HELICOPTER SAFETY RESEARCH MANAGEMENT COMMITTEE

Minutes of the 60th Meeting held on 11th May 2010
Aviation House, Gatwick

Present:	Capt. C. Armstrong	UK CAA, Head Flt Ops H (Chair)
	Mr. T. Eagles	UK CAA, Head Flt Ops Policy GA
	Mr. D. Howson	UK CAA, Flt Ops 2
	Mr. J. Lyons	EHA
	Mr. P. Dawes	BP
	Mr. V. Reed	UK CAA, Flt Ops H (Secretary)
	Mr. B. Finlay	DSTL
	Mr. P. Naylor	HSE, OSD
	Mr. J. Steel	IAA
	Mr. K. Payne	UK CAA, Flt Ops H
	Mr. R. Decoster	Belgian CAA
	Mr. A. Knight	HCA
	Mr. W. Kleine-Beek	EASA
	Mr. O. Monson	NCAA
Apologies:	Capt. G Porter	UK CAA, Hd Flt Ops Inspectorate (2)
	Mr. P. Halldorsson	Iceland CAA
	Mr. K. Dodson	CAA, Strategy and Policy
	Mr. G. Hamre	N CAA
	Capt. N. Norman	BHA
	Mr. G. Campbell	Oil & Gas UK/Shell Expro
	Mr. E. Hamremoen	OLF/ Statoil
	Mr. M. Stevens	Shell Aircraft
	Mr. G. Robb	Danish CAA
In attendance:	Mr. H van der Boom	MARIN
	Mr. K Zeilstra	NLR
	Mr. P Booij	NLR
	Mr. F Nascimento	Imperial College
	Dr. Sue Coleshaw	

1 Introduction

Capt. Armstrong welcomed everyone to the 60th meeting of the HSRMC and introduced himself as the chairman standing-in for Capt. Porter. Mr. Naylor was welcomed as the new representative for the HSE, replacing Mr. Lunt.

2 Review of Minutes of 59th Meeting (7th December 2009)

Accuracy:

Mr Dodson had requested that paragraph 7.2 be replaced with the following

"Mr Dodson queried why the subject of offshore wind farms, which previously rated high on the offshore operators list of top 10 safety concerns, did not now appear on the latest top 10 list provided by Bristow Helicopters."

Other than the above, the minutes of the previous meeting were agreed.

Matters Arising:

2.1 Action 311 - Mr Hamremoen to establish whether FMECAs would be included in the forthcoming SINTEF Helicopter Safety Study - 3.

It was noted that the SINTEF study had been completed and reported, although only the executive summary was available in English. Action to remain open for discussion at next meeting.

ACTION 311: Open - OLF/Mr. Hamremoen

Post-Meeting Note: The English version of the full report was received on 10 June and circulated to all on 11 June.

2.2 Action 312 - Mr. Howson to check Felipe Nascimento's thesis on factors affecting safety during night visual approaches and then circulate to all.

The document has been circulated to all and Mr. Howson noted the presentation on the work from Mr. Nascimento later in the agenda.

ACTION 312: COMPLETED

2.3 Action 313 - Mr. Finlay to provide contacts for obtaining Merlin or Cormorant tail rotor VHM data for the extension of HUMS to rotors work.

Mr. Finlay had tried to obtain Merlin data but, unfortunately, the system wasn't active on the accident aircraft. The need for this data has now been superseded by the proposal for a further study using AW139 data.

ACTION 313: COMPLETED

2.4 Action 314 - Capt. Armstrong to produce a proposal for any research into PC2e emerging from the North Sea NAA meeting on 8 December.

Capt. Armstrong reported that the CAA is not in a position to produce a proposal at this time.

ACTION 314: CLOSED

2.5 Action 315 – Mr. Hamremoen to contact SINTEF to see if they needed any assistance with work on FMECAs.

Nobody was aware of any action but, in any event, the action had been superseded by the completion of the study.

ACTION 315: CLOSED

2.6 Action 316 – Mr. Lunt to have HSE consider funding new projects such as lightning strike forecasting.

Mr. Naylor was not aware of any action, and noted that HSE had made further contributions to the helideck lighting and the helideck friction projects. Mr. Naylor undertook to progress with FY 2011/12 in mind.

