THE SIRC COLUMN

Passing ships' information

AIS, when correctly used, can take some of the stress out of transmitting ship's data to shoreside authorities, says **Nick Bailey** of the Seafarers International Research Centre

IN December 2004 it became a requirement that all ships carry automatic identification system (AIS) units. As many of you will know, AIS automatically transmits information to other ships and shore stations within VHF range. The information transmitted includes the ship's name, call sign, IMO number, draught, destination, speed and course, etc.

The introduction of AIS was rushed through in response to the attacks of 9/11. The information transmitted by the system makes it potentially easier for shore side authorities to track and monitor ships. Originally, however, the system was designed with the aim of improving situational awareness. With greater information about ships in the vicinity, navigators are better able to make informed decisions as to how to manoeuvre their vessels. To fully benefit from such a system, the data transmitted must be accurate and operators must understand the system.

With this in mind, my colleague Neil Ellis and I, as part of the work of the Lloyd's Register Educational Trust Research Unit (LRETRU), have been monitoring the use of AIS since its introduction. Specifically, we undertook research at a vessel traffic services (VTS) station on three separate occasions in 2004, 2005 and 2007.

The VTS station monitors ships passing through the adjacent waters and operates a mandatory ship reporting system. Much of the information the ships pass to the VTS by VHF radio is also transmitted by AIS. By comparing the two sets of information we were able to assess the accuracy of the information transmitted by AIS.

What we found in 2004 was that approximately 10 per cent of ships reporting to the VTS were transmitting errors in their AIS data. The majority of the errors were in the destination and draught data. As this information is entered by the ship's officer at the beginning of each voyage, it appeared that officers were either not used to entering the information or didn't know how to use the system correctly.

When talking to the operators in the VTS centre at that time, we were told that many ships' officers seemed unable to correct the information when told of an error. This further suggested that the problem was down to a lack of training. Indeed, in talking to crews, we have often heard that they received no training for AIS, and that this is not uncommon when new equipment is fitted. A study being undertaken by LRETRU is currently examining this wider issue of training and technology on ships.

As well as errors in draught and destination information, there were also errors in the fixed identification information such as ship's name, call sign and MMSI number. Moreover, there were numerous incidents of ships' course information being incorrect, often 180 degrees out. This information is fed directly from the ship's gyro and it is now recognised that there is a problem with the interface with some compasses. Most of these problems are now widely recognised and documented.

Nicholas Bailey with an AIS unit on board ship (left) and a close-up of an AIS unit (above)

Having monitored the system over time, we have seen an improvement in the accuracy of the data transmitted, with approximately four per cent of ships transmitting incorrect information in 2007. Furthermore the VTS operators report that ships' officers are now much more responsive when an error is detected. This suggests that crew members are becoming more familiar with the system and have possibly incorporated it into their normal pre-departure routine.

The VTS operators have equally modified their practice, so when speaking to a ship they will now indicate that they see from AIS that the ship's draught is such and such and destination is so and so. This is intended to make life easier for the ship's officer and to emphasise that the AIS information is being used.

Having spent many years at sea as a navigator, I remember that calling up the shore- side authorities was always slightly stressful. There was the worry that they wouldn't understand me or I wouldn't understand their question, or that they would ask something I was not quite prepared for. I recall many occasions when I had to repeat my ship's name and destination several times before they understood me. So having a system that makes these types of exchanges easier and takes some of the stress out of the situation can only be a benefit.

But also having now spent time with the people in the control room of a VTS centre, I have discovered, perhaps not surprisingly, that they are actually very nice people, and not difficult officials there to make life awkward for seafarers. Indeed, all those we worked with were extremely friendly and welcoming, with a real interest in ships and shipping. Several of them, when not on duty, work on the local lifeboats, while others have small boats of their own, or are enthusiastic ship spotters who spend their vacations taking photos of ships. Some of the operators had spent time on board different ships and talked about it excitedly.

Within the control centre there are normally around six operators on watch. They sit in different positions in the control room and take on different roles during their 12-hour shifts, moving around every hour or so. There is one desk with radars and VHF radio that is dedicated to taking ship details. When you call up, this is the person you will most probably speak to. Others deal with telephone calls from the public and emergency calls concerning such matters as the sighting of distress flares or a dog falling off the cliffs.

As well as dealing with routine matters, they are constantly updating their knowledge and practising the planning of search and rescue operations. If a real incident occurs these are the people who co-ordinate operations. Perhaps most importantly, my strongest impression was of a group of people committed to the safety of seafarers. On several occasions when taking a call from a ship I heard the operator say "what a nice person" in response to a simple "thank you" or "have a good watch". So the next time you approach a reporting zone, ensure your AIS is up to date and remember the people at the other end of the VHF are friends looking out for your safety, and wish them well!

The Lloyd's Register Educational Trust is an independent charity wholly funded by the international risk management organisation, the Lloyd's Register Group. Its principal purpose is to support advances in transportation, science, engineering and technology education, training and research worldwide for the benefit of all. It also funds work that enhances the safety of life and property at sea, on land and in the air.