

CCGS PROVO WALLIS Condition and Valuation Survey

Project 6971
04 August 2011



CCGS PROVO WALLIS
Condition and Valuation Survey

August 04, 2011

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REPORT: CCGS Provo Wallis Condition and Valuation Survey

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TABLE OF CONTENTS

Contents

1. EXECUTIVE SUMMARY	1
2. LIMITATIONS OF THE SURVEY	1
3. AS-FOUND CONDITION OF THE VESSEL	2
3.1 Vessel Particulars and History	2
3.1.1 Numerical Data	2
3.1.2 Service history.....	2
3.2 Exterior hull	2
3.3 Foc'sle, Mast, Well Deck.....	3
3.4 Derrick Machinery Space, Chain lockers, Hold.....	4
3.5 Aux. Machinery Compartments: Bow Thruster & Steering Compartments.....	4
3.6 Superstructure and accommodations	5
3.6.1 Bridge.....	5
3.6.2 Service spaces; galley, heads, coolers, freezers, fan rooms, battery room.	6
3.6.3 Accommodations	6
3.6.4 Exterior Decks, Hiab Crane, and Davits	6
3.7 Machinery spaces.....	7
3.7.1 Emergency Generator Compartment.....	7
3.7.2 Engine room.....	7
3.7.3 Aft machinery space.....	8
3.8 Miscellaneous.....	8
4. COMMENTS; CONDITION	9
5. VALUATION.....	9
5.1 Comparable Vessels (will be forwarded under separate cover).....	9
5.2 Valuation (will be forwarded under separate cover).....	9

APPENDIX A: General Arrangement Plans of the CCGS Provo Wallis

APPENDIX B: Equipment list, post-refit, CCG Provo Wallis

APPENDIX C: Pictures of the CCGS Provo Wallis, July 2011

APPENDIX D: Asbestos Survey Summary, 2006, CCGS Provo Wallis

APPENDIX E: Task List for Cold Layup, CCGS Provo Wallis, January 2011

APPENDIX F: Propulsion Shafting Alignment Report, December 20009

APPENDIX G: Two Reports of Alongside Self-Maintenance Work Periods

APPENDIX H: CCG Forecast of Inspection Items Coming Due

1. EXECUTIVE SUMMARY

PROVO WALLIS is a 64m x 13m (209' x 42.5') Canadian Coast Guard buoy tender and light icebreaker. She is surplus to the department's operational needs. This report describes her condition, and offers an opinion of the value of the vessel as is-where is, and as scrap steel.

The vessel is in generally good condition. She was fully operational until 7 months ago.

In January of 2011 she was laid up methodically, and the layup tasks are documented in Appendix E.

Overview of the vessel's condition:

- Re-activation of the ship will require some focused effort on the bridge equipment required for competent navigation. Machinery will need normal care to put on-line at this time; no known latent defects were identified during the survey.
- No urgent repairs were identified for steelwork.
- Deck machinery is unrigged, tackle certificates have lapsed.
- Anchors, anchor windlass, anchor chains, and the bow thruster isolation transformer have been removed from their seatings/lockers. They will be placed loose aboard the vessel at the time of sale.

2. LIMITATIONS OF THE SURVEY

The survey was performed on 06 & 07 July 2011, with the vessel afloat alongside the CCG Pat Bay wharf, with a 0.15 m trim by the stern on an even (athwartships) keel.

- Condition of the underwater hull was only observed where possible from the interior.
- Vessel was afloat; only wharf-side areas of the hull topsides were observed in detail
- No tanks were opened or entered.
- No ultrasonic or other NDT thickness measurements were taken.
- No Machinery or electronics were observed in operation.
- Past history, plans, and operational details are as presented by the owner without warranty as to accuracy or timeline.

Note: Considerable detail about the vessel is contained in the Appendices. Consequently, most of the information in the body of the report is only presented in summary form.

3. AS-FOUND CONDITION OF THE VESSEL

3.1 Vessel Particulars and History

The PROVO WALLIS was built in 1969 at Sorel, Quebec, as an inshore supply ship and buoy tender, strengthened for operation in near-shore ice (Lloyds' Class II (hull) and to Lloyd's Machinery Class + LMC.

3.1.1 Numerical Data

The vessel is 63.8 m long, 13 m beam, maximum draft 3.66 m, with a Gross Registered Tonnage of 1313 after lengthening. Lightship displacement is 1334 MT, full load displacement is approximately 2100 MT.

General Arrangement drawings and "Particulars" details are in Appendix A.

3.1.2 Service history

The vessel was built at Marine Industries Ltd on the South shore of the St. Lawrence River in 1969. She worked Maritime waters, generally operating from the CCG Base and maintenance facility in Dartmouth NS. In 1990, she underwent a major refit and lengthening in Marystown Shipyard (Newfoundland), which inserted 6.1m (20 ft) into the mid-body (hold) area. At some point in the early 2000's, she was laid up for approximately 3 years. In 2006 she was re-activated, then sent to the CCG base in Sydney, BC. She served on the west coast in BC waters until January 2011, when she was methodically laid up in preparation for the Coast Guard's asset disposal program. She had been laid up for approximately 7 months at the time of survey.

Appendix B contains a post-refit listing of ship's equipment. Some items of machinery have been renewed, upgraded or replaced since the refit, notably the main engine cooling pumps (converted from main engine to electric motor drive), and new refrigeration equipment has been installed in the steering compartment and refrigerated stores spaces. Other minor changes which have occurred are not deemed significant for this survey and evaluation

Appendix C contains representative pictures of the condition of the vessel with captions.

3.2 Exterior hull

From the wharf, the topsides of the port hull are generally fair, with no significant insets or deformations of significance.

The port anchor pocket boundaries are worn down from chain wear and the bottom ½ round is deformed. These items are considered normal wear and tear, and are not considered to be structurally significant.

There is some perforation of the gunwale bar at the aft end of the well deck. As above, this is not significant.

3.3 Foc'sle, Mast, Well Deck

The foc'sle contains 3 stores spaces; a paint locker, a deck workshop, a small radar equipment compartment, and the motor-generator set for the DC windlass motor.

The compartments in the foc'sle have been emptied and cleaned. There is some miscellaneous firefighting equipment in the foc'sle which has been left aboard. (CCG does not wish to renew the annual recertification of this equipment)

The M-G set appears to be in good order; no external sign of overheat or sparking.

The windlass on the foc'sle weather deck has been removed. Owner intends to place it aboard the vessel, loose on deck, in preparation for the sale of the vessel. The windlass was not available for viewing, but is reported to have undergone recent maintenance/component renewal work, and to be in good order.

Both anchors and one chain are laying loose on the well deck. One anchor chain appears to be missing from the vessel.

The compartments have been well ventilated, and are dry. Paint coatings are generally intact and in good condition.

The port stores compartment contains a significant amount of spares for the engine room equipment. Most of the items were properly packaged, and appear to be generally suitable for use as required.

The mast appears to be in sound condition, with only minor rust at some cable conduit hangars. All blocks, shackles, and wire tackles have been un-rigged and are not aboard the vessel. The two operators' cabins for the buoy derrick are dry, show normal signs of use, and no damage to them was noted. No tests of the derrick controls were undertaken.

The ship's Tackle Registry Book was viewed, in some detail. There are numerous component test certificates and records of inspections covering both tackle and equipment (the derrick) still on board, as well as components which are not on board. In general, the rigging, tackles, blocks, derrick and crane appear to have been properly tested and certified as late as 2010. July of 2009 and June of 2010 were concentrated examination and test periods, and included a Liebherr record of annual derrick inspection.

The wood decking on the well deck appears almost new and is in excellent condition; it is reported to be one year old. The steel deck underneath was not available for viewing, but the

steel deck plate on the perimeter of the wood working deck was in reasonable condition with only “working surface rust” showing.

41 of the 43 listed deck rings were sighted and judged to be in good condition. The Tackle Registry documented the load testing of the deck rings to rated levels. Two rings at the forward end of the cargo hatch were inaccessible for viewing.

