



Research Update
Briefing for 04 May 2017 HSRMC

David Howson, 02 May 2017

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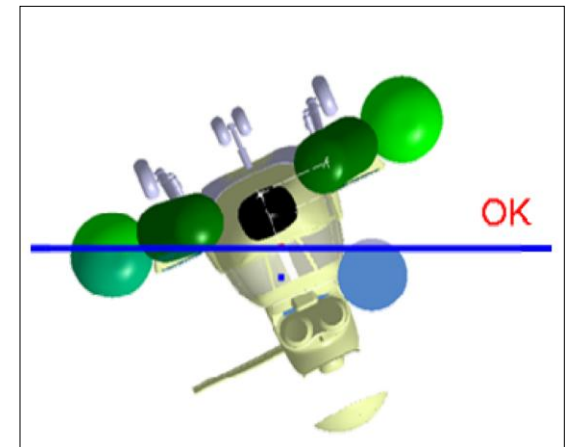
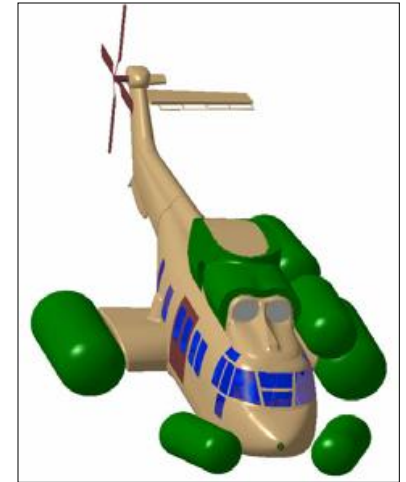
- Helicopter Ditching & Water Impact – EFS
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Helicopter Ditching & Water Impact EFS (1)

- EASA Safety Committee determined that air pocket scheme (side-floating helicopter scheme) is not sufficiently mature:
 - Air pocket scheme removed from AMC.
 - Research to determine feasibility of air pocket scheme to be commissioned and funded by EASA.
- The associated objective rule may also be removed:

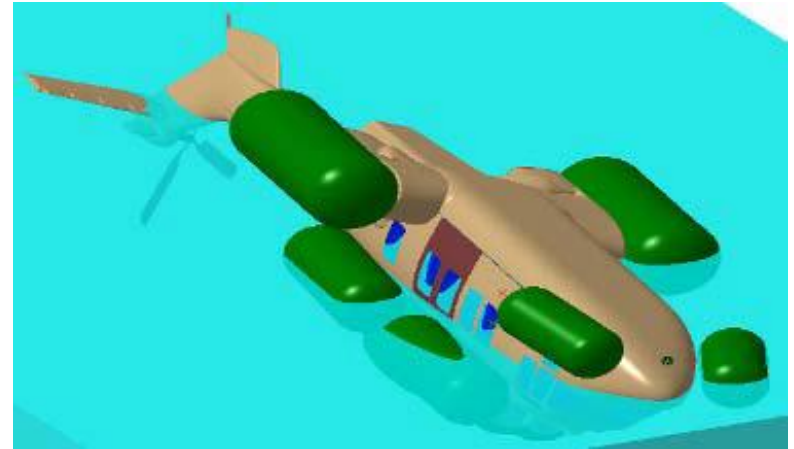
“CS 29.801(i): The rotorcraft design must incorporate appropriate post-capsize survivability features to enable all passenger cabin occupants to safely egress the rotorcraft, taking into account the human breath hold capability.”

- If retained then EASA will accept EBS as meeting the rule pending demonstration of feasibility of air pocket, but OEM representatives not happy about possible future change.
- If removed then the major cause of fatalities in survivable water impacts will be ignored in the new CS.



Helicopter Ditching & Water Impact EFS (2)

- CAA has proposed that publication of the new CS be delayed until the air pocket research has been concluded.
- Advantages:
 - Avoids issue of whether to remove or retain the objective rule.
 - Delay would have no direct impact – will only apply to new helicopter designs.
- Disadvantage:
 - Would delay consideration of retrospective application of new CS, **but unlikely that this exercise will deliver anything not already required by SPA.HOFO or SD-2015/005 (in the UK), or voluntarily implemented by the industry.**



Helicopter Ditching & Water Impact – PPE (1)

- Emergency Breathing Systems (EBS) Standard:
 - ASD-STAN D1 WG9 work nearly complete.
 - prEN 4856 submitted for National Domain Ballot; positive vote and no significant comments received.
 - prEN 4856 to be finalised at end May 2017, and submitted to CEN for adoption as an EN (no technical changes during this process).
 - EASA expected to issue ETSO to cover prEN 4856.
- EBS Training:
 - Exemption issued by HSE in UK.
 - Shallow water (max chest depth 0.7m) training permitted with only standard offshore medical + self questionnaire on day of training.
 - In water training to depth of 1.5m permitted with standard offshore medical + lung function (spirometry) test. Ok for all exercises except for HUET capsizes.



