Canadian Coast Guard's CCGS Naalak Nappaaluk

36th International Research Ship Operators Meeting

September-2025

Presentation Outline

- Project Update from Last Year
- Primary Missions
- Science Capabilities & Equipment
- Project Status

Project Overview

- CCGS Naalak Nappaaluk will replace CCGS Hudson, our largest and longest serving science vessel.
- Based in Halifax, the CCGS Naalak Nappaaluk will be capable of supporting a range of DFO and NRCan science missions.
- CCGS Naalak Nappaaluk will be approximately 88 m long with a full load displacement of approximately 4700 tonnes (BOSL).
- The CCGS Naalak Nappaaluk is currently in construction in Vancouver Shipyards. First steel was cut on 26 March 2021; delivery is planned for Fall 2025.

Principal Particulars

- Lloyd's Register ✠100A1 Oceanographic Research Vessel, ✠LMC, UMS, DP(AM), NAV1, IBS, and PSMR
- Full load displacement 4700 tonnes
- Length 87.93 m
- Beam 17.6 m
- Design draught 6.3 m
- Fully integrated diesel electric
- Installed power of 4.8 MW
- Economical speed of ~12 knots
- IACS PC 6 Category C

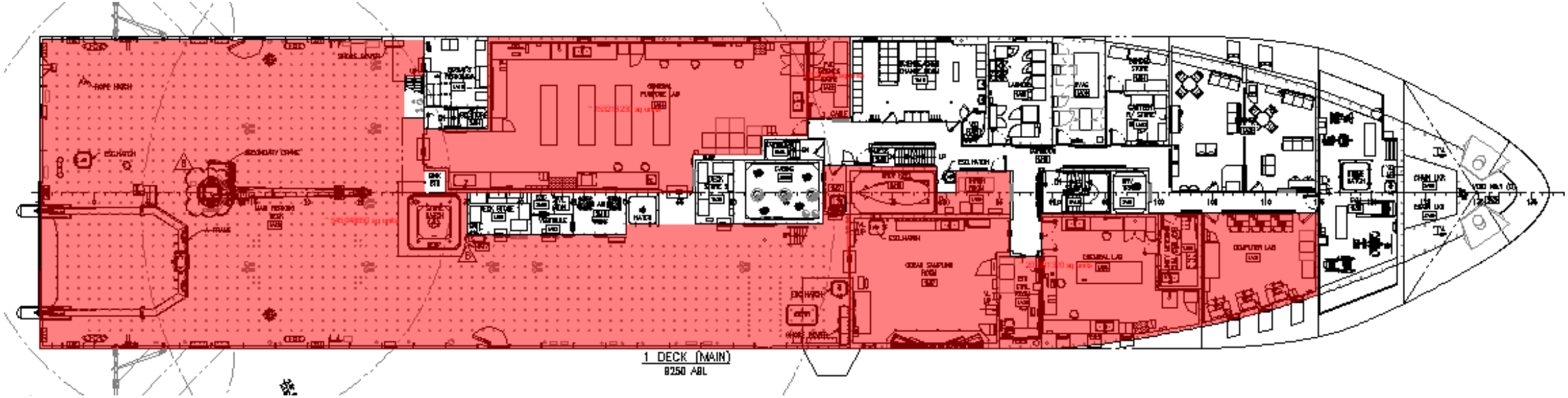
- Complement of 34 crew / 26 scientists
- 84 days logistical endurance
- 400 m^2 of laboratory space
- 150 m^2 of science storage space
- 500 m^2 modular working deck