3.4 Derrick Machinery Space, Chain lockers, Hold

The derrick machinery space contains the 4 hydraulic pumps and the valves and hoses for operating the buoy derrick. The machinery appears to be in good order. Hoses and fittings appear to be well made-up and properly chafe-protected where necessary. There is no indication of noticeable oil leaks.

A reverse-osmosis watermaker is situated on the port side of this compartment. It shows no external damage, but may require cartridge renewal if it is to be put in service.

The chain lockers are empty. There is a small accumulation of paint chips and rust flakes in the bottoms of each. The sides and bottom appear to have been well painted not long ago.

The hold is structurally in good condition. There is some minor corrosion at the base of a few frames on the starboard side which is not considered significant.

The hold is cluttered with a loose accumulation of spare parts, pipe sections, and miscellaneous equipment. No specific cataloguing was undertaken. The collection is typical of a vessel in service for many years, and some items can probably be consigned ashore.

No significant amount of rigging/blocks/shackles etc. was observed in the hold.

There are two tugger winches in the hold for moving buoys about. They appear to be in working condition, and were included in the certificates in the tackle register book.

3.5 Aux. Machinery Compartments: Bow Thruster & Steering Compartments

The bow thruster is an OMNI bi-directional unit of 400 hp with tunnel discharges just below the waterline. Suction is a sea bay at the keel. The thruster impeller is driven through a right-angle drive via a Siemens variable speed DC controller. The motor is separately fan-cooled.

A three-phase isolation transformer was mounted in the bow thruster compartment to supply the variable-speed controller and mitigate the harmonic distortion for the ship’s electrical distribution system. It has been removed; the owner’s intentions are to place it loose aboard (unconnected) prior to the vessel’s sale.

The thruster suction bay is corroded evenly overall at its bottom (no ultrasonic thickness data is known to the author). The thrust produced by the OMNI unit was measured a year ago at 3600

lbs (1630 kgf) +/- . The suction well plate condition is as expected for a splash/drip zone area around the thruster's impeller shaft packing gland.

Structural members within the compartment are in acceptable condition, with coatings generally intact.

The steering compartment is well-preserved, well-maintained. The steering gear is a Brown Brothers rotary vane unit which shows no indication of excessive oil leakage or carrier bearing wear. The steering gear was not operated.

The compartment also contains new refrigeration machinery which was installed c/w new chiller, cooler, and freezer compartments just forward of the steering gear compartment bulkhead in 2009-2010, all of which appear to be in excellent condition.

3.6 Superstructure and accommodations

3.6.1 Bridge

The bridge interior and conning stations are physically in good condition with no sign of undue damage or of neglect. Paint coatings are universally intact. Sliding windows operate normally.

There have been significant removals of navigational and communication electronics. The following list of significant electronics delineates what remains, as confirmed by a base electronics technician. It should be stressed that no warranty is implied for completeness, as no ships' bridge officers who were familiar with what had been installed were present during the survey.

- 1-Anscheutz gyro
- 1-Sailor Radio Direction Finder
- United Public Address and telephone console
- 1-X band radar PPI
- 1-S band radar PPI
- 1-Liega MX420 GPS
- 1-Scanti VHF Digital Select Calling radio

The two bridge wing propulsion control consoles have had some (unknown) components removed, but are otherwise intact and reported to be functional.

There are no gyro repeaters at the bridge wing conning stations.

There are no charts on the bridge, and no electronic chart devices.

No operational tests were done on any electronics. No assumptions should be made as to the remaining equipment's capability to function satisfactorily; interface connections with other electronics which have been removed may compromise the remaining equipment's functioning. Equipment which remains appears to the eye to be in good condition.

The wheelhouse top is uncluttered. Some antennae, GPS receivers, a weather station, ship's horn, sidelights and two searchlights are physically in good condition. Deck coating is generally intact.

3.6.2 Service spaces; galley, heads, coolers, freezers, fan rooms, battery room.

The galley is spacious; equipment is in good visual condition. The tiled deck is in good condition with only a few spots warranting re-grouting.

Crew heads are clean and well kept, with no significant damage or indications of non-functioning equipment. Piping has been drained.

Freezers, refrigeration machinery, coolers have been described in section 3.5.

Fan rooms were well kept, with no dirt/dust accumulation. Flexible joints between duct sections and fixed equipment were intact.

The battery room was clean and the 16 8D batteries appeared to be in good condition, and operating as the vessel's emergency communications power.

3.6.3 Accommodations

Representative pictures of the accommodation cabins and spaces on the vessel are in Appendix C.

The accommodations are in good condition everywhere on the ship. They are appropriate for the vessel and her voyages. They show minimal wear and tear for the age of the vessel (it's not known if they were upgraded during the 1990 refit).

There are 29 berths available, including 2 not extant in the hospital/gym. CCG normal manning is 27 personnel. TC minimum manning requirement is 13 personnel of the appropriate rank/rating.

3.6.4 Exterior Decks, Hiab Crane, and Davits

The superstructure weather decks' coating is in moderately good condition. About 30% overall of the deck area is in need of re-coating. Corrosion is generally superficial, save for approximately 5 m² on the aft starboard corner of the boat deck which warrants UT testing to determine if steel renewal is necessary before incurring the cost of repainting.

The Hiab knuckleboom stores crane at the aft end of the superstructure appears to be in satisfactory condition with no visual defects of concern.

The rescue boat davit and workboat/lifeboat davits had passed their last Tackle Inspection. Neither boat was aboard, nor are they intended to be sold with the vessel. The davits and their operating systems will remain on the vessel.

Two liferafts, one of 16 person capacity and one of 20 person capacity, were aboard, laying loose on the well deck. Both need servicing, and will go with the vessel.

3.7 Machinery spaces

3.7.1 Emergency Generator Compartment

The compartment has accumulated some clutter of parts and components. Beyond that, the compartment and its contents appear to be in very good condition, well maintained. The 3406 Caterpillar generator engine drives a 219 KVA, 480/3/60 Stamford NewAge generator, built 1987.

The CO2 bottles installed in this compartment and elsewhere were hydrostatically tested in 2004, and serviced annually, the last time in may and June of 2010, as was the sprinkler system in the accommodations.

3.7.2 Engine room

The engine room's list of equipment is in Appendix B.

The main engines are Mirlees-Blackstone model KLSDM-6, direct reversing four-cycle 783 kw (1050 hp) 6 cylinder units. Four-blade propellers are driven through Vulcan fluid drive couplings. The propellers are LIPPS variable pitch units, with the pitch control box mounted aft of the fluid drive in the aft auxiliary machinery space just forward of the stern tube seal.

A shaft alignment check was performed in 2009. The port shaft was satisfactory, starboard shaft was not. Recommendation to adjust the bearing support points on both shafts has been made. Details of the alignment check and its conclusions are presented in Appendix F.

The PROVO WALLIS' machinery suite is typical of a well-found ship of her era (1960's-70's) and class. The vessel has 4 ship's service generator sets, partially due to the 3 large intermittent loads which have to be supplied: buoy derrick, bow thruster, and stern thruster.

The machinery controls are not compliant with contemporary marine automation standards. Control is centralized in the control room forward of the engine room, but the vessel is a locally controlled entity. Propulsion control can be managed from the bridge or machinery control room.

The main engines are original; parts availability is becoming an issue. Main engine FW and SW cooling pumps were changed from main-engine driven to electric-motor, off-engine driven pumps within the last 3 years.

Starting air bottles were both renewed in 2007.

Generators are IVECO 270 KW units, installed in 1990. Switchboard was manufactured by Island Controls, PEI, date unknown. The vessel was last megger tested in June of 2010, with no known significant deficiencies.

Overall, the engine room and the equipment therein have been well-used, and well-maintained. PROVO's scantlings, which are those of a light icebreaker, are robust enough that even the corrosion in way of stern tubes, thruster shafts, and other SW drip/spray sources has yet to reach diminution levels requiring plate replacement work.

Bilges were dry, with no accumulated debris and garbage.

