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Submarine Safety Symposium 2013 Feedback Report

1. Introduction

The fifth Submarine Safety Symposium was held on 9/10 Oct 2013 at the Dock Museum in Barrow-in-Furness. The event was sponsored by BAE Systems, but all the Submarine Enterprise organisations (as depicted in the above logo) participated. The Project Manager for this event was [REDACTED] of the Submarines Operating Centre within MOD, who was supported by a pan-Enterprise Working Group comprising:



Babcock/HMNB(D)
HMNB(C)
BAE Systems
Navy Command
AWE
Rolls-Royce

The event was planned over a 12-month period and set out to build on feedback and areas of interest from previous Symposia, in particular the one held at HMNB(D) in 2011.

The overall theme of the event was 'Adopting project delivery behaviours that ensure safety whilst maintaining quality'. Sub-themes of Learning from Experience, Safety Culture, Product Safety and Recruitment/SQEP were featured within the various sessions.

The Symposium ran over two days, included an evening reception featuring the inaugural SEPP Awards and culminated with an optional tour of the Devonshire Dock Hall within the BAE site. A range of invited speakers from across the Enterprise and external organisations gave presentations or led break out sessions covering the themes of the event.

2. Event Feedback

Approximately 200 people, drawn from all the Enterprise organisations and other related bodies, attended the event. All delegates received event evaluation forms and close to 40% were returned. The information from the forms has been collated and analysed and a summary of the feedback is given below.

3. Welcome – ██████████ (BAES)

1 Excellent	2	3	4	5 Poor
14%	70%	15%	1%	

Illustrative comments:

- *Strong introduction which set the tone for the quality and content of the Symposium.*
- *Incisive and sharp – exactly the right start. Very good introduction to the challenge – left an interesting challenge in suggesting that approach to safety is not applied uniformly across the risks in the Enterprise.*
- *A pertinent welcome and set the scene well.*

4. Opening Address – RAdm Simon Lister (Director Submarines and COM(F) designate)

1 Excellent	2	3	4	5 Poor
87%	12%	1%		

Illustrative comments:

- *Excellent talk, very powerful and engaging. Made safety 'real'. Nice finish re priorities for the Enterprise.*
- *Useful pointers to product safety and quality; conscious competence; scene setting for safety at sea.*
- *Inspiring, thought provoking and very powerful. The perfect opener to the session.*

5. Keynote Speech – ██████████ (Sheffield Forgemasters)

1 Excellent	2	3	4	5 Poor
22%	58%	15%	5%	

Illustrative comments:

- *Great example of a leader who clearly takes safety seriously and supports the safety culture.*
- *Presentation was interesting as it looked at the supply chain (relatively high hazard to workforce). It covered all Symposium objectives with the talk on new product design being particularly interesting for improvement of safety and product LFE.*

- *Good keynote speech both for its content, application to the nuclear industry whilst remaining a novel/different industry perspective.*

6. Break out sessions – Learning from Experience – [REDACTED] (Rolls-Royce)

The venue for these sessions was affected by unanticipated noise from elsewhere in the building – this has impacted greatly on the feedback.

1 Excellent	2	3	4	5 Poor
	29%	43%	19%	9%

Detailed feedback from this session is included at Annex A. Illustrative comments:

- *A good presentation with the presenter giving good LFE examples on maintaining product quality and safety.*
- *The problems acoustically didn't help this presentation; I didn't feel I got much out of this and felt the interactive session would have translated learning better.*
- *Good, thought provoking prompt to get things going.*

7. Break out sessions – Safety Culture/Peer Review – [REDACTED] (AWE) and [REDACTED] (MOD)

1 Excellent	2	3	4	5 Poor
12%	60%	22%	6%	

Comments from facilitator:

Overall, the ESH Culture and Peer Review sessions appeared to go down very well. There was a high level of interaction within each of the groups and good overall participation. Sampling some of the conversations showed recognition amongst the delegates of their own similar experiences. Use of the AWE ESH Culture booklet allowed the groups to focus on a couple of key behaviours relating to the group they were considering. The single scenario was probably the easiest way to get a common conversation across the groups and made the feedback easier. All of the delegates I spoke to recognised culture as a key issue across the enterprise and were involved in some form of programme within their organisations. A good OEL opportunity we should capitalise on.

Future considerations: The time available and number of delegates made it a challenge to run an interactive workshop and turn sessions around when back to back. With the topic area being so wide it is important to keep it both focused and pitched at the right level for the audience. A couple of the groups found it difficult to get started or even nominate a facilitator, so it is useful to have a number of 'plants' in the audience to get things going if required.

