters (ELTs)/Personal Locator Beacons (PLBs) units to add details, where absent, of the correct use of the antenna to the instructions annotated on the body of such beacons.

Date Safety Recommendation made:

24 June 2009

LATEST RESPONSE

Response received:

29 March 2009

1) Review of applicable requirements:

Regarding standards applicable to portable ELTs, ED-62 2.8.3 (ED-62A 2.7.3) already requires clear instructions for use on outside of the case. No standard change is considered necessary.

2) Design review of portable ELT's

EASA has made a design review of portable Emergency Locator Transmitters (ELTs), which are either Survival or Automatic Portable ELTs. One of the objectives was to check that clear instructions are provided on the ELT at least in simple English language. Even though it can not be assumed that all passengers are able to read and understand English instructions, especially in a post crash condition, it is considered that this is the best way to communicate on how to use the unit especially when additional pictograms are provided.

The results have shown that only one manufacturer uses an extendable antenna. Further instructions regarding the need to extend the antenna are now provided on newly produced units. No retroactive change to the units already in the field has been requested as the manufacturer demonstrated that even with the not extended antenna the ICAO minimum requirement having a radiation of at least peak effective radiated power (PERP) of 50 mW is achieved. The transmitter does have a minimum output power of 100 mW as requested by ED-62 and the ETSO. EASA will monitor the situation to determine if the ICAO recommended reduced output power is sufficient for the final rescue operation or not.

Other manufacturers use an automatic erectable antenna. The erection is activated automatically when the unit is exposed to water or retracted from the fixture. Instructions for manual activation are provided on the unit as well.

For automatic Portable (AP) ELTs it is common practice to provide a separate antenna for the portable use. Instructions are provided how to disconnect the aircraft integrated antenna and how to connect the antenna provided separately for the portable use.

The issue raised by investigators is noted and was addressed. Consequently no further action is required. Status: Closed – Agreement.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2009-067

It is recommended that the Civil Aviation Authority ensure that all aspects of Emergency Locator Transmitter (ELT)/Personal Locator Beacon (PLB) operation, particularly correct deployment of the antenna, are included and given appropriate emphasis in initial and recurrent commercial air transport flight crew training, as applicable.

Date Safety Recommendation made:

24 June 2009

LATEST RESPONSE

Response received:

12 August 2009

The CAA accepts this Recommendation and has reminded operators that it is their responsibility to provide training to aircraft crews which should include relevant aspects of ELT/PLB use. The CAA has published FODCOM 22/2009 which highlights the pertinent circumstances of this accident and reminds operators to ensure that appropriate aspects of ELT/PLB operation are included and given due emphasis in initial and recurrent crew training. This includes specific guidance for flight crew training. The text of the FODCOM will eventually be included in CAP 768.

FODCOM 22/2009 Training in the Use of Emergency Equipment was published on 21 Jul 2009. It will be reviewed in July 2010 and either kept as an "active" FODCOM, or withdrawn and the content published in CAP 789 (superseding CAP 768).

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-049

It is recommended that the Civil Aviation Authority re-emphasises to Oil and Gas UK that they adopt the guidance in Civil Aviation Publication (CAP) 437, entitled Offshore Helicopter Landing Areas - Guidance on Standards, insofar as personnel who are required to conduct weather observations from vessels and platforms equipped for helicopter offshore operations are suitably trained, qualified and provided with equipment that can accurately measure the cloud base and visibility, in order to provide more accurate weather reports to helicopter operators.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this recommendation and will by way of a letter re-emphasise to offshore helicopter operators and to Oil and Gas UK the guidance contained in CAP 437 on the provisions for accurate weather observations for helicopter offshore operations. The letter will be set by the end of October 2011.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Accident

Safety Recommendation 2011-050

It is recommended that the Civil Aviation Authority encourages commercial air transport helicopter operators to make optimum use of Automatic Flight Control Systems.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will through the means of an Information Notice encourage all commercial air transport helicopter operators to make optimum use of Automatic Flight Control Systems. The Information Notice will be published by the end of October 2011.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Accident

