

ETSO Workshop 2022 - Industry session -

20th – 21st September 2022

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Your safety is our mission.

Rotorcraft ditching survival ETSO equipment

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Rotorcraft ditching survival ETSO equipment

→ Summary

- Rulemaking for CS and Operational rules overview
- Current ETSO Standards
- Ongoing activities to update referenced industry standards (ASD-STAN WG)
- CS-ETSO rulemaking
- Updated EBS, Life jacket, Suit, Life raft standards and main differences with current ones

Rotorcraft ditching survival ETSO equipment

→ Rulemaking

- RMT.0120 Ditching Occupant Survivability Phase I: CS 27 and CS 29 amendment
- RMT.0120 Ditching Occupant Survivability Phase II: Part 26 and CS 26 update
 - 8th and 9th of December 2022 [EASA Rotorcraft and VTOL Symposium](#)
- RMT.0392 Regular update of air operations rules (“OPS” EU Reg. 965/2012 <https://www.easa.europa.eu/en/document-library/easy-access-rules>)

→ CS-ETSO Rulemaking

- Ditching Survival Equipment (EBS, Life Jacket, Immersion Suit, Life rafts)

Air Ops 1/4

- Regulation (EU) No 965/2012, specifically reg. (EU) 2016/1199 of 22 July 2016 amending
 - SUBPART K HELICOPTER OFFSHORE OPERATIONS is added in Annex V (Part-SPA) to the above rule. Specifically requiring from 1st July 2018:
 - SPA.HOFO.165 Additional procedures and equipment for operations in a hostile environment
 - **(a) Life jackets**
 - Life jackets shall be worn at all times by all persons on board unless integrated survival suits that meet the combined requirement of the survival suit and life jacket are worn.

Air Ops 2/4

→ (b) **Survival suits**

→ (1) General

→ When the weather report or forecasts available to the commander/pilot-in command indicate that the sea temperature will be less than plus 10 °C during the flight, or when the estimated rescue time exceeds the calculated survival time, or the flight is planned to be conducted at night, each passenger on board shall wear a survival suit.

→ (2) Medically incapacitated passengers

→ ...

Air Ops 3/4

→ SPA.HOFO.165 Additional procedures and equipment for operations in a hostile environment

→ (c) **Emergency Breathing System**

All persons on board shall carry and be instructed on the use of **Emergency Breathing Systems**.

Air Ops – AMC for EBS

- AMC1 SPA.HOFO.165(c) Additional procedures and equipment for operations in hostile environment
 - EMERGENCY BREATHING SYSTEM (EBS)
 - The EBS of SPA.HOFO.165(c) should be an EBS system capable of rapid underwater deployment.

Air Ops 4/4

→ SPA.HOFO.165 Additional procedures and equipment for operations in a hostile environment

→ **(d) Life rafts**

→ (1) All life rafts carried shall be installed so as to be usable in the sea conditions in which the helicopter's ditching, flotation, and trim characteristics were evaluated for certification.[...]

Current ETSO Available 1/3

- EASA CS-ETSO Amendment 1 (2006) introduced survival equipment's STDs for Operations in Hostile Sea Areas (ex JAR-OPS3 now EU Reg.965/2012):
 - *“Hostile environment”: for overwater operations, the open sea area north of 45 N and south of 45 S [...]*
- ETSO-2C502 “Helicopter Crew and Passenger Integrated Immersion Suit”
- ETSO-2C503 “Helicopter Crew and Passenger Immersion Suits for Operations to or from Helidecks Located in a Hostile Sea Area”

Current ETSOs Available 2/3

- ETSO-2C504 “Helicopter Constant-Wear Lifejackets for Operations to or from Helidecks Located in a Hostile Sea Area”
- ETSO-2C505 “Helicopter Life raft for Operations to or from Helidecks Located in a Hostile Sea Area”

Current ETSOs Available 3/3

- Old/obsolete versions of the international standards, might either not be available or have been superseded by other references (i.e. EN ISO 15027-3:2002, EN ISO 15027-1:2002, EN 396:1993, EN394:1994)
- Difficult to formulate Deviation Requests in case of a positive deviation
- Test facilities usually conduct activities according to latest standards
 - ETSO projects for survival equipment had to undergo a positive deviation and comparison of the old vs the new test procedures
- Need of a WG to draft updated standards
- Rulemaking CS-ETSO revising the content of ETSO standards to reflect latest standards

Rotorcraft ditching survival ETSO equipment

- ASD-STAN AeroSpace and Defence Industries Association of Europe
 - Domain 12 “Cabin” WG02 Ditching Equipment <https://asd-stan.org/domain-d12-cabin/>
 - EN 4856:2022 Rotorcraft - Emergency Breathing Systems
 - Current Edition: 2022-03; Initial edition P1 09/2017; Edition 12/2017 in the ETSO
 - prEN 4862 Rotorcraft – Constant Wear Lifejackets
 - Current Edition: P1 2022-02
 - prEN 4863 Rotorcraft – Immersion suits
 - Current Edition: P1 2022-05
 - prEN 4886 Rotorcraft – Life rafts
 - In development

Ditching survival ETSO equipment

- ASD-STAN Domain 12 “Cabin” WG02 Ditching Equipment
 - Standards being self-contained
 - Harmonized definitions
 - Same document structure
 - Same “cross” requirements
 - Compatibility testing as a “survival system”

ETSO EBS Standard Development

- ASD-STAN European Standards for Aerospace & Defence
 - WG started January 2016
 - WG composed by members of Industry, NAAs and EASA
 - EBS work completed, EN 4856 issued December 2018
 - CS-ETSO Amendment 16 (07/2020) included ETSO-2C519 referencing to EN4856:2018 for EBS
 - With minimal editorial work as standard embodied EASA's input through the working group participation

Ditching survival ETSO equipment

- prEN 4863 Rotorcraft – Immersion suits - Main update
 - Integrated immersion suit in the same standard
 - Improved test procedures
 - Additional categories defined for thermal protection
 - Self rightening requirements proportionate to the thermal protection

Ditching survival ETSO equipment

- prEN 4886 Rotorcraft – Life rafts - Main update
 - Two categories, integrated or manually handled
 - Category A life rafts deployment test underwater
 - Average occupant weight is 98 kg (increased from 90 kg)
 - Improved puncture resistance
 - Provisions for 2 retaining lines
 - Remote activation design
 - Testing provisions for deployment including submerged

Ditching survival ETSO equipment

- Upcoming CS-ETSO Amdt.18 regular will include:
 - Include the transposition of ASD-STAN into ETSO revision for EBS, Life Jacket, Immersion Suit
 - Standard for raft is still under development

Questions?
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