

**ELANDER INSPECTION LTD.****Nondestructive Testing and Marine Inspection**

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REPORT OF ULTRASONIC EXAMINATION

CLIENT: Allied Shipbuilders Ltd.
1870 Harbour Road
North Vancouver, BC V7H 1A1

PROJECT NO: E11-018-004
REPORT DATE: March 18, 2011
TEST DATE: March 17, 2011
P.O. NO: 1953
CLIENT'S NO:
REPORT NO: R01
CODE: See below
PAGE: 1 of 11

LOCATION: Same As Above

PROJECT: R.V. Medeia – Piping Survey

EQUIPMENT: PANAMETRICS EPOCH II ☐ EPOCH XT ☐ 38 DL+ ☒		UNIT BASIC SENSITIVITY: 0.060" (1.2 mm), 60% Full Screen ☐ Standard Step Block Calibration on 2 thicknesses ☒	
TRANSDUCER: Angle: 0°, Dual	FREQUENCY: .5 Mhz ☐ 1 Mhz ☐ 10 Mhz ☐ 2.25 Mhz ☐ 5 Mhz ☒ 15 Mhz ☐	CALIBRATION BLOCK: IIW ☐ DSC ☐ DAC ☐ Other ☒ Std Step Block	COUPLANT: Gel-Gel ☒ Oil ☐ Other ☐
INSPECTION TECHNIQUE: CSA W59 Section 8.2 ☐ Other ☒ ASTM E 797 Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method.		INSPECTION CODE: CSA W59, Section 11 ☐ Section 12 ☐ Other ☒ Transport Canada	
MATERIAL: Carbon Steel ☒	FORMING PROCESS: Plate ☒	SURFACE CONDITION: Clean ☒ Painted ☒	
DESCRIPTION: UTM of piping as directed on Allied Shipbuilders job procedure Item 17.			

Areas Tested: Piping as described below

Nominal thickness was not known at time of testing for all areas. Areas identified with nominal thicknesses are shown in the data sheets.

TEST RESULTS

1. Engine Room salt water ballast manifolds and associated piping. The Suction and discharge manifold and first pipe from the manifold was tested. See Figure 1
2. Sea Chest – the sea chest was tested including the middle pipe nozzle going fwd.
3. Bilge pump and associated piping in the area was tested. See Figure 2.
4. Bow salt water ballast tank intake/discharge pipe from the engine room salt water ballast manifold to the bow ballast tank. The pipe goes through 3 fuel tanks.
5. Testing of 4" Sch. 80 pipe identified as salt water toilet discharge pipe from the Port and Starboard heads to the void room Starboard side overboard discharge valve.
6. UTM of 3 – Engine room through-hull penetration pipes.
7. UTM of 4 – Void room through-hull penetration pipes.
8. UTM of 2 – Engine Room air receivers.

See attached photos on tested locations and data sheets for thickness results.

General Comments

Original thickness of pipes was unknown for all areas and in some instances the given schedule of pipe appears to be incorrect or not as built. It is recommended that confirmation of all original thicknesses to be done before using the diminution calculations in the data report.

