

HELICOPTER SAFETY RESEARCH MANAGEMENT COMMITTEE

Minutes of the 68th Meeting held on 20 May 2014 Aviation House, Gatwick

Present:	Capt. C. Armstrong	UK CAA, Flt Ops Mgr H (Chair)
	Mr. D. Howson	UK CAA, ISP Policy Specialist Research
	Mr. K. Payne	UK CAA, Flt Ops H (Secretary)
	Capt. P. McKeage	C-NLOPB
	Mr. A. Wilson	AgustaWestland
	Mr. T. Andersen	Danish Transport Authority
	Mr. T. Eagles	UK CAA
	Capt. J. Steel	IAA
	Mr. J. Lyons	EHA
	Mr. O. Lien	N CAA
	Mr. R Walker	BP Aviation
	Mr. G Robb	Dong Energy
	Mr. G Hamre	N CAA
	Capt. S O'Collard	CHC Scotia
	Mr. G. Bruniaux	Airbus Helicopters
	Mr. A. Ward	Shell Aircraft
	Mr. B. Pattinson	UK CAA,
	Mr. L. Tauszig	EASA

Apologies:	Mr. R. Decoster	Belgian CAA
	Mr. D. McLean	BP
	Mr. B. Finlay	DSTL
	Mr. A.Knight	HCA
	Mr. E. Hamremoen	Statoil
	Mr. P. Heeney	HSE
	Capt. M. McDougall	UK CAA, Flt Ops H

1 Introduction

Capt. Armstrong welcomed members to the 68th meeting, in particular Mr. Lionel Tauszig of EASA and Mr. Gilles Bruniaux of Airbus Helicopters who were both attending for the first time. Capt. Armstrong noted with appreciation the much better attendance compared to the previous meeting held in November.

2 Review of Minutes of 67th Meeting (21 November 2013)

2.1 Accuracy

There were no comments or corrections and the minutes of the previous meeting were agreed.

2.2 Actions/Matters Arising

- **ACTION 334** – CAA to consider inviting helicopter manufacturers and/or an appropriate industry body to join the HSRMC. Mr. Howson (CAA)

Mr. Howson stated that he still had an action pending to approach George Klug at Sikorsky. Alan Wilson has been attending for AgustaWestland and Gilles Bruniaux was now representing Airbus Helicopters.

Open

- **ACTION 337** – Mr. Howson to invite Dan Wells of AgustaWestland to give a presentation at next HSRMC.

Mr. Wilson attending on behalf of AgustaWestland delivered a presentation / progress report on the AgustaWestland RTVP, reported in the minutes under agenda item 5.

Mr. Howson
(CAA)
Closed
- **ACTION 338** – Mr. Robb to establish the form and format of any DONG Energy wind turbine wake data that could be made available.

Mr. Robb explained that the LIDAR data remained propriety information at present but he was working towards release by the year end. It was noted that UK CAA's Peter Tormey is engaged in a similar UK project which is also expected to report around year end. It was agreed that the action remain open.

Mr. Robb
(DONG)
Open
- **ACTION 340** – Mr. Hamre to deliver a presentation at the next meeting on the results of Norwegian Onshore Operations Safety Study.

Mr. Hamre was unable to attend the 67th meeting so the action was deferred to the 68th meeting. Given the time constraints at the 68th meeting it was agreed to circulate the presentation to members post-meeting. This action was discharged by Mr. Payne on 22 May 2014.

Mr. Hamre
(N-CAA)
Closed
- **ACTION 343** – Capt. Armstrong to liaise with Mr. Stevens at OGP to exert pressure on the OEMs to participate in GPS trials.

Capt. Armstrong notified no further progress since the last meeting but undertook to make contact with Mark Stevens at OGP as soon as practical. He added that all OEMs were developing their own GNSS approaches.

