

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY

Received at London Office

25 AUG 1949

Date of writing Report 7-7-1949 When handed in at Local Office 7-7-1949 Port of NEWCASTLE, N.S.W.

No. in Reg. Book 90949 Survey held at Newcastle, N.S.W. Date: First Survey 12-5-48 Last Survey 30-6-1949 (Number of Visits 58)

on the Steel Single Screw Steamer "DENMAN" Tons (Gross 2265 Net 1100)

Built at Newcastle, N.S.W. by whom built N.S.W. Govt. Engineering & Shipbuilding Undertaking. Yard No. 27 When built 1949

Engines made at Sunderland, England By whom made N.E. Marine Eng. Co. (1938) Ltd. Engine No. 4204 When made 1948

Boilers made at Sydney & Newcastle N.S.W. By whom made Babcock & Wilcox Boiler No. 736 Port 737 When made 1949

Registered Horse Power 1400 I.H.P. Owners Australian Shipbuilding Board Port belonging to Newcastle, N.S.W.

Nom. Horse Power as per Rule MN = 262 230 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

## ENGINES, &c.—Description of Engines Triple Expansion Reciprocating

Dia. of Cylinders - Length of Stroke - Revs. per minute - No. of Cylinders - No. of Cranks -

Dia. of Crank shaft journals as per rule - as fitted - Dia. of Crank pin - Crank webs Mid. length breadth - sbrunk Thickness parallel to axis - Mid. length thickness - Thickness around eye-hole -

Diameter of Thrust shaft under collars as per rule Approved as fitted 13 1/2" Diameter of Tunnel shaft as per rule Approved as fitted 12-5/8" Diameter of Screw shaft as per rule Approved as fitted 13-3/4" Is the Screw shaft fitted with a continuous liner the whole length of the stern tube. Yes

If the liner is in more than one length, are the joints burned Yes Through whole thickness If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Tight fit

If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated No Length of Stern Bush 4'-8" Diameter of Propeller 12'-6"

Pitch of Propeller Varying 14'-0" to 17'-6" No. of Blades 4 State whether Moveable No Total Surface 56.4 square feet.

No. of Feed Pumps fitted to the Main Engines Nil Diameter of ditto - Stroke - Can one be overhauled while the other is at work -

No. of Bilge Pumps fitted to the Main Engines Nil Diameter of ditto - Stroke - Can one be overhauled while the other is at work -

Total number and size of power driven Feed and Bilge Auxiliary Pumps 2 main feed 6"x9"x13", 1 Aux. feed 6"x9"x13", 1 Bilge 6"x9"x13"

No. and size of Pumps connected to the Main Bilge Line 1 Fire and Bilge 6"x9"x13", 1 Ballast pump 10"x9"x24"

No. and size of Ballast Pumps 1/10"x9"x24" No. and size of Lubricating Oil Pumps, including Spare Pump -

Are two independent means arranged for circulating water through the Oil Cooler Not fitted No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room E.R. 4/2 1/2", 1/4" B.R. 2/2 1/2" and in Holds, &c. No. 1 Hold 2/2 1/2"—No. 2 Hold 2/2 1/2"

Tunnel Well 1/2 1/2" No. 3 Hold 2/2 1/2", No. 4 Hold 2/2 1/2"

No. and size of Main Water Circulating Pump Bilge Suctions 1/7" dia. No. and size of Donkey Pump Direct Suctions

to the Engine Room Bilges 1/4" Are all the Bilge Suction Pipes in hold and tunnel well fitted with strum-boxes Yes

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. Yes

Are all connections with the sea direct on the skin of the ship All except refrigeration cond. circ. inlet which is connected to a sea tube. Valves except Boiler & Evap. blow downs. All except Refrig. cond. circ. discharge.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line discharge.

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What Pipes are carried through the bunkers. No How are they protected -

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times. Yes

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the Screw Shaft Tunnel watertight. Yes Is it fitted with a watertight door. Yes worked from E.R. grating at main deck level.

## MAIN BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers Boilers 1518 sq. ft., s/heaters 348 sq. ft.

Is Forced Draft fitted Yes No. and Description of Boilers 2 B&W, 3 Pass Marine with S/Heater. Working Pressure 245 lbs. per sq. in..

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? -

PLANS. Are approved plans forwarded herewith for Shafting 2-11-47 Main Boilers 26-2-48 Auxiliary Boilers - Donkey Boilers - (If not, state date of approval)

General Pumping Arrangements Yes Oil fuel Burning Piping Arrangements Yes

SPARE GEAR. State the articles supplied:— As per Rules see attached list forwarded herewith.

Total for ship = 2x1518 = 3036  
2x348 = 696  
3732 sq ft

7.21.  
-47,  
-48,  
-9-48  
-5-49  
94

The foregoing is a correct description.