TECHNICIAN: Allan Elander
CGSB Level II UT, Cert. No. 1136

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Allan Elander, Manager, NDT



PHOTO LOG

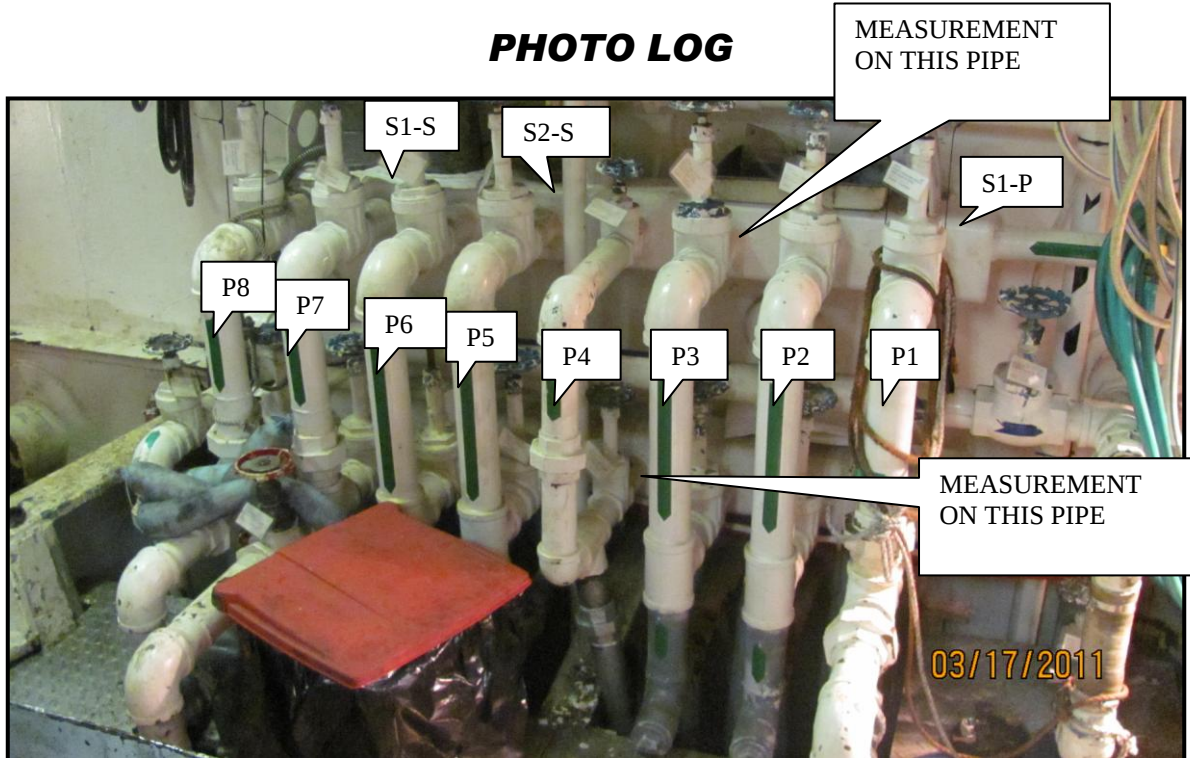


Figure 1 General view of the Suction and Discharge manifold and associated piping. Suction and discharge pipes were tested at the same locations.

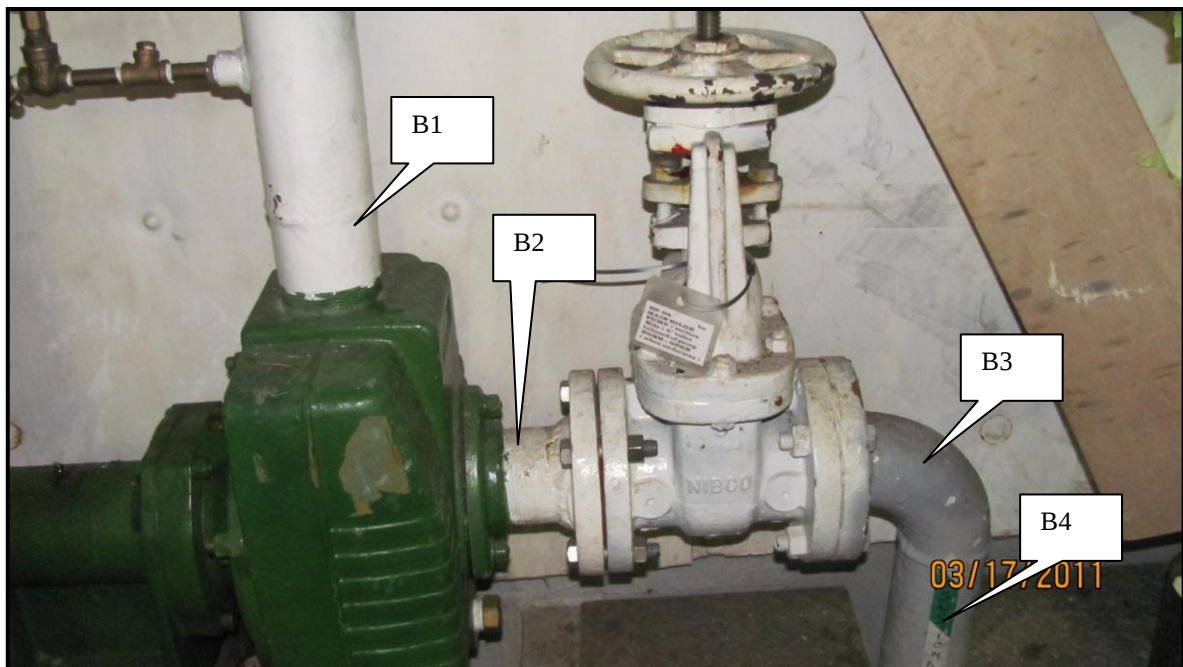


Figure 2 General view of the bilge pump and associated piping.