There has been significant ongoing interest including a number of follow up requests and we have received feedback that several organisations are now using the framework themselves.

Illustrative comments:

- *Good use of scenarios, helped the team to engender debate, but also allowed discussion of experience.*
- *Interesting methodology for conversations about culture and behaviours.*
- *Very thought provoking, will be making contact to explore this further.*

8. Break out sessions – Product Safety ‘I Keep Submarines Safe’ – [REDACTED] (Babcock), [REDACTED] (BAES) and [REDACTED] (BAES)

1 Excellent	2	3	4	5 Poor
68%	23%	9%		

Comments from facilitator:

Both sessions ran well, although it was a challenge to turn around a very interactive session in the changeover time allocated.

The session provided an interactive review of some well-known case studies which acted as pertinent reminders of how seemingly minor aspects/occurrences can impact upon the safety of any product and that we all have responsibilities to address. Attendees engaged well and seemed to appreciate the interactive nature of the session.

Detailed feedback from this session is included at Annex B. Illustrative comments:

- *Very powerful exercise indeed – really resonated.*
- *A well thought out approach to remind delegates of the pitfalls and consequences linked to product safety.*
- *Excellent. Everyone in the Enterprise should do this!*

9. Keynote Speech – ‘High Consequence Events’ [REDACTED]

1 Excellent	2	3	4	5 Poor
59%	37%	4%		

Illustrative comments:

- *An excellent presentation clearly indicating the impact that human factors and culture/attitudes can have on an organisation - beneficial and detrimental.*
- *Interesting to see how the US has investigated the root causes of their safety incidents which is an area we have something to learn from.*

- *The underlying causes to the major events were well brought out and provided sobering reflection.*

10. Evening Reception and SEPP Awards

1 Excellent	2	3	4	5 Poor
25%	45%	22%	8%	

Illustrative comments:

- *Good function and chance to interact with other attendees. Excellent to see the awards showing commitment to the safety culture and beliefs.*
- *An excellent opportunity to catch up/network and recognise teamwork.*
- *The SEPP awards highlighted the benefits of working together with both awards appearing to be drawn from LFE. It may be worth considering small presentation on each award to clearly communicate this to delegates.*

11. Morning Address – RAdm Mike Wareham (Director Submarines)

1 Excellent	2	3	4	5 Poor
32%	53%	15%		

Illustrative comments:

- *Good introduction, brought real challenges ahead into focus and front line reliance on safe Enterprise.*
- *Pragmatic and realistic about the challenges that the Enterprise has ahead of it, with steady resolve and encouragement to face them.*
- *Good introduction. Safety top of his priority list – very clearly stated.*

12. Keynote Speech – People and Skills – Resourcing a Nuclear Construction Project – [REDACTED] (EDF)

1 Excellent	2	3	4	5 Poor
25%	53%	15%	3%	

Illustrative comments:

- *Very thought provoking about what can be done in this environment – holistic view to the people challenge.*
- *Really interesting and lots of relevance to the issues we face.*
- *A very useful presentation. The linkage to training and in particular the 'E' in SQEP was very thought provoking.*

13. Keynote Speech – ‘The View from the Front Line’ – Cdr [REDACTED] (Royal Navy)

1 Excellent	2	3	4	5 Poor
93%	4%	3%		

Illustrative comments:

- *An outstanding presentation. Brought real life and colour to what submarines can do, their capability and the importance of the material state of the platform and ultimately its safety.*
- *A tremendous view on the real reason for the submarine programme.*
- *Good insight into the ‘users’ of the final system and makes that link to the work undertaken.*

14. Closing Address – RAdm Simon Lister (Director Submarines and COM(F) designate)

1 Excellent	2	3	4	5 Poor
67%	33%			

Illustrative comments:

- *A great closing out of the Symposium and exactly the LFE expected from the work over two days.*
- *Important message on what will I take away to do differently. For me – looking more at what industry are doing. Good reflections.*
- *The ‘Teaching from Experience’ idea is excellent – we need to do this.*

15. Symposium Administration Arrangements

1 Excellent	2	3	4	5 Poor
59%	38%	3%		

Illustrative comments:

- *Very good, well planned, well balanced and well executed.*
- *Simply excellent! Excellent event production team with respect to audios and visuals.*
- *Well organised, good venue, good control.*

