



EUR 262-20 / WG110-16
RTCA Paper No. 265-20/SC237-011

Summary of the
EUROCAE Working Group 110/ RTCA SC 237 (Meeting 8)
Helicopter Terrain Awareness Warning Systems (TAWS) for
Offshore Operations

DATE: 16th -18th September 2020

PLACE: Webex

CONTACT:
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ATTENDEES:

The following people attended all or part of the webex:

Organisation	First name	Last name	Email address
Airbus Helicopters Deutschland GmbH	Dietmar	Kleinitz (DK)	dietmar.kleinitz@airbus.com
Airbus Helicopter USA	Paul	Dunlap(PD)	paul.dunlap@airbus.com
Bell RTCA Chair	Michael	Deer (MD)	mdeer@bellflight.com
Bell	Erik	Oltheten (EO)	eoltheten@bellflight.com
Collins Aerospace	Philippe	Salmon (PS)	philippe.salmon@rockwellcollins.com
EASA	Eric	Bennett (EB)	eric.bennett@easa.europa.eu
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EUROCAE	Sebastian	Reschenhofer (SR)	sebastian.reschenhofer@eurocae.net
FAA	Charisse	Green (CG)	charisse.green@faa.gov
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HAI	Harold	Summers (HS)	harold.summers@rotor.com
HeliOffshore	Steve	O'Collard (SOC)	Steve.OCollard@chcheli.com >
Honeywell	Gary	Ostrom (GO)	gary.ostrom@honeywell.com
RTCA	Rebecca	Morrison (RM)	RMorrison@rtca.org
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Sikorsky	Robert	Endrizzi (RE)	robert.j.endrizzi.jr@lmco.com
Sikorsky	Steve	Schellberg (SS)	steve.schellberg@lmco.com
Transport Canada Civil Aviation	Travis	Brooks (TB)	travis.brooks@tc.gc.ca
UK CAA	Dave	Howson (DH)	dave.howson@caa.co.uk
UK CAA EUROCAE Secretary	Mark	Prior (MP)	mark@mpriorconsulting.com
UK CAA EUROCAE Chair	Yasuo	Ishihara (YI)	y.ishihara.sea@gmail.com

1 Introductions

Mike Deer(MD) welcomed everyone to the meeting. Sebastian Reschenhofer(SR) was introduced as the new EUROCAE manager for WG110. Yasuo Ishihara(YI) was reinstated as the Co-Chair and it was explained that he was now working as a representative of the UK CAA.

2 IPR/Membership Call-Outs and Introductions.

Rebecca Morrison(RM) showed the mandatory slides which explain the obligations of members and covered administrative aspects of the meeting. SR explained the additional requirements of EUROCAE.

Secretary's Note: The following minutes group the discussions by topic rather than chronologically, as some items were discussed during more than 1 session.

3 Administrative Remarks/EUROCAE and RTCA Policy

3.1 Delivery Schedule for MOPS

The future workload and publication date for the MOPS were discussed and it was agreed that the work is still on track to achieve the deadlines below:

- 3.1.1 The RTCA/EUROCAE MOPS will be issued for external review and comment on the 30th September 2020. The comment period will close on the 13th November 2020. It was noted that a 45-day comment period is standard practice.
- 3.1.2 The next meeting of the WG/SC will take place virtually from 15th-17th December 2020 where external comments will be reviewed and processed.
- 3.1.3 The MOPS is scheduled to be published in March 2021.

3.2 EUROCAE Open Consultation (OC) and Final Review and Comment (FRAC) Process

RM explained the EUROCAE OC and RTCA FRAC processes. This included guidance on how organisations should make comments, along with an explanation of the review processes and projected timings. It was stressed that a descent should only be used where it is believed an agreement within the WG will not be reached.

A copy of the OC/FRAC slides is available on the RTCA workspace.

4 Previous Meeting Minutes

Actions arising from the previous meetings were discussed and it was confirmed that all items were now closed.

Action Reference	Action	By Whom	By Date
7.1	Provide guidance material on an altitude rate source suitable for offshore HTAWS	Bell (EO)	Closed
7.2	Provide guidance on how to calculate the power required for a 3 degree approach using RFM level flight performance graphs.	Sikorsky (RE)	Closed
7.3	Contact Leonardo (FR) to request the full analysis from the AW139 and AW189.	Secretary	Closed
7.4	Assess the Mode 7B and 7C warning times and nuisance alert rates using five accident cases shown in CAP 1538	UK CAA (DH)	Closed
7.5	Review the MOPS and provide text which reflects the research findings from CAP 1747	UK CAA (DH)	Closed
7.6	Upload an updated set of MOPS to the EUROCAE and RTCA sites.	Bell (MD)	Closed

5 Review of the Comments Received on the Current Draft MOPS

At Meeting 7, all WG 110/SC 237 members were requested to review, and provide comments if thought necessary, on the draft MOPS. A total of 222 comments were received. The comments were recorded on an Excel spreadsheet, along with proposals on how the comments could be resolved. Consensus was reached with members present on how all of the 222 comments were resolved, and by the end of the meeting all the

comments had been closed. That spreadsheet forms the record of how comments were processed and was posted on the RTCA/EUROCAE sites. These Minutes will only record where actions were raised during the process.