Safety Recommendation 2011-051

It is recommended that the Civil Aviation Authority ensures that commercial air transport offshore helicopter operators define specific offshore approach profiles, which include the parameters for a stabilised approach and the corrective action to be taken in the event of an unstable approach.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation in so far as it will review all commercial air transport offshore helicopter operators' operations manuals to ensure that they detail specific offshore approach profiles, including stable approach parameters, and the corrective action to be taken if an approach becomes unstable. This action will be completed by the end of October 2011.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-052

It is recommended that the Civil Aviation Authority commissions a project to study the visual illusions that may be generated during offshore approaches to vessels or offshore installations, in poor visibility and at night, and publicises the findings.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA does not accept this Recommendation. The CAA believes that retrofit of the new helideck lighting system covered by Recommendation 2011-053 will significantly reduce the potential for visual illusions. In combination with adherence to revised approach procedures, ideally using GPS instrument guidance (refer to Recommendation 2008-033) and associated approach profiles, the hazard presented by visual illusions will be adequately addressed in the CAA's view. The CAA is also leading a joint industry project to improve helicopter Terrain Awareness Warning Systems (HTAWS) which will address Recommendations 2011-060, 062 and 063. HTAWS has the potential to provide an effective safety net to underpin the helideck lighting and GPS approach initiatives. In view of the foregoing, the CAA considers a study of visual illusions to be unnecessary but will recommend to offshore operators that the information contained in this AAIB Report is disseminated amongst crews.

AAIB Assessment – Not Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-053

It is recommended that the Civil Aviation Authority (CAA) amends Civil Aviation Publication (CAP) 437, Offshore Helicopter Landing Areas - Guidance on Standards, to encourage operators of vessels and offshore installations, equipped with helidecks, to adopt the new lighting standard, for which a draft specification has been published in Appendix E of CAP 437, once the specification has been finalised.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will ammend CAP 437 once the specification has been finalised and encourage operators of vessels and offshore installations to apply these standards. The specification is expected to be defined by April 2012 after which the CAP will be amended.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-054

It is recommended that the Civil Aviation Authority reviews the procedures specified by commercial air transport helicopter operators as to when a crew may or should suspend a radio altimeter aural or visual height warning.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will review the procedures specified by commercial air transport helicopter operators in their operations manuals as to when a crew may, or should, suspend a radio altimeter aural or visual height warning. This action will be completed by the end of October 2011.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-055

It is recommended that the Civil Aviation Authority reviews commercial air transport offshore helicopter operators' procedures to ensure that an appropriate defined response is specified when a height warning is activated.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will review commercial air transport offshore helicopter operators' operations manuals to ensure that they include procedures specifying an appropriate defined response when a height warning is activated. The action will be completed by the end of October 2011.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-056

It is recommended that the Civil Aviation Authority reviews the procedures set out by commercial air transport offshore helicopter operators to ensure that a member of the flight crew monitors the flight instruments during an approach in order to ensure a safe flight path.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will review commercial air transport offshore helicopter operators' operations manuals procedures to ensure that they include the requirement for a member of the flight crew to monitor the flight instruments during an approach in order to ensure a safe flight path. This action will be completed by the end of October 2011.

AAIB Assessment – Adequate – Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-057

It is recommended that the International Civil Aviation Organisation introduces a Standard for crash protected recordings of the operational status of Airborne Collision Avoidance System (ACAS) and Terrain Awareness and Warning System (TAWS) equipment, where fitted, on helicopters required to carry a flight data recorder.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

26 June 2013

The Flight Recorder Panel (FLIRECP), as indicated in ICAO's letter, proposed a relevant amendment to Annex 6, Part III, to address UK AAIB Safety Recommendation 2011-057.

Accordingly, the Air Navigation Commission (ANC) carried out the preliminary review of the proposal on 11 June 2013 and agreed that it should go back to the FLIRECP for further work. The next meeting of the FLIRECP is scheduled for September 2013.

The FLIRECP's future recommendations on this subject should be reviewed by the ANC in mid 2014.