Figure 3 General view of the Fwd. Void Space through-hull penetration, Port Side.

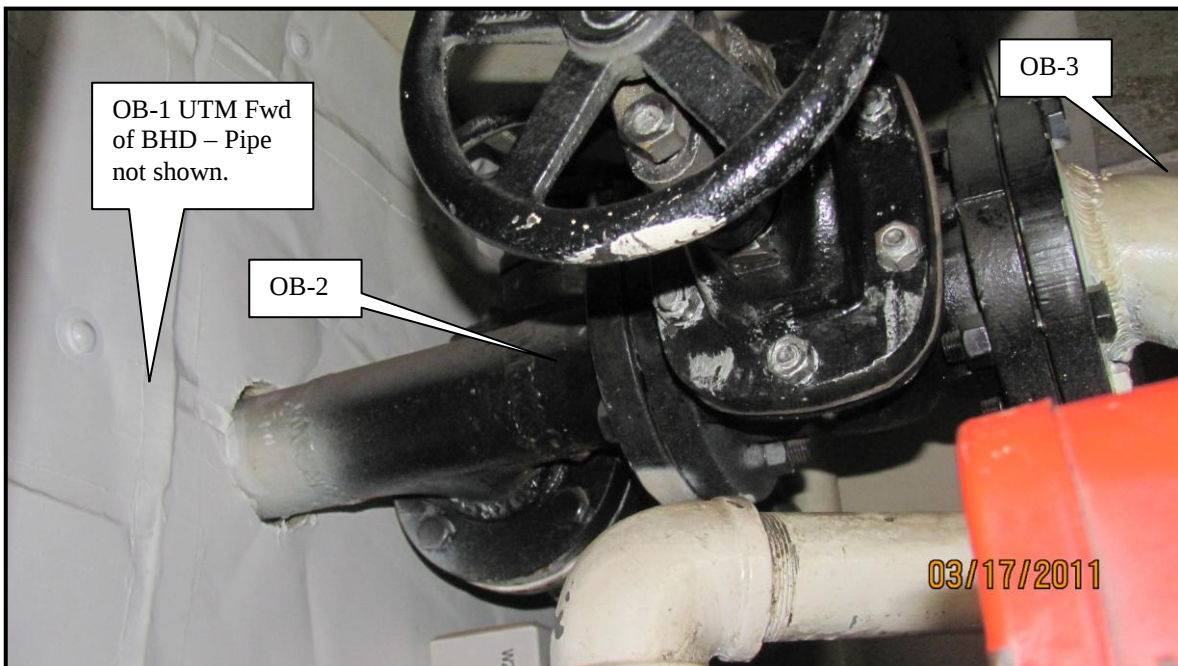


Figure 4 General view of the waste water to tank piping, Stbd. side showing the pipe coming from the Fwd. heads.