The upper fiddley space, often a soot-laden depository for exhaust leaks, was clean and easy to move around in, and is indicative of the level of operational cleanliness achieved.

3.7.3 Aft machinery space

This compartment contains the vessel's workshop, and much of the ships' service auxiliary machinery (starting air compressors, sewage treatment plant, heating boiler, SW circulation pumps, CPP pitch control box and associated pumps/filters/coolers, stern thruster, etc).

Overall condition of the visible hull and machinery is as described above for the engine room; well used, well maintained. Additions and modifications to the machinery installed there make it a crowded space.

Hull corrosion is more evident than in the engine room in way of the stern tube seals and circulating SW piping.

3.8 **Miscellaneous**

Appendix G contains two reports of recent alongside refit work periods, and serve to illustrate the level and type of work accomplished throughout the ship.

Many of the required operational certificates for the vessel as a buoy-tender have lapsed. To continue as an operating vessel in Canadian registry, these would have to be re-instated by Transport Canada, Marine Safety. Appendix H is an internal forecast of the required inspection dates for most of the engineering mechanical components and the hull of the ship. Note that

annual tackle inspections, radio station certificate, load line certificate etc., are not included on this document. Also note that there are a significant number of main engine components which are due for inspection.

The ship's documentation, considering its age, is very complete, and well organized, reflecting its recent operational state within the Canadian Government service.

Some amount of lifesaving, survival, and firefighting equipment has been left aboard with the intention of being sold with the vessel. It is equipment which needs annual re-certification of its condition, and the CCG finds it more cost-effective to sell it rather than continue the annual certification and recording procedures.

4. COMMENTS; CONDITION

The PROVO WALLIS was fully operational and certificated until January 2011, within the owner's preventive maintenance program. She was methodically laid up (Appendix "E") with appropriate steps taken to preserve and protect operating systems. Consequently, bringing her back to an operational (not necessarily certificated) status should be straightforward.

A reservation to this statement would be that the navigation, communications, and bridge control equipment should not be anticipated to be fully functional, and would need particular attention during re-activation.

No warranty is made as to the accuracy of this forecast, as latent defects may be present which are not discernible until machinery is run.

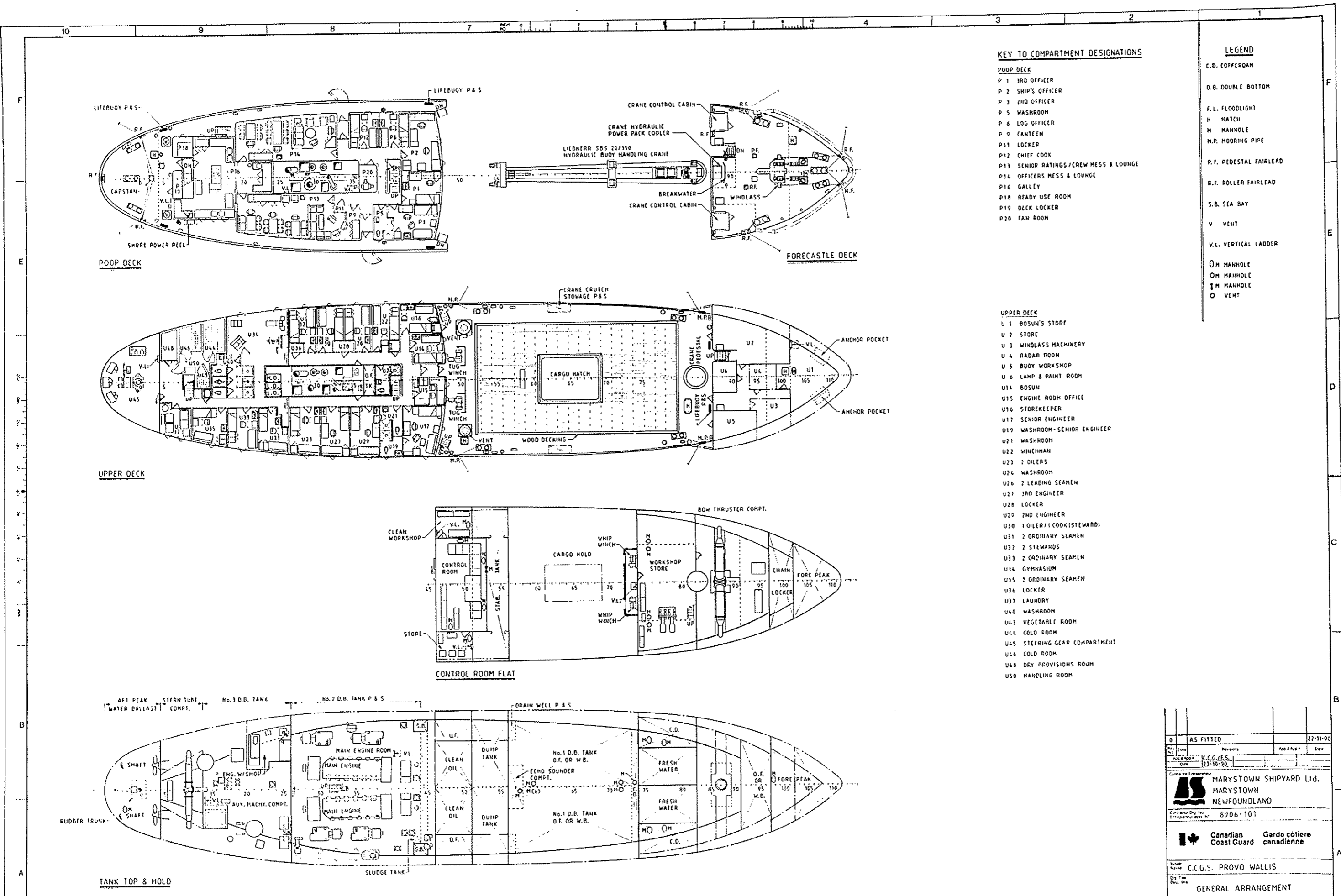
Structurally, the vessel appears to be in better-than-average condition where steelwork is concerned. Her light icebreaker construction scantlings have provided a higher-than average corrosion allowance, and interior and exterior coatings appear to have been generally well-maintained.

5. VALUATION

5.1 Comparable Vessels (will be forwarded under separate cover)

5.2 Valuation (will be forwarded under separate cover)

APPENDIX A: General Arrangement Plans of the CCGS Provo Wallis



KEY TO COMPARTMENT DESIGNATIONS

- POOP DECK**
 P 1 3RD OFFICER
 P 2 SHIP'S OFFICER
 P 3 2ND OFFICER
 P 5 WASHROOM
 P 6 LOG OFFICER
 P 9 CANTEN
 P 11 LOCKER
 P 12 CHIEF COOK
 P 13 SENIOR RATINGS / CREW MESS & LOUNGE
 P 14 OFFICERS MESS & LOUNGE
 P 16 GALLEY
 P 18 READY USE ROOM
 P 19 DECK LOCKER
 P 20 FAX ROOM

LEGEND

- C.D. COPPERDAM
 D.B. DOUBLE BOTTOM
 F.L. FLOODLIGHT
 H HATCH
 M MANHOLE
 M.P. MOORING PIPE
 P.F. PEDESTAL FAIRLEAD
 R.F. ROLLER FAIRLEAD
 S.B. SEA BAY
 V VENT
 V.L. VERTICAL LADDER
 Ø M MANHOLE
 ⊙ M MANHOLE
 ⊕ M MANHOLE
 ○ VENT

