

Navigation, Charts & ECDIS

The journey to automated shipping

By Felicity Landon

The world has become an ever more complex place – and navigation is no exception to that, said Howard Stevens, Chief Commercial Officer at ChartCo. “When it comes to navigation and generally staying in compliance as you navigate around the world, there are more and more regulations you have to take into account, these are changing more and more frequently, and it is harder and harder for ship owners, managers and mariner to stay on top of it all,” he said. “Principle among these are environmental regulations. They are changing at such a rapid pace, and the dates for compliance are different from country to country – and they often change.”

Against this background, ChartCo’s own evolution is mirroring the drive towards digitalisation and automation. A handful of years ago, ChartCo was, to use Mr Stevens’ words, “essentially a distribution and logistics business moving enormous amounts of packages containing A3 charts and books to thousands of moving targets”. Now, he said, ChartCo can be defined as between two-thirds and three-quarters a software house.

“The world of navigation has changed principally from paper to digital and we are very much a digital software-based company. We absolutely have retained our ability to supply paper charts and books but we are seeing a significant year-on-year decrease of that side of our business.”

However, digitalisation doesn’t take away the levels of complexity around all the components within navigation, he pointed out.

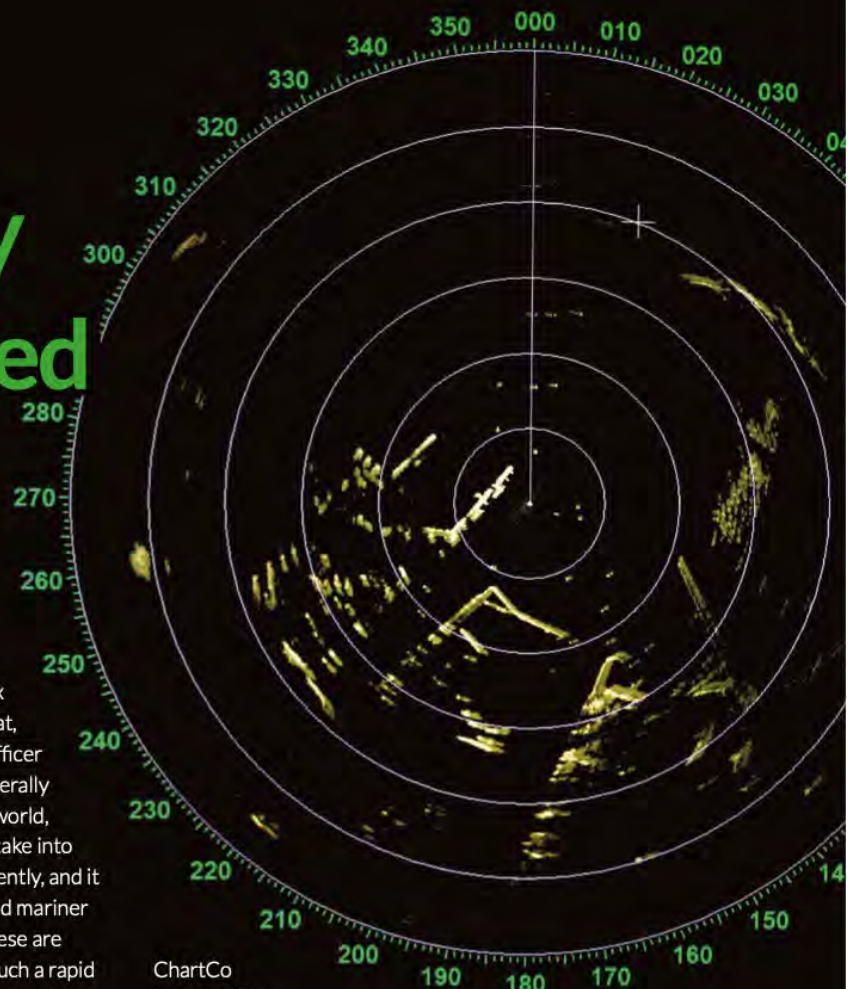
Having made a series of acquisitions over the past five years which added to its PassageManager core navigation platform,

ChartCo launched its OneOcean platform last year to bring functionalities together. PassageManager was rebuilt ‘from the ground up’, and is now overlaid by environmental compliance, regulations management, safety & quality compliance, operational reporting and real-time monitoring and control functions.

