Civil Aviation Authority

EASA RMT.0120 (27 & 29.008)

Ditching Occupant Survivability

21 November 2013

Background (1)

- Helicopter Airworthiness Review Panel – HARP Report (CAP 491), 1984.
- Accident to G-TIGH, 14 March 1992 – AAIB Safety Recommendation 93-30.
- Review of Offshore Safety and Survival – RHOSS Report (CAP 641), 1995.
- JAA HOSS Working Group – HOSS/WP-99/8.5.
- JAA/FAA Joint Harmonisation Working Group (JHWG) Water Impact, Ditching Design & Crashworthiness Working Group (WIDDCWG) – Report.
- JAA/FAA Rotorcraft Steering Group (RSG).

Background (2)

- EASA Helicopter Ditching, Water Impact & Survivability Workshop, December 2012.
- EASA Ditching & Survivability Rule Making Task RMT.0120 (27 & 29.008):
  - launched January 2013
  - 2nd meeting May 2013
  - 3rd meeting September 2013
  - next meeting scheduled for March 2014

Background (3)

EASA Rulemaking Task RMT.0120 (27&29.008)
Ditching occupant survivability

Version 1: Jan 2013

2013

Jan-13	Feb-13	March-13	April-13	May-13	June-13	July-13	Aug-13	Sept-13	Oct-13	Nov-13	Dec-13
1st Meeting				2nd Meeting					3rd Meeting	NPA drafting	NPA drafting

2014

Jan-14	Feb-14	March-14	April-14	May-14	June-14	July-14	Aug-14	Sept-14	Oct-14	Nov-14	Dec-14
NPA drafting	4th Meeting	NPA drafting	NPA drafting	NPA drafting	NPA drafting & internal consultation	NPA	Consultation	Consultation	Consultation		Review Group Meeting & CRD drafting

2015

Jan-15	Feb-15	March-15	April-15	May-15	June-15	July-15	Aug-15	Sept-15
CRD drafting	CRD drafting	Draft CRD	Consultation + Workshop	Consultation	CRD update + Decision drafting	CRD update + Decision drafting	Decision drafting & Internal consultation	Decision + CRD

Background (4)

- Membership:
  - Regulators: EASA, UK CAA, FAA
  - Helicopter Operators: CHC/EHA, Bristow Helicopters
  - Helicopter manufacturers: Eurocopter, AgustaWestland
  - Oil & gas industry: Oil & Gas UK, C-NLOPB
  - Consultants: BMT Fluid Mechanics, Dr S Coleshaw
  - Equipment manufacturers: Ferranti Technologies, Survitec, Zodiac Aerospace (Aerazur), Dart Aerospace, HR Smith.

Water Impact

- Minimise risk of sinking:
  - Automatic arming/disarming of EFS.
  - Eliminate single point failures, e.g. provide individual floatation unit autonomy.
  - Add redundant floatation unit(s).
- Maximise successful occupant egress:
  - Ensure air gap post-capsize.
  - Extend underwater survival time (EBS).

Ditching (1)

- Sea keeping performance:
  - Irregular wave testing (demonstration of compliance).
  - Performance appropriate for area of operation (hostile/non-hostile).
  - Demonstrate performance with failed float (rather than float compartment).
- Operational limitation:
  - Cease operations if sea state exceeds certificated performance.
  - Cease operations if reasonable prospect of rescue not assured.

Ditching (2)

- Emergency egress from helicopter:
  - Add hand holds next to push-out windows and on seats (cross cabin escape).
  - Standardise emergency exit operation.
  - Standardise emergency exit marking and lighting.
  - Paint emergency exit operating handles in black and yellow stripes.
  - Review and increase (if justified) minimum size of all emergency exits.

Survival Equipment (1)

- Immersion suits.
  - Increase sea temperature threshold from 10°C to 12°C.
  - Introduce separate standards for flight crew and rear crew (including lower thermal insulation).
  - Improve conspicuity:
    - High visibility colour.
    - Infrared reflective tape.
  - Add requirement for self-righting capability in combination with life jacket.
  - Replace fixed 150N maximum buoyancy with range proportional to suit size.
  - Review ETSO and update as required.

Survival Equipment (2)

- Life jackets.
  - Ensure compatibility with immersion suit(s):
    - Add requirement for self-righting capability when used in combination with immersion suit.
    - Add requirement for appropriate floating angle when used in combination with immersion suit.
  - Add reflective strips to (deployed) lobes.
  - Add requirement for spray hood.
  - Add requirement for crotch strap or equivalent means of preventing the life jacket from ‘riding up’ on the wearer.
  - Review ETSO and update as required.

Survival Equipment (3)

- Life rafts (1).
  - Develop ETSO for external life rafts.
  - Correct inconsistencies in length of painter(s) and add requirement for short painter.
  - Correct inconsistencies in occupant weights (i.e. 77 kg vs 91 kg).
  - Improve requirements for testing of deployment of external life rafts, including underwater deployment where applicable.

Survival Equipment (3)

- Life rafts (2).
  - Life raft deployment:
    - Primary – automatic and/or from flight deck (all/both life rafts from one switch/handle).
    - Secondary – from passenger cabin (accessible to designated passenger seat(s) which must be occupied, but measures to prevent in-flight operation required).
    - Tertiary – external (accessible in all foreseeable floating attitudes).
  - Durability of life raft / delethalisation of aircraft.
  - Dry shod entry.

Implementation

- Changes agreed for CS 27/29 - applicable to new certification applications post September 2015.
  - Not certain how much will 'survive'.
  - Long time to wait.
- Changes to CS 27/29 will be considered for CS 26 (retrospective application) – applicable to existing aircraft.
  - Will likely be less than that for new certification applications.
  - May not even include all changes already voluntarily implemented.
- Some changes already implemented voluntarily by industry.
- All changes could be considered by industry for voluntary implementation.
  - Would help case for changes to rules.
  - Would deliver safety benefits significantly sooner.

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Thank you for your attention…

Any questions?