Primary Missions

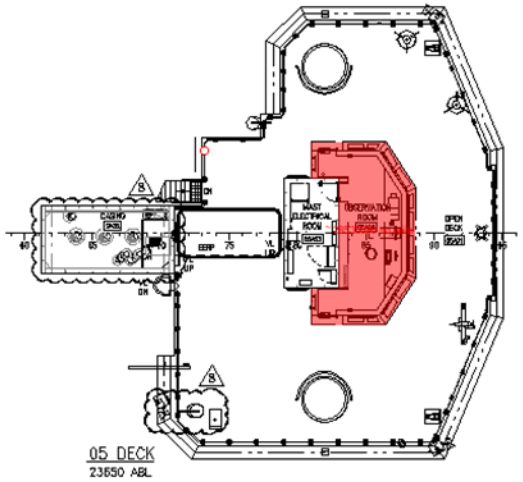
- To act as the primary offshore oceanographic science platform for Government of Canada, with a focus on Fisheries and Oceans Canada and Natural Resources Canada, in:
    - The Atlantic, year-round;
    - The Arctic, summer operations;
    - The Pacific, year-round; and
    - The Gulf of St. Lawrence, year-round.
  - To act as a stable, maneuverable, and acoustically quiet platform to conduct physical, chemical, and biological oceanographic research; to conduct marine geological/geophysical surveys; and to conduct hydrographic surveys.
- Specifically, the primary missions of the OOSV will be focused on:
  - Oceanographic research;
  - Geophysical surveys; and
  - Hydrographic surveys.