UPPER DECK

- U 1 BOSUN'S STORE
 U 2 STORE
 U 3 WINDLASS MACHINERY
 U 4 RADAR ROOM
 U 5 BUDY WORKSHOP
 U 6 LAMP & PAINT ROOM
 U 14 BOSUN
 U 15 ENGINE ROOM OFFICE
 U 16 STOREKEEPER
 U 17 SENIOR ENGINEER
 U 19 WASHROOM - SENIOR ENGINEER
 U 21 WASHROOM
 U 22 WINCHMAN
 U 23 2 OILERS
 U 24 WASHROOM
 U 26 2 LEADING SEAMEN
 U 27 3RD ENGINEER
 U 28 LOCKER
 U 29 2ND ENGINEER
 U 30 1 OILER / 1 COOK / STEWARD
 U 31 2 ORDINARY SEAMEN
 U 32 2 STEWARDS
 U 33 2 ORDINARY SEAMEN
 U 34 GYMNASIUM
 U 35 2 ORDINARY SEAMEN
 U 36 LOCKER
 U 37 LAUNDRY
 U 40 WASHROOM
 U 43 VEGETABLE ROOM
 U 44 COLD ROOM
 U 45 STEERING GEAR COMPARTMENT
 U 46 COLD ROOM
 U 48 DRY PROVISIONS ROOM
 U 50 HANDLING ROOM

0	AS FITTED	27-11-90
AS BUILT	REVISED	NO. 4 AND 5
DATE	DATE	DATE
MARYSTOWN SHIPYARD LTD. MARYSTOWN NEWFOUNDLAND		
Canadian Coast Guard / Garde côtière canadienne		
C.C.G.S. PROVO WALLIS		
GENERAL ARRANGEMENT		

APPENDIX B: Equipment list, post-refit, CCG Provo Wallis

LIST OF EQUIPMENT

ITEMS N°	N° OF	DESCRIPTION	MANUFACTURER	SUPPLIER	PERFORMANCE DATA	REMARKS
1	2	MAIN ENGINE	MIRRELEES NATIONAL		1050 B.H.P. AT 340 R.P.M.	TYPE-KLSDM 6 (ENG. RM.)
2	2	HYDRAULIC COUPLING	VULCAN SINCLAIR		SIZE 64	TYPE-SCD (K)
3	4	SHIP SERVICE GENERATOR	VECO-STAMFORD	G.E.C. CANADA LTD.	270 KW-1800 RPM-460V	8281 SRM 44.1
4	1	EMERGENCY GENERATOR	PAXMAN, WESTINGHOUSE	RUSTON & HORNSBY LTD.	185 KW-1200 RPM	BOAT DECK
5	2	AIR COMPRESSOR (ELECTRIC)	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	30 C.F.M.	FR. 25 (S)
6	1	AIR COMPRESSOR (DIESEL)	REAVELL, PETTER	REAVELL LTD.	27 C.F.M.	FR. 27 (S)
7	1	STANDBY S.W. PUMP	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	210 I.G.P.M.- 54 FT.	FR. 42 (S)
8	1	STANDBY F.W. PUMP	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	210 I.G.P.M.- 54 FT.	FR. 34 (C)
9	2	STANDBY L.O. PUMP	ALLWEILER MARINE	ALLWEILER MARINE	174- 82 I.G.P.M.- 25 PSI.	FR. 43 (S&P)
10	1	BILGE & BALLAST PUMP	KSB	DYNAMIC ENG. LTD.	34 LT./HR.-70 FT.	FR. 40 (S)
11	1	FIRE PUMP	KSB	DYNAMIC ENG. LTD.	25-70 LT./HR. 231-70 FT.	FR. 42 (P)
12	2	S.W. CIRC. PUMP	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	180-120 I.G.P.M. 54-24 FT.	FR. 41-42 (P&S)
13	2	F.W. CIRC. PUMP	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	180-120 I.G.P.M. 54-24 FT.	FR. 43-44 (P&S)
14	1	F.W. TRANSFER PUMP	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	75 I.G.P.M. 76 PSI.	FR. 23-24 (P)
15	2	F.W. PRESSURE PUMP	ALLWEILER MARINE	ALLWEILER MARINE	20 I.G.P.M. 60 PSI.	FR. 38-39 (P)
16	2	F.W. PRESSURE TANK	WELL-X-TROLL	ALLWEILER MARINE	70 IMPERIAL GALLONS	FR. 39-40 (P)
17	2	F.O. TRANSFER PUMP	ALLWEILER MARINE	ALLWEILER MARINE	54 I.G.P.M. 50 PSI.	FR. 43(P)
18	1	F.O. CENTRIFUGAL PURIFIER & PUMP	ALFA-LAVAL	ALFA- LAVAL	26 TONS/DAY- MMPX-303	FR. 45 (S)
19	1	L.O. CENTRIFUGAL PURIFIER & PUMP	ALFA-LAVAL	ALFA- LAVAL	77 I.G./HR.- MMPX-303	
20	2	L.O. COOLER		AMERICAN STANDARD	3.6 CUBIC FT. CAPACITY	FR. 46 (P&S)
21	2	F.W. COOLER			1.7 CUBIC FT. CAPACITY	
22	2	COUPLING OIL COOLER			1.1 CUBIC FT. CAPACITY	FR. 28-30 (P& S)
23	2	JACKET WATER HEATER			15 KW.	FR. 40-41 (P&S)
24	2	L.O. HEATER			12 KW.	FR. 41-42
25	2	L.O. FILTER	MIRRELEES	MIRRELEES		FR. 39-41
26	1	F.O. FILTER		BOWSER	50 I.G.P.M.	FR.43-44 (P)
27	2	MAIN AIR RECEIVER	IDEAL	IDEAL	50 CUBIC FT.- 300 PSI.	FR. 26-35 (S)
28	1	CONTROL AIR DRYER (DUPLEX)	ENERVAC.	ENERVAC CORP.	10 CFM- 120 PSI.	FR. 26 (P)
29	1	GENERAL SERVICE PUMP	KSB	DYNAMIC ENG. LTD.	34/75 LT./HR. 75/35 FT.	FR. 19 (P)
30	1	EMERGENCY FIRE PUMP	KSB	DYNAMIC ENG. LTD.	25 LT./HR. 231 FT.	FR. 17 (P)
31	1	SPRINKLER PUMP	KSB	DYNAMIC ENG. LTD.	102 LT./HR. 100 PSI.	FR. 15 (P)
32	1	SPRINKLER TANK	IDEAL	IDEAL	185 PSI.	FR. 12-15 (P)
33	1	SPRINKLER AIR COMPRESSOR	CANADIAN BROOMWADE	CANADIAN BROOMWADE	10 C.F.M. 120 PSI.	MODEL 106347- FR. 14 (P)
34	1	F.W. GENERATOR	ALFA-LAVAL	ALFA- LAVAL	4 CUBIC M/DAY	MODEL JWP16-C-40-FR. 34-35 (P)
