

HELICOPTER SAFETY RESEARCH MANAGEMENT COMMITTEE

Minutes of the 63rd Meeting held on 8 November 2011
Aviation House, Gatwick

Present:	Capt. G. Porter	UK CAA, Hd Flt Ops Inspectorate (2) (Chair)
	Capt. C. Armstrong	UK CAA, Mgr Flt Ops H
	Mr. D. Howson	UK CAA, Flt Ops Research Manager
	Mr. V. Reed	UK CAA, Flt Ops H (Secretary)
	Mr. K. Payne	UK CAA, Flt Ops H
	Mr. J. Lyons	EHA
	Mr. G. Hamre	N CAA
	Ms. M. Kirkesæther	N CAA
	Mr. B. Finlay	DSTL
	Capt. S O'Collard	CHC /BHA
	Mr T Cramp	Shell Aircraft
	Mr. M. Ruelokke	C-NLOPB
	Capt. P. McKeage	C-NLOPB
Apologies:	Mr. W. Kleine-Beek	EASA
	Mr. T. Eagles	UK CAA, Head Flt Ops Policy GA
	Mr. A. Knight	HCA
	Mr. R. Decoster	Belgian CAA
	Mr. R. Paterson	UK Oil and Gas
	Mr. D. McLean	BP
	Mr. E. Hamremoen	OLF/ Statoil
	Mr. P Dawes	BP
	Mr. G. Robb	Danish CAA
	Mr. P. Halldorsson	Iceland CAA
	Mr. J. Steel	IAA.
	Mr. O. Monson	N CAA
	Mr. P. Naylor	HSE, OSD
	Mr. P. Heeney	HSE, OSD
	Mr. D. Trapp	CHC/BHA
	Capt. R. Freeman	Transport Canada

1 Introduction

Captain Porter welcomed everyone to the 63rd meeting and, in particular, Max Ruelokke and Peter McKeage (C-NLOPB) who had accepted the invitation to join the HSRMC, Tony Cramp who was taking over from Mark Stevens as the Shell Aircraft representative and Steve O'Collard who was representing BHA in lieu of Duncan Trapp. He also noted that Rob Freeman of Transport Canada had declined the invitation to join due to travel budget restrictions, and that Paul Heeney is taking over from Pat Naylor as the HSE representative (although neither had been able to attend).

2 Review of Minutes of 62nd Meeting (25 May 2011)

2.1 Accuracy

With reference to Section 9 on page 5, Mr. Howson advised that the slides for Capt. Freeman's presentation were not available as he had lost his memory stick; however, most of the material was taken from the TSB accident report and a link will be included in

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

2.2 Matters Arising

- ACTION 311 - Mr. Hamremoens to establish whether FMECAs would be included in the forthcoming SINTEF Helicopter Safety Study – 3. **Mr. Hamremoens (OLF) Open**

Mr. Hamremoens had been unable to attend. Action to remain open for next meeting.

- ACTION 318 – CAA (Mr. Reed) to contact BHA to see how they wanted to arrange the increased representation from the North Sea operators. **Closed**

This had been discussed at the 19 September HMLC meeting. The helicopter operators felt that one BHA representative was sufficient; however, HSRMC would continue to extend an open invitation to all operators with an interest.

- ACTION 324 - Capt. Armstrong and Mr. Eagles to investigate the possibility of feeding the output of the EASA HOMP research into SHSG and EHEST. **Closed**

The EASA research related to small helicopters and was being considered by the EHSIT Regulatory Specialist Team which was chaired by Mr. Howson. Small/onshore helicopters were not within the scope of the HSRMC.

- ACTION 327 - Capt. Armstrong to discuss the publication of HSRMC documentation with Capt. Porter. **Capt. Porter (CAA) Open**

Permission had been given to CAA Norway to put the research progress reports on its website as these were already in the public domain. As regards other documentation, Capt. Porter said that it would be more appropriate for UK CAA to put the material on its website and to provide CAA Norway with a link.

The item is to remain open until the next meeting by which time the action should have been completed.