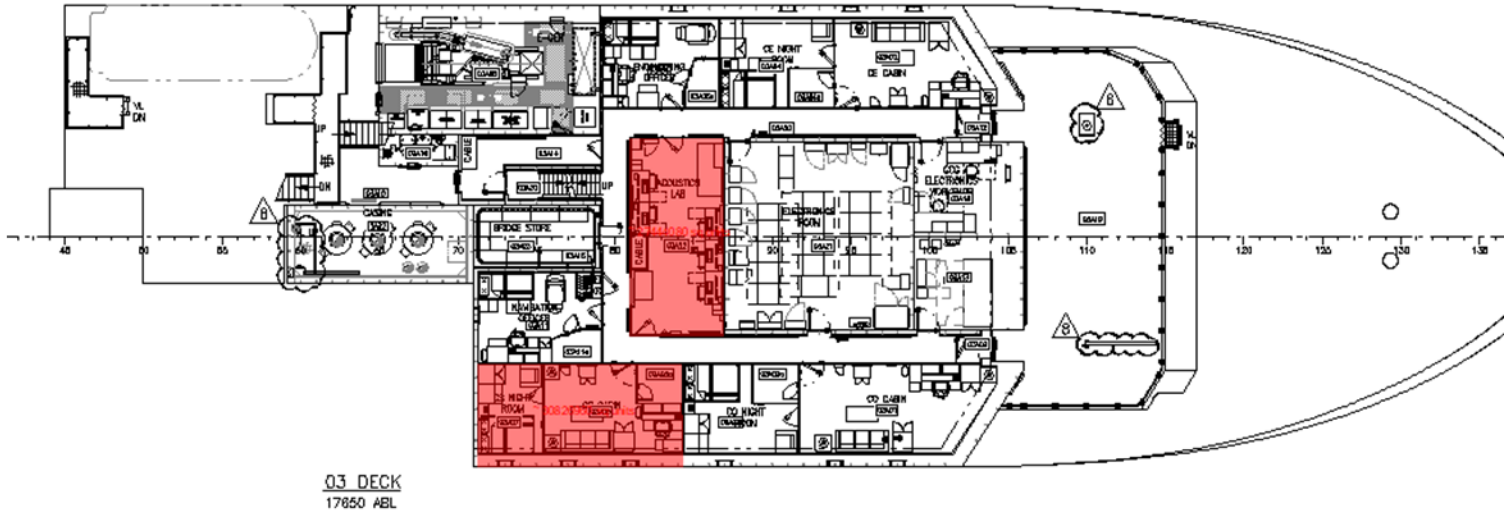
Science Capabilities and Equipment

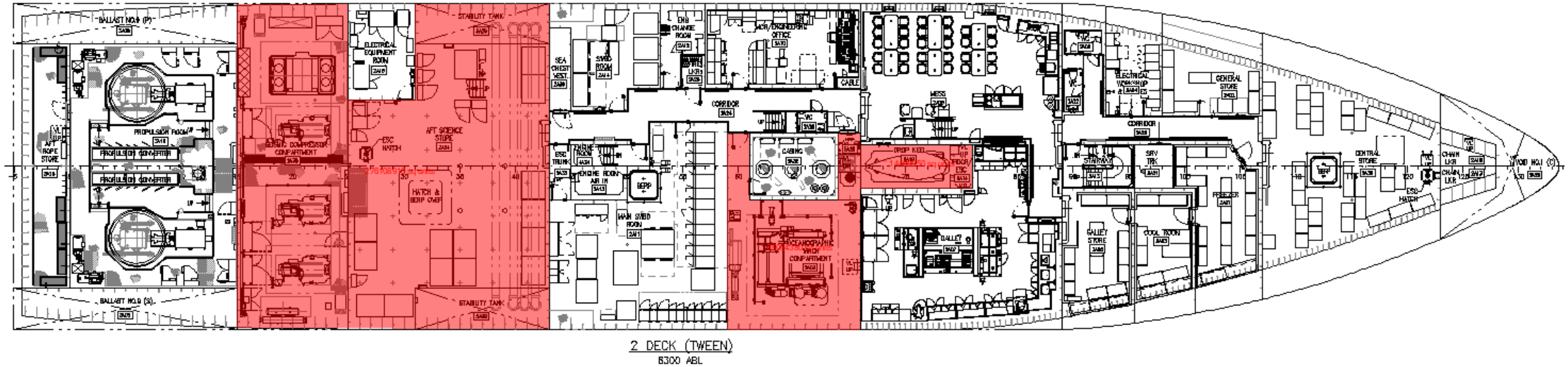
- Marine Mammal Observation Station (MMOS)
- Acoustics Laboratory
- Computer Laboratory
- Chemical Laboratory
- Salinity Laboratory
- General Purpose Laboratory
- Ocean Sampling Room
- Scientific Seawater Laboratory
- Uncontaminated Scientific Sea Water System
- Oceanographic Winch
- CTD and Hydro Wire LARS & Winches
- Coring LARS
- Stern A-Frame
- Main and Secondary Cranes
- Towing Booms
- Seismic Compressors
- Drop Keel with Sonars/Sensors
- Hi-PAP
- Modular Working Deck & Labs



Science Capabilities and Equipment







Science Sensor Suite

- Multi-Frequency Scientific Sounder (MFSS) - Kongsberg (Simrad) EK80 - 18, 38, 70, 120, and 200 kHz
- General Purpose Deep Sea Echo Sounder (DSES) - Kongsberg EA640
- Integrated Positioning System (IPS) - Kongsberg Seapath 380+ with MRU 5+
- Sonar Synchronization System (SYNC) - Kongsberg K-Sync
- Acoustic Doppler Current Profilers (ADCPs) - Teledyne RDI 75 kHz Ocean Surveyor and 300 kHz Workhorse Mariner
- Ultra-Short Baseline Transceiver (USBT) - Kongsberg HiPAP 452
- Scientific Navigation System (SNS) - Raytheon Anschütz Synapsis ECDIS NX
- Shallow Depth Seabed Mapping System (SDMS) – Kongsberg EM 2040
- Deep Sea Multibeam Echo Sounder (MBES) - Kongsberg EM 304
- Sound Velocity Probes (SVPs) - AML Oceanographic Smart•X with SV and UV Xchange
- Middle Depth Seabed Mapping System (MDMS) - Knudsen Chirp 3260 (shared with SBP) with KEL571 transducer
- Sounding and Pinging Monitoring (SPM) Transducers - Airmar M175 12 kHz-B
- Acoustic Release (AR) - Teledyne Benthos UTS-9400A with C270 transducer and DAT-916
- Moving Vessel Profiler (MVP) - AML Oceanographic MVP300-3400
- Photosynthetically Active Radiation (PAR) Sensors - Sea-Bird Scientific PAR 1000 m
- Sub-Bottom Profiler (SBP) - Knudsen Chirp 3260 (shared with MDMS) with KELA5701 transducer
- Scientific Temperature Measurement System (STMS) - Sea-Bird Scientific SBE 38