AAIB Assessment – Partially Adequate – Open

RESPONSE HISTORY

N/A

Safety Recommendation 2011-058

It is recommended that the European Aviation Safety Agency requires that crews of helicopters, fitted with a Terrain Awareness and Warning System, be provided with an immediate indication when the system becomes inoperative, fails, is inhibited or selected OFF.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

10 June 2014

The EC Terrain Awareness and Warning System (TAWS) has a "TAWS" amber light on the helicopter Caution and Warning Panel (CWP). It was originally certified to illuminate for inhibited or failed TAWS and remain extinguished when the system is switched OFF. This design is in line with the 'Black Cockpit' concept applied to the EC225. It aims at limiting permanent unnecessary caution lights on the instrument panel and thus strengthening flight crew alertness and responsiveness to actual failure conditions, should any alarm illuminate. A "Black Cockpit" has valuable safety benefit under that perspective, provided however that control panels design is meant to prevent a wrong switch being activated and to ensure flight crews are always aware of any of their intentional manual selections. With this concept, voluntary switching OFF TAWS did not trigger permanent illumination of the "TAWS" light of the CWP, as the system master switch design is interlock-secured and cover plate-guarded.

There may be human factors limitations to this approach (i.e. not displaying system inoperative status), for instance in case of a two pilot crew not communicating a switch selection. For this reason, the EC225 TAWS system has been improved by Airbus Helicopters with the modification MOD 332P083739.10/.11/.12/.13/.14/.15. This MOD is the current design standard for all newly produced EC225 helicopters and the retrofit of the fleet with MOD has been made available by the Airbus Helicopters Service Bulletin No. EC225-34.029 dated 25-07-2013. This is a software upgrade from V.26 (software version of the affected G-REDU rotorcraft) to V.28. Among various design improvements, it provides CWP lighting command of the 'TAWS' amber light when the system is selected OFF or a failure mimicking this condition. This completes the other already existing system conditions that trigger indication of this alarm in case of inhibited or failed TAWS. Moreover, some EC225 helicopters equipped with former TAWS software V.24, can also accomplish the upgrade to the V.28 standard with specific MOD 332P083739.16/.17/.18/.19 and SB No. EC225-34.031 dated 25-07-2013.

AAIB Assessment – Partially Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-059

It is recommended that the European Aviation Safety Agency reviews the acceptability of crew operated ON/OFF controls which can disable mandatory helicopter audio voice warnings.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

26 March 2013

In the course of certification and approval of aircraft and/or installed systems, the proposed normal operation of each system is assessed against the applicable airworthiness requirements or certification specifications (CS 29.1309). Additionally, failures and emergencies directly and indirectly related to the use of the system are evaluated. This includes the acceptability of a means to disable a mandatory system, if proposed.

As a general principle, it is acceptable to have a means of deselecting such a system, but only if the pilot is at all times aware of the degraded status of the aircraft and there is mitigation to ensure that the aircraft continues to meet an acceptable airworthiness standard. There are many examples of the satisfactory application of this principle.

AAIB Assessment –Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-060

It is recommended that the Civil Aviation Authority reviews the guidance in Civil Aviation Publication (CAP) 562, Civil Aircraft Airworthiness Information and Procedures, Part 11, Leaflet 11-35, Radio Altimeters and AVADs for Helicopters, regarding the pre-set audio height warning that is triggered by the radio altimeter and may not be altered in flight, to ensure that crews are provided with adequate warning to take corrective action.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 September 2011

The CAA accepts this Recommendation and will, by 31 October 2011, review the guidance in Civil Aviation Publication (CAP) 562 Civil Aircraft Airworthiness Information and Procedures, regarding the content of the leaflet "Radio Altimeters and AVADs for Helicopters" (Leaflet 11-35 is now relocated in Book 2 as Leaflet 34-30) concerning the pre-set audio height warning that is triggered by the radio altimeter, to ensure that crews are provided with adequate warning to take corrective action.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-061

It is recommended that the European Aviation Safety Agency ensures that helicopter performance is taken into consideration when determining the timeliness of warnings generated by Helicopter Terrain Awareness and Warning Systems.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

26 March 2018

CAA UK has performed research activities over the last years to improve Class A Helicopter Terrain Awareness Warning Systems (HTAWS) for offshore helicopter operations. The final report of a recent study, reference FOP-CAA-Report 150922, was published in April 2017. The report is published by CAA UK as CAP1538 at version 1.1, dated 5 June 2017.

The report compares the new identified warning envelopes between EC225 and S76A+, and concludes that only minor adaptations are necessary. It further considers that the new warning envelopes are generally applicable, and that a single set of warning envelopes would serve the need for various helicopter types when using the classical parameter radio altitude and sink rate.