3 Review of Current Research Projects

3.1 UK CAA Managed Projects

Mr. Howson reviewed the highlights of the Research Update (see Attachment 1) which he had circulated by e-mail on 2 November. The following additional points were noted:

- HUMS – Regarding Advanced Anomaly Detection (AAD) implementation, Mr. Cramp advised that Grant Campbell had visited Sikorsky and had reported the Goodrich system used in the Sikorsky S92 to be equivalent to the GE Aviation system. The oil and gas industry was therefore not pushing Sikorsky to adopt the GE system. Grant Campbell would be producing a report which Mr. Cramp undertook to circulate to all HSRMC members.

NEW ACTION 328 – Mr Cramp to circulate Grant Campbell's report on the Sikorsky S92 enhanced HUMS VHM data analysis system. **Mr Cramp (Shell Aircraft) Open**

All data from the new S92 system was being automatically fed back to Sikorsky on a daily basis for analysis, and it was difficult to benchmark the new analysis with the earlier standard. This might be easier if Bristow performed the analysis in house, but it was not known whether this was feasible.

Eurocopter was due to give a presentation on their system at the 14 December 2011 ASTG meeting; as yet no information was available in the public domain.

It was considered that the most important issue was to ensure that the established weaknesses in HUMS VHM data analysis be addressed. As is the case for current HUMS, there are no performance criteria for AAD, only a definition. A practical way of establishing enhanced performance and usability would be an in-service trial equivalent to that performed with the GE Aviation system by Bristow Helicopters under the research.

Post Meeting Note: *The abbreviated definition of HUMS AAD is as follows:*

“Rotorcraft HUMS Anomaly Detection is an approach that detects abnormalities in rotor drive system components by comparison of multiple downloaded health monitoring parameters with prepared multi-parameter models of normality for these components. It also provides diagnostic information on the monitoring parameters causing abnormal indications. The multi-parameter models of normality represent the statistical dependencies between monitoring parameters and are based on experience across multiple aircraft within a fleet. The approach incorporates methods to ensure that any unknown abnormalities within this experience do not prevent the detection of similar abnormalities. Models are to be periodically refined based on increasing fleet experience.”

- EBS – Mr. Cramp noted that advice on which category of EBS system should be used would be helpful. Mr. Howson said that EBS category selection would be up to the end user to decide based on safety arguments, or EASA in the event that EBS is mandated following the review of the associated requirements and advisory material during 2012. He added that an indication of the issues that should be taken into consideration would nevertheless be given in a foreword to the report.
- Helideck Lighting – A short presentation (attached to these minutes) covering the problems with the installation of the production version of the new helideck lighting on the CPC-1 was given. It was hoped that the system would soon be re-installed and the trial continued. Mr. Cramp raised the issue of the compatibility of the system with skidded aircraft. Mr. Howson noted that there were no skidded aircraft currently operating on the UKCS, so this had not been a priority but might be investigated in the future, resources permitting. Consideration would be given to including a caveat in CAP 437 in the meantime.

NEW ACTION 329 – Mr. Howson and Mr. Payne to review the CAP 437 wording relating to the use of skidded helicopters on helidecks with ‘H’ and Circle lighting systems.

**Mr. Howson/
Mr. Payne
(CAA)
Open**

- Offshore Approaches – It was understood that Sikorsky had developed a system for the S92 which was close to FAA certification (if not already achieved). It was noted that it would be interesting to see some details.

Post Meeting Note: *A presentation on the Sikorsky system provided by Mr. Cramp is attached to these minutes. Their proposed system is quite similar to the European SBAS Offshore Approach Procedure (SOAP) in many respects, but there are some notable differences such as approach speed (much lower at 30 kt), deceleration during descent, and lack of obstacle detection other than WXR.*

- Triggered Lightning Strike Forecasting – The trials system had been installed on OHWeb following funding from six industry stakeholders (Conoco Phillips, Perenco,

Apache, Centrica Energy, CAA Norway and BP). To date, there had been one instance of lightning and the system had performed satisfactorily.

