With the conversion of the DDH 280 Iroquois-class helicopter-carrying destroyers to their current configuration (armed with the vertical-launch Standard SM-2 missile, range approximately 50 nautical miles), the Canadian Navy took delivery of a ship that has ably led naval task groups on many occasions in the past two decades. Iroquois-class destroyers may deploy with a Flag Officer and his staff, and are able to command and control large expanses of maritime territory and the operations of numerous ships from Canada and other countries. They can defend themselves as well as other vessels in the vicinity from attacks by anti-ship missiles and hostile aircraft. These ships are thus capable of command and control (C²) and area-air defence (AAD).

Bridging the Gap: Canadian Surface Combatant

There have been several initiatives to replace Canada’s destroyers, as 35-40 years is considered the maximum lifespan that can be expected from a modern warship of this type. As the reader will appreciate, maintenance requirements (and resulting expense) become excessive with increasing age. A major stumbling block is, as usual, cost: at least three or four ships are needed at a unit price in excess of $1.5 billion. Given the current age of the Iroquois-class, one must expect a gap of as much as five years between their being withdrawn from service and the commissioning of replacement ships.

The latest destroyer replacement project is the Canadian Surface Combatant (CSC), which could replace the Iroquois-class in the period 2016-2019. CSC, employing a common hull and propulsion machinery but different weapons and sensors, would also replace the Halifax-class frigates later in the 2020s, likely at a lesser cost than the more complex DDG variant.

Recent history has demonstrated the importance of this capability to a maritime state like Canada, if it wishes to play a security role on the world’s oceans. Taking command of multinational naval forces, such as the anti-piracy and anti-terrorist task groups now employed off Somalia and in the Arabian Sea, is a role that Canada has...
performed on a number of occasions, and there are not many other medium-power navies which do this as well as Canada. Also, providing area-air defence is becoming more crucial as maritime forces operate in coastal areas, where the threat often includes anti-ship cruise missiles and, in the future, anti-ship ballistic missiles.

The *Halifax*-class frigates will undergo a major midlife refit and modernization during the coming decade, and it is intended that four of those 12 ships will be fitted with additional communications, situational awareness displays, and accommodation for a Commodore and his staff, in order to ‘bridge’ the anticipated command and control gap until CSC becomes a reality. This will permit command of national and international maritime forces, but nothing will be added to these ships’ area-air defence capability.

Is there any way of expediting the process, so that we don’t have to bridge the gap? There certainly are some existing designs which could be built in Canada to meet the requirement to replace the *Iroquois*-class. The latest variant of the US Navy’s *Arleigh Burke*, the UK’s *Daring*-class DDG, the German *Type 124* or *Type 125* frigate, or the very interesting diesel-powered Danish *Peder Skram*-class patrol frigate, would be worthy of consideration. However, CSC is intended to be developed as the core of our ‘Next Navy,’ i.e., a cohesive plan for two types of ships totalling perhaps 15 units, based on a common hull and propulsion system as previously described. Canada would probably need to abandon this idea if it took an off-the-shelf design for a C²AAD destroyer, and then develop a separate frigate design to replace the *Halifax*-class.

**What will CSC Look Like?**
Particularly if we are looking at another 8-10 years before commissioning, CSC should take advantage of some of the new developments we are seeing in the newest frigates and destroyers being developed by Canada’s NATO partners. These would include:

- Integrated Electric Propulsion which would eliminate long, vulnerable and difficult to align propeller shafts and provide additional electrical power for future sensors and weapons;
- the ability to operate tactical unmanned aerial vehicles, such as the small helicopter Firescout or fixed-wing Scan Eagle, in addition to a manned maritime helicopter such as the Sea King’s successor, the Cyclone;
- a modern, vertical-launch area-air defence missile such as the SM-6, which has been selected by Australia for its new Air Warfare Destroyer. This promises to be an outstanding weapon, with an intercept range of 200 nautical miles; and
- a good multi-purpose medium-calibre gun, like the USN’s 5-inch Mark 45, Mod. 4, with a range of over 60 nautical miles using precision-guided, rocket-assisted projectiles.