5.1 Audio Alert

Airbus (DK) had raised a number of Non-Concur comments (id 51419 *et seq*) on the requirement for audio alerts to have a unique tone. The current text could be read as a unique tone for each mode, which would have the potential to confuse pilots. UK CAA (DH) took an action to clarify the text.

Action 8.1 UK CAA (DH) to provide revised text which explains the requirement for a unique tone for HTAWS alerts.

The following email was provided by DH 16th Sep 2020 17:52 BST:

“I would suggest that we replace “A compelling and unique tone(s)...” throughout with “An Offshore HTAWS tone...”.

Then, in 3.1.12 expand OHTAWS_REC08 as follows:

OHTAWS_REC08 Offshore HTAWS aural alerts should comprise an aural message preceded by an aural tone. The tone should be compelling and dissimilar to tones used by other aircraft systems. The same tone should be used for all HTAWS alerts, however the tone used for warning alerts should convey greater urgency than the tone used for caution alerts, e.g. by employing an increased pulse rate. Aural tones should consist of a combination of frequencies selected to be distinct from the background frequencies generated by the rotorcraft. Appendix A and [Ref 10] provide guidance on the design of aural alerts.”

DK replied by email (17th Sep 2020 13:29 UTC) accepting the proposed revision. The revised text was adopted and the relevant comments closed.

Action 8.1 – Action complete

5.2 Drafting Guidelines

It was noted that some of the General requirement contained in the DTCA Drafting Guidelines were missing from Chapter 2, so these were inserted into the draft MOPS, edited and agreed by the members.

5.3 Additional Tasks

The following 2 actions were identified.

Action 8.2 Co-Chairs (MD & YI) to clean up and verify the draft MOPS. By 25th September 2020. – Action complete

Action 8.3 Co-Chairs (MD & YI) to verify the test cases in Chapter 5 (Test Procedures) against the requirements in Chapter 3 (Minimum Performance Specification Under Standard Conditions). By 25th September 2020 – Action complete.

6 Update on EASA Rule Making Task (RMT) and Proposal for Onshore MOPS

EASA (EB) presented the work underway on RMT.0708. The aim of the RMT was to reduce the helicopter accident rate due to CFIT both onshore and offshore. HTAWS was seen as being one potential solution for this activity and so EASA proposed that the work of EUROCAE WG 110/RTCA SC-237 be extended to develop MOPS for onshore HTAWS, as already permitted by its Terms of Reference (ToR). It was agreed that a review of the EUROCAE WG110 and RTCA SC-237 ToRs would be discussed at Meeting 9 in December.

Following the presentation, a number of questions arose which led to the following discussion points:

- As EASA had proposed developing a terrain database with higher resolution as part of the onshore HTAWS look-ahead mode, questions were asked on how the proposed work would interface with DO-309. YI, as the Co-Chair of RTCA SC 212 which developed the DO-309 MOPS, cautioned against conflicting with DO-309, as DO-309 HTAWS were mandated for some operations in the USA.

- The FAA(CG) asked how the MOPS for an on-shore HTAWS would be integrated with the new off-shore HTAWS and the existing DO-309 MOPS. It had been envisioned to create a separate On-shore MOPS based on what has been produced for Off-shore. The FAA stated it was important for the authorities to agree the best approach considering the impact on the associated TSOs that will be developed. It was agreed that this important topic will need to be addressed with the initiation of any on-shore HTAWS activity.
- Concerns were expressed that EASA implied that On-shore HTAWS could be used as a navigation feature. This concern is associated with limitations in the current terrain databases, both in terms of accuracy and resolution, and how an inaccurate terrain display could lead to further accidents. EASA (RDC) noted that any changes would have to be performed in a careful and systematic manner. The intent of On-shore HTAWS is to improve situational awareness, which will be reflected in its certification basis, and not to be used as a navigation system.

Action 8.4 EASA (EB) to provide a copy of his presentation slides. Slides were provided by email – Action closed

7 Motion to Open Consultation/Final Review and Comment

A motion was proposed to open the OC/FRAC process which was agreed unanimously.

8 Future Meeting

It was agreed that the next meeting to review the OC/FRAC comments on the draft MOPS will be held 15th – 17th December by webex.

9 Any Other Business

The Co-Chairs were thanked for their hard work in updating the MOPS after each day's meeting, which assisted the overall process.

10 Close

The Chair closed the meeting on the 18th September and thanked all the attendees for their input.

11 Decisions and Actions

The following actions were raised during the meeting:

Action Reference	Action	By Whom	By Date
8.1	Provide revised text which explains the requirement for a unique tone for HTAWS alerts.	UK CAA (DH)	Closed
8.2	Clean up and verify the draft MOPS	Co-Chairs (MD&YI)	Closed
8.3	Verify the test cases in Chapter 5 against the requirements in Chapter 3	Co-Chairs (MD&YI)	Closed
8.4	Provide slides on RMT 0708	EASA(EB)	Closed

Mark Prior

Secretary, SC 237/WG-110