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Collisions, ECDIS and “All Available Means”

On 16 December 2015, at 20:14 local time, the Thorco Cloud and the Stolt Commitment collided in the Singapore Strait resulting in the unnecessary deaths of six seafarers. This incident should have been avoided, and this article discusses how the Electronic Chart Display Information System (ECDIS) and traditional navigation skills should be used to reduce the risk of such incidents occurring in the future.

Currently, 51% of the Safety of Life at Sea (SOLAS) fleet uses Electronic Navigation Charts (ENCs). With the staged introduction over the next two years of the mandatory carriage of ECDIS for the remaining class of vessels — as well as the requirement to comply with the Manila amendments to the The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) code — it is timely to review the role of ECDIS in collision avoidance, with the hope of reversing the worrying trend where vessels that are currently fitted with ECDIS are not utilising it as the “primary means of navigation” or to its full capacity.



Seafarers shall use “all available means” appropriate in the prevailing circumstances and conditions in maintaining a proper look out and determining if a risk of collision exists (see Rule 5 and 7 of the *International Regulations for the Prevention of Collisions at Sea* (COLREGS)). “All available means” clearly includes technology such as ECDIS installed on vessels designed to aid navigation and/or plot the position, speed and direction of potential collision risks.

It is clear to those who have utilised ECDIS as the primary means of navigation that ECDIS offers substantial benefits which cannot be replicated on a paper chart. These benefits revolve around increased situational awareness of the ship and its operating environment. This increased situational awareness allows the operator to have a real time picture of those vessels presenting a risk of collision (including verification of that data through Automatic Identification System (AIS), Automatic Radar Plotting Aid (ARPA) and Radar Image Overlay (RIO)) with reference to the potential navigational situation that both (or more vessels) may be facing. This provides the operator, navigator, master or marine pilot with the opportunity to make more informed decisions in circumstances where a risk of collision exists. While these features are in part achievable on a paper chart, the real time display and ability to interrogate and interact with an ECDIS cannot be replicated on a paper chart.

These tools are invaluable for operators in situations where a risk of collision is developing or exists. If utilised correctly, ECDIS allows the give-way vessel to take early and substantial action to keep well clear and avoid other close-quarters situations developing. Utilising ECDIS correctly and to its full extent requires operators to have undertaken appropriate type-specific training, reinforced with at-sea familiarisation as required by the International Safety Management Code, or simulator training under the supervisions of appropriately qualified personnel.¹

¹ A vessel was recently detained in the Port of Brisbane, Australia, after transiting the Great Barrier Reef for significant deficiencies identified with the crews knowledge and ability to use the ECDIS system on-board (despite all crew having conducted relevant type specific training).

Not only should utilising ECDIS correctly reduce the risk of collisions occurring, it may also reduce the extent of liability that is incurred by ship owners and charterers where a collision cannot be avoided. The words of Hewson J in *The Vechtstroom* [1964] 1 Lloyd's Rep. 118 are relevant here:

'A vessel which deliberately disregards such an aid when available is exposing not only herself, but other shipping to undue risks, that is, risks which with seamanlike prudence could, and should, be eliminated. As I see it, there is a duty upon shipping to use such aids when readily available - and when I say 'readily available' I am not saying instantly available - and if they elect to disregard such aids they do so at their own risk.'

However, "all available means" does not mean relying solely on ECDIS when making collision avoidance and navigational decisions. The operator must continue to validate those inputs, including by looking out the bridge window and monitoring the bearing movements of approaching vessels, to ensure that a full appraisal of the situation and risk of collision is made. Good visual lookouts are necessary, notwithstanding the assistance of other navigational aids, as such aids can take time to calculate (or in the case of AIS, transmit) information and therefore provide information that is in some cases, to an appreciable extent, historic.

This is particularly important in close-quarters situations and heavy traffic areas as operators (particularly new operators) can be drawn into an ECDIS display and lose situational awareness (the exact thing ECDIS was designed to overcome). There is also a danger that some operators unquestioningly trust what is displayed on ECDIS, which may give them a false sense of security. While ECDIS is a valuable navigation aid, an unwelcome side effect is that some watchkeepers will favour track maintenance at the cost of complying with COLREGS.

Traditional navigational skills must not be forgotten or lost in the age of ECDIS. While ECDIS, as an aid to navigation, far surpasses the traditional paper chart, we must understand its limitations and ensure we use "all available means" in maintaining a proper look out and determining if a risk of collision exists.

Maurice Thompson
Partner, Clyde & Co

Joel Cockerell
Associate & Mariner, Clyde & Co

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