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REPORT ON OIL ENGINE MACHINERY.

No 101940

1 APR 1944

Received at London Office

Date of Survey Report 27 MAR 1944

When handed in at Local Office

7 MAR 1944

Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle on Tyne

Date, First Survey 13th April, 1943 Last Survey 22nd February 1944

Number of Visits 90

on the Single Screw vessel

"PORT MACQUARIE."

Tons: Gross 9071.80 Net 5485.32

Built at Newcastle (Wallsend) By whom built Swan, Hunter, & Wigham Richardson Ltd Yard No. 1685 When built 1944

Engines made at " (Walker) By whom made ditto Engine No. 1760 When made 1944

Donkey Boilers made at Annan By whom made Cochran & Co (Annan) Ltd Boiler No. 15416 When made

Brake Horse Power 6,600 Owners The Port Line Port belonging to London

Nom. Horse Power as per Rule 1291 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended Open sea service.

OIL ENGINES, &c. Type of Engines Swan, Hunter - Doreford opposed piston 2 or 4 stroke cycle 2. Single or double acting Single

Maximum pressure in cylinders 640 lbs ✓ Diameter of cylinders 670 m/m ✓ Length of stroke 2320 m/m ✓ No. of cylinders 6 ✓ No. of cranks 6 of three ✓

Mean Indicated Pressure 87 lbs ✓ Centres of side rods 1300 m/m ✓ Is there a bearing between each crank Yes, between each 3 throw.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1044 m/m ✓ Weight 3.92 tons ✓ Means of ignition Compression ✓ Kind of fuel used Heavy fuel oil ✓

Revolutions per minute 115 ✓ Flywheel dia. 8'2" ✓ Crank pin dia. 5'7" ✓ Crank Webs Mid. length breadth 754 m/m ✓ Thickness parallel to axis 300 m/m ✓

Crank Shaft, { Semi built dia. of journals as per Rule 493 ✓ as fitted 530 ✓ Crank pin dia. 530 m/m ✓ with 175 m/m central hole. ✓ Mid. length thickness 300 m/m ✓ Thickness around eye hole 221 m/m ✓

Flywheel Shaft, diameter as fitted 460 m/m ✓ Intermediate Shafts, diameter as fitted 16 7/16 ✓ Thrust Shaft, diameter at collars as fitted 500 m/m ✓

Tube Shaft, diameter as per Rule as fitted ✓ Screw Shaft, diameter as fitted 17.38 ✓ as fitted 18 1/2 ✓ Is the shaft fitted with a continuous liner Yes ✓

Bronze Liners, thickness in way of bushes as per Rule 26 7/32 ✓ as fitted 7/8 ✓ Thickness between bushes as per Rule 20/32 ✓ as fitted 1 3/16 ✓ Is the after end of the liner made watertight in the propeller boss Yes ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner In one length ✓

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 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 6'10" ✓

Propeller, dia. 18'0" ✓ Pitch 14'3" ✓ No. of blades 4 ✓ Material M. Buz ✓ whether Moveable Solid ✓ Total Developed Surface 121 sq. feet

Method of reversing Engines compressed air ✓ Is a governor or other arrangement fitted to prevent racing of the engine when deaccelerated Yes ✓ Means of lubrication by hand lever ✓

Forced Thickness of cylinder liners 25 m/m ✓ Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged ✓ If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓

Cooling Water Pumps, No. 2 for Piston & Jacket cooling (Distilled water) ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes (for S.W. Pumps) ✓

Bilge Pumps worked from the Main Engines, No. nil ✓ Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size One Bilge P. 135 tons/hr & one Ballast P. 250 tons/hr ✓ How driven Elec motor. ✓ Elec. motor. ✓

Is the cooling water led to the bilges No ✓ If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements ✓

Ballast Pumps, No. and size One of 250 tons/hr. ✓ Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 of 66 tons/hr each. ✓

Are two independent means arranged for circulating water through the Oil Cooler Yes ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 4 of 3 1/2", 4 of 2" for oil bilges; Funnel well 1 of 2 1/2" ✓ In Pump Room ✓

In Holds, &c. No 1 Hold, 2 of 3 1/2"; No 2 Hold, 2 of 3 1/2"; No 3 Hold, 2 of 3 1/2"; No 4 Hold, 2 of 3 1/2"; No 5 Hold, 2 of 3 1/2" ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 6" dia ✓

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes ✓ Are the Bilge Suctions in the Machinery Spaces 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 platform 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 nil ✓ How are they protected ✓

What pipes pass through the deep tanks nil ✓ 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 ✓

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓

Main Air Compressors, No. nil ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. 2 ✓ No. of stages 3 ✓ Diameters ✓ Stroke ✓ Driven by Elec. motors ✓

Small Auxiliary Air Compressors, No. 1 ✓ No. of stages 2 ✓ Diameters ✓ Stroke ✓ Driven by Steam ✓

What provision is made for first Charging the Air Receivers Small Steam-driven Compressor ✓

Scavenging Air Pumps, No. Oil Dble acting ✓ Diameter 1852 m/m ✓ Stroke 1480 m/m ✓ Driven by main engine crank shaft ✓

Auxiliary Engines crank shafts, diameter as per Rule 8" dia journals, 6 1/4" dia Crank pins ✓ Position 2 on Port & 1 on Starboard in Main Eng Room ✓

Have the Auxiliary Engines been constructed under special survey Yes ✓ Is a report sent herewith See Nottingham Cert. C1836 ✓ Copies attached C1837 & C1838 ✓