16. Venue Facilities and Catering

1 Excellent	2	3	4	5 Poor
40%	51%	9%		

Illustrative comments:

- *Dock Museum seems to be the perfect venue for this event – lots of space and very relevant.*
- *Superb venue with maritime theme. Food and beverages good standard.*
- *A fantastic facility, excellent use of space and very supportive staff.*

17. Particular Benefits Gained by Delegates at the Symposium

The most frequently cited benefits can be summarised as follows:

- *Networking*
- *Sharing knowledge, experiences and learning*
- *Gaining a wider perspective from other sectors*
- *Exposure to new ideas*
- *Time out to focus/reflect on safety*
- *Refreshment/re-energisation of safety responsibilities and commitment to them.*
- *Contextualisation of the importance of safety to the end product.*
- *The importance of leadership commitment to safety.*
- *Safety Culture and the importance of behavioural aspects.*


18. Topics Delegates Would Like to See at any Future Symposium

The topics requested can be summarised as follows:

- *Learning from Experience – how can this be applied effectively across the Enterprise?*
- *Teaching from Experience*
- *Control of Work*
- *Safety Case approaches*
- *Safety Culture and human factors – sharing of best practice across the Enterprise (AWE and Navy Safe specifically mentioned)*
- *Quality assurance to deliver product safety*
- *Integrating safety best practice and 'high reliability' from other industries.*
- *The Regulator's view and their relationship with the platform and operations.*
- *Examination of real incidents e.g. look at ASTUTE grounding from all perspectives.*
- *SQEP sitrep*
- *Root cause analysis*
- *Balancing/prioritising different aspects of risk of nuclear and ship.*
- *How to measure and what to measure to drive improvement*
- *Wider attendance from non-engineering cadre and more junior staff.*
- *Look at SEPP challenges in moving forwards.*

19. Summary and Looking Forward

Overall, the event was a great success and brought together many of the key players in terms of safety across the Enterprise. The feedback indicates that delegates, as well as enjoying the event, gained a lot from attendance. The next Symposium is scheduled for 2015.


12th Feb 2014

Annex A - Learning from Experience Output

Infrastructure

LfE Area of good Practice	Raised By (Name)	Raised By (Org)	How could this be shared? (With whom?)
Use of enclaves for construction sites in order to manage security of non-cleared individuals.		AWE	All construction stakeholders on secure sites
Get the specification at the commencement of a project – including the safety case		Generic	All Sites
Adopt the safety case on a page approach		AWE	All Sites
Clearly define the mandatory elements for quality control – make sure the supply chain understand these requirements		AWE	All Sites
Ensure sufficient in-house 'intelligent customer' infrastructure capability exists		MOD / RR	All Sites
Safety in Design is managed and integrated into the process & activities associated with the safety case		D154	All Sites
Share experiences in dealing with crane modifications/new product across the enterprise		AWE	Crane Working Group? SEIF?
Continuity of experience in infrastructure modifications & changes is really important and requires sharing		AMEC	
Use of virtual reality to test/simulate changes, develop manufacturing capability readiness levels by use of off site facilities e.g. MTC use technology centres to support development		MOD	All Sites
Safety performance Indicators for infrastructure projects based on previous failures		Rolls-Royce	SPI Working Group SDF
Generic approach to PSRs for Nuclear Facilities at a strategy		DE&S Clyde	SDF Working Group

level			
Embed LfE in infrastructure (Quality + Safety) reviewing data/trends (historical)		BAES Barrow	Share generally following the maturity of processes
Adopt greater 'user focused design' to support safe use		Babcock	All Sites
Challenge the origin of requirements and clearly understand these going forward		DE&S	SEIF
Major contract change learning – share the on-site controls & management required		BAES barrow	SEIF
Share regulatory feedback across the Enterprise		ONR	All Sites
Share good practice design management including roles/responsibilities & processes		Babcock / AWE	All Sites
Share experiences and forward intent for through life management of nuclear facilities		SUSM / Babcock	All Sites
Sharing experiences on: a) Interfacing with Regulator during infrastructure projects. b) Risk management. c) Hold Point control documents / plans.		RR AWE Babcock	All Sites
Process controls for transferring manufacturing facilities		RR	All Sites
Interfacing with local authorities		AWE	All Sites
Interfacing with operators & maintainers (e.g. Valiant jetty , DIO & Babcock)		Babcock	All Sites
LfE from other parties from outside of SM Enterprise/MOD e.g. EDF		EA	All Sites
'Make time for LfE'		SUSM	All Sites/Stakeholders