Helicopter Ditching & Water Impact – PPE (2)

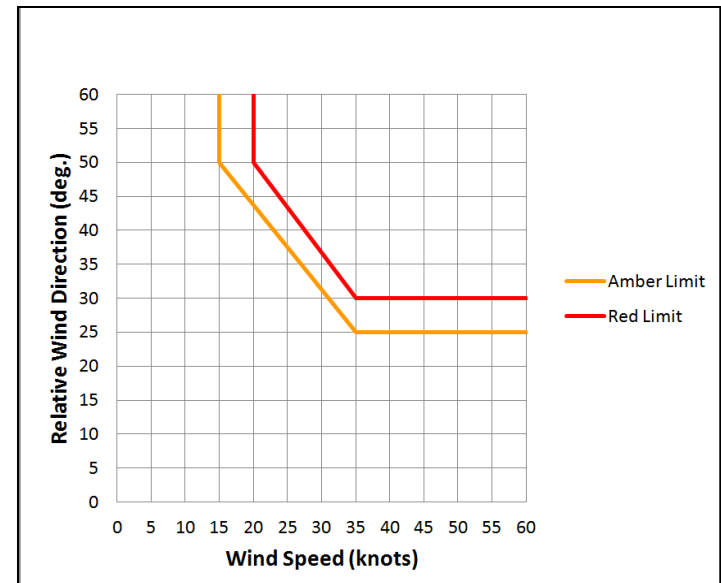
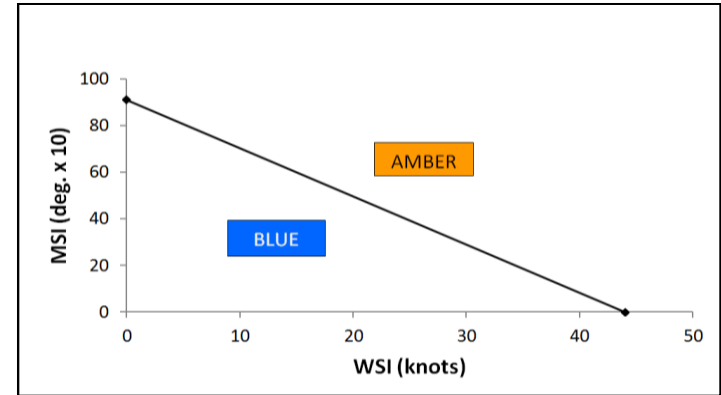
- **Life Jacket Standard:**
 - ASD-STAN D1 WG9 work item agreed and work under way.
 - Main issue is self-righting capability.
 - Difficult to achieve with heavily insulated immersion suits.
 - Large lobes cause difficulties in life raft boarding.
 - Suggestion to use additional chambers that can be deflated (and re-inflated if required) for boarding.

- **Immersion Suit Standard:**
 - ASD-STAN D1 WG9 work item agreed work under way.
 - Main issue is thermal insulation and trade-off between comfort and survival time.
 - Propose to solve with multiple levels of insulation.
 - Solution could be a standard suit shell with a series of liners.