Capt. Armstrong
(CAA)
Open

3 Review of Current Research Projects

3.1 UK CAA Managed Projects (DH)

Mr. Howson reviewed the highlights of the latest Research Update (see Section 8) which he had circulated to members by e-mail prior to the meeting. The following additional points were noted (NB: paragraph numbers correspond to the numbering in the Research Update):

- (2) Side floating helicopters – Mr. Howson delivered an update via a separate presentation “A progress report on EASA RMT.0120, Helicopter Ditching and Survivability (May 2014)” taken under agenda item 5.
- (3) Operations to Moving Decks – Mr. Howson signalled the intention for a trials system to be developed and installed on a floating installation or vessel in time for an in-service trial next winter (2014/15). Mr Howson confirmed that on satisfactory completion of the in-service trial, CAP 437 will be updated (now estimated mid-2015).
- (4) Helideck Lighting – Mr. Howson confirmed that the research and development was essentially completed. However, the CAA had identified a need for some relatively minor adjustments to the specification presented in CAP 437, Appendix C to allow a degree of flexibility to facilitate system installation and to clarify some of the detail in response to queries received from the industry. He advised that three ‘serious’ system solutions were known to the CAA and that installation had been completed in a number of cases – with more promised. Mr. Howson concluded that the project was proving to be one of the major success stories of recent years.
- (5) HOMP (FDM) – Mr. Howson advised that the helicopter user group established on 2 December 2013 was starting to gain real traction. He reported that another meeting was due to be held on 17 June where FDM event statistics from the three operators would be reviewed.

- (6) Offshore Approaches – Mr. Howson noted that new circle and H lighting would shortly be installed on a platform in the northern North Sea within range of the Bond AS332L2 trials helicopter. This will enable the night trial to be performed which will focus on the interface between the instrument segment and the visual segment of the offshore approach. He noted that it would be possible, and might be desirable, to progress to in-service trials in parallel with or instead of the remaining research trial. He proposed to take this forward via the JOR and OEMs.
- (7) Helideck Friction – Mr. Howson reported that all testing had been completed at NLR and the CAA now intends to capture the lessons learned in a proposed new approach to helideck friction measurement and monitoring which will be presented to the next meeting of the HCA Helideck Steering Committee (HSC). Once agreed with the HSC, the proposals will be shared with the Oil and Gas UK Aircraft Safety Technical Group. Finally the CAA will produce a single all-encompassing report on helideck friction and will add the requirements to CAP 437 in a further revision in 2015.
- (8) Helideck Environmental Research – Mr Howson advised that although this project had been completed some years ago, issues with the helideck environment are still being raised in an operational context and as a result, in time, the CAA may re-visit issues such as temperature mapping by re-engaging subject matter experts, e.g. Atkins. Geir Hamre added that turbine plume mapping was being pursued in Norway and suggested that Eric Hamremoene be invited to present at the next HSRMC.

NEW ACTION 344 – Capt. Armstrong to liaise with Mr. Hamremoene at Statoil to invite him to deliver a presentation on turbine plume mapping at the next HSMRC in November 2014.

- (9) Extension of HUMS to rotors – Mr. Howson explained that an update would be addressed by Alan Wilson (AgustaWestland) in a presentation under agenda item 5. (Progress Report on AgustaWestland Rotorcraft Technology Validation Programme (RTVP).)
- (10) Tail Rotor Strike Warning – While accepting there was nothing specific to report for the project due to insufficient funding to proceed at present, members were invited to take a fresh look at issues by gathering data for any tail rotor strike warning occurrences.

NEW ACTION 345 –All members to gather and feedback data for discussion and collation at the 69th (November) meeting for Tail Rotor Strike Warnings.