Based on this, the Agency considers that the timelines of HTAWS are in general not type-performance dependent.

EC225 and S76A+ fleets Flight Data Monitoring programmes have been used to develop and test modified warning envelopes of the 'Classic' or non-database EGPWS alerting modes (using radio altitude and sink rate parameters). This has demonstrated significant improvement in terms of warning time while maintaining acceptably low nuisance alert rates. The two helicopter types and associated styles of operation are considered to represent a broad spectrum of offshore operations, indicating that a single set of warning envelopes would have general applicability, avoiding the need to tailor warning envelopes for individual helicopter types and/or types of operation.

The study therefore does not indicate that the timeliness of HTAWS warning alerts are in general type performance dependent.

To be mentioned, that new warning envelopes based on airspeed and total torque parameters were also evaluated, which are more dependent on the specific helicopter type. This is captured in CAP1519, Offshore Helicopter Terrain Awareness Warning System Alert Envelopes, version 1.2, dated 29 November 2017 and proposed for field testing. However, changing the input parameter for a warning function is a too significant shift in the approach to be introduced, for the time being, as a minimum performance requirement.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

Response received:

30 September 2013

EASA is awaiting results from studies which may allow redefining the Helicopter Terrain Awareness and Warning System (HTAWS) standards, especially for offshore operation, as the report FDP-CAA-Report

121019 "Report for UK Civil Aviation Authority on Class A Terrain Awareness Warning System (TAWS) for Offshore Helicopter Operations", which is currently interim and hence subject to change.

AAIB Assessment – Partially Adequate – Open

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Safety Recommendation 2011-062

It is recommended that the European Aviation Safety Agency reviews the frequency of nuisance warnings generated by Terrain Awareness and Warning System equipment in offshore helicopter operations and takes appropriate action to improve the integrity of the system.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

25 April 2013

A project 'Class A Terrain Awareness Warning System (TAWS) for Off-Shore Helicopter Operations' has been launched as part of the UK CAA-run joint Industry Helicopter Safety Research Management Committee (HSRMC) research programme and has been supported by the International Association of Oil & Gas Producers, Bristow Helicopters, Shell Aircraft Ltd and BP. Flight trials were run with 2 helicopter types a S76A+ and a Eurocopter EC225. It appears that it has been possible to produce a single set of HTAWS 'classic mode' warning envelopes covering both helicopter types while maintaining a 'nuisance' alert rate of no worse than 1 in 100 flights and still provide significantly enhanced warning times. The next step in the project will be to examine the form and format of the associated warnings. Simulator trials are then envisaged both for flight crew evaluation of the complete system and also to generate further 'accident' examples for testing the envelopes. Progress on these areas will be subject to availability of resource/funding. EASA monitors the project progress as member of the HSRMC. The final report will be published.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

Safety Recommendation 2011-063

It is recommended that the European Aviation Safety Agency, in conjunction with the Federal Aviation Administration, defines standards governing the content, accuracy and presentation of obstacles in the Terrain Awareness and Warning System obstacle database for helicopters operating in the offshore environment.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

23 April 2015

EASA has issued European Technical Standard Order (ETSO) C194 Helicopter Terrain Awareness and Warning System (HTAWS) in amendment 7 of Certification Specifications for European Technical Standard Orders (CS-ETSO) applicable since 05 July 2012 for new designed HTAWS. ETSO-C194 endorses Radio Technical Commission for Aeronautics (RTCA) Document DO-309, Minimum Operational Performance Standards (MOPS) for HTAWS Airborne Equipment, dated 13 March 2008, as the applicable requirements for the Terrain Awareness and Warning System obstacle database and refers further to EUROCAE ED-76/RTCA DO-200A, Standards for Processing Aeronautical Data, as the applicable standard for the processing of such database. The standard is giving the responsibility to the equipment manufacturer to demonstrate that the accuracy and resolution of the obstacle database is suitable for the intended operation [DO-309 2.4.3.4.b]. EASA considers that the standards to define accuracy and presentation of obstacles in the database of the equipment are adequate. These requirements are passed along the database supply chain. This is facilitated through the EUROCAE ED-76/RTCA DO-2001 process standard.