STATE DOCKYARD.

N.S.W. Govt. Engineering and Shipbuilding Undertaking.

*Danduff* Manufacturer.



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012591-012591-0109

Dates of Survey while building

During progress of work in shops During erection on board vessel Total No. of visits	12 & 26-5-48, 29-6-48, 28-7-48, 14 & 16-9-48, 15 & 25-10-48, 15 & 29-11-48, 9 & 21-12-48, 9-1-49, 3-3-49, 4, 6 & 19-4-49, 3, 4, 5, 9, 11, 25 & 30-5-49, 18 & 30-6-49, 21 & 23-7-48, 1, 6, 20, 21, 22, 27 & 30-6-49.
	13 & 17-8-48, 23-9-48, 14 & 17-1-49, 7-2-49, 4 & 15-3-49, 13, 20 & 26-4-49, 25 & 27-5-49, 7, 8, 10, 14, 15, 17, 20, 21, 22 & 30-6-49.
	58

Dates of Examination of principal parts—Cylinders → Slides -  
 Covers - Pistons - Rods -  
 Connecting rods - Crank shaft - Thrust shaft 26-5-48, 25-10-48, 29-11-48  
 Tunnel shafts 26-5-48, 25-10-48, 29-11-48 Screw shaft 26-5-48, 25-10-48, 29-11-48 Propeller 23-9-48 and 4-4-49  
 Stern tube 29-6-48 Engine and boiler seatings 14-1-49 Engines holding down bolts 4-3-49  
 Completion of pumping arrangements 7-6-49 Boilers fixed 29-11-48 Engines tried under steam 21 & 22-6-49  
 Completion of fitting sea connections 23-9-48 Stern tube 23-9-48 Screw shaft and propeller 23-9-48  
 Main boiler safety valves adjusted 14-6-49 Thickness of adjusting washers -  
 Material of Crank shaft Mild steel Identification Mark on Do. Lloyd's No. 4204 T.G. 8-9-48  
 Material of Thrust shaft " " Identification Mark on Do. Lloyd's No. 180, W.C.E. 29-11-48  
 Material of Tunnel shafts " " Identification Marks on Do. Lloyd's No. 178 & 179 W.C.E. 29-11-48  
 Material of Screw shafts " " Identification Marks on Do. Lloyd's No. 177 W.C.E. 29-11-48  
 Material of Steam Pipes Solid drawn M.S. Test Pressure 720 lbs. spare Lloyd's No. 196 W.C.E. 26-4-49  
 Date of Test 15-10-48 to 30-5-49  
 Is an installation fitted for burning oil fuel Yes ✓ Is the flash point of the oil to be used over 150°F Yes ✓  
 Have the requirements of the Rules for carrying and burning oil fuel been complied with Yes ✓  
 Is this machinery duplicate of a previous case No If so, state name of vessel -

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under Special Survey in conformity with the Rules approved plans and Secretary's letter.

The main engine was built by Messrs North Eastern Marine Engine Co. for particulars of which see Sunderland Rpt. 4 No. 34992 dated 1st. November, 1948.

The materials and workmanship are of good quality and to my satisfaction. The machinery has been properly installed, tested under working conditions, found satisfactory and in my opinion, is eligible to be classed in the Society's Register Book with the following records and notations.

+LMC 6-49, TS(C.L.), 2 W.T. Boilers 245 lbs. (Spt. 220 lbs.) F.D.

At the time the vessel was handed over to the Owners, temporary boiler mountings as follows were fitted, main safety valves and auxiliary steam stop valves on both boilers and superheater safety valve on the port boiler, it is intended to replace these valves at the first opportunity.

The interim certificate has been endorsed subject to "Both boilers auxiliary stop valves, main safety valves and port boiler superheater safety valve being replaced and all safety valves being adjusted under steam at the first opportunity".

**PARTICULARS OF SAFETY VALVES NOW FITTED.**

Port Boiler : Drum 2 x 2 1/2" diam. high lift, Adjusting washes P .502" S .476"

S/Heater 1 x 2 1/2" " " " " " .688"

Starboard Boiler: Drum 2 x 2 1/2" " " " " " P. .407" S. .471"

S/Heater 1 x 2" " " " " " .714"

The amount of Entry Fee £ : : When applied for,  
 Special £ 235 5 0 7/7/ 19 49  
 Donkey Boiler Fee £ : : When received,  
 Travelling Expenses (if any) £ 50 : 0 0 25/7/ 19 49

*D. B. E. Ebbens*  
 Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

+LMC 6.49

FITTED FOR OIL FUEL 6.49 FLASH POINT ABOVE 150°F

F.D. C.L. 2 WTB 245 lb. (Spt 220 lb.)



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The Surveyors are requested not to write on or below the space for Committee's Minute.

Certificate to be sent to