AIR RECEIVERS: - Have they been made under survey *Yes* ✓ State No. of Report or Certificate ✓
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes* ✓
 Can the internal surfaces of the receivers be examined and cleaned *Yes* ✓ Is a drain fitted at the lowest part of each receiver *Yes* ✓
Injection Air Receivers, No. ✓ Cubic capacity of each Internal diameter thickness
 Seamless, lap welded or riveted longitudinal joint ✓ Material Range of tensile strength Working pressure by Rules Actual
Starting Air Receivers, No. 2. ✓ Total cubic capacity 350 cub. ft Internal diameter 5'0" ✓ thickness 1 9/32" ✓
 Seamless, lap welded or riveted longitudinal joint *T.R. Dble butt straps.* Material *M. Stl.* Range of tensile strength 30 to 34 tons ✓ Working pressure by Rules 604 lbs/□ Actual 600.

IS A DONKEY BOILER FITTED? *Yes* ✓ If so, is a report now forwarded? *Yes* ✓
 Is the donkey boiler intended to be used for domestic purposes only *No* ✓
PLANS. Are approved plans forwarded herewith for Shafting *Or. Sh. 13-3-42* ✓ Receivers *21-12-42* ✓ Separate Fuel Tanks *26-6-43* ✓
 (If not, state date of approval) *T.S. etc. 1-7-42* ✓
 Donkey Boiler *Elc. Rpt 66953* ✓ General Pumping Arrangements *27-8-42* ✓ Pumping Arrangements in Machinery Space *1-12-42* ✓
 Oil Fuel Burning Arrangements *10-9-43* ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes* ✓
 State the principal additional spare gear supplied *1 Main Piston Head, 1 upper + 1 Lower Piston Rods, 2 Skirts for Lower Pistons (1 light & 1 heavy), 1 Skirt for Upper Piston, 1 set Top end Bearings for Scavenge Pump, 1 Relief Valve for M.E. Cylinders, 1 set Ball Brgs + Roller Brgs for Camshaft drive.* ✓

The foregoing is a correct description. *P. H. Lane*
 SWAN, HUNTER, & WILKINSON RICHARDSON, LTD. Manufacturer.

Dates of Survey while building
 During progress of work in shops - *1942*
 During erection on board vessel - *1944*
 Total No. of visits *90*
 APR. 13-14-16-23. JUNE 4-8-9-10-17-18-21-23-24-25-29-30. JULY 16-19-21-23-27-28-29. AUG. 14-16-19-20-24. SEPT. 3-9-10-13-14-15-17-20-21-22-30.
 OCT. 4-12-14-18-19-25. NOV. 5-12-15-17-18-23-24-25-26. DEC. 1-2-3-6-7-8-9-10-13-14-15-16-20-21-23-27.
 1944 JAN. 11-17-18-21-26-27-31. FEB. 7-7-8-10-12-14-17-18-19-21-22.

Dates of Examination of principal parts - Cylinders *12th to 19th Oct. 43.* Pistons *12th + 17th / 10-43* Rods *as Pistons* Connecting rods *23-11-43*
 Crank shaft *21-9-43* Flywheel shaft *as Cr. Sh.* Thrust shaft *as Cr. Sh.* Intermediate shafts *16-8-43* Tube shaft ✓
 Screw shaft *17-6-43* Propeller *17-6-43* Stern tube *29-7-43* Engine seatings *27-7-43* Engines holding down bolts *11-1-44*
 Completion of fitting sea connections *19-8-43* Completion of pumping arrangements *18-2-44* Engines tried under working conditions *in Works 6-18-12-43 on board 12-2-44*
 Crank shaft, Material *7 Stl.* Identification Mark *11747 LCD.* Flywheel shaft, Material *7 Stl.* Identification Mark *as Cr. Sh.*
 Thrust shaft, Material *7 Stl.* Identification Mark *11747 LCD.* Intermediate shafts, Material *7 Stl.* Identification Marks *12485-HAI.*
 Tube shaft, Material ✓ Identification Mark ✓ *17-3-43* Screw shaft, Material *7 Stl.* Identification Mark *12485-HA.*

Identification Marks on Air Receivers
Two Starting Air Receivers: **LLOYD'S TEST**
 WT 800 LBS
 WP 600 LBS
 16-9-43 AW AW

Is the flash point of the oil to be used over 150° F. *Yes* ✓
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes* ✓
 Description of fire extinguishing apparatus fitted *Steam fire extinguisher under Vent. Donk. Blr. in E.R. Comp. Ten - 2 gall. Extinguishers.*
 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 desired* ✓
 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, installed satisfactorily and tried under working conditions with good results. The materials and workmanship are good. The machinery of this vessel is eligible, in my opinion, for record + L.M.C. 2.44, and the notations T.S. CL., D.B. 105 lb WP, OIL ENG.*

The amount of Entry Fee ... *6 : 0* ✓ When applied for, **30 MAR 1944**
 Special *7 : 10 5/16* ✓
 Elc. Welded Constr. *12 : 12* ✓
 Donkey Boiler Fee *4 : 4* ✓
 Travelling Expenses (if any) : : : ✓ When received, 19

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

Committee's Minute **FRI. 21 APR 1944**
 Assigned *+ L.M.C. 2.44 Cl Oil Eng DB-105 lb*



NEWCASTLE-ON-TYNE

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