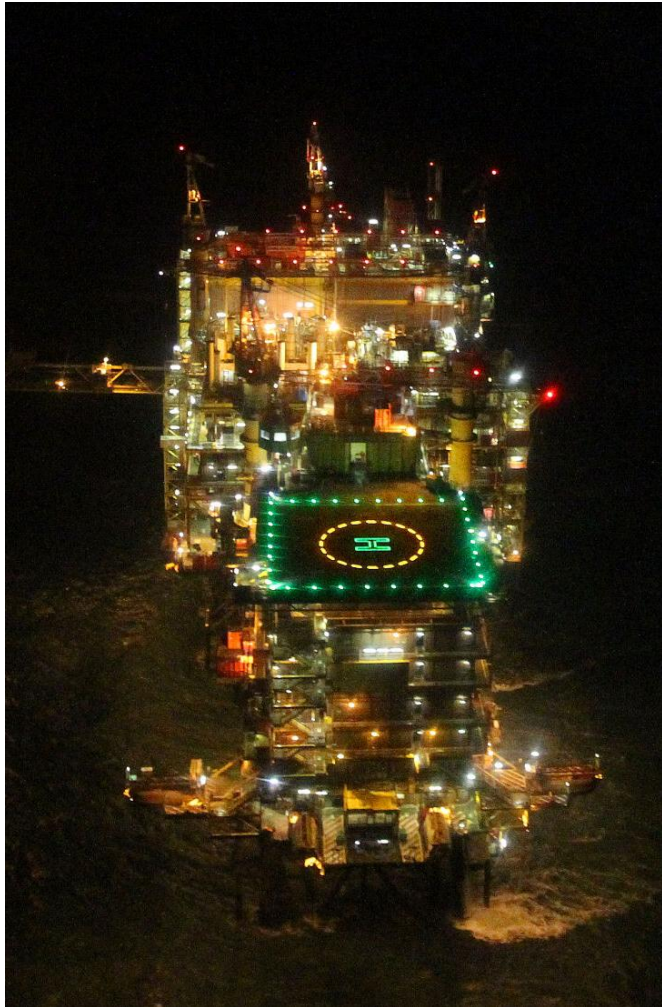


Operations to Moving Helidecks

- Upgraded ‘traffic lights’ to be delivered and installed on Chevron’s ‘Captain’ and ‘Alba’ FSU during Q2 or Q3 2017.
- New HMS specification drafted adding new functionality to existing HCA specification.
- MSI/WSI and RWD limits refined:
 - WSI max increased from 36kts to 44kts;
 - RWD limits extended to allow for non-DP vessels.
- Meeting with industry hosted by HCA arranged for 18 May 2017 to agree HMS specification, trials objectives and plan for introduction.



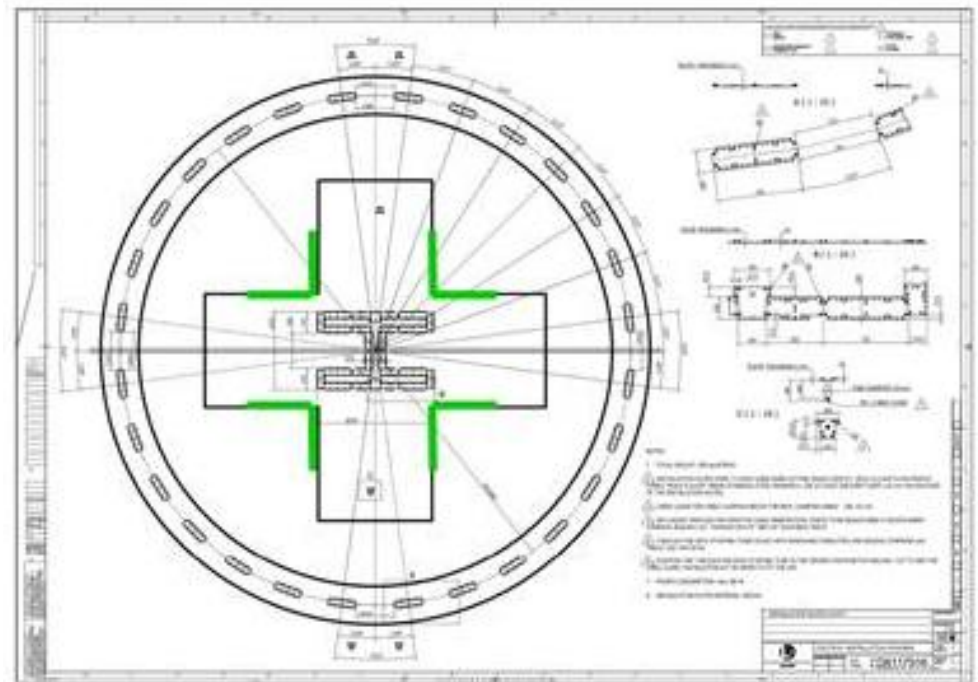
Helideck Lighting (1)



- Status of approvals:
 - Orga, IMT, FricTape and Tranberg systems approved by HCA.
 - Orga, FricTape and IMT systems approved by CAAi.
 - Further two systems 'in progress' with CAAi.
- CAP 437 8th Edition Update:
 - Added tolerances for size and location of the 'H' marking.
 - Added tolerances on the radius of the TDPM circle.
 - Clarified requirements in respect of strength of mountings and drainage.
- Safety Directive SD-2016/005:
 - Mandated the circle & H lighting for night operations post 31 March 2018.
 - Gave credit for circle & H lighting from 01 January 2017 in NUI fire-fighting scheme.

