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# REPORT ON OIL ENGINE MACHINERY.

No. 34502

Received at London Office 22 JUL 1946

Date of writing Report 19 When handed in at Local Office 19 JUL 1946 Port of Sunderland  
No. in Survey held at Sunderland Date, First Survey Aug 20 45 Last Survey 17 July 1946  
Reg. Book. Number of Visits 74  
Single on the Twin Screw vessel "BRITISH COMMERCE" Tons Gross 609.2 Net 333.5  
Built at Sunderland By whom built Wm. Leifford & Sons Ld. Yard No. 436 When built 1946  
Engines made at Sunderland By whom made Wm. Leifford & Sons Ld. Engine No. 436 When made 1946  
Donkey Boilers made at Sunderland By whom made Stockton Chem. Engrs & Ship Bldg Ld. Boiler No. 6929, 6930 When made 1946  
Brake Horse Power 2500 Owners British Tanker Co Ld. Port belonging to London  
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 Tanker M.N. 534 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 640 lb/sq in Diameter of cylinders 600 in Length of stroke Upper 980 in, Lower 1340 in No. of cylinders 3 No. of cranks 3 Triple throws  
Mean Indicated Pressure 88 lb/sq in 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. 2300 in Weight 2.263 tons Means of ignition Compression Kind of fuel used —  
Crank Shaft, Solid forged dia. of journals as app'd 418 in Crank pin dia. 450 in Crank webs as app'd 308 in Mid. length breadth 650 in Thickness parallel to axis 255 in  
Semi built as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in  
All built as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in as fitted 450 in  
Flywheel Shaft, diameter as per Rule 450 in Intermediate Shafts, diameter as app'd 341 in Thrust Shaft, diameter at collars as app'd 450 in  
Tube Shaft, diameter as fitted 430 in Is the tube screw 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 16.5 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 no If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of tube shaft no If so, state type — Length of bearing in Stern Bush next to and supporting propeller 11'-11"  
Propeller, dia. 15'-9" Pitch 11'-6" No. of blades 4 Material Brass whether moveable no Total developed surface 85 sq. feet  
Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disengaged 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 Yes  
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. Two Is the sea suction provided with an efficient strainer which can be cleared within the vessel (F.W. Cooling)  
Bilge Pumps worked from the Main Engines, No. none Diameter — Stroke — Can one be overhauled while the other is at work —  
Pumps connected to the Main Bilge Line { No. and size Two Vert. duplex 4" x 8" x 8" & Ballast pump  
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 @ 10" x 12" x 10" duplex Power Driven Lubricating Oil Pumps, including spare pump, No. and size one engine driven 8 1/2" x 6 1/2" & one steam driven 5 1/2" x 6 1/2"  
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 2 @ 3 1/2" & 1 @ 6" in hull (4 ft) In pump room 4" P.S., 2 1/2" & 1 1/2" ballast pump in fwd room  
In holds, &c. (Tanker) Independent Power Pump Direct Suctions to the engine room bilges, No. and size 1 @ 8" (Ballast) 1 @ 6" (Bilge) & 1 @ 4" on main eng. Cooling water pump  
Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes — Are the bilge suction pipes 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 in the skin of the ship Yes (except low suction of ballast & cooling water pump) 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 — 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 (Tanker) Is the shaft tunnel watertight Yes Is it fitted with a watertight door — 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 Three diameters 11 1/2"-2 1/2", 11 1/2"-9 1/2", 2 1/4" stroke 4" driven by Steam Eng. 13 1/2" x 4"  
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 Compressor  
Scavenging Air Pumps, No. one diameter 1400 in stroke 610 in driven by Revers from main engine  
Auxiliary Engines crank shafts, diameter — as per Rule — as fitted — Position —  
Have the auxiliary engines been constructed under special survey — Is a report sent herewith —

2100-187000-587000  
002485-002489-0012



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

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Actual

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

Actual

IS A DONKEY BOILER FITTED

Is 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 cylinder liner & gasket complete, 1 upper & 1 lower piston & skirt, 4 scraper rings, 1 main piston head & 40 rings, 8 fuel valve spray flaps, 4 fuel valves complete, 1 Centric & 1 Side Cam. rod bolt. End Spherical bearing, 1 main Sph. bearing, 2 main bearing studs, 4 (Each) Centric & Side Cam rod top & bottom bearing bolts & nuts, 2 Side rod bolts & nuts, 1 Set. Coupling bolt for int. Shaft, 2 R. Sliding valves complete, 2 relief valves complete, 1 fuel pump fuel chamber, 2 fuel pump bodies complete, 1 sea pump fuel valve complete, 1 roller chain for camshaft drive, 1 C.I. propeller, 1 tail shaft, 3 pads for int. tail shaft bearings, 1 set for crank block & C.

WILLIAM DOXFORD & SONS, Limited.

25, Abchurch Lane, London, E.C. 4.

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1945 Aug 10, 22, 24, 27, 28, 30, 31. Sep 1, 4, 5, 11, 12, 14, 17, 18, 27. Oct 1, 4, 5, 8, 9, 11, 12, 15, 17, 18, 19, 22, 23, 29, 30, 31.  
During erection on board vessel - Jan 6, 2, 5, 7, 9, 12, 13, 14, 15, 16, 19, 22, 23, 24, 27, 29, 30. Feb 4, 7, 9, 12, 13, 14, 19, 22, 25. Mar 2, 5, 9, 24, 27.  
Total No. of visits 74

Dates of examination of principal parts—Cylinders 8/10/45 Covers - Pistons 9/11/45 Rods 9/11/45 Connecting rods 12/11/45

Crank shaft 4/11/45 Flywheel shaft as crank Thrust shaft as crank Intermediate shafts 29/1/46 Tube shaft -

Screw shaft 5/4/46 Propeller (L.M.C.T.) 21/2/46 Stern tube 19/3/46 Engine seating (Dank top) Engine holding down bolts 14/6/46

Completion of fitting sea connections 9/4/46 Completion of pumping arrangements 10/4/46 Engines tried under working conditions 17-7-46

Crank shaft, material Ingot Steel Identification mark N° 436 W.H.F. 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 N° 14550-802

Tube shaft, material - Identification mark - Screw shaft, material Ingot Steel Identification marks N° 14550-80 W.H.F. 5/4/46

Identification marks on air receivers K 1850 / 1

L.R. 22045  
G.M.M. 15/11/45.

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 x 1. Perforated pipe for steam led around E.R. & B. En. for Phenolic & Butlin with spraying for boiler fronts

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo (Tanker) 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 decided.

Is this machinery duplicate of a previous case If so, state name of vessel (Standard 3 cyls. 600 hp)

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 rules of the Society. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under working conditions alongside quay & at sea with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted with oil fuel (F.P. above 150°F) & safety valves adjusted under steam to working pressure in accordance with rule requirements, Section 20 of the rules has been complied with.

The machinery is eligible in our opinion to have notation  
L.M.C.Y. 46, T.S. (CL) 2 DB 150 hp.

The amount of Entry Fee ... £ 6

Special ... £ 100 : 16

Donkey Boiler Fee... £ 12 : 12

Travelling Expenses (if any) £ :

When applied for 19 JUL 1946

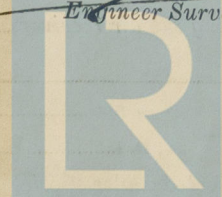
When received 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 16 AUG 1946

Assigned + L.M.C. 7.46 Oil Eng.

C.L. 2 DB 150 hp.



Lloyd's Register Foundation