



CANADIAN SURFACE COMBATANTS

The Canadian Surface Combatants (CSCs) are the planned replacement for Canada’s now retired *Iroquois*-class air-defence destroyers and the current fleet of *Halifax*-class frigates. The CSCs are the most complex and expensive element of the Canada’s National Shipbuilding Strategy (NSS) and the intent is to procure 15 of these vessels, beginning in the mid- to late 2020s. As you’ll know if you’ve read Briefing Note #6, the NSS dates back to 2010, when it was announced that billions of dollars were being allocated to renew the fleets of both the Royal Canadian Navy (RCN) and the Canadian Coast Guard (CCG). (See Briefing Note #6 for a discussion of the NSS.) The biggest part of the project is the construction of the CSCs. In January 2015 the government announced that Irving Shipbuilding had been named the prime contractor for the program, with the ships to be built in Irving’s Halifax Shipyards.

In 2017, bids from several international firms were received for the construction of the CSC. The final contenders consisted of a Lockheed Martin-led consortium, which put forward a design based on the British Type 26 frigate (Global Combat Ship) by BAE Systems; Alion Science and Technology, which proposed a CSC based on the Dutch De Zeven Provinciën air-defence and command frigate; and a Navantia/Saab/CEA Technologies consortium, which offered a design based on the Spanish Navy’s F-105 frigate.

On 19 October 2018 it was announced that BAE-Lockheed Martin group was selected as the ‘preferred’ bidder in the CSC program. The BAE-Lockheed Martin (LM) team then entered the ‘due diligence process,’ which included negotiations with BAE-LM on intellectual property rights, an assessment of the proposed combat systems, an assessment of BAE-LM’s financial capability to deliver the project, and other administrative matters.

In February 2019, the government confirmed that the bid from Lockheed Martin Canada had been selected for the design for the CSCs. Irving Shipbuilding, the project’s prime contractor, awarded a sub-contract to Lockheed Martin Canada for work to finalize the design. While the CSCs will be based on the British design, they will be tailored to Canadian requirements, a process which will ultimately produce a uniquely Canadian ship.

The Type 26 was originally ordered by the UK Ministry of Defence as a replacement for the Royal Navy’s aging Type 23 frigates. It was designed as a multi-mission warship, able to undertake anti-submarine warfare, air defence and

general-purpose operations. The first contract for construction of the ship was awarded by the British government in July 2017 and, by winter 2018 three ships had been ordered, with more to be ordered in future, although there is some uncertainty about how many will eventually get built. Construction of the ships is proceeding – the first ship (the future HMS *Glasgow*) is apparently half done, and steel for the second ship was cut in August 2019.

<u>Type 26 Specifications</u>	
Displacement:	7,800 tonnes (full load)
Length:	151.4 metres
Beam:	20.75 metres
Speed:	27 knots
Range:	7,000 nautical miles
Complement:	115-150 (up to 210)

In June 2018, the Australian government announced that it had selected a modified version of the Type 26 platform as the replacement for its *Anzac*-class frigate. The Royal Australian Navy will procure up to nine of the frigates, referring to them as the *Hunter*-class, to be constructed by BAE Systems Australia in Osborne, South Australia. Construction had been planned to begin in 2020, but the program is facing delays and construction likely will not start for a few years.¹

At over 7,000 tonnes (full load), the CSCs will be nearly 50% larger than the *Halifax*-class warships and nearly as large as most modern destroyers. Designed to be flexible and versatile, the ships will be equipped with a reconfigurable mission bay for light boats, unmanned surface/aerial vehicles, a towed array sonar and/or cargo containers. This will allow the vessels to be reconfigured depending on mission and requirements.

Specific weapons systems and design characteristics continue to be finalized, but the Department of National Defence issued a document in November 2020 that illustrates that the navy has begun to solidify the capabilities of the ship.² The CSCs will be highly versatile and possess advanced weapons technology. They will possess an area-air defence capability, which was lost to the RCN with the retirement of the *Iroquois*-class destroyers. As well, the ships will house missiles capable of anti-surface, anti-air and land-attack roles, an anti-submarine warfare capability built around advanced towed array sonar and ship- and helicopter-launched torpedoes – and defensive weapons capable of countering these capabilities in others. The CSCs will have sophisticated command and control suites, electronic warfare and surveillance/communication capabilities and a modern combat management system.

Like the ship's weapons systems, details of the CSC's other capabilities are not yet available. However the ship will have a combined diesel-electric or gas propulsion system (CODLOG), and an acoustically quiet hull, an essential feature for the kind of anti-submarine warfare on which the RCN has focused since the Second World War. The CSCs will possess an expanded flight deck capable of landing the CH-148 Cyclone helicopter and aircraft similar in size to the Chinook.