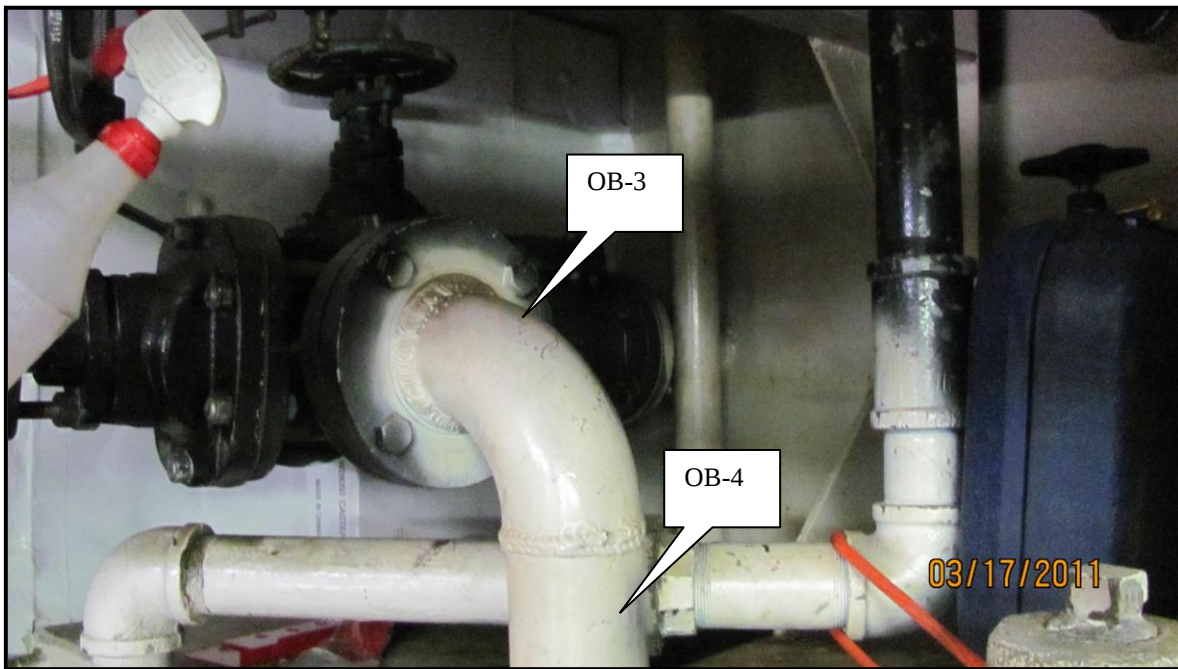


Figure 5 General view of the waste water to tank piping, Stbd. side showing the pipe Aft of the valve.

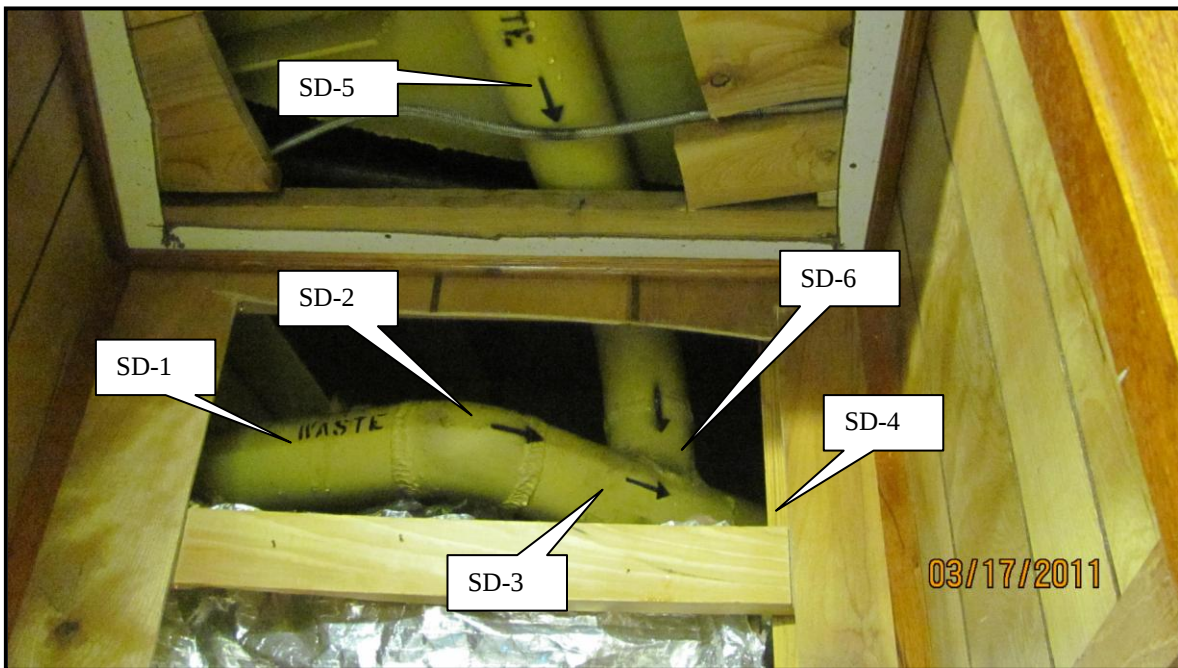


Figure 6 General view of the waste water to tank piping in closet, Stbd. Side