35	1	OILY BILGE/SLUDGE PUMP	ALLWEILER	ALLWEILER	4 CUBIC M./HR. AT 10 M. HEAD	TYPE- SEP. 50.1- FR. 39 (S)
36	1	OILY WATER SEPARATOR	DVZ	FAIRWATER SALES LTD.	CAPACITY- 2.5 CUBIC M./HR.	15 PPM. DISCHARGE FR. 36-38 (S)
37	1	SEWAGE TREATMENT PLANT	HAMWORTHY ENG. LTD.	HAMWORTHY CAN. LTD.	CAPACITY- 32 PERSONS	FR. 13-17 (S)
38	1	SEWAGE COLLECTION TANK	ENVIROVAC INC.	EVAC	CAPACITY-660 GAL.	FR. 20-22 (S)
39	1	STERNTHRUSTER	OMNITHRUSTER INC.	OMNITHRUSTER INC.	200 H.P.- 3700LB. THRUST	MODEL PV 575 A FR. 10
40	4	UNIT HEATERS	CHROMALUX	HARRIS ROOME LTD.		FR. 25 & 45 (P&S)
41	1	CALORIFIER	EVERDUR	WCR. SERGENT LTD.	150 IMP. GAL.- 100 PSIG.	MODEL 192 FR. 39-40 (P)
42	1	HOT WATER CIR. PUMP	ALLWEILER	ALLWEILER	CAPACITY- 15 I.G.P.M.	TYPE 25- 200/W3 FR. 38 (P)
43	2	REFRIGERATION CIRC. PUMP	MP PUMP DIVISION	BERG CHILLING LTD.	CAPACITY- 15 I.G.P.M.	FR. 6-8 (S)
44	3	STERN TUBE CIRC. PUMP	ALLWEILER	ALLWEILER	CAPACITY- 25 I.G.P.M.	TYPE 32- 200/W3- FR. 5-8 (P)
45	1	STERNTHRUSTER HYDRAULIC PACK	PACIFIC WESTERN SYS.	OMNITHRUSTER INC.		FR. 16 (P)
46	1	OILY BILGE HOLDING TANK	M.S.L.	M.S.L.	CAPACITY-500 GAL.	FR. 39-42 (S) IN #2 D.B. TK.
47	2	M.E. F.W. EXPANSION TANK	M.I.L.	M.I.L.	124 I.G. CAPACITY	POOP DECK (CASING)
48	2	L.O. STORAGE TANK	" (BUILT-IN)	M.I.L.	300 I.G.	UPPER DECK (CASING)
49	1	CENTRIFUGED LUBE OIL TANK	"	M.I.L.	300 I.G. "	FR. 44-46 (P)
50	1	FLUID COUPLING LUBE OIL TANK	" (BUILT-IN)	M.I.L.	350 I.G. "	UPPER DECK (CASING)
51	1	C.P.P. PROPELLER HYD. OIL TANK	"	M.I.L.		ST. GEAR COMPT.
52	1	DIRTY LUB OIL TANK	"	M.I.L.	300 I.G. "	FR. 44-46 (S)
53	1	SLUDGE TANK	" (BUILT-IN)	M.I.L.	75 I.G. "	FR. 43-44 (S)
54	2	M.E. L.O. SERVICE TANK	MIRRELEES	MIRRELEES	350 I.G. "	FR. 41-43 (P&S)
55	1	F.O. DAILY SERVICE TANK	M.I.L. (BUILT-IN)	M.I.L.	5 TONS "	UPPER DECK
56	1	EMERGENCY GENERATOR F.O. TANK	M.I.L.	M.I.L.		NAV. BRIDGE DECK
57	1	F.O. DRAIN TANK	M.S.L.	M.S.L.	85 I.G. "	FR. 40-43 (C)
58	1	RECOVERED OIL TANK	M.S.L.	M.S.L.	100 I.G. "	FR. 36-38 (S)
59	1	L.O. PURIFIER HEATER		DE-LAVAL	12 KW.	FR. 46 (S)
60	1	L.O. PURIFIER HEATER CONTROL PANEL		DE-LAVAL		
61	2	TAIL SHAFT	LIPS	LIPS	225mm DIAMETER	AUX. MACHINERY COMPT.
62	2	SPEED INDICATOR GENERATOR	CHADBURNS	CHADBURNS		FR. 26 (P&S)
63	2	THRUST BLOCK	MICHELL	MICHELL		FR. 23-25 (P&S)
64	2	THRUST BLOCK METER CONTROL PANEL	MICHELL	MICHELL		FR. 26 (P&S)
65	4	INTERMEDIATE SHAFT	M.I.L.	M.I.L.	6 3/4" DIAMETER	FR. 22 & 27 (P&S)
66	2	AFT SHAFT BEARING	MICHELL	MICHELL	8 3/4" SHAFT	FR. 15 (P&S)
67	4	SHAFT BEARING	MICHELL	MICHELL	6 7/8" SHAFT	FR. 20-21 & 27-28 (P&S)
68	2	STERN TUBE	M.I.L.	M.I.L.		STERN TUBE COMPT.
69	2	BARRING BKT.	MIRRELEES	MIRRELEES		FR. 30-31 (P&S)
70	2	TURNING GEAR	BUFFOLINE GEARS LTD.	MIRRELEES		FR. 13 (P&S)
71	3	MAIN E.R. SUPPLY FAN	WOODS	NORRIS WARMING	12,500 C.F.M.	30 in. I-TYPE (CASING)
72	1	E.R. EXHAUST FAN	WOODS	NORRIS WARMING	12,000 C.F.M.	30 in. I-TYPE (CASING)
73	1	WORKBENCH FOR PURIFIER	M.I.L.	M.I.L.		FR. 42-44 (S)
74	2	WORKSHOP BENCH	M.S.L.	M.S.L.		FR. 25 & 50 (P)
75	1	LATHE	HARRISON	RIDEOUT	5 H.P.	MODEL m-350 FR. 25 (P)
76	1	DRILL	NIDER	RIDEOUT	2.1/2.9 H.P.	2 SPEED- REVERSING FR. 25 (P)
77	1	GRINDER	BALDOR	RIDEOUT	8" WHEEL	PEDESTAL TYPE FR. 23 (P)
78	2	M.E. EXHAUST SILENCER	MAXIM	BEARD IND. INC.		CASING
79	4	S.S. GENERATOR EXHAUST SILENCER	SILEX	GEC CANADA LTD.		CASING
80	1	EMERGENCY GENERATOR EXHAUST SILENCER	MAXIM	BEARD IND. INC.		CASING
81	1	ACOUSTIC BOOTH				FR. 34-35 (C)
82	1	DRINKING FOUNTAIN		CORDLEY	6 I.G.P.M.	FR. 20-21 (S)
83	2	SHAFT BRAKE	M.I.L.	M.I.L.		FR. 13 (P&S)
84	2	M.E. INSTRUMENT PANEL				FR. 42 (P&S)
85	2	TELEGRAPH REPLY RECEIVER	CHADBURNS	CHADBURNS		FR. 40-41 (P&S)
86	1	MAIN SWITCHBOARD	ISLAND CONTROL LTD.	ISLAND CONTROLS LTD.		FR. 49-52 (P)
87	2	PROPELLER ACTUATING MECHANISM	LIPS	LIPS		FR. 17 (P&S)
88	2	PROPELLER ELECTRIC PUMP	LIPS	LIPS	8 U.S. G.P.M.	FR. 19 (P&S)