Source and Method

LfE Area of good Practice	Raised By (Name)	Raised By (Org)	How could this be shared? (With whom?)
Operational experience feedback into supply chain & verification of LfE transfer	[REDACTED]	Babcock	
Submarine Advisory Training Group – tailor & bespoke training to individual submarine crew. Optimise training to manage time pressures.		FOST	
Review of core load experience @ BAES		BAES	
Good experience seen in EDF civil nuclear power facilities of reviewing, sentencing & investigating operational events		Babcock	
Robust 'STOP' culture in place around dynamic evolutions (munitions loading at Devonport). Use of check lists/check points.		Babcock	
Immediate recording of issues (Nuc Procedures) to capture issues.		Babcock	
Operational experience feedback into design/safety cases (and checked)		HMNB Devonport	
Change to ISM A&A process – detailed stakeholder involvement and piloting roll-out		HMNB Devonport	
Share near miss reports more widely so all can learn		HMNB Devonport	
Interaction with civil nuclear & high hazard industries via OELG		Babcock	
Categorise LfE so that it can be 'worked up' when relevant to the task you are doing – include LfE in business processes		Babcock	
Don't over focus on just the engineering, e.g. make sure of psychological, human factors perspectives		All	Via ESDF. Add Human Factors/Psychology to Safety Peer Review.

Use experienced experts to define the changes & standards. Put ownership where it counts		Babcock	
Designing & operating a new facility requires focus to be put on the culture of the operators		AWE	
Suppliers deciding to out source artisan work to areas with inadequate capability		RR	
New HV electrical plant with area of concern in the life of winding varnish. Proof of principle trials and subcon changing – but caught due to forewarning process		NR	Do we need a manufacturing engineering forum pan enterprise
Method changes require early planning, capability to be proven early, prototyping where applicable and structured FAIR/LAIR		RR	All. Case study?
Event reporting to combine quality & safety to product related events & investigations		BAES	OELG & SDF
Safety case on a page		AWE	OELG / SEDF / SEPR
Embodiment and embedding of engineering change request		BAES	SEDF, LFE WG
Peer Review cascade through all levels of the organisation – limited visibility within organisations		DE&S	SEDF / OELG
Peer review – sharing of best practice from the reviews across the enterprise		DE&S	SEPR
Changing design standards, validation of new standard to ensure effectiveness		DE&S	
Smoothing out of drum beat to support & retain supply chain and reduce source & method changes.		RR	

Complex Processes

LfE Area of good Practice	Raised By (Name)	Raised By (Org)	How could this be shared? (With whom?)
Chalfont operation		BAES	Complex man machine interfacing systems
Specific highlighting of safety critical steps within a procedure		HMNB Clyde	Roll out to all areas where procedural control is used
Commissioning / cleanliness of systems		BAES	All manufacturers / repair organisations
Integration of complex software systems		CSG TL	
Common LfE reporting process with integrated filters & feedback process		Group	
SOPs & EOPs – how defined & used		Devflot	
Nuclear fuelling & refuelling – common terminology		BAES	BAES / Babcock
Safety risk management process		BAES	Improve promulgation across the Enterprise
Hold Point Control – what are the process differences across organisations and a broader application (generic) be adopted – Regulatory management		BAES	Have a single nuclear model?
Ensure operators are involved in the development of procedures		ONR	Via SEPP Quality Forum
Improve sharing of LfE associated with Events & Incidents across the Enterprise		DE&S	Extend internal approaches to wider Enterprise. Set up independent organisation to facilitate
Use case studies across the Enterprise to get people to think about LfE & educate people		SSP	

Annex B – Product Safety Output

Question posed:

As managers what behaviours & attitudes can you display to your workforce in your daily routine which will enhance or inhibit your tag line?