ACTION 316: Ongoing – HSE/Mr. Naylor

2.7 Action 317 – Mr. Findlay to supply a copy of the slides for his presentation on vibration monitoring associated with the EU Physical Agents Directive for circulation with the minutes.

ACTION 317: COMPLETED

2.8 Action 318 – CAA (Mr. Reed) to contact BHA to see how they wanted to arrange the increased representation from the North Sea operators.

No progress to report. This matter would be addressed at the next HMLC meeting.

ACTION 318: Ongoing - CAA/Mr. Reed

2.9 Action 319 – Mr Howson to arrange a presentation from Transport Canada or a Canadian helicopter operator to give their views on offshore operations in Canada and the S-92 accident.

Mr. Howson noted that the accident enquiry was still ongoing so a presentation would not be appropriate at this time.

ACTION 319: Ongoing – CAA/Mr. Howson

3 Review of Current Research Projects

3.1 Mr. Howson distributed copies of the Research Update (see Attachment 1) and reviewed the highlights. The following additional points were noted:

- Item 2 – Side-Floating Helicopters: Mr. Kleine-Beek noted that Mr. Haddon would be organising an industry workshop to review the ditching and water impact requirements and advisory material around mid-2011.
- Item 8 - Turbulence Criterion: Mr. Eagles drew attention to Sikorsky Safety Advisory SSA-S92-10-002 regarding flight through turbine exhaust plumes. Mr. Howson noted that this was not a new problem and reminded the meeting of the recommendations contained in CAP 437 regarding helideck design guidance, visualisation of turbine exhaust plumes, and mapping of offshore helideck environments using HOMP/FDM. The effects of turbine exhaust plumes on helicopter engines have been known for many years and, in principle, apply to all helicopter types and not just the S92.

  Mr. Knight and Mr. Naylor drew attention to the general lack of wind tunnel testing/CFD studies for offshore installation topsides that had been highlighted during a CAA audit of HCA. Mr. Payne noted that the guidance in CAP 437 was clear on this matter.

3.2 Mr Kleine-Beek provided an update on EASA helicopter research:

- The project on HUMS for small helicopters had been completed but the report was not yet satisfactory.
- The trial of HOMP for small helicopters was scheduled to complete by end July.
- Two new projects had been identified for funding during FY 2010/11 subject to budget availability:
  - Icing of small rotorcraft.
  - Power reserves for rotorcraft.
- An MOC was being drafted to allow joint funding of research. This had been instigated following the AAIB recommendation associated with the December 2006 Morecambe Bay accident.

4 Research Programme Funding Update

4.1 Funding Status of Current Programme

Mr. Howson presented the project funding table (see Attachment 2), highlighting the following points:

- Item 3, operations to moving decks - there will be more work to do following completion of sea trials on the Maersk GP III, but most of the funding for this may be provided through collaboration with the MARIN-led HELIOS JIP.
- Item 5, HOMP low airspeed – the CAA may have enough funding during 2010/11 to complete the data collection trials but further funding will be needed to analyse and use the data to complete the job either later on in FY 2010/11 or during FY 2011/12.

- Item 6, GPS approaches - enough funding is available to cover the AIS add-on but not the other three (total of £140k). About £65k will be needed to extend the demonstration trials to include integration with the new deck lighting. There may be some funds available for this in the helideck lighting budget.
- Item 9, extension of HUMS to rotors - GE have been tasked with estimating the costs of extending the work to the AW139. Some external (Shell) funding (£25k) is available to cover this but more may be required.
- Item 13, lightning strike forecasting - about £50k of funding is needed before the tender an be issued. OGUK have agreed to contribute, still waiting to hear from BP and/or CAA Norway.

4.2 Status of Funding Contributions

Mr. Howson thanked the meeting for their funding contributions to date. The following new contributions (since the 7th December 2009 meeting) were announced:

- Mr. Monson announced a contribution of between £25k and £30k to the lightning forecasting project from CAA Norway during 2010.
- Mr. Howson advised that Oil & Gas UK had committed to funding up to £40k of the lightning forecasting project in 2010.
- Mr. Naylor said that HSE had contributed an additional £28k for 2010 to be split £15k for helideck lighting and £13k helideck friction.
- Mr. Howson reported that Bristow Helicopters had agreed to provide half the funding (up to £15k) for the work on EGPWS warning envelopes; the other half is expected to be provided by OGP via Mr. Stevens.