LIST OF EQUIPMENT

ITEMS N°	N° OF	DESCRIPTION	MANUFACTURER	SUPPLIER	PERFORMANCE DATA	REMARKS
89	2	PROPELLER SHAFT DRIVEN PUMP	LIPS	LIPS	8 U.S. G.P.M.	FR. 19 (P&S)
90	2	PROPELLER HYDRAULIC PANEL	"	"		FR. 16-17 (P&S)
91	2	" HYDRAULIC OIL TANK	"	"	100 LITRE	FR. 18-19 (P&S)
92	2	" HYDRAULIC OIL TRAN. BLOCK	"	"		FR. 19 (P&S)
93	2	" HUB OIL TRANS. BLOCK	"	"		FR. 14
94	2	" HUB OIL PUMP	"	"	8L.-2K./squ. cm 1450RPM	FR. 16
95	1	" HUB OIL TANK	"	"	100 LITRE	ST GEAR COMPT.
96	2	" FEED BACK	"	"		FR. 16-17 (P&S)
97	2	" HYDRAULIC OIL COOLER	"	"		FR. 17 (P&S)
98	2	" HAND PUMP	"	"		FR. 15-16 (P&S)
99	2	SLIDING W.T. DOOR	WALZ & KRENZER	WALZ & KRENZER		FR. 25 & 46
100	2	ELECTRIC PUMP	"	"		" " "
101	2	HAND PUMP	"	"		" " "
102	4	DRUM SWITCH	"	"		FOR W/T DOOR
103	2	REVERSING CONTROL BOX	"	"		" " "
104	3	CATHELCO DISTRIBUTION PANEL		POLLUTION CONTROL		FR. 16 (P) & FR. 46 -47 (P)
105	1	BUFFER TANK	M.I.L.	M.I.L.	5 CUBIC FT. AT 120 PSI.	BRIDGE DECK (CASING)
106	3	M.C.C.				FR. 46-52 (S)
107	1	STERNTHRUSTER SCR.	SIEMENS LTD.	OMNITHRUSTER INC.		FR. 16-18 (S)
108	1	STERNTHRUSTER GEARBOX	AMARILLO GEAR	OMNITHRUSTER INC.	200 H.P. MODEL SSL 450A	FR. 10 (C)
109	1	TANK GAUGING PANEL	YOUNG & CUNNINGHAM	YOUNG & CUNNINGHAM		FR. 45 (P)
110	1	STERNTHRUSTER TRANSFORMER	SIEMENS LTD.	OMNITHRUSTER INC.		FR. 22-23 (S)
111	1	SHORE POWER TRANSFORMER	REX MANUFACTURING	SEA MARKETING LTD.		FR. 17-19 (P)
112	1	U.V. STERILIZATION UNIT	HAMWORTHY ENG. LTD.	HAMWORTHY ENG. LTD.		FR. 6 (C)
113	3	GALLEY TRANSFORMER	REX MANUFACTURING	SEA MARKETING LTD.		FR. 46-50 (S) STORES
114	3	HEATING TRANSFORMER	REX MANUFACTURING	SEA MARKETING LTD.		" " "
115	1	F.W. GENERATOR PUMP	ALFA-LAVAL	ALFA-LAVAL	15.3 CUBIC m./HR.	FR. 33-34 (P)
116	1	STERNTHRUSTER COOLING PUMP	ALLWEILER	ALLWEILER	10 I.G.P.M.	FR. 12-13 (P)
117	1	STERNTHRUSTER GEARBOX MOTOR DRIVE	SIEMENS	OMNITHRUSTER INC.		FR. 12-14 (C)
118	1	CHLORINE INJECTOR	PULSAFEEDER	ATLANTIC PURIF. LTD.		FR. 32-33 (P)
119	1	AFT. CAPSTAN CONTROL PANEL	CLARKE & CHAPMAN	CLARKE & CHAPMAN		FR. 46-47 (S) STORES
120	1	CAPSTAN M/G SET	CLARKE & CHAPMAN	CLARKE & CHAPMAN		FR. 47-49 (S) "
121	3	ACCOMMODATION REHEAT TRANSFORMERS	MARCUS	MARCUS TRNSF. OF CAN.		" " "
122	2	EYEWASH SHOWER DELUGE UNIT	SPEAKMAN	BREN KIR. IND. SUPPLIES		FR. 48 (P) & BOAT DECK
123	4	GENSET INSTRUMENT PANEL	THOMSON TECH. LTD.	G.E.C. CANADA LTD.		FR. 26&39(S) & 32&39(P)
124	1	INJECTOR TEST STAND	MIRRELEES NATIONAL	HAWKER SIDDELEY LTD.		FR. 48 (P)
125	2	STERN GLAND STUFFING BOX				FR. 13 (P&S)
126	1	ACCOM. AIR HANDLING UNIT	FLAKT ROSS INC.	FLAKT ROSS INC.	5300 CFM.	BOAT DEC. FAN ROOM
127	2	REFRIG. CONDENSING UNIT	BERG CHILLING LTD.	BERG CHILLING LTD.	FREON 12,22 OR 502	ST GEAR COMPT.
128	1	BOW THRUSTER	OMNITHRUSTER INC.	OMNITHRUSTER INC.	400 H.P. -7500LB. THRUST	BOW TH. COMPT. (FR. 82-97)
129	1	BOW THRUSTER GEARBOX	AMARILLO GEAR	"	MODEL SSL 750 A	" " "
130	1	" TRANSFORMER	SIEMENS LTD.	"	"	" " "
131	1	" MOTOR DRIVE	SIEMENS LTD.	"	"	" " "
132	1	" SCR	SIEMENS LTD.	"	"	" " "
133	1	" GEARBOX COOLING WATER PUMP	ALLWEILER	ALLWEILER	10 I.G.P.M.	" " "
134	1	" HYDRAULIC P. PACK	PACIFIC WESTERN SYS.	OMNITHRUSTER INC.		" " "
135	1	HOT WATER CALORIFIER	EVERDUR	W.C.R. SERGENT LTD.		ST GEAR COMPT. (S)

APPENDIX C: Pictures of the CCGS Provo Wallis, July 2011

Exterior hull

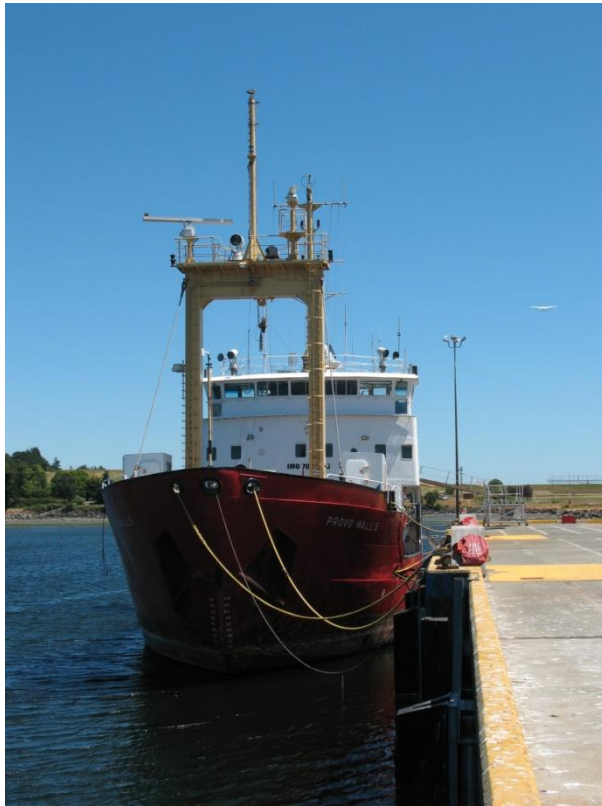


Figure 1: Vessel alongside at Pat Bay wharf



Figure 2: Port side exterior superstructure

CCGS Provo Wallis Condition and Valuation Report: Photos

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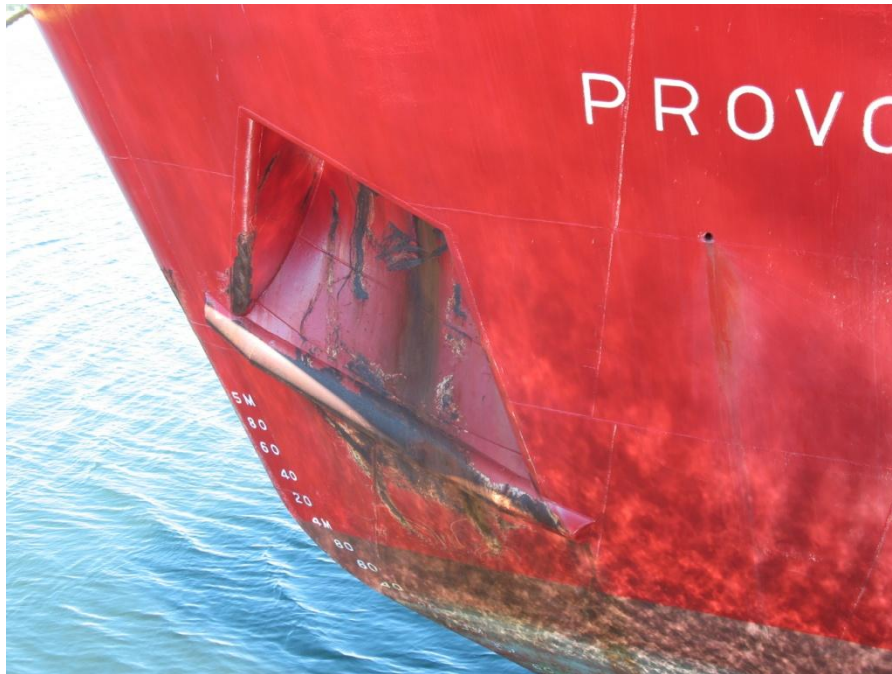


Figure 3: Anchor pocket, port bow.