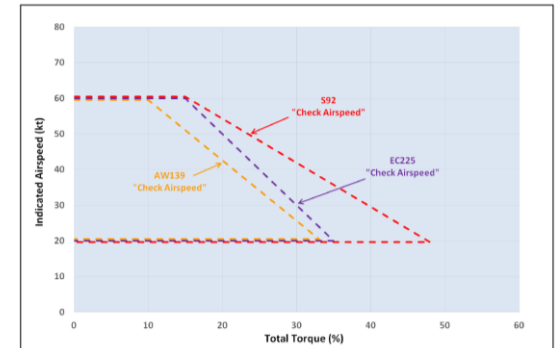
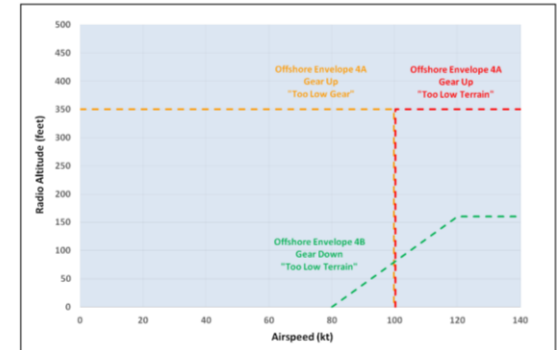
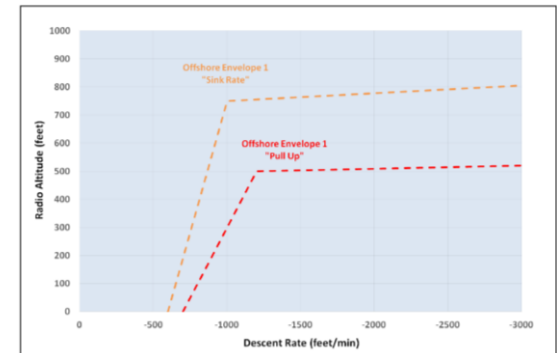
Helideck Lighting (2)

- St. George's Hospital Helipad:
 - Circle only installed on 28 April 2017, but not yet wired up.
 - No problems reported from other trials with skidded helicopters (e.g. Orga in The Netherlands), but pilots had reservations about landing on the H.
 - Alternative to H proposed for dedicated trial
 - Provides required cueing in central area of deck but leaves flat space for skidded helicopters to land.
 - Smooth gurney access via gaps in circle into ends of white cross.



Helicopter TAWS (1)

- Two-phase implementation programme driven by HeliOffshore:
 - Phase 1:
 - Essentially limited to HTAWS unit changes; minimal aircraft integration issues (button label change and update to HTAWS supplement in RFM only).
 - New and improved warning envelopes developed.
 - Tested and validated on EC225, S92, AW139, S76A+ & S76C++ using FDM data from Bristow, CHC and Babcock.
 - Minor adjustment required to Mode 4B (AW139); additional Mode 7 envelopes produced for S92 and AW139; Mode 7 confirmed unsuitable for all S76 types.
 - Evaluated and confirmed via flight simulator trials on Bristow EC225 simulator.
 - Specification and research report published in CAP 1519 and CAP1538 respectively.



Helicopter TAWS (2)

- Phase 1 Progress:

- All parties pledged support at April 2016 HeliOffshore conference.
- HTAWS manufacturers will produce equipment service bulletins.
- Helicopter manufacturers will cover introduction of modified HTAWS with aircraft service bulletins (major modification as HTAWS Flight Manual supplement affected).
- Leonardo Helicopters expected to lead the retrofit with the AW139.
- IOGP expected to issue a letter of intent committing to fund the retrofit.
- Target date for completion of voluntary retrofit is end 2017/early 2018.

- Phase 2:

- Will include any modifications to warning form/format resulting from ongoing Cranfield University research.
- Will include modifications to HTAWS omitted from Phase 1 and any aircraft modifications.
- Will investigate any new ideas.
- Will pursue development of formal specification (RTCA/EUROCAE MOPS) with EASA.



Occurrence	Warning Times					
	Current Equipment		Modified Equipment		Improvement (Best to Best)	
	AVAD (set to 160ft)	HTAWS (excl. AVAD = Mode 6A)	Existing/ Revised Envelopes	New Envelopes	Seconds	%
Scilly Isles, 1983	24.0	4.0	24.0	0.0	0.0	0
Cormorant 'A', 1992	6.0	1.5	6.0	17.0	11.0	183
Morecambe Bay, 2006	7.0	7.5	8.0	35.0	27.5	367
ETAP, 2009	7.0	1.5	15.0	13.0	8.0	114
Sumburgh, 2013	5.0	7.0	8.0	13.0	6.0	86
Clipper, 2013	0.0	5.0	9.0	35.0	30.0	600
Sea Rose, 2011	12.5	18.0	31.0	32.0	14.0	78
'920194'	1.0	6.8	11.4	18.0	11.2	165

Best warning time (current)

Best warning time (new)

Thank you for your attention...

Any questions?