

Navigating into the Future

→ NI Director of Projects David Patraiko FNI has spoken to the Hong Kong SAR Branch in the past. His presentation on that occasion must have been well received, because 60 members and guests turned out to hear him in November when he spoke to us again.

David's topic was 'Navigating into the Future'. He started with a brief review of what the industry currently does well and where there is room for improvement. We do well to carry more than 90% of world trade in relative safety, in what has become the most environmentally benign form of commercial transport, but we still suffer too many accidents. Collisions and groundings are on the rise, so there is no room for complacency.

In David's view, the likely causes of accidents in 10 years' time will include:

- Manning issues and fatigue;
- Poor passage planning;
- Poor bridge resource management (BRM);
- Failure to obey Colregs;
- Pilotage errors;
- Poor management of underkeel clearance;
- Electronic issues.

We need to identify why and how accidents happen in order to prevent them. David recommended the new NI book *Navigation Accidents and Their Causes*, which builds on the earlier works by Capt Cahill FNI in a more proactive way.

Among the technical issues that are predicted to plague us is the quality of installation of equipment. For example, anyone can install a GPS because there are no rules requiring

competence. This opens up the possibility of interference, either deliberate or accidental. Problems with the accuracy of satellite and other navigation systems will not go away, although multi-receivers are already available and may offer a solution to the potential problems.

Human issues may be the most difficult to tackle, and will continue to include fatigue, lack of competence, inexperience, the absence of mentoring, and poor situational awareness. David pointed out that more authorities are now training their staff to recognise weak ECDIS knowledge. He was asked whether officers will have to be trained to think differently in the digital age. They will need to be better at interpreting information and will have to develop an analytical mindset.

The Nautical Institute is contributing towards developing future mariners through its books and magazines, and by its involvement on international bodies and working groups. Having been asked by the IMO to help define future user needs, branches are obtaining feedback from global branch meetings, *Seaways* articles, NI committees etc.

One of The Nautical Institute's initiatives is the development of standardisation in e-navigation. There are 35 different manufacturers of ECDIS, and it is hoped to have agreement on standard presentation of information by 2019. The NI is also pushing for improved reliability, better alarm management and human-centred design.

In future, there will almost certainly be more sea traffic management (along the lines of air traffic control), especially in northern Europe,

but there are issues to be resolved about how the various authorities will work together, and how efficient communication will be assured. We will almost certainly be subject to more tracking and shoreside intervention, but it will have to be carefully planned to avoid disasters. After radar-assisted collisions (RAC) and ECDIS-assisted groundings (EAG), perhaps the next big thing will be bureaucrat-assisted disasters.

Turning to the hot topic of autonomous vessels, David opined that autonomy is already here in the form of dynamic positioning systems and unmanned engine rooms. He believes that it is only a matter of time before vessels become completely unmanned. The challenge will be to ensure that shoreside operator training and competence is fit for purpose, and that there is a sensible handling of liability issues. To this biased observer, it sounds as though the money saved on crew costs will not match the amounts likely to be given to the lawyers in future. Change of career, anyone?

In conclusion, David stated that we should be proud of our ability to navigate, but change is coming and we need to manage that change both in technological and human terms. The human element will always be present, either in the operation of vessels or in system design, and needs to be carefully addressed.

A lively question and answer session had to be curtailed for lack of time, but the presentation created so much food for thought that David was invited to give it again to cadets at the Maritime Services Training Institute before he left Hong Kong.

Capt Alan Loynd FNI