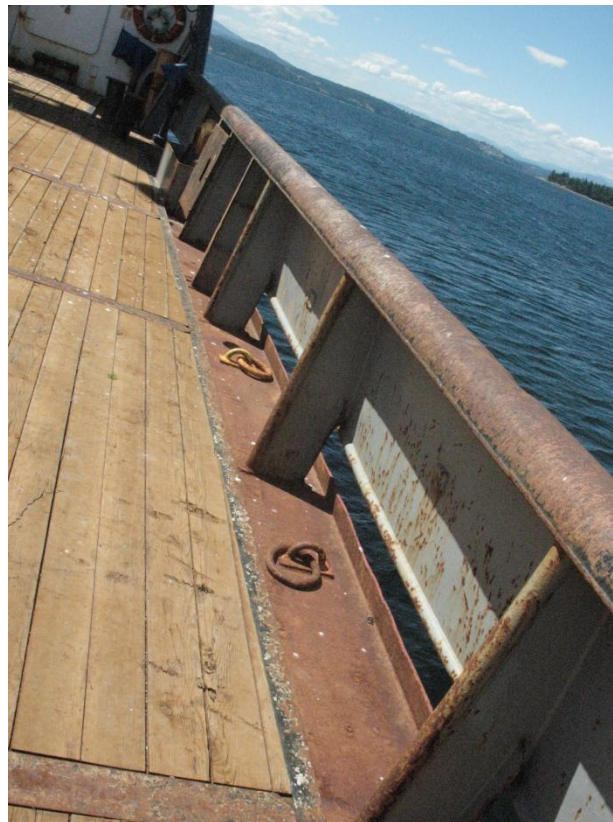


Figure 4: Well deck bulwarks, stringer plate, and wood decking



Figure 5: Upper deck, port side looking aft

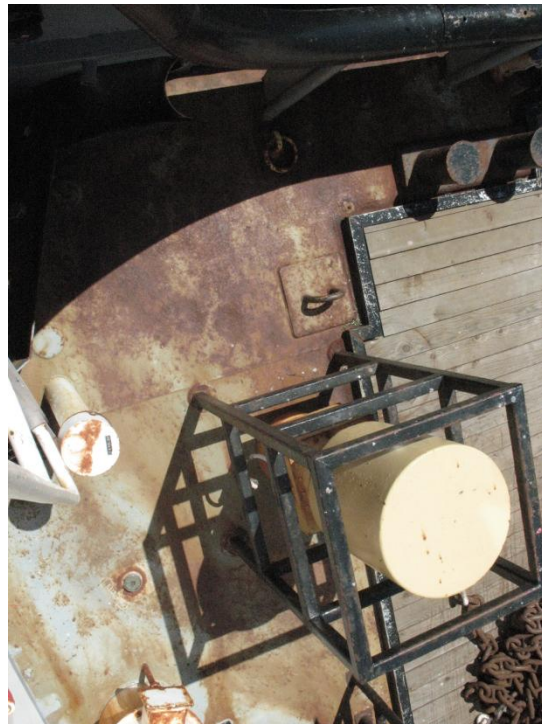


Figure 6: Port aft corner of well deck



Figure 7: Typical ventilation fan and inlet head



Figure 8: Stores crane and aft bhd of emerg. gen. compt. on boat deck

CCGS Provo Wallis Condition and Valuation Report: Photos

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Foc'sle, welldeck, and mast



Figure 9: Buoy Derrick, main hatch, well deck, and anchors

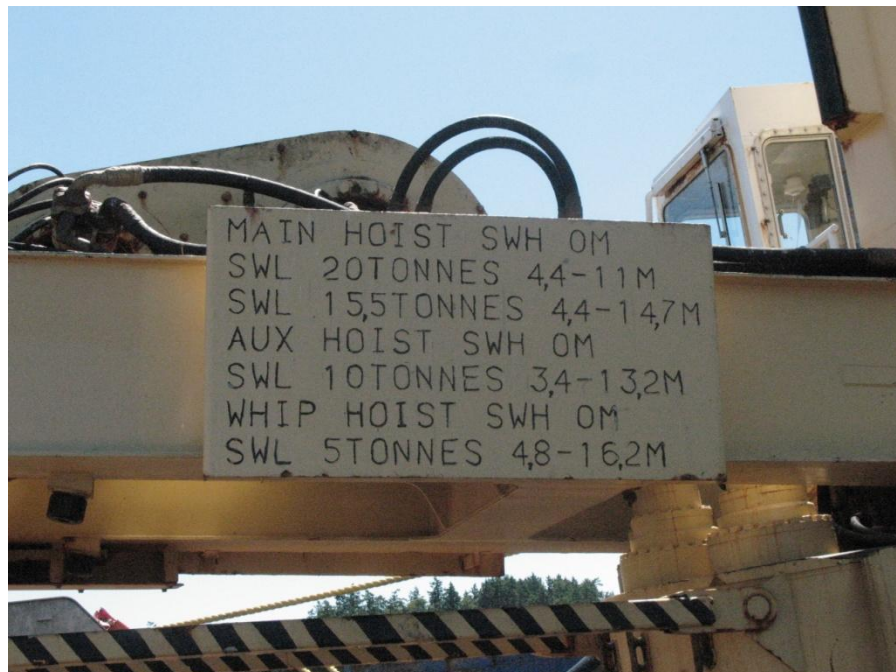


Figure 10: Buoy derrick SWL nameplate at base



Figure 11: Windlass bedplate, chain stoppers, fairleads on foc'sle



Figure 12: Windlass MG set in foc'sle

CCGS Provo Wallis Condition and Valuation Report: Photos

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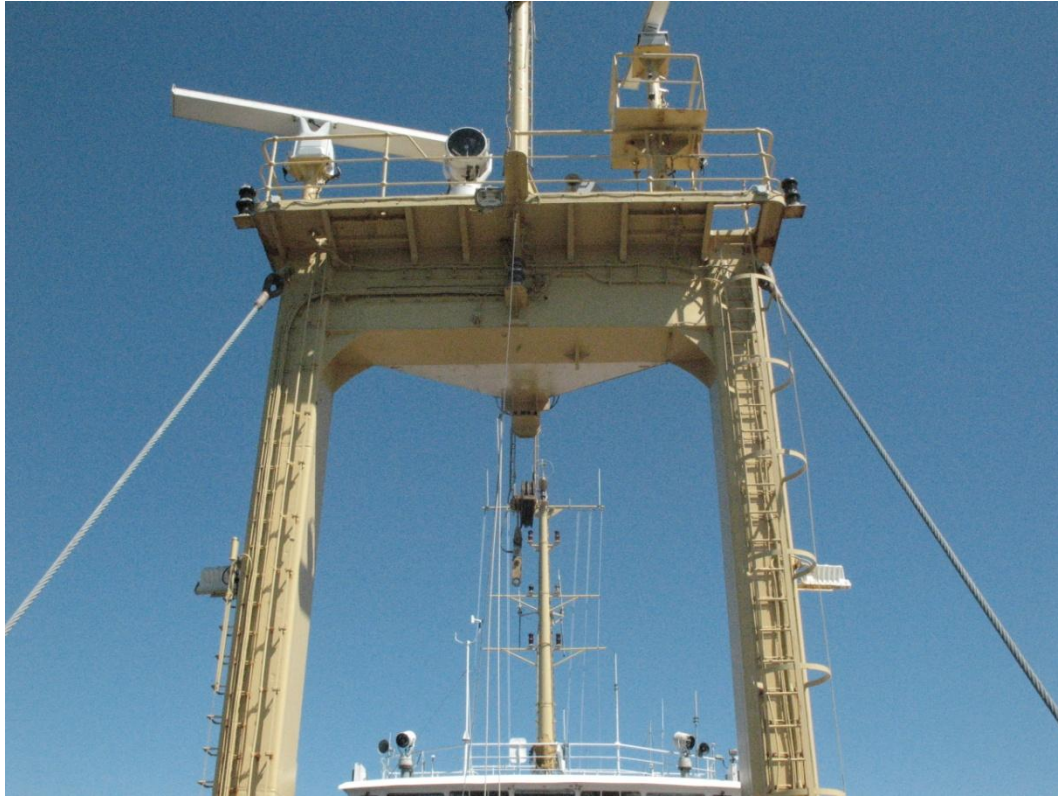


