

Warship Developments: Training Ships: Virtual or Actual?

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In the past, when ships, crews and fuel were relatively inexpensive, it was common for navies to operate dedicated training ships. After World War II, Canada's two light cruisers were employed primarily for this purpose: HMCS *Quebec* on the East Coast for seamanship training of sailors; and HMCS *Ontario* in the Pacific for navigation training of junior officers. In the late 1950s, when manning and funding the operations of these big ships became an issue, they were paid off for scrap and the navigation training function was conducted in the seven modified *Prestonian*-class frigates of the West Coast-based 4th Escort Squadron.

Later, with the demise of these wartime ships, the training squadron was composed of the four destroyer escorts of the *Mackenzie*-class. This effort was augmented by *Bay*-class patrol ships (ex-minesweepers), the sail training ship HMCS *Oriole*, and wooden-hull auxiliary craft. Recently,

basic sea training has been conducted in the new *Orca*-class Patrol Craft, Training (PCT). Junior officer bridge watch-keeping and advanced navigational training is done in operational frigates and destroyers.

It is worth examining the *Orca*-class as an example of a well-thought out sea training vessel, although it is limited to inshore operations. The increased speed (18 knots) and updated technology of the *Orcas* will ably support current navigation and watch-keeping training curricula. The enclosed bridge of this vessel provides good all-around visibility, a chart table and equipment suitable for emerging electronic charting technologies. The design of these vessels also includes a training room of sufficient size and technological capability to allow a comfortable briefing to be conducted for up to 20 personnel.

Orcas are unarmed when employed as training vessels.



Photo: DND Combat Camera

A Sea King helicopter hoists a sailor from the *Orca*-class patrol craft, training (PCT) *Wolf* off Vancouver Harbour in February 2009.



Photos: US Navy Press Release 14 April 2007

US Navy personnel operate the Navigation, Seamanship and Shiphandling Trainer (NSST) master control station.

If tasked to conduct operations, they may be fitted with a .50 calibre heavy machine gun on the fore deck and may carry a number of small arms with their associated equipment and ammunition. Indeed, several *Orcas* were employed in patrol and logistics support duties during the 2010 Vancouver Olympics and Paralympics. The eight *Orcas*, all based at Esquimalt, British Columbia, where the climate and protected waters are more conducive to year-round operation, are proving to be very useful training and general-purpose vessels.

Many navies have dedicated training vessels, such as the French *Jeanne d'Arc* and Japanese *Kashima*. Such ships are designed so that they may be readily modified for combat or support roles. Many Latin American navies operate sail training ships, such as the Chilean *Esmeralda* and Argentine *Libertad*, which frequently visit North American ports on training deployments or tall ship gatherings. These deployments also serve the purpose of broadening the education of junior officers and of 'showing the flag' abroad.

While at-sea training is important, a major development has been the computerized navigation and ship-handling trainer. These can be programmed to simulate the characteristics of a broad range of ships – on dry land. An increasing number of navies, coast guards and shipping companies are purchasing such bridge simulators. In January 2010, the Royal Australian Navy (RAN) announced a contract with the Norwegian firm Kongsberg Marine, a major supplier of these simulators, to upgrade and modernize an existing bridge simulator. The announcement stated that:

The delivery will provide [the] RAN with high fidelity visual effects of ships, ship behaviour and the maritime environment. Through the state-of-the-art functionality provided by the ... ship bridge simulator, the Royal Australian Navy will be able to accurately replicate the full range of maritime operations likely to be experienced while on the bridge of a warship. This will include the ability to test knowledge, skills and competencies of trainees in scenarios ranging from simple tasks, such as passage planning, ocean passage and coastal navigation, to more complex tasks including pilotage, berthing and un-berthing, precise navigation and close quarter maneuvering when conducting warfare type exercises.¹

It is worth noting that an important feature of the Canadian *Orca*-class ships is that they are equipped with a PC-based navigation radar system, which eases the transition from shore-based simulators to afloat operations.

Does this mean that simulators will totally replace training vessels? I submit that the sea is a sufficiently complex and alien environment that actual underway training and experience will always be necessary. However, maritime simulation is a highly effective means of educating and re-qualifying professional mariners before they proceed or return to sea, and it is now an important and necessary part of the training curriculum. 🇨🇦

Notes

1. Commander Glenn Robinson, "The RAN Awards Significant Ship Bridge Simulator Contract to Kongsberg," *DefenceProfessionals.com*, 29 January 2010.