

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 23 JUN 1941

Date of writing Report 19 When handed in at Local Office 6/6/41 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle on Tyne Date, First Survey 3 Jun 1940 Last Survey 31/5/1941
Reg. Book. on the S/S EMPIRE FORM (Number of Visits 86)

Built at Newcastle By whom built Swan, Hunter & Wigham Richardsons Yard No. 1694 Tons {Gross 7047 Net 5178} When built 1941-

Engines made at do By whom made do Engine No. 1694 When made "

Boilers made at do By whom made do Boiler No. 1694 When made "

Registered Horse Power Owners Port belonging to NEWCASTLE

Nom. Horse Power as per Rule 433. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended Ocean going.

ENGINES, &c.—Description of Engines 3 cyl Triple Exp Recip. Revs. per minute 72 Service

Dia. of Cylinders 23, 39, 66 Length of Stroke 45" No. of Cylinders 3 No. of Cranks 3
Crank shaft, dia. of journals as per Rule 13.136 Crank pin dia. 13 3/8" Crank webs Mid. length breadth ✓ Thickness parallel to axis 8 3/8" ✓
as fitted 13 3/8" Mid. length thickness ✓ Thickness around eye-holds 5 1/2" at journals ✓
Intermediate Shafts, diameter as per Rule 12.5" Thrust shaft, diameter at collars as per Rule 13.136 5 1/2" at pins ✓
as fitted 13 1/4" as fitted 14" ✓

Tube Shafts, diameter as per Rule ✓ Screw Shaft, diameter as per Rule 13.97" Is the {tube} shaft fitted with a continuous liner {Yes} ✓
as fitted ✓ as fitted 14 1/2" ✓ {screw} ✓

Bronze Liners, thickness in way of bushes as per Rule 23.75" Thickness between bushes as per Rule 18/32" Is the after end of the liner made watertight in the propeller boss Yes ✓
as fitted 24/32" as fitted 23/32" ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner In one piece ✓

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 a tight fit ✓
If two liners are fitted, is the shaft lapped or protected between the liners ✓ Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 58 1/2" ✓

Propeller, dia. 17'-6" Pitch 16'-3" No. of Blades 4 Material Cast iron whether Moveable No Total Developed Surface 105 sq. feet

Feed Pumps worked from the Main Engines, No. None Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
Bilge Pumps worked from the Main Engines, No. 2 Diameter 5 1/4" Stroke 26" Can one be overhauled while the other is at work Yes ✓

Indep't Feed Pumps {No. and size Two: - 1 main 9 1/2 x 7 x 18 19 SP 5 1/2 x 7 1/2 x 15 Pumps connected to the Main Bilge Line {No. and size Three in Ball 10 1/2 x 12 1/2 x 21; Two 5 1/4 dia x 26" 200 ton/hr each 43 ton/hr} How driven Steam driven ✓ by main engine ✓

Ballast Pumps, No. and size one 10 1/2 x 12 1/2 x 21 Lubricating Oil Pumps, including Spare Pump, No. and size none ✓
Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 3 of 3 dia. In Tunnel well 1 of 2 1/2 dia. In Pump Room ✓ In Holds, &c. No 1 Hold, 2 of 3; No 2 Hold, 2 of 3; Cross bunker 2 of 3; No 3 Hold, 2 of 3; No 4 Hold, 2 of 3

Main Water Circulating Pump Direct Bilge Suctions, No. and size one 8" dia. on P side Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one 5" dia. on S side ✓ Are all the Bilge Suction Pipes in holds 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 Sea Connections fitted direct on the skin of the ship Yes ✓ Are they fitted with Valves or Cocks both ✓

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates. Yes ✓ Are the Overboard Discharges above or below the deep water line below ✓
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 pass through the bunkers Bilge suction to Two 2 + 1 Holds ✓ How are they protected by lumber boards ✓
What pipes pass through the deep tanks none ✓ Have they been tested as per Rule ✓

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 Shaft Tunnel watertight Yes ✓ Is it fitted with a watertight door No ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 6080 sq. ft.

