

REPORT ON OIL ENGINE MACHINERY.

No. 33545

3- DEC 1942

Received at London Office

Date of writing Report 19 When handed in at Local Office 25 Nov 1942 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 15 Jan Last Survey 24 Nov 1942
 Reg. Book. Number of Visits 55
 on the Single "HARPAGUS" Tons Gross 7271
Triple Screw vessel Net 5044
 Built at Sunderland By whom built Wm. Leasford & Son L^d Yard No. 695 When built 1942
 Engines made at Sunderland By whom made Stockton Chem. Eng^s & Riley Bros L^d Engine No. 695 When made 1942
 Donkey Boilers made at Stockton By whom made Stockton Chem. Eng^s & Riley Bros L^d Boiler No. 6623 When made 1942
 Brake Horse Power 2500 Owners Leasford & Son (Aman) L^d Port belonging to
 Nom. Horse Power as per Rule 516 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
 Trade for which vessel is intended 23 5/8 91 5/16

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 540 lbs Diameter of cylinders 600 in. Length of stroke Upper 980 in. No. of cylinders 3 No. of cranks 3 (3 throws)
 Mean Indicated Pressure 88 lbs Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 in. Is there a bearing between each crank Between each 3 throws
 Revolutions per minute 108 Flywheel dia. F. 2300 in. Weight F. 3 3/4 tons Means of ignition Compression Kind of fuel used -
 Crank Shaft, Solid forged dia. of journals as per Rule 418 in. Crank pin dia. 450 in. Mid. length breadth 650 in. Thickness parallel to axis 255 in.
 Flywheel Shaft, diameter as per Rule 418 in. Intermediate Shafts, diameter as per Rule 308 in. Thrust Shaft, diameter at collars as per Rule 418 in.
 Tube Shaft, diameter as per Rule 341 in. Is the shaft fitted with a continuous liner Yes.
 Bronze Liners, thickness in way of bushes as per Rule 18 in. Thickness between bushes as per Rule 13 1/2 in. 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 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 -
 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 4'-11"
 Propeller, dia. 15'-9" Pitch 11'-9" No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 90 sq. feet
 Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes. Means of lubrication
Hand forced Thickness of cylinder liners 25 in. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with
 non-conducting material Yes. 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. one engine driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel (i.e. w. cooling)
 Bilge Pumps worked from the Main Engines, No. none Diameter 1 @ 5 1/2" x 6" x 15" (Simplex) 4 Ballast pumps.
 Pumps connected to the Main Bilge Line No. How driven Steam
 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 1 @ 12 1/2" x 14" x 24" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one engine driven 8 1/2" x 6 1/2" x 15"
 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 @ 3" in E.R. 1 @ 3" in Tunnel well In Pump Room -
 In Holds, &c. N°1. 3 1/2" φ rs. N°2. 4" φ rs. N°3 (Keel tank) 4" φ rs. N°4. 3 1/2" φ rs. N°5. 4" φ rs. 1 @ 8" (Ballast pump) 1 @ 5" x 1 @ 1/2" Connected to
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast pump) 1 @ 5" x 1 @ 1/2" Connected to
 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 -
 What pipes pass through the deep tanks In' bilge Suctions 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 to 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 (Blkd) 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. Two No. of stages 3 Diameters 11 1/2" 11 1/2" 9 1/4" 23 1/4" Stroke 6 1/2" Driven by Steam Engine
 Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -
 Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -
 What provision is made for first Charging the Air Receivers (Steam driven Compressors)
 Scavenging Air Pumps, No. one Diameter 1400 in. Stroke 610 in. Driven by Lever from main engine.
 Auxiliary Engines crank shafts, diameter - Position -
 Have the Auxiliary Engines been constructed under special survey - Is a report sent herewith -

AIR RECEIVERS: — Have they been made under survey

Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned

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.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

Actual

IS A DONKEY BOILER FITTED?

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

(If not, state date of approval)

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

1 C.I. Propeller, 1 Cyl. liner & packer Complete, 1 main piston head & 24 rings, 4 fuel valves Complete, 8 spray plugs, 2 Side & Centre top & bottom end bearing bolts & nuts, 1 N.R. air starting valve, 1 Cyl. relief valve Complete, 4 Scavenge pump 1/2 discs, 1 fuel pump body with 1/4 in. shaft & shell, Crank liner with valves & clapper, 3 rubber hoses for upper piston cooling water, 6 links of chain for Camshaft drive, 3 Michell pads for tail shaft, plummer block & 3 for intermediate shaft bearings.

WILLIAM DOXFORD & SONS, Limited.

The foregoing is a correct description.

Wm. H. Purdie, Director.

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1942. Jan. 15, 27, 29, 30. Feb. 5, 11, 13, 14, 17. Mar. 2, 8, 14. May. 20, 26, 29. June. 1, 2, 3, 15, 17, 25, 29. July. 1, 14. During erection on board vessel - 20, 23, 29, 30, 31. Aug. 4, 5, 6, 7, 11, 12, 17, 24, 25, 31. Sep. 7, 14. Oct. 13, 20. Nov. 3, 4, 5, 6, 10, 11, 13, 16, 20, 23, 24. Total No. of visits 55

Dates of Examination of principal parts - Cylinders 26/5/42, 1/6/42, 29/5/42. Covers - 15/6/42. Pistons 20/4/42. Rods 15/6/42. Connecting rods 20/7/42.

Crank shaft 1/4/42. Flywheel shaft as crank. Thrust shaft as crank. Intermediate shafts 13/10/42. Tube shaft -

Screw shaft 14/9/42. Propeller 14/9/42. Stern tube 12/8/42. Engine sealings (Crank top) 24/11/42. Engines holding down bolts 13/11/42.

Completion of fitting sea connections 11/8/42. Completion of pumping arrangements 24/11/42. Engines tried under working conditions 20/11/42.

Crank shaft, Material Ingot Steel Identification Mark No 695 WHF 1/7/42. Flywheel shaft, Material as crank Identification Mark as crank.

Thrust shaft, Material as crank Identification Mark as crank. Intermediate shafts, Material Ingot Steel Identification Marks No 8002 (2), 8003, 54/13.

Tube shaft, Material - Identification Mark - Screw shaft, Material Ingot Steel Identification Mark WHF 13/10/42.

Identification Marks on Air Receivers K 1394/5. L.R. 21063. L.C.D. 24/5/42. N° 8009 WHF 14/9/42.

Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

Description of fire extinguishing apparatus fitted 1 1/2 dia W.I. Refined pipe for steam led around E.R. & B.L.R's 8. 29 gal. Phenol.

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

Is this machinery duplicate of a previous case

If so, state name of vessel

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

This machinery has been built under Special Survey in accordance with the approved plans & the requirements of the Society's rules. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under working conditions alongside quay with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (F.P. above 150° F.) Section 2a of the rules has been complied with & safety valves of boilers adjusted to working pressure in accordance with rule requirements.

The machinery is reliable in my opinion & have notation N° L.M.C. 11. 42 (oil engine), T.S (C.L.), 2 DB (120 lbs).

The amount of Entry Fee .. £ 6 : : When applied for,

Special ... £ 100 : 16 : 26 NOV 1942

Donkey Boiler Fee ... £ 12 : 12 : When received,

Travelling Expenses (if any) £ : : 19

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation