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LONDON BRANCH

Bridge standardisation and ergonomics

➔ An audience of 60 attended the London Branch December technical meeting on board HQS *Wellington* and heard the views of a panel of air and maritime industry experts. Chaired by Cdre David Squire, the meeting discussed the complications of standardisation in the maritime industry compared with the norm of standardisation in the airline industry.

Tim Crowch, President of Advanced System Safety Management (ASSM), linked the lack of standardisation to the occurrence of accidents through James Reason's barriers and defences models such as the 'Swiss Cheese Model'. Because every vessel is a 'prototype', there is no standardised bridge design – there is an area created as a working environment for the crew to perform at their best, giving rise to unsafe acts due to local workplace factors. Conversely, the aviation industry has a standard cockpit layout and standard man-machine interface. This standardisation reduced the length of the pilot



Tim Crowch, President of Advanced System Safety Management (ASSM)

cross-training requirement between aircraft types to two or three weeks with a resultant saving in costs. Although the maritime industry is steeped in tradition, there is a need for shipowners to become more closely allied to manufacturers, and take a close look at more standardisation, particularly in these times of rapid technological change. Tim concluded by demonstrating the philosophy of 'Pro-Active Safety Management', showing that investment in safety management will eventually produce a profit for the company.

Don Cockrill, Chairman of the UK Maritime Pilots' Association, and a pilot at the Port of London Authority, gave a presentation showing the diverse ship's bridge layouts encountered on a daily basis by a pilot on the Thames. These

layouts vary from the simple to the cluttered with consoles becoming ever more 'sophisticated'. Don pointed out the simple minimum keyboard display (MKD) device for displaying AIS information, and showed that even for the basic displays, there are a number of versions. He then showed a series of photographs of ECDIS consoles, underlining the vast differences between the various manufacturers' ideas of what makes a user-friendly display. Even the pilot cards stipulated in IMO Resolution A.601 have been amended to include more information that shipping companies require the pilot to know in addition to the IMO standard. Don showed several examples and asked what was the reason for the extras. The information and layout is already there in A.601 – so why change it?

In conclusion, he said standardisation is a huge challenge and there are many problems to overcome before any form of standardisation of ships' bridges can be achieved.

E-navigation and the priorities outcome from NAV 59 were the core of David Patraiko's address to the meeting. Two key priorities are:

- improved, harmonised and user-friendly bridge design;
- a means for standardised and automated reporting.

Follow-on risk control options include standardised mode(s) for navigation equipment and bridge and workstation standardised layout. Of course, the development of an eNavigation strategy implementation plan also has to take into account human-centred design. This only raises more questions: how will this be progressed and where will we take eNavigation? Should we be aiming for standardisation and a form of 'S-mode'? Should we encourage voluntary 'standardisation' with common rules and compete on services, or should we have 'mandatory' standardisation with regulation?

David said that, while complexity isn't necessarily all bad, we have to find a way of dealing with the obstacles it creates. There has to be a suitable training infrastructure in place, and we need to create barriers for error capture.

In the discussion after the presentations, the general opinion in the room was 'Why don't we enforce the standards we already have?' In the aviation world, the standards and recommended practices are enforced and the will to do this is



Don Cockrill FNI, Chairman of the UK Maritime Pilots' Association, and a pilot at the Port of London Authority

there. This is not the case in the maritime world. The role of the workforce is predominant in the airline industry. If pilots deem it dangerous to fly into a country's airspace or airport, then it doesn't happen. Again, there is no such representation in the maritime industry. There is a different attitude to organisational safety between the two industries – air 'flag states' are affected financially if their airspace or airport falls below the highest standards.

It may be that the maritime mindset will have to change due to the increase in data exchange. Otherwise vessels will be swamped with data as the input continues to grow exponentially. There will be a need to standardise transmission/reception of data otherwise the system will overload and be unworkable.

Other items discussed were 'alarm management' – in the aircraft cockpit, albeit a lot smaller in area compared to a ship's bridge, the alarm management panel is laid out the same way in all aircraft. The T-layout in an aircraft cockpit was developed ergonomically and standardised for safety and cost reasons (sound familiar?). If we in the maritime industry don't move to adapt our systems now, then we will eventually be driven to act in future by the cost in human lives, pollution, property. Failure to act will have consequences.

Harry Gale FNI

KEEPING IN TOUCH

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