

REPORT ON OIL ENGINE MACHINERY.

No 100073

Received at London Office - 9 JAN 1942

Date of writing Report 19 When handed in at Local Office 3/1/42 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Newcastle on Tyne Date, First Survey 29/1/41 Last Survey 31/12/1941
 Reg. Book. Number of Visits 81

on the Single Screw vessel BRITISH CHARACTER Tons Gross 8453
Triple Net 4897
Quadruple

Built at Newcastle By whom built Swan, Hunter & Wigham Richardson Ltd Yard No 1698 When built 1941
 Engines made at ditto By whom made ditto Engine No 1698 When made 1941
 Donkey Boilers made at ditto By whom made ditto Boiler No. 1698 When made 1941
 Brake Horse Power 3100 Owners Port belonging to London
 Nom. Horse Power as per Rule 687 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which vessel is intended Ocean going, Carrying Petroleum in bulk

OIL ENGINES, &c. Type of Engines Opposed piston, airless injection 2 or 4 stroke cycle 2. Single or double acting Single
 Maximum pressure in cylinders 568 lb Diameter of cylinders 600 m.m. Length of stroke 2320 m.m. No. of cylinders 4 No. of cranks 4 three thro
 Mean Indicated Pressure 85 lb 23 7/8 9 1/2 1200 m.m. and between Centres of side rods
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 m.m. Is there a bearing between each crank between each three thro
 Revolutions per minute 105 Flywheel dia. 425 m.m. Weight 24 tons-ft² Means of ignition Compression Kind of fuel used heavy oil fuel
 Crank Shaft, Solid forged dia. of journals as per Rule 425 m.m. Crank pin dia. 450 m.m. Crank Webs Mid. length breadth 650 m.m. Thickness parallel to axis 255 7/8
Semi built All built as fitted 450 m.m. (Centre Cr. pin 432 m.m.) shrunk Thickness around eye hole 200
 Flywheel Shaft, diameter as per Rule 425 m.m. Intermediate Shafts, diameter as fitted 16 7/8 Thrust Shaft, diameter at collars as fitted 450
 Tube Shaft, diameter as per Rule None Screw Shaft, diameter as per Rule 14 6/8 Is the tube shaft fitted with a continuous liner Yes
as fitted as fitted 16 7/8 as fitted 9 1/6 as fitted 29 1/2 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 a tight fit
 If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No Length of Bearing in Stern Bush next to and supporting propeller 5' 8 1/2"

Propeller, dia. 16' 3" Pitch 12' 3" No. of blades 4 Material M. Buz whether Moveable No Total Developed Surface 90 sq. feet
 Method of reversing Engines compressed air Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication 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

Cooling Water Pumps, No. 2 for Distilled Water for Jackets Is the sea suction provided with an efficient strainer which can be cleared within the vessel In S.W. System
 Bilge Pumps worked from the Main Engines, No. None Diameter Stroke Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line { No. and Size Three vry 1 Ballast Pump 10x11x10 dup, 1 Bilge 1 Sanitary each 7x7 1/2 x 8 dup
 How driven all independent steam driven each 80 tons/hr

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 Yes
 Ballast Pumps, No. and size one 10x11x10 duplex Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one 8x7x18 simplex 30 tons/hr
 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 3 of 3 1/2" dia; 2 of 2 1/2" to OF Gutterways In Pump Rooms 2 of 4" dia

In Holds, &c. 2 of 2 1/2" dia in Fore Hold; 2 of 2" in Store Room; 1 of 2" in Fore Hold Pump Room Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one 6" to Ballast P.; one 5" to Bilge Pump.
 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 None How are they protected Yes
 What pipes pass through the deep tanks None Have they been tested as per Rule Yes
 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 None machy aft Is it fitted with a watertight door Yes worked from Yes
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes

Main Air Compressors, No. None (Airless Inj) No. of stages 3 Diameters Stroke Driven by Steam Eng.
 Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 11 3/4" Stroke 7" Driven by Steam Eng.
 Small Auxiliary Air Compressors, No. None No. of stages 3 Diameters Stroke Driven by Yes

What provision is made for first Charging the Air Receivers by steam driven compressor
 Scavenging Air Pumps, No. One Double acting Diameter 1960 m.m. Stroke 608 m.m. Driven by Lever from main engine
 Auxiliary Engines crank shafts, diameter as per Rule No. 2 Steam driven 30KW Position 2" " Air Compressor sets
as fitted all on Star Side in E.R.