Although the exact timeline is as yet unknown, it is likely that construction of the CSCs by Irving in Halifax will commence in the late 2020s, after the *Harry DeWolf*-class Arctic and Offshore Patrol Ships are built. The entry of the CSCs into the RCN will take place throughout the 2030s. As they enter into service, they will gradually replace the *Halifax*-class frigates which are slated for retirement in the 2030s. Once brought into service, the CSCs will be the backbone of the Royal Canadian Navy for a generation.

¹ For a discussion on the delays of the *Hunter*-class, see Marcus Hellyer, "Australia's Hunter-class Frigates are Coming, but Maybe Not Soon Enough," *The Strategist*, 26 November 2020, available at [Australia's Hunter-class frigates are coming, but maybe not soon enough | The Strategist \(aspistrategist.org.au\)](https://www.aspistrategist.org.au/australias-hunter-class-frigates-are-coming-but-maybe-not-soon-enough/)

² For information on the capabilities of the CSC, see Department of National Defence, Royal Canadian Navy, "The Canadian Surface Combatant: More than Just a Ship," November 2020, available at [csc_eng_1.pdf \(forces.gc.ca\)](https://www.forces.gc.ca/csc_eng_1.pdf). For discussion on the capabilities, see Xavier Vavasseur, "Royal Canadian Navy Unveils New Details on CSC Frigates," *Naval News*, 9 November 2020, available at [Royal Canadian Navy Unveils New Details on CSC Frigates - Naval News](https://www.royalcanadiannavy.ca/en/press-releases/2020/11/09/royal-canadian-navy-unveils-new-details-on-csc-frigates)

CANADIAN SURFACE COMBATANT



The right ship for the RCN. The right ship for Canada.



Surveillance & Weapon Sensors

- Solid State 3D Active Electronically Scanned Array (AESA) Radar – LMC SPY-7
- Solid State AESA Target Illuminator – MDA
- Navigation Radars – X & S Band
- Electro-Optical and Infrared Systems

Command & Control

- Combat Management System – LMC CMS 330 with AEGIS
- USN Cooperative Engagement Capability – Sensor Netting
- Integrated Cyber Defence System
- Integrated Bridge and Navigation System – OSI
- Internal and External Communication Suite – L3 Harris

Aviation Facilities

- 1 x CH-148 Cyclone Helicopter
- Space for embarking Remotely Piloted Systems
- Helo Hauldown and Traverse System – Indal Technologies Inc.

Weapons

- Missile Vertical Launch System 32 Cells – LMC MK 41
- Area Air Defence Missiles – Raytheon Standard Missile 2
- Point Defence Missiles – Raytheon Evolved Sea Sparrow
- Naval Fires Support – Raytheon Tomahawk
- Main Gun System – 127mm



Weapons

- Lightweight Torpedoes MK54 & Twin Launch Tubes
- Close-In Air Defence System – MBDA Sea Ceptor
- Surface-to-Surface Anti-Ship Missile – Kongsberg Naval Strike Missile
- 2 x Stabilized Rapid Fire 30mm Naval Gun System – BAE

Reconfigurable Mission & Boat Bays

- 1 x Rescue Boat – 9 metres
- 2 x Multi-Role Boats – 9-12 metres
- Mission Bay Handling System – Rolls Royce
- Modular Mission Support Capacity – Sea Container, Vehicles, Boats

Propulsion & Power Generation

- Combined Diesel-Electric or Gas Propulsion System (CODLOG)
- 2 x Electric Motors – GE
- 1 x Gas Turbine – Rolls Royce MT 30
- 4 x Diesel Generators – Rolls Royce MTU
- Integrated Platform Management System – L3 Harris

Integrated Underwater Warfare System

- Towed Low Frequency Active & Passive Sonar – Ultra Electronics
- Hull-Mounted Sonar – Ultra Electronics Sonar S2150
- Towed Torpedo Countermeasures – Ultra Electronics SEA SENTOR S21700
- Sonobuoy Processing System – General Dynamics
- Expendable Acoustic Countermeasures

Specifications:

Length: 151.4 metres Displacement: 7800 tonnes Range: 7000 nautical miles
Beam: 20.75 metres Navigational Draught: ~8m Class: 15 ships
Speed: 27 knots

Habitability:

Accommodations: ~204 Dedicated Gym/Fitness Facilities
Medical Facilities Shipboard Wi-Fi