

Please see below clarifications and changes to the CCGS Henry Larsen specification.

H-03: Multibeam Install

Question:

Drawing 217-049-21262rb *transducer conduit arrangement*, view A-A SVS SENSOR SEA INLET PIPE, shows two electrically operated valves and a pump. Please provide details of the required pump.

We cannot find any details on any power cable connected to these three units or control cables, please provide information.

Answer:

Pump

Centrifugal type. Pump must be LR approved for sea water service. Pump flow shall be 16 L/min at 1m head. Power is 120V AC.

Valve

Valves are to be 120V AC power-to-open and power-to-close, stay in last known position with loss of power. (no need for control cable) Valves must be LR approved for sea water service.

Power cables for pump and valves:

Run cables from the SVS sensor/pump/valves to starboard side inside the cofferdam along the deck head stiffener on frame 121. Penetrate the tank top outboard of the cofferdam bilge pump suction pipe into the Main Generator Room. Run cables aft under the floor plates to a vertical cable tray located forward of the Starboard Main Generator. Power the valves and pump cables from a local panel in the Main Generator Room.

All cabling shall be comply as Transport Canada Marine Shipboard Cable. Cabling shall be shielded to mitigate against EM interference to the Rx transducer.

Question:

- Who supplies what ? (UPS type and quantity, cable for speed meter, inclinometer, etc.)
- Type and length of cables arrangement (Robert Allan Ltd)?

Answer:

We are not sure what the inclinometer is as stated. Are they referring to the IMU (inertial motion unit). See below if this is the case.

Material Supply

CCG will provide EH 36 steel for the Contractor to manufacture the casings, and side and end cover plates as indicated on the drawings only. All other materials are Contractor supply.

CCG will supply the following multibeam components, all other material are Contractor supply.:

1. Tx Transducers
2. Rx Transducers

3. Transceiver Unit
4. Tx Stainless Steel Mounting Frame
5. Rx Stainless Steel Mounting Frame
6. Hyperlast 70mm TX Ice Protection Window for 1 degree
7. Hyperlast 70mm RX Ice Protection Window for 2 degree
8. Applanix POSMV 320 system includes Processor, Inertial motion unit (IMU) and GNSS Antennas
1. SVS sound velocity meter with cabling.
2. See Robert Allan drawing 217-049 61510 and Installation Specification for preliminary cable arrangements. Final routing may vary during installation.

UPS

UPS Type – APC brand or equal, 3000 VA rating, 120Volt, x93 marine modified. Installed between ship power supply and 120/240V transformer.

Please supply ships electrical one-line diagram (in order to know breakers' ratings, types and quantities)
See attached file "P205 panel and one line"

H-05: Helicopter Fueling System Maintenance

(3.4 inspection): We would need specifications/documentations on the valve below: Table below is all that is available, no manuals or catalog cuts

- 1x1.5" vacuum relief (15017);
- 1x1.5" 'Uniac' pressure relief valve (15990SP); and
- 1x8" fire engulfment valve (6R8/411422/C).

No.	EQUIPMENT	MAUFACTURER	MODEL / TYPE	SIZE	SET POINT	SERIAL / ID #
1	AV Gas – Fire Engulfment	Bailey Brikett	6R8-411422-C	6 R 8	17 psi	S42151-C1024-3
2	AV Gas – Pressure Relief	Fort Vale	30/01612	1.5" BSP	12 psi	9123970
3	AV Gas – Vacuum Relief	Fort Vale	47/00014X	1.5" BSPP	0.5" Hg	8434372

H-06 LIFERAFTS

Manufacturer of each rafts, please provide. Survitec/Zodiac

H-13: Main Deck Underlay and Covering Replacement

Replace section 3.5 in spec H-13 with the following:

3.5 A new Dex-o-tex underlayment system is to be applied to the original thickness of approximately 70mm as directed by the manufacturer's instructions.

Contractor to provide Dex-o-tex certified installers for Dex-o-tex installation.

Temperature and humidity to be recorded by Nace level 2 inspector with documentation to CCG. All cure times assume 20 degrees Celsius ambient. Install to follow the following sequence with Nace level 2 and CCG inspection between steps.

- a) Deck is to be cleaned to SP11
- b) Salt test to by Nace level 2 to confirm conditions meet manufacturer's instructions
- c) 2 coats marine primer to be applied
- d) Insul-dek primer
- e) Insul-dek underlayment to minimum A60 depth
- f) VLW-IMO primer
- g) VLW-IMO to finish height
- h) Megabond Fine finish coat with finish acceptable for vinyl plank flooring install.