Regarding the updating of the Terrain and Obstacle Databases, in order to ease the oversight of the database supply chain EASA is offering the voluntary Letter of Acceptance process based on EASA opinion 1/2005, which can be used for aeronautical data published by states. With Opinion 02/2015 'Technical requirements and operating procedures for the provision of data to airspace users for the purpose of air navigation' EASA is proposing to the Commission to mandate organisation oversight for aeronautical database providers instead of the current voluntary process oversight.

The data quality requirements on the interface between states and database providers for obstacle data are defined in EUROCAE ED-98/RTCA DO-276 'User Requirements for Terrain and Obstacle Data'. Annex 15 of the Chicago Convention establishing the International Civil Aviation Organization (ICAO) requires states to publish obstacle data. Additionally, European Commission Regulation (EU) No 73/2010 lays down requirements on the quality of aeronautical data and aeronautical information for the single European sky.

The operator is responsible for ensuring that the aeronautical database used is adequate for the intended operation. With Opinion 02/2015 it is proposed to the Commission to amend Commission Regulation (EU) No 965/2012 CAT.IDE.H.355 and further guidance material is developed to ensure controlled handling of state published obstacle data along the database chain.

In case the state is not publishing obstacle data of sufficient quality or coverage, but such data is identified to be needed either by the equipment manufacturer or the operator, the proposed regulation in Opinion 02/2015 has provisions to allow data enhancement along the data chain.

EASA considers that all elements are in place, to govern the issuance and use of obstacle data in respect to content, accuracy and presentation of obstacles in the Terrain Awareness and Warning System for helicopters including the operating in offshore environment.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

Safety Recommendation 2011-064

It is recommended that the European Aviation Safety Agency establishes the feasibility of recording, in crash-protected memory, status indications from each avionic system on an aircraft.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

21 December 2012

It is acknowledged that non-volatile memories have delivered important information in a number of investigations. However, non-volatile memories are not designed to survive accident conditions (such as crash impact forces, fire, water ingestion etc.) because avionics systems are intended to perform other functions than recording data. Instead, the crash-protected flight data recorder is specifically designed to record flight parameters, including those coming from avionic systems. In addition, adding flight parameters to the mandatory parameter list has always been done on a case by case basis. This is because establishing a set of well-defined flight parameters corresponding to specific aircraft functions has been deemed a better tool for the accident investigation authorities to identify their needs and for the industry to provide a satisfactory solution than relying on generic requirements. EUROCAE Document 112 (ED-112) already specifies that the status of some essential avionic systems of a helicopter should be recorded (see flight parameters 14, 46 and 47 of table II-A.2 "Parameters to be recorded - helicopters"). ED-112 is referenced in Annex to EASA Executive Director (ED) Decision 2012/018/R (Acceptable means of compliance and guidance material to Air Operation Rules, Part Commercial Air Transport) . In addition, EUROCAE Working Group 90 is revising ED-112, and EASA has proposed to this group to add the technical status of the Terrain Awareness Warning System (TAWS) and of the Anti Collision Aircraft System (ACAS) to ED-112 table II-A.2. Rulemaking tasks RMT.0308 and RMT.0309 are In the Agency's Rulemaking Programme and they will address the update of the flight parameters list, taking into account the latest ED-112 revision.

AAIB Assessment – Not Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-065

It is recommended that the European Aviation Safety Agency considers amending certification requirements for rotorcraft, that are certified in accordance with ditching provisions, to include a means of automatically inflating emergency flotation equipment following water entry.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

6 June 2012

A rulemaking task was initiated in May 2012 (Reference: RMT.0120 (former 27&29.008)), which aims to undertake a broad review of helicopter ditching, water impact events and subsequent occupant survivability. A determination will be made on how certification rules and guidance material can best be developed to further enhance helicopter safety. Automatic float inflation was one of the many safety enhancements to be identified during earlier work and an assessment of the safety/impact benefits is an integral part of this task. Both future and retroactive certification requirement are being considered.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-066

It is recommended that the European Aviation Safety Agency modifies European Technical Standard Order (ETSO) 2C70a and ETSO 2C505 to include a requirement for multi-seat life rafts, that do not automatically deploy their Sea Anchor, to include a label, visible from within the inflated life raft, reminding the occupants when to deploy the Sea Anchor.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

8 August 2013

According to the outcome of the SAE S-9A Safety Equipment and Survival Systems Committee work, the potential safety benefit from additional life raft markings, taking into consideration the operational aspects as well as the related necessary improvement in crew training, was not deemed to justify the associated burden and costs.