Have the Auxiliary Engines been constructed under special survey No (Steam only) Is a report sent herewith Yes

AIR RECEIVERS:—Have they been made under survey Yes State No. of Report or Certificate Letter 2800 lbs wt for 600 lbs WP.
 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. None 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 280 lbs ft Internal diameter 4'-1 1/2" thickness 1/32"
 Seamless, lap welded or riveted longitudinal joint ✓ Material 5 Range of tensile strength 29 & 38 tons Working pressure by Rules 602 lbs Actual 600 lbs

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. - also for Steam Amplifiers
PLANS. Are approved plans forwarded herewith for Shafting 1/8/40 Receivers 4/10/40 Separate Fuel Tanks ✓
 Donkey Boilers 9/9/40 General Pumping Arrangements 5/11/40 Pumping Arrangements in Machinery Space 1/2/41
 Oil Fuel Burning Arrangements 18/2/41

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes
 State the principal additional spare gear supplied 1 Hoop in Special Bearing, 1 non-ret. Air Starting Valve, 1 Cyl. relief valve, 1 Fuel pump body complete with Suct. & deliv. valves, 1 upper & 1 lower piston skirts, 5 piston rings for 4 cyls, 4 Scraper rings, 6 Rubber hose pipes for upper piston water service, one 6 fed lubricator for 4 cyls, 2 complete sets of springs, 2 complete sets of joints, 1 day gauge glasses, with 1 day. packing rings, 1 lid for Feed Check Valve, 12 boiler tubes, 1 Sept. Valve Spring, 1 set of cages for feed water filter, 1/2 set of Springs & valves for Aux. Compr., 5 strainer bags, 2 burner bodies & caps, 12 Wryzles & 12 diaphragms for O.F. burning installation
 The foregoing is a correct description,
 SWAN, HUNTER, & WILSON, EDINBURGH, LTD.

J. J. Sweeney Manufacturer.

Dates of Survey while building
 During progress of work in shops -- 1941 Jan 29. Mar. 17. 18. Apr. 9. 18. May 1. 5. 9. 21. 23. 28. June 5. 10. 11. 18. 20. 25. 27. July 1. 3. 16. 18. 23. 24.
 During erection on board vessel -- Aug. 1. 5. 8. 11. 13. 14. 17. 18. 19. 20. 21. 22. 28. 29. Sep. 1. 4. 5. 8. 9. 12. 16. 17. 18. 22. 25. 26. Oct. 3. 6. 8. 9. 10. 13. 17. 20.
 Total No. of visits 81

Dates of Examination of principal parts—Cylinders 9th to 12th/10/41 Covers ✓ Pistons 30/10/41 Rods 30/10/41 Connecting rods 31/10/41
 Crank shaft 13/10/41 Flywheel shaft 13/10/41 Thrust shaft 13/10/41 Intermediate shafts 16/10/41 Tube shaft ✓
 Screw shaft 21/5/41 Propeller 21/5/41 Stern tube 17/8/41 Engine sealings 1/9/41 Engines holding down bolts 2/12/41
 Completion of fitting sea connections 1/9/41 Completion of pumping arrangements 12/12/41 Engines tried under working conditions 15th, 17th & 31st Dec 1941
 Crank shaft, Material F.S.H Identification Mark 9165.L.C.D. Flywheel shaft, Material F.S.H Identification Mark as Crank shaft
 Thrust shaft, Material " Identification Mark as Crank shaft Intermediate shafts, Material F.S.H Identification Marks 10377 HAI 27 + 28.
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material F.S.H Identification Mark 10377 HAI. 25.
 Identification Marks on Air Receivers Lloyds Test 800 lbs. WP 600 lbs. 13-10-41 A.W. and

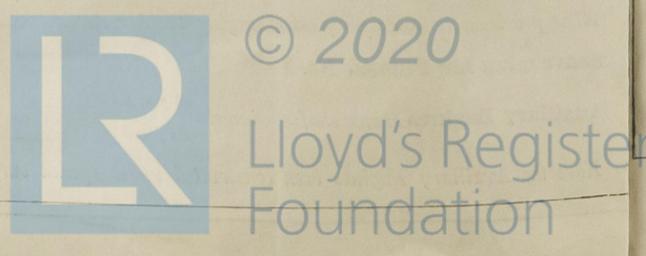
Is the flash point of the oil to be used over 150° F. Yes
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ If so, have the requirements of the Rules been complied with ✓
 If the 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 Yes If so, state name of vessel British Harmony, Yard No 1696. W.C. Rpt No.

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 main engine was tested under full load in the works and afterwards the Elec. Welded construction Bedplate, Columns & Entablature were examined and found in good condition.
The machinery has been efficiently installed on board the vessel, tested under working conditions (vessel moored) with satisfactory results, and is eligible in my opinion for record + LMC 12.41, and the notations 2 DB. WP. 150 lbs. ce. Oil Sup. machy aff.

The amount of Entry Fee .. £ 6 : 0 :
 Special .. £ 109 : 7 :
 2 w. Coastm .. £ 12 : 12 :
 Donkey Boiler Fee ... £ 23 : 10 :
 2 Starting Air Receivers .. £ 4 : 4 :
 Travelling Expenses (if any) .. £ : :
 When applied for, 8 JAN 1942
 When received, 19

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

Committee's Minute FRI. 23 JAN 1942
 Assigned + LMC 12.41 CH
2 DB 150 lb



IN DUPLICATE

NEWCASTLE-ON-TYNE

Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)