3.2 C-NLOPB Initiatives

Capt. McKeage advised that the issue of helmets had been investigated. The following points were noted:

- There had been an 80% voluntary take-up of helmets by pilots.
- No real benefit for passengers had been identified.
- C-NLOPB would not mandate helmets – there was a concern that experienced pilots might be lost if helmets were to be mandated.
- Neck injury from wearing helmets was an issue, but information was only available in relation to wearing helmets in combination with NVG.

A research paper on helmets had been posted on the C-NLOPB website.

Mr. Ruelokke reported that C-NLOPB was progressing the implementation of the side-floating helicopter scheme on the S92. A research contract had been let to Oceanic Consulting Corporation, a commercial marine research and development organisation in Newfoundland.

3.3 EASA Managed Projects

Mr. Kleine-Beek had been unable to attend the meeting but had provided a PowerPoint presentation on ACARE and the Strategic Research and Innovation Agenda (SRIA). Mr. Kleine-Beek is co-chairing WG 4 (covering Safety & Security) and wished to encourage HSRMC members to contribute. A copy of the presentation is attached to these minutes.

4 Research Programme Funding Update

4.1 Funding Status of Current Programme

Mr. Howson had circulated the project funding table (see Attachment 2) on 2 November 2011. There had been no significant changes since the last meeting. However, he noted that £8.5k was needed for the next stage of the HTAWS work, the need for funding for the work on helideck nets, and the potential for further development of the lightning strike forecasting next year following completion of the current in-service trials.

4.2 Status of Funding Contributions

Mr. Howson advised that there had been no changes since the last meeting, and that Oil & Gas UK had advised that they would be unable to provide any funding due to the DNV study on NUI fire fighting.

4.3 Status of UK CAA/EASA MoU

There had been no progress on this issue.

5 Presentations

5.1 SINTEF Helicopter Safety Study

Unfortunately Sintef had been unable to attend.

5.2 TAWS for Offshore Helicopters

Mr. Howson repeated the presentation on the HTAWS research project that he had given at the 29 September 2011 OGP Aviation Safety Committee meeting. A copy of the presentation is attached to these minutes.

Post Meeting Note: The updated and improved version of the presentation given at the EASA Rotorcraft Symposium on 8 December 2011 is attached.

6 AOB

- 6.1 Capt. O'Collard raised the issue of helicopter operations in support of offshore wind farms and, in particular, the issue of wake turbulence. Only general guidance was available and the operators were concerned about the possible effects on helicopters winching maintenance personnel onto wind turbines. He requested that CAA investigate working up a research project aimed at producing improved guidance.

Mr. Howson said he was aware of the issue and had discussed it with Capt. Duff at Bond Helicopters. There was also potential for some synergy with other ongoing CAA research initiatives. Capt. Porter accepted the tasking on behalf of CAA on the basis that any extramural costs would have to be met by external funding contributions.

7 Date of Next Meeting

The 64th meeting of the HSRMC will be held on Wednesday 16 May 2012 commencing at 09.30, Aviation House, Gatwick.

8 Attachments to e-mail

1. CAA Research Update
2. CAA presentation on Helideck Lighting Trial Problems
3. Sikorsky presentation on IFR Offshore
4. CAA Research Programme Funding Update
5. EASA presentation on SRIA
6. CAA presentation on TAWS for Offshore Helicopters

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HELICOPTER SAFETY RESEARCH MANAGEMENT COMMITTEE**Agreed Actions from the 63rd Meeting**

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|---|---|
| ACTION 311 - Establish whether FMECAs would be included in the forthcoming SINTEF study.
<i>Action to remain open for discussion at next meeting.</i> | Mr. Hamremoens
(OLF)
Open |
| ACTION 327 - Capt. Armstrong to discuss with Capt Porter the publication of HSRMC documentation.
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(CAA)
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| ACTION 328 – Mr Cramp to circulate Grant Campbell’s report on the Sikorsky S92 enhanced HUMS VHM data analysis system. | Mr. Cramp
(Shell Aircraft)
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| ACTION 329 – Mr. Howson and Mr. Payne to review the CAP 437 wording relating to the use of skidded helicopters on helidecks with ‘H’ and Circle lighting systems. | Mr. Howson/
Mr. Payne
(CAA)
Open |