- (11) TCAS – Capt. O'Collard updated the meeting on the implementation of TCAS II to the North Sea helicopter fleet. He confirmed that the modification for the S92 would be available later in 2014, while for the other SAR aircraft, the AW 189, it was already available. He further confirmed that TCAS II may be implemented in the EC 225 and in the Super Puma fleet.
- (12) EGPWS Warning Envelopes (HTAWS) – Mr. Howson advised that data from last year's Sumburgh fatal accident had been reviewed with the AAIB. Although the proposed new 'classic mode' warning envelopes would have performed significantly better than the standard versions, the warning would have been too late. However, an idea for a new envelope has been identified and, thanks to funding made available by Shell Aircraft, this will be evaluated along with other ideas that have emerged from the work at Liverpool University with which Mark Prior at Bristow Helicopters is involved. It is hoped that the next stage of the project to investigate the form and format of warnings can be progressed in parallel - the invitation to tender needs to be issued. Mr Howson confirmed that the key deliverable from the project would be the basis of a specification for an improved HTAWS for offshore helicopter operations.

- (13) Triggered Lightning Strike Forecasting – Mr. Howson reported that the winter 2013/14 in-service trial had been inconclusive as there had been very little lightning strike activity in the UK sector due to the unseasonably mild weather conditions. Mr. Howson confirmed that he would be meeting with the Met Office in June to review the project and agree the way forward. It will likely be necessary to run the trial for another winter season (2014/15). The final project report will be published in a Civil Aviation Publication (CAP) document on conclusion of all trials activities.

3.2 C-NLOPB Initiatives (PM)

Capt. McKeage delivered an update on initiatives in Canada related to the following issues: Sea state limitation / significant wave height measurement, an update on 'recommendation' implementation for the S92 fatal accident, the roll-out of a new environmental survival suit, the implementation of EBS, survey data size and shape and side floating systems for the S92:

- Sea state/ significant wave height limitation: Will be addressed in Transport Canada regulation CARS 602.64 within 30 days and, under an amendment to the original proposal, will now include a limitation of SS6 for the whole of the en-route phase (and not just limitations for SS conditions at destination). Despite HF Wave Radar technology being proven to deliver real-time measurement of wave heights to a high degree of accuracy, there is now a proposal by the operator for a new two-year project to look at alternative wave buoy technology as a means to assess significant wave height. This technology is very unlikely to deliver the same degree of accuracy as HF Wave Radar.
- Implementation of recommendations from the Wells Commission report on the S92 fatal accident: Of the 29 listed recommendation, 22 are complete although some (e.g. safety culture) will remain at 'yellow' status indefinitely. Once complete, a Helicopter Oversight Committee will convene to assess whether the outcomes from recommendations have been effective.
- The roll-out of a new environmental survival suit: A new Survitec suit is being rolled out in Canada by the spring of 2015 which is regarded as a significant improvement on the existing suit – fitted with a fully integrated inflatable visor the suit is warm and comfortable and with no leaks at all (based on water entry tests from a high platform).
- Survey data size and shape: In connection with the roll-out of a new survival suit, operators will laser survey the 2,600 strong offshore workforce to accurately determine the size and shape of the workforce and to find a suit that is a good fit for everyone. The suggestion was made that data from the Canadian survey could be read directly across to the North Sea. However, it is considered that a size and shape survey conducted in Canada could not be used to correlate directly with the size and shape of the UK sector work force and therefore specific measurements of the UK work force would be necessary.
- Side floating for the S92: A contract had been awarded to Oceanic Consulting Services but, despite being well funded, to date the contractor had made little progress with the project.

3.3 EASA Managed Projects (LT)

Mr. Tauszig from EASA delivered a [presentation](#) to provide an update on EASA managed helicopter research projects. The following points were noted:

- Metallurgical Assessment of Standard Hardware (MASH): work on cracking of self-locking nuts being performed by Health & Safety Laboratories (HSL) in Buxton, UK.
- Helicopter Flight in Degraded Visual Environments (HDVE): simulator trials of Malcolm Horizon at NLR, Amsterdam.
- Study of Helicopter Foreign Object Damage Tolerance (HFOD): work on rotor strike performed by DLR; certified on AW139.