Following the publication of SAE standards AS1356, the Agency intends to harmonise ETSO 2C70b with the FAA, and this will be done in the frame of rulemaking task RMT.0206 (which will start in 2013). This ETSO update will not include the recommended action

No revision is currently planned for ETSO 2C505.

AAIB Assessment – Not Adequate - Closed

RESPONSE HISTORY

N/A

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Safety Recommendation 2011-067

It is recommended that the Federal Aviation Administration modifies Technical Standard Order (TSO) C70a to include a requirement for multi-seat life rafts, that do not automatically deploy their Sea Anchor, to include a label, visible from within the inflated raft, reminding the occupants when to deploy the Sea Anchor.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

13 February 2015

The FAA's Aircraft Certification Service, Design, Manufacturing, and Airworthiness Division published TSO-C70b, Life Rafts, on August 4, 2014. TSO-C70b can be found at the following Web site:

http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/E85891F0E71796E486257D2B005782D5?OpenDocument

The revised TSO's minimum performance standard includes the Society of Automotive Engineers Aerospace Standard (AS) 1356, Life Rafts. AS 1356 contains the following new requirement in paragraph 8.3.8:

A Sea Anchor that is not automatically deployed shall be stowed in a readily accessible location that is clearly marked and visible from within the inflated life raft, including instructions for Sea Anchor use.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

Safety Recommendation 2011-068

It is recommended that the European Aviation Safety Agency requires Eurocopter to review the design of the fairings below the boarding steps on AS 332 and EC225 series helicopters to reduce the possibility of fairings shattering during survivable water impact and presenting sharp projections capable of damaging life rafts.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

10 June 2014

The helicopter, registered as G-REDU, suffered a collision with the water which is irrelevant to the certification scope for helicopters with respect to the current EASA Airworthiness Standards. For certification, EASA deals with intentional and controlled ditching, for which the aircraft structural requirements are prescribed in terms of horizontal and vertical velocities of the helicopter at the time of the contact with the water during a ditching. The helicopter is therefore designed to structurally meet water contact loads derived from the predefined ditching conditions of the certification regulations.

Although the crash was survivable, the G-REDU helicopter flight conditions recorded during the sea impact were much higher than the regulatory ditching envelope applicable for certification, hence far beyond the certified structural ditching provisions of the rotorcraft.

Moreover, other undetermined impact parameters had a large effect on the local failure of the fairings below the G-REDU helicopter boarding steps and in particular, the attitude of these fuselage skins relative to the surface of the sea water at impact (i.e waves condition, shape and amplitude). The actual impact loads encountered locally by the fairings that failed during the accident remain therefore unknown after the investigation. Consequently, reviewing the affected fairings to reduce their possibility of failure versus structural loading conditions, beyond the ditching certification provisions and without any identified design targets or objective technical limit, is impracticable.

Nevertheless, EASA requested Airbus Helicopter to confirm that the failed fairings comply with the certification structural ditching provisions and assess whether they could even demonstrate higher structural resistance. Airbus Helicopters have provided Report no. ETVF 130/12 issue B, dated 2013, by which they show positive safety structural margins on the fairings to ultimate loads of the certification ditching conditions (CS29.563 & 801 requirements), i.e. using a 1,5 safety factor. Additionally, the EASA Rulemaking Task RMT.0120 is on-going with the aim to further consider structural design aspects for ditching certification and possible expansion of the ditching envelope.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

Safety Recommendation 2011-069

It is recommended that the European Aviation Safety Agency, in conjunction with the Federal Aviation Administration, review the design requirements and advisory material for helicopters to require 'delethalisation' of the fuselage to prevent damage to deploying and floating life rafts following a survivable water impact.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

12 July 2019

NPA 2016-01 published 23/3/2016. It led to ED Decision 2018/007/R on 25/6/2018 amending CS-27 and CS-29 (amdt 5).

Second NPA planned 01Q2020.