Is Forced Draft fitted Yes ✓ No. and Description of Boilers Two S.E. Boilers Working Pressure 220 lbs ✓
IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes ✓
IS A DONKEY BOILER FITTED? No ✓ If so, is a report now forwarded? ✓

Is the donkey boiler intended to be used for domestic purposes only ✓
PLANS. Are approved plans forwarded herewith for Shafting No. 20/5/40 & 13/6/40 Main Boilers 15/5/40 Auxiliary Boilers ✓ Donkey Boilers ✓
(If not state date of approval) 4/16/40 ✓

Superheaters ✓ General Pumping Arrangements 29/12/40 Oil fuel Burning Piping Arrangements ✓
Pumping Arrgt in E & B Spaces 9/1/41
SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓
State the principal additional spare gear supplied One Cast iron propeller, one complete bottom end bearing, & one top end bearing, one set metallic packing complete for one piston rod, one set Coupling bolts, one set of pads for one face of mitchell thrust block, one set bilge pump valves & seats, one set of air pump valves, one valve lid for main feed check valves, one set of patent packing rings for HP Piston and one set of ditto for HP Piston Valve, 12 stoppers for boiler tubes, one set fore bars for one furnace.

The foregoing is a correct description, FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

G. J. Sweeney Manufacturer. DIRECTOR.



003434-003443-0042

1940
 Jan 3, 4, 7, 13, 14, 25. Feb. 23, 26. Oct. 10, 23. Nov. 5, 8, 13, 14, 15, 18, 25, 26, 29.
 1941
 Jan 2, 4, 16, 17, 18, 19, 23, 27, 30. Jan 2, 7, 10, 13, 16, 20, 22, 23, 27, 29, 31. Feb. 5, 6, 7, 10.
 12, 13, 14, 18, 19, 21, 24, 25, 26, 28. Mar. 3, 5, 7, 11, 17, 20, 21, 26, 27, 28, 31. Apr. 3, 7, 9, 11, 18, 21, 22.
 25, 29. May 2, 6, 7, 8, 14, 23, 27, 28, 29, 30, 31.
 Total No. of visits 86

Dates of Examination of principal parts—Cylinders 23/12/40 Slides 24/2/41 Covers 23/12/40
 Pistons 24/2/41 Piston Rods 24/2/41 Connecting rods 24/2/41
 Crank shaft 23/12/40 Thrust shaft 30/12/40 Intermediate shafts 22/1/41 & 19/2/41
 Tube shaft ✓ Screw shaft 31/1/41 Propeller 28/2/41
 Stern tube 13/2/41 Engine and boiler seatings 13/2/41 Engines holding down bolts 27/3/41
 Completion of fitting sea connections 6/3/41
 Completion of pumping arrangements 23/5/41 Boilers fixed 28/4/41 Engines tried under steam 23/5/41 & 31/5/41
 Main boiler safety valves adjusted 23/5/41 Thickness of adjusting washers Port Blr 7/16" : aft V. 9/16"
 Stbr Blr " 7/16" " 13/32"
 Crank shaft material 7. Steel Identification Mark 8973 23-12-40 AW Thrust shaft material 7. Steel Identification Mark 9899 HA1 926
 Intermediate shafts, material 7. Steel Identification Marks 9899 HA1 Tube shaft, material ✓ Identification Mark ✓
 928 to 934 inclusive
 Screw shaft, material 7. Steel Identification Mark 9899 HA1 DB. 927 Steam Pipes, material S.D. Steel Test pressure 660 lbs Date of Test 11/4/41 to 8/5/41
 Is an installation fitted for burning oil fuel No Is the flash point of the oil to be used over 150°F. ✓
 Have the requirements of the Rules for the use of oil as fuel been complied with ✓
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with ✓
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with Not required
 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 constructed under special survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good.

The machinery has been efficiently fitted on board, tried under working conditions with satisfactory results, and is eligible, in my opinion for record + LMC 5.41 and the notations 2.5B.FD, 220lbs., CL.

NEWCASTLE-ON-TYNE

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

The amount of Entry Fee ... £ 500 : When applied for,
 Special & Supervision of Spec. £ 112 : 9 : 20 JUN 1941
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 19

A Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 1 JUL 1941

Assigned + Linc. 5.41
 J.D., C.A.