Path to Delivery

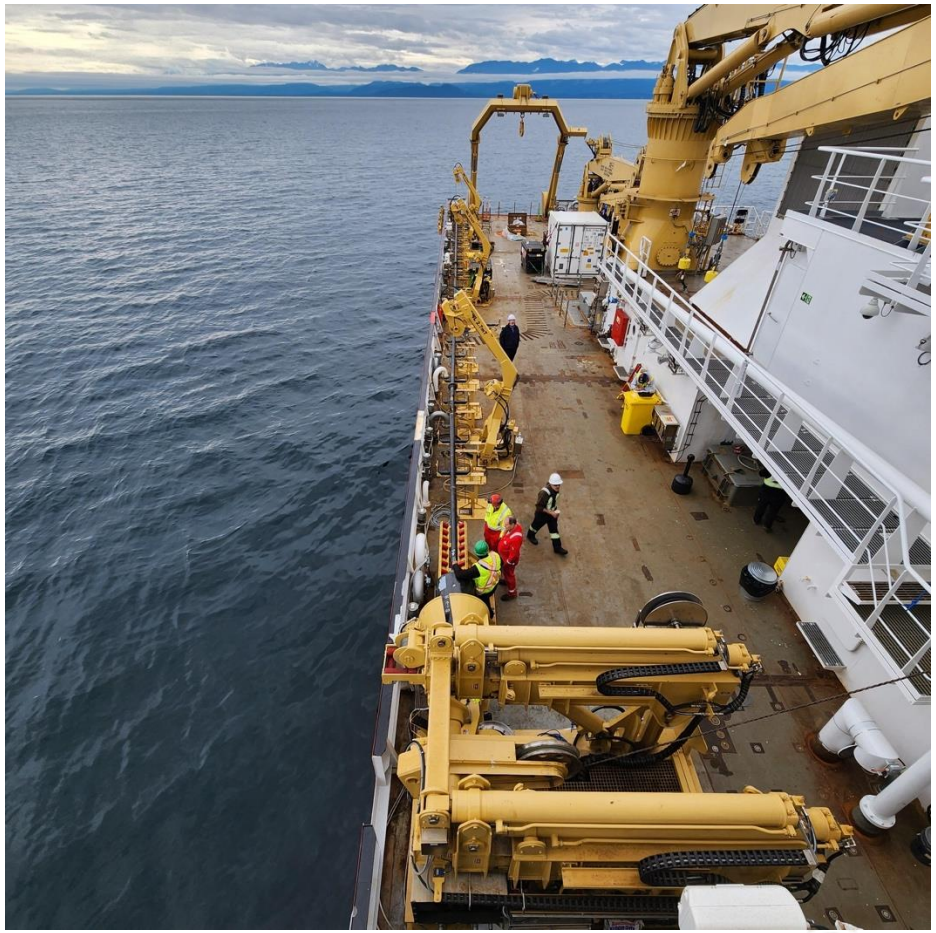
- Shipyard working through compartment completion, inspection, and acceptance
- Remaining harbour acceptance trials (HATs) to be completed for early October
- In final weeks of preparation for second round of sea acceptance trials
- Ship delivery anticipated in November, pending outcomes of sea trials

Sea Trial Progress

- First round of sea acceptance trials (SATs) ended in early July.
- Most tests were successful but follow up SATs were needed for some systems, including Science sensors.
- Second round of SATs scheduled from Oct 5-17.
- Equipment Manufacturers for key systems are actively engaged in testing and will be present for trials.