Team & Tag Line	Session 1		Session 2	
	Management behaviour that will enhance compliance	Management behaviour that will inhibit compliance	Management behaviour that will enhance compliance	Management behaviour that will inhibit compliance
1. David Henderson – died July 1988, Piper Alpha <i>We ensure that TAG outs are safe and will not harm the crew of the platform...don't we?</i>	<ul style="list-style-type: none"> • By providing robust challenges. • Understanding interdependency of departments and the consequences if we get it wrong. 	<ul style="list-style-type: none"> • Complacency towards process and tag out failures. 	<ul style="list-style-type: none"> • Enforcing appropriate checks and controls of the tag out system. • Understanding throughout Enterprise. 	<ul style="list-style-type: none"> • Carelessness and complacency.
2. Jim Lovell – survived Apollo 13 disaster April 1970 <i>We make sure our factory testing is thorough and the equipment doesn't have any defects...don't we?</i>	<ul style="list-style-type: none"> • Leading with safety context, putting safety first. • Leading by example – stop/ check. 	<ul style="list-style-type: none"> • Don't just push programme. 	<ul style="list-style-type: none"> • Ensuring process adherence. • By fostering/ developing a Just Culture. 	<ul style="list-style-type: none"> • Acceptance of deviations due to programme pressures.
3. Ayrton Senna – died San Marino Grand Prix 1994 <i>We make sure we order the right materials to the right specification...don't we?</i>	<ul style="list-style-type: none"> • Line of sight / competence. • Challenge. 	<ul style="list-style-type: none"> • Cutting costs in areas which undermine safety important items/ processes. 	<ul style="list-style-type: none"> • Challenge status quo • Ensuring workers understand the reasoning for standards. 	<ul style="list-style-type: none"> • 'Quality' of materials.
4. Christa McAuliffe – died January 1986, Challenger <i>We ensure that all plant and equipment are always used within the design limits and operating instructions...don't we?</i>	<ul style="list-style-type: none"> • Process vs reality • Why – proportional to risk. 	<ul style="list-style-type: none"> • Bureaucracy 	<ul style="list-style-type: none"> • Maintain operator focus. • Ensuring and fostering a strong safety culture. 	<ul style="list-style-type: none"> • Lose safety focus in face of programme pressure.

Team & Tag Line	Session 1		Session 2	
	Management behaviour that will enhance compliance	Management behaviour that will inhibit compliance	Management behaviour that will enhance compliance	Management behaviour that will inhibit compliance
5. Kalpana Chawla – died Feb 2003, Columbia <i>We cross check our design assessments and safety cases against what is really happening...don't we?</i>	<ul style="list-style-type: none"> Actively seek operational feedback. Carrying out checks against the safety case. 	<ul style="list-style-type: none"> SQ informed decisions 	<ul style="list-style-type: none"> Ensuring that plain English safety cases are written. Reviewing assumptions to check that operations and reality align. 	<ul style="list-style-type: none"> Allowing development of bureaucratic safety case which is not useful.
6. Christian Marty – died July 2000, Concorde <i>We clear up rubbish and arisings and manage loose article control...don't we?</i>	<ul style="list-style-type: none"> Ensuring workers understand consequences if they get their job wrong. Leadership behaviour and holding personnel to account. 	<ul style="list-style-type: none"> Allowing a walk on by culture or being seen to walk on by/ not leading by example. 	<ul style="list-style-type: none"> Lead by example. Investing in education for workers such that they understand the consequences if they get their jobs wrong. 	<ul style="list-style-type: none"> Not giving time and emphasis to completing the jobs fully and properly.
7. Dmitry Kolesnikov – died August 2000, Kursk <i>We ensure that we record and report incidents, accidents and quality failures and learn lessons...don't we?</i>	<ul style="list-style-type: none"> LfE is an investment. Being curious as to the root cause of failures. 	<ul style="list-style-type: none"> Allowing or participating in a blame culture. 	<ul style="list-style-type: none"> Leadership buy-in. Ensuring a through and appropriate LfE process. 	<ul style="list-style-type: none"> Not encouraging communication of findings.
8. Ben Knight – died August 1996, Nimrod <i>We ensure that our build standards are kept high whatever the financial pressures...don't we?</i>	<ul style="list-style-type: none"> Focus on ensuring SQEP capability. Ensuring the plan is not just a picture – it's a commitment. 	<ul style="list-style-type: none"> Focussing on deliver, delivery, delivery and not on safety & delivery. 	<ul style="list-style-type: none"> Ensuring focus on quality processes. Question/ challenge. 	<ul style="list-style-type: none"> Not listening, not acting when issues are raised.

Closing notes:

- As an Enterprise we have a good track record but:
 - We have had near misses, and;
 - It is getting tougher.
 - We need to consider Quality & Product Safety as well as Personal Safety.
- Encourage personnel to question, challenge, & report issues.
 - Informed compliance not blind adherence.
 - You as managers are able to drive the behaviours within your respective organisation. If they're not right – make changes.
- These events can happen to us – paperwork & systems alone do not make us safe – attitudes and behaviours matter.

Can you proudly say.....



Because I **know** that lives depend on us doing our job right