5 Presentations

5.1 Mr. H van den Boom of MARIN gave a presentation on the HELIOS Joint Industry Project on Operability & Safety of Helicopters on Offshore Ships. (Presentation attached to these minutes.)

Mr. Howson noted that the CAA's current research was looking at on-deck stability where as this research was focused on the moment of landing, so the two work programmes were complementary. Mr. Knight thought that the deck availability figures presented were optimistic; in his experience decks on small vessels were rarely used. Mr. Lyons felt that the operability analysis should take account of the MSI/WSI limits as well since this will be part of the overall system to ensure stability on the deck after landing. He added that he was not sure about the benefits of a system to identify quiescent periods; pilots are generally able to judge this for themselves. Mr. Eagles noted that aircraft certification with regard to the undercarriage loading should be considered; helicopters are not certificated for operations to moving decks.

5.2 Dr. S Coleshaw gave a presentation on the Emergency Breathing System Specification project. (Presentation attached to these minutes.)

A general discussion followed regarding the pros and cons of various mouthpieces and noses clips. Mr. Naylor observed that nose clips often came off during training. He thought that it was possible to manage without them but wondered whether that would be a realistic expectation in cold water. He added that he thought that a mask would be a better option and it would also address the lack of visibility. Mr. Knight raised the issue of compatibility of EBS equipment with seat harnesses, and Mr. Naylor noted that training should be realistic - some train with lap straps only.

5.3 Mr F Nascimento of Imperial College gave a presentation on The Factors Affecting Safety During Night Visual Approaches. (Presentation attached to these minutes.)

Mr. Dawes said that BP were very interested in this subject; recency was an issue with the reduced amount of night flying and crews felt more confident after three night deck

landings. Capt. Armstrong noted that the minima for night deck landings needed reviewing, height in particular. Mr. Finlay was impressed with the presentation and asked what was the best way of extracting information without introducing bias. Mr. Nascimento replied that he didn't ask any questions; he just got the interviewees to explain. Mr. Lyons commented that the interviews were conducted not long after the ETAP accident and wondered whether the interviewees had particular points to make. Referring to future work involving the measurement of pilot workload, Mr. Howson suggested using FDM to measure workload or conducting simulator experiments where performance on additional, artificial tasks could be used to measure workload.

6 AOB

6.1 Mr. Lyons highlighted the forthcoming RAeS conference on flight in Degraded Visual Environments (DVE) and noted that this topic had been dropped from the CAA Safety Plan. He felt that something needed to be done about this significant cause of accidents. Capt. Armstrong advised that the CAA Safety Plan was constantly under review. This issue mainly affected private pilots and recent changes to the VFR limits had been made. Mr. Howson noted that further work was under consideration to conduct a literature survey into devices designed to provide additional, ideally heads up, attitude cues to assist recovery for inadvertent entry into IMC. This work was not shown in the Safety Plan as it was subject to internal CAA prioritisation. Mr Finlay said that the military were investigating technological solutions but noted that the human factors aspects also needed to be considered.

6.2 Mr. Eagles commented that in the latest EASA NPA the five hours instrument flying training had been removed from the PPL syllabus on the basis that it was too onerous. He added that it had been suggested that the training could encourage pilots to take risks regarding inadvertent IMC. Although he did not believe that this had been proven, he accepted that it could be an issue. However, he thought that the instrument training should be replaced with a simulator-based exercise aimed at discouraging inadvertent IMC by raising awareness and improving decision making.

7 Date of Next meeting

A date for the next meeting was suggested but was not practical and a revised date is shown below.

Post-Meeting Note: The 61st meeting of the HSRMC will be held on Friday 26 November 2010 commencing at 10:00, Aviation House, Gatwick.

8 Attachments to e-mail

1) Research Update
2) Research Programme Funding Update
3) List of Actions
4) HELIOS Project Presentation
5) Emergency Breathing System Specification
6) Factors Affecting Safety During Night Visual Approaches

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