CTD

Coring LARS



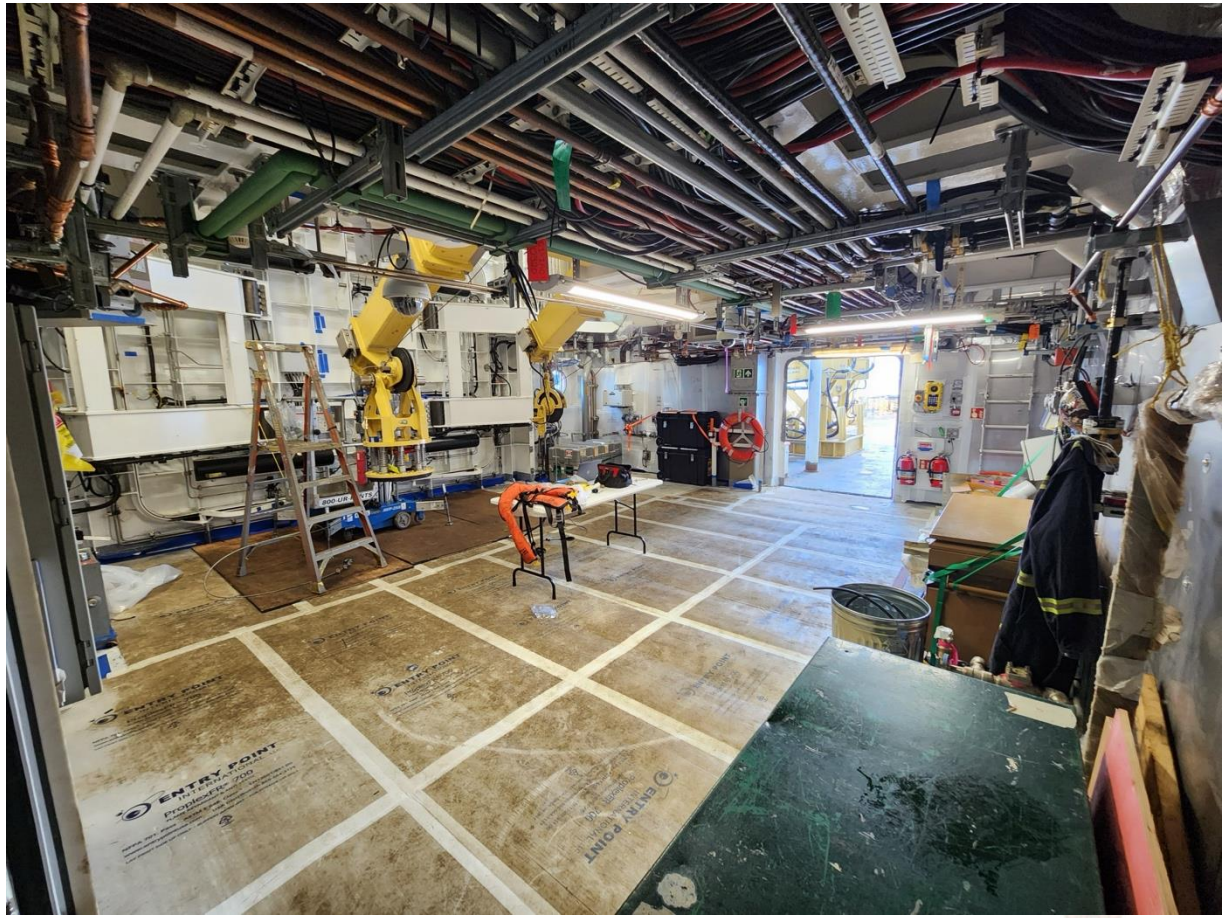
Aft Deck


HAWBOLDT INDUSTRIES
MAIN HOIST 11000 KG @ 15 M ONBOARD
AUXILIARY 5000 KG @ 15.5 M ONBOARD
2500 KG OFFBOARD
PALFINGER
PALFINGER