H-14: Fixed FM200 and CO2 Smothering System Inspection

- 1) An allowance for transportation of the bottles \$5000 under proof of invoice, hazardous goods.
- 2) Unit cost per size of bottles. It is at the TCMS inspector's discretion which ones are chosen and depending on weight and location, they could be a real problem.

Contractor to include in bid cost of removal and testing for 1 of each size. There are 47 bottles on vessel

- A. 0-100lb
- B. 100-200
- C. 200-300
- D. 300-500
- E. 500-900

- 3) Contractor to include in bid price 200lb of replacement fm200 agent with unit cost per lb to be adjusted by 1379

- 4) Rebuild of valves by 1379 if required

HD-20: Cooling System Piping Renewals

Class 150 slip-on flanges have approx. 1in thk as you can see in CCTF catalog page 6. Class300 flanges at page 10 are twice thicker and have different bolt circle and dimensions. 1st pic shows a pipe to renew. Assume that bolt size is approx. 7/8 inch compare to the flange thickness, It is logic to ask the question. The flange thickness as shown is approx. 1 3/8" or the 1.38" thickness as mentioned in the catalogue for 150 class flanges.

Same for 2nd pic shows a 10 inches valve with 7/8inch bolt. Class150 Gruklok fitting 7012 at page 44 of the catalog have 1 inch thick and class300 Gruklok fitting 7013 at page 47 have 1 7/8inch thick. Also 3rd pic shows a type of flange with hinges similar to class300 while class150 seem to be split. The flange attached to the valve is approx. 1 3/16" thick or the 1.19" thickness as mentioned in the

catalogue for 150 class flanges. The Grivlok flange on the pump is a 7012. The 3rd picture is actually a Victaulic flange and not Gruvlok which would explain the discrepancy .

Can you confirm if flanges of existing valves onboard are class150 or class300? Existing is 150

Can you confirm If Gruvlok Ridgidlok 7401 is the required groove coupling type to use? Present Gruvlock fittings are 7000,7001, 7002

We understand that material list Appendix A + 10% for bid purpose, additional material required to complete the work will be treated as 1379? Yes, 1379 for any material above this

Appendix A, T-fittings, 4th item not in catalog (reducer 14in to 2 1/2in), please advise, It is a 14" diameter pipe with a 2 1/2" pipe welded in it so this would have to be fabricated by yard.

Can you please confirm If EPDM gaskets are acceptable? EPDM gaskets are acceptable

Do you have more accurate drawings of the cooling pipe system onboard other than schematic no22-0713-01 rev13. This is the best available

E-08 ANNUAL REFRIGERATION SYSTEMS INSPECTIONS

1. Do we have information about the distances between the units of compression and the units that distribute the cold? The Compressors are at frame 100 port side upper engine room and Domestic spaces are one deck up on the main deck between frames 35-60. Cargo fridge is on main deck between frames 21 and 30. See attached main deck layout.
2. Is the 15-0311-07 drawing available? Attached is best version available.

E-12 STBD SILENCER RE-INSULATION

Would need a drawing in regards of the silencers, or any specifications related to the silencers onboard (For the 20% we are going to supply to complete the 80% blanket supplied by CCG). See 2616-25-0022-03-04 EN(2000) Model (1) and 22-0741-01 Diesel Exhausts and Uptakes Diagram Sheet 1 of 2 attached. This is all that is available.

E-16 SEWAGE TREATMENT SKIMMER INSTALLATION

Please provide the following references :

- **2.2 Red Fox Modification –Skimmer Install For Facet & Canadian Built Units** See attached "Redfox Marine Unit Skimmer Install English1" in separate email. Note that this is a generic manual, and any questions should be directed to OEM for vessel specific
- **2.3 Red Fox drawing indicating tank penetration details** see attached drawings E-16 Red Fox Skimmer penetrations and E-16-2 Red Fox Skimmer penetrations
- **2.4 Discharge Pumps, UV, and Filter** See attached "Ultra-Violet Sterilizer Unit" and "M-3T-01-001" in separate email
- The coatings of paragraph 3.24 also refer to the sewage tank maintenance specification' which was not provided, coatings are unknown at this point. Please provide. Coatings are to be as per H-11 Sewage system 3.21, Royal Coatings Easy Prime and Easy Nova

E-17 THERMOSTATIC CONTROL VALVE REPLACEMENT

- Please supply a drawing of the new thermostatic control valves (need to know what type and size the flanges are).

See attached manual AMOT_OMMB00010_7

- For valve Mat # 006720064 please reference drawing 4V34L75.
- For valves Mat # 006720085 and Mat # 006720132 please reference drawing 4V34L76.

Material	Item Desc.
006720064	THERMOSTATIC VALVE 63C DN125
006720085	THERMOSTATIC VALVE 91C DN150
006720132	THERMOSTAT VALVE 32C DN150