Above documents are available on EASA website:

<https://www.easa.europa.eu/document-library/notices-of-proposed-amendment>

<https://www.easa.europa.eu/document-library/agency-decisions>

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

Response received:

22 March 2012

Ditching, as defined in Advisory Circular (AC) 29.801, is an emergency landing on water, deliberately executed, with the intent of abandoning the rotorcraft as soon as practical. Ditching structural design considerations are based on a limited ditching envelope with a descent rate of 300ft/min, and acceptable means of compliance aims to ensure that probable damage to the airframe within this envelope is fully considered. Furthermore, AC 29.1411 (Safety Equipment - General) addresses the accessibility and stowage of safety equipment, including life raft, and additional guidance was included in AC 29-2C at Change 3 (September 2008), which specifically relates to protection of life raft from damage due to fuselage projections. This event cannot be considered a ditching in the accepted design definition, as the water impact was not a deliberate act on the part of the pilot and the descent rate at impact was 1380ft/min, which is considerably beyond the ditching envelope.

However, it is recognised that survivable water impact events beyond the ditching envelope do occur and having survival equipment that can properly function in such cases would lead to enhanced safety. The Agency will launch a rulemaking task RMT.0120 (former 27&29.008) 'Ditching Occupant Survivability' on ditching, water impact and survivability, to review and amend the rotorcraft certification specifications CS-27 and CS-29. This rulemaking task will consider multiple facets of the problem, including structural design aspects and expansion of the ditching envelope.

AAIB Assessment – Partially Adequate – Open

Safety Recommendation 2011-070

It is recommended that the European Aviation Safety Agency ensures that a requirement is developed for all emergency equipment, stowed in deployable survival bags, to be capable of being easily accessed and utilised by the gloved hands of a life raft occupant whilst in challenging survival situations when a life raft may be subject to considerable motion in cold, wet and dark conditions.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

23 October 2012

EASA is involved within the S9 group (Cabin Safety) of the SAE (Society of Automotive Engineers) and works on two propositions of Aerospace Standards (AS) relating to emergency equipments as follows:

- AS 1354: for Individual Inflatable Life Preservers and
- AS 1356: for Life rafts.

Both propositions contain provisions for test with either gloved or chilled hands as defined below:

CHILLED HANDS TEST METHOD: A technique to simulate the reduced dexterity of chilled hands that may occur during an emergency in a cold environment. A naïve test subject simultaneously submerges left and right forearms and hands in 50°F (10° C) water for 2 minutes, quickly dries, and immediately (within 5 seconds following immersion) attempts to open/operate designated packaging/equipment. The test subject should be healthy and wear a loose-fitting, sleeveless upper garment that will not inhibit blood-flow to the arms and hands. (Alternate: GLOVEDHANDS TEST METHOD)

GLOVED HANDS TEST METHOD: A technique to simulate the reduced dexterity of chilled hands that may occur during an emergency in a cold environment. A naïve test subject wears appropriately sized, 0.2 inch (5 mm) or thicker smooth-surfaced neoprene gloves to open/operate designated packaging/equipment. (Alternate: CHILLED HANDS TEST METHOD)

Depending on the outcome of this SAE work, the Agency may consider updating the corresponding CS-ETSO (C13f, C69c and 2C70a).

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A

EC225 LP,
G-REDU

The Eastern Trough Area
Project (ETAP) Central
Production Facility
Platform in the North Sea

18 February 2009

Accident

Safety Recommendation 2011-071

It is recommended that the European Aviation Safety Agency reviews the location and design of the components and installation features of Automatically Deployable Emergency Locator Transmitters and Crash Position Indicator units, when required to be fitted to offshore helicopters, to ensure the reliability of operation of such units during and after water impacts.

Date Safety Recommendation made:

14 September 2011

LATEST RESPONSE

Response received:

6 June 2012

A rulemaking task was initiated in May 2012 (Reference: RMT.0120 (former 27&29.008)), which aims to undertake a broad review of helicopter ditching, water impact events and subsequent occupant survivability. A determination will be made on how certification rules and guidance material can best be developed to further enhance helicopter safety. The installation and functioning of all types of Emergency Locator Transmitters following water impact events is an integral part of this task. Both future and retroactive certification requirement are being considered.

AAIB Assessment – Adequate - Closed

RESPONSE HISTORY

N/A