“OneOcean means that the mariner, as they start to passage plan, can overlay other elements, from whether they are in a whaling area to the weather. So they can see everything before they start journey optimisation, without having to go into different systems.”

The question is: will that mariner’s job exist at all in years to come? As Mr Stevens said – we are all on the journey towards automated/unmanned ocean shipping, and the evidence is clearly there in the inexorable shift from ship to shore.

“We do have a long way to go before we see a bulkier or tanker at sea unmanned – I think 15 to 20 years – but it is coming. Shoreside, our customers want to see more and more



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about what is happening on the vessel. A couple of customers are saying they want to reduce, maybe even eliminate, the role of navigation officer and do all the passage planning, optimisation, weather, etc., in the office and push out the passage plan to ECDIS, which the master will then look at and sign off."

ChartCo is being asked all the time to enable the flow of 'decision grade' information back to shore, he said. "Power is moving away from the master, whose role will be eroded slowly but surely as people do more and more on shore."

A shore-based version of OneOcean enables those in the office to see where a ship is, spot if it has strayed from its passage plan and overlay environment and weather information in real time.

The next stage in EnviroManager and other parts is to add company-specific layers of functionality – essentially, some companies are looking to implement policies that are more stringent than required by regulation, to ensure that vessels stay well within designated areas and don't breach any environmental or other regulations, said Mr Stevens.

"You can overwrite the international regulations with something stronger. That is the next trend. Ship owners want to be good corporate environmental citizens; they say 'we want to do everything we can do'.

"They want to be able to say that they have taken every available opportunity to minimise the risk [of breaching the regulations]. Having all the systems in place doesn't absolve you if something goes wrong, but it does demonstrate you have the procedures and systems and have tried your best." ♦

AIS spurs data revolution

AIS (Automatic Identification Systems) analytics is spurring a data processing revolution, said the UK Hydrographic Office.

"In today's digital maritime industry, the amount of data at our fingertips has never been greater. From operational data and supply chain calculations, to weather information and tidal predictions, we now have a veritable ocean of information at our disposal – all with the promise of unlocking great benefits if utilised properly," said UKHO innovation manager Jonathan Lewis.

"But, as the maritime digitalisation push continues, it is worth examining exactly how we can make the most out of this data – the core of which lies in proper handling and processing. In tandem with the world's data growth, we are continuously looking for new ways of processing the data we hold as we work to further our understanding of the world's oceans."

Among the big data sets UKHO holds that has provided real value is AIS. The peer-to-peer system in which all vessels broadcast their position, speed and direction, and identifying information, is primarily used for collision prevention. However, it can also be received by satellites and terrestrial stations, where it can be stored, collated and transformed into a data source that can be analysed for other purposes, said Mr Lewis.

"AIS offers valuable information which can help us to improve safety for mariners and vessels – as well as potentially have a real impact on things like port and infrastructure development."

UKHO's portfolio of Admiralty maritime data solutions contains more than 15,750 electronic navigational charts (ENCs) which inform mariners on where to anchor when transiting to a particular port. "By analysing AIS data, we can gain an immediate understanding of how many ships are using these anchorages. In turn, this information can spur the development of whole new anchorages in areas of high demand, or allow port operators to sensibly manage their assets and land if a particular terminal is seeing less use because of wider macroeconomic movements," said Mr Lewis.

"AIS also provides us with a unique insight into how our products are being used – influencing new product developments and improvements for our end users. For the new edition of our ADMIRALTY Ocean Passages for the World published last year, we used an in-depth analysis of AIS tracking data to identify changing patterns in shipping routes, including those emerging due to shifting global macroeconomic trends. These updates have been instrumental in helping us to support mariners in the planning of deepsea voyages along major trade routes."

From June this year, UKHO's Admiralty Vector Chart Service (AVCS) became available online to support shore-based decision-making. The new service supports shore-based users with vessel tracking and voyage planning, giving shore-based users and planning teams access to more than 15,000 ENCs, updated weekly. ♦

MARITIMES MOST COMPREHENSIVE AND INTENSIVE ONLINE COURSES

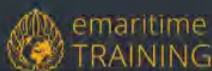
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