- Helicopter Main Gearbox Loss of Oil Performance Optimisation (HELMGOP II): commissioning of instrumented gearbox on test rig at Cranfield University due in two weeks. Testing will evaluate use of theo-ether instead of glycol for emergency lubrication. Expecting gearbox to run for one hour.
- Vibration Health Monitoring (VHM): work on improving monitoring of epicyclic stages ongoing at Cranfield University. Investigating mounting of sensors on planet gears and using RFID to transfer data. Acoustic emission sensors being evaluated.
- Crew Immersion Suit Conspicuity: looking at the application of military GLINT tape.
- Low Airspeed Monitoring: EASA have tendered twice for this work but have received no responses.
- Research budget: EASA have no research budget for 2014/15. Plan to seek funding from any surplus within DG MOVE.

In response to the presentation Mr. Howson asked what process was behind the choice of topics for the EASA research programmes. Mr. Tauszig responded that EASA research programmes are usually driven by an immediate safety recommendation. Both Capt. Armstrong and Mr. Howson noted that better co-ordination is needed between EASA (EARPG – the European Aviation Research Partnership Group) and the UK CAA (through the HSRMC).

4 Research Programme Funding Update

4.1 Funding Status of Current Programme

Prior to the meeting Mr. Howson had circulated the project funding table (see Section 8) and reviewed the changes which are shown in red italics. Mr. Howson noted that the funding situation is generally satisfactory, and with the agreement of Mark Stevens of Shell Aircraft, unused funds are being diverted from item 1 HUMS advanced analysis of HUMS data (completed) to item 12 – HTAWS / EGPWS Warning Envelopes (amber funding status).

4.2 Status of Funding Contributions

Referring to CAP 1145, Action A32 Mr. Howson noted the desire to put CAA research funding on a more sure footing. To this end it is intended that A32 should be discussed at a future Offshore Helicopter Safety Action Group (OHSAG) meeting.

4.3 Status of UK CAA/EASA MoU

Mr. Tauszig advised that there had not been any progress in establishing an MoU between EASA and UK CAA to allow EASA to contribute to funding of HSRMC projects. The EASA/FAA MoU that would form the model for MoU's between EASA and Member States was not yet in place. Mr. Howson noted that joint funding was catered for under the terms of the EU Directive that established EASA. As well as allowing scarce resources to be pooled, provided the EASA contribution is less than 50% the EU Directive would permit projects to be managed and progressed under the CAA's terms and conditions. In permitting greater flexibility, CAA's terms and conditions are better suited to research. The funding issue will be included in forthcoming discussions with EASA regarding improved communications and coordination.

NEW ACTION 346 – Capt. Armstrong and Mr. Tauszig to progress the funding issue.

5 Presentations

5.1 CAA Review of UK Offshore Helicopter Operations

Mr. Eagles delivered the **presentation** on the review that had been prepared for the SARG Group Director to give to a meeting in June. The presentation is forwarded with these meeting notes (see Section 8).

5.2 Progress Report on EASA RMT.0120, Helicopter Ditching and Survivability

Due to the very low attendance at the last HSRMC in November 2013, Mr. Howson repeated the **presentation** on the rule making task that he had given at the at that meeting, updated to encompass the RMT meeting that had been held in March 2014. The presentation slides were forwarded to members as a PowerPoint document on 22 May 2014 (see Section 8).

6 AOB

None

7 Date of Next Meeting

The 69th meeting of the HSRMC is now agreed to be held on Tuesday 18 November 2014 commencing at 12:30 hrs, at Aviation House, Gatwick.

8 Attachments to E-Mails (22 May 2014¹, 14 May 2014² and 20 May 2014³)

1. **AW obstacle proximity LIDAR system** (Alan Wilson – AgustaWestland)¹
2. **EASA Research Update for HSRMC** (Lionel Tauszig – EASA)¹
3. **Norwegian Helicopter Safety Study – Inland Operations** (Geir Hamre – CAA-N)¹
4. **CAA Review of UK Offshore Helicopter Operations** (Tony Eagles) – attached with minutes
5. **Progress Report on EASA RMT.0120, Helicopter Ditching and Survivability** (David Howson)¹
6. UK CAA Research Update²
7. UK CAA Research Programme Funding Update³

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Agreed Actions from the 68th Meeting

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