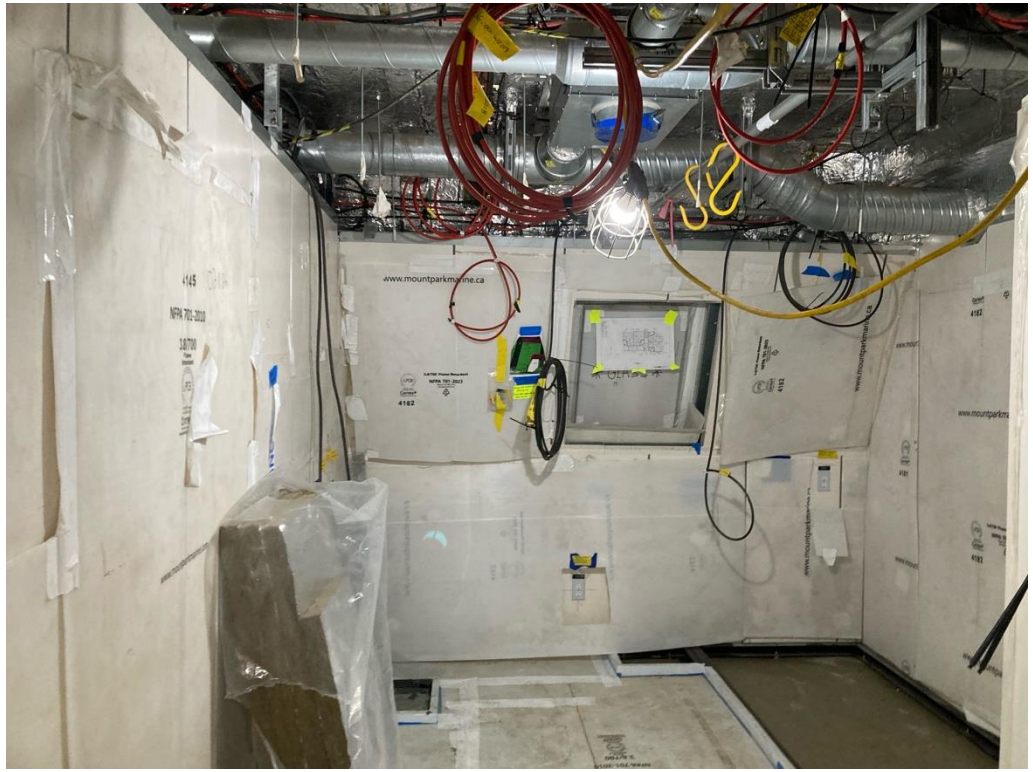
Transition into Service

- There will be a full year transition into service before dedicated programs begin
- Vessel will spend time on the Pacific coast for familiarization and drills before transiting to the east coast early in 2026
- Vessel will spend the rest of transition year around Halifax. Science is engaged with the Canadian Coast Guard to align 2026 schedules and plan post-acceptance trials (PATs) for all key program areas.
- The vessel is expected to begin science program delivery in earnest in Spring 2027.

Interior Science Spaces

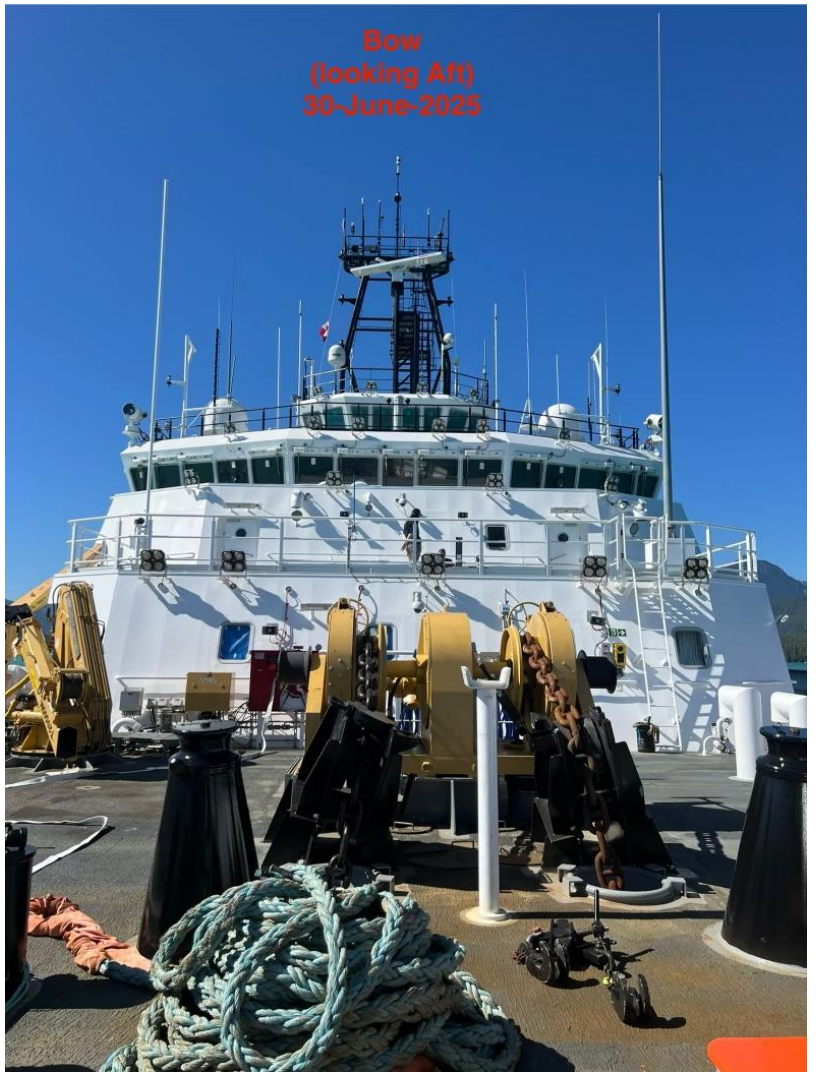


Cabins



Bridge

Bow



Questions?

Canada