Figure 13: Mast structure, looking aft

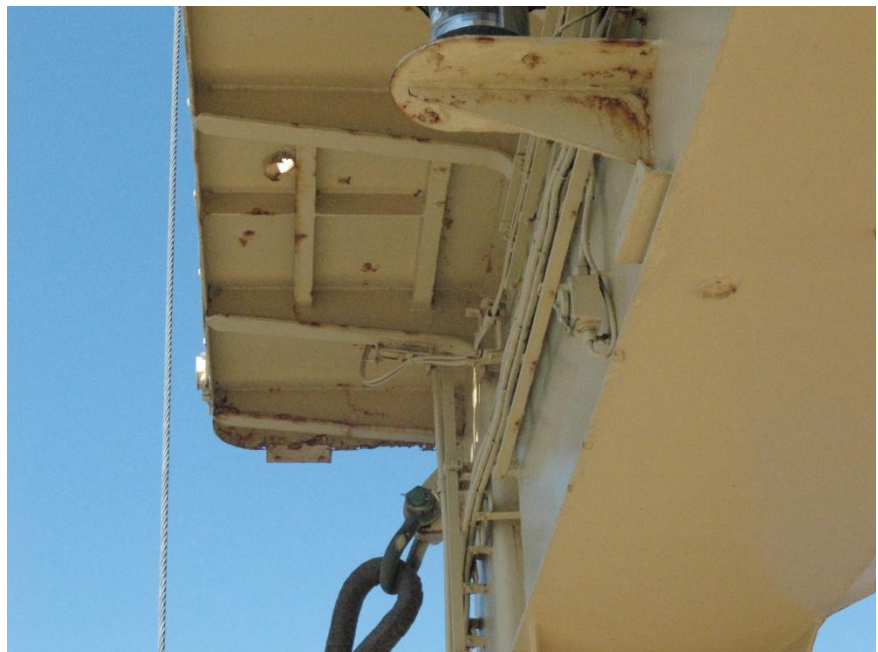


Figure 14: Underside of mast top structure



Figure 15: Foc'sle interior, looking at the port anchor pocket



Figure 16: Deck workshop, foc'sle, stbd side

Bow thruster, derrick machinery, cargo hold, steering gear compt.



Figure 17: Bow thruster compt.---motor, right-angle drive, control cabinet, discharge tubes



Figure 18: Bow thruster sea bay suction well

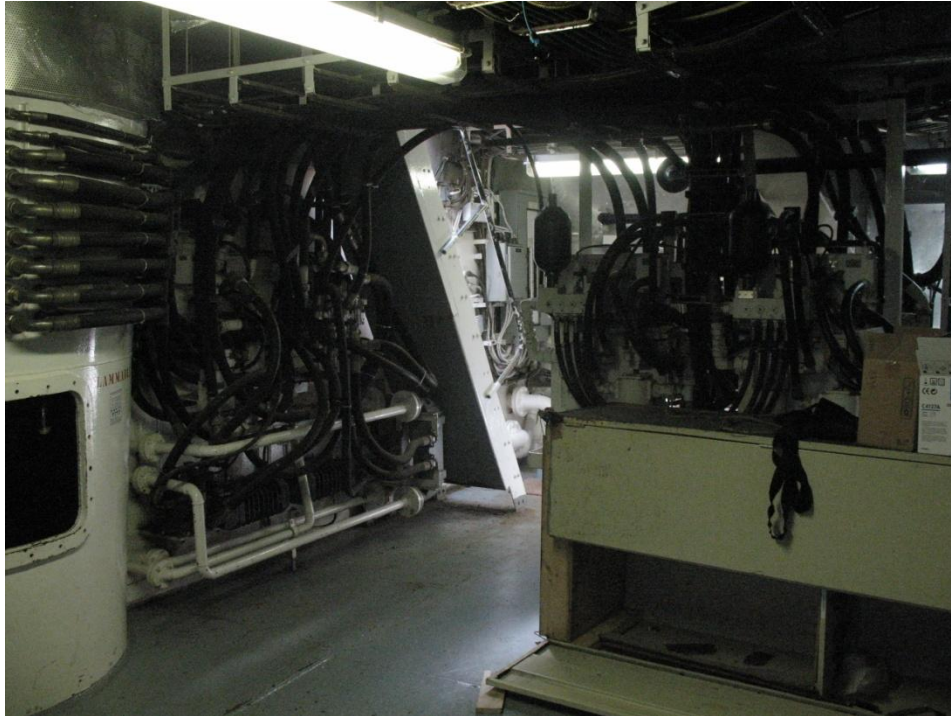


Figure 19: Derrick machinery/hydraulic compartment



Figure 20: Hold, starboard side, looking aft



Figure 21: Hold, looking forward toward derrick machinery compartment



Figure 22: Typical spares in hold



Figure 23: Steering motor

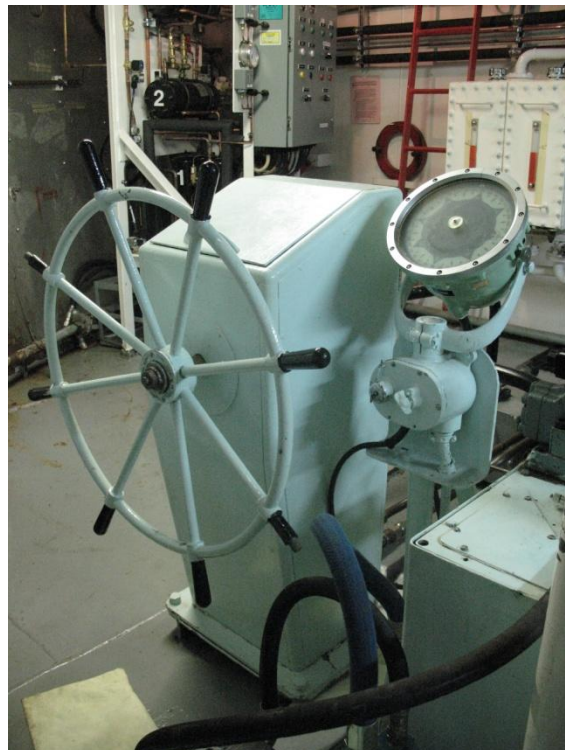


Figure 24: Emerg. steering station, refrigeration machinery in background

Bridge



Figure 25: Stbd bridge wing maneuvering console



Figure 26: Bridge front, looking to port



Figure 27: Radio room

Service spaces, galley, fan room, fire locker, coolers



Figure 28: Galley, looking aft and to starboard

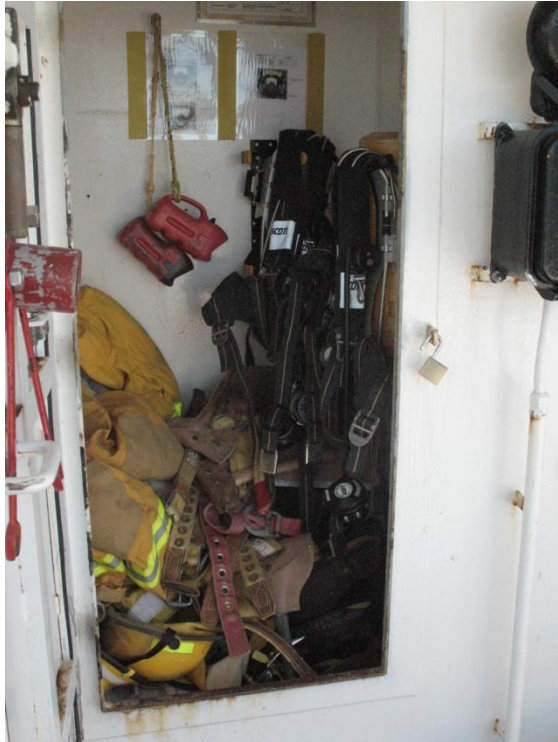


Figure 29: Fire equipment locker



Figure 30: Cold stores locker



Figure 31: Battery room, boat deck



Figure 32: Fan room, typical

ACCOMODATIONS, TYPICAL VIEWS



Figure 33: Senior officer stateroom



Figure 34: Captain's stateroom