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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 20-25 Last Survey 17 July 1946 Reg. Book. Number of Visits 7+

on the Triple Screw vessel **"BRITISH COMMERCE"** Tons { Gross 609.2 Net 333.5

Built at Sunderland By whom built Wm Leaford & Sons L^d Yard No. 436 When built 1946

Engines made at Sunderland By whom made Wm Leaford & Sons L^d Engine No. 436 When made 1946

Donkey Boilers made at Sicelton By whom made Stockton Chem. Empt & Riley Bros L^d Boiler No. 6929, 6930 When made 1946

Brake Horse Power 2500 Owners British Tanker Co L^d 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 MN. 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 lbs/sq in Diameter of cylinders 600 in Length of stroke Upper 980 in Lower 1340 in No. of cylinders 3 No. of cranks 3

Mean Indicated Pressure 88 lbs/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

Flywheel Shaft, diameter as app^d 418 in Intermediate Shafts, diameter as app^d 430 in Thrust Shaft, diameter at collars as app^d 450 in

Tube Shaft, diameter as per Rule Screw Shaft, diameter as app^d 430 in Is the tube 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 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

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

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 no

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 turbine 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 (aft) In pump room 4" P.S., 2 1/2" 30" bellows pump in fore 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

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 pumps) 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 3/4" 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 -

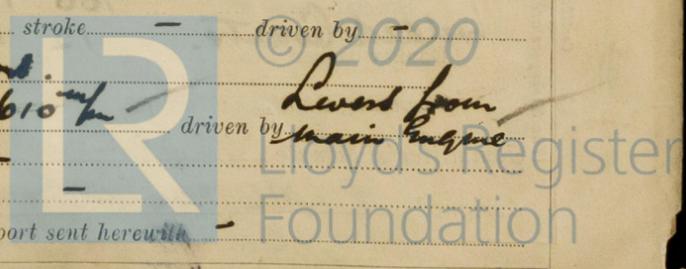
What provision is made for first charging the air receivers Steam driven Compressors

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 *Yes*. State No. of report or certificate *Pls. No. 54183*.
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*. *Visible plugs fitted. Relief valves on Comp^d and ch.*
 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 *-*
 Starting Air Receivers, No. *Two*. Total cubic capacity *220 Cuft.* Internal diameter *3'-6 3/4"* thickness *1"*
 Seamless, lap welded or riveted longitudinal joint *Welded*. Material *M/Steel* Range of tensile strength *29/32* Working pressure *600 lbs*

IS A DONKEY BOILER FITTED *Yes* (2) 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 *Yes* *4/2/46*. *Class No. 1803* Receivers. *23/12/44* Separate fuel tanks
 Donkey boilers. General pumping arrangements *Yes* Pumping arrangements in machinery space *Yes*
 Oil fuel buring arrangements *-*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*.
 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 plugs, 4 fuel valves complete, 1 central & 1 side cam rod bolt, 2 spherical bearings, 1 main sph. bearing, 2 main bearing studs, 4 (each) central & side cam rod top & bottom bearing bolts & nuts, 2 side rod bolts & nuts, 1 set coupling bolt for int. shaft, 2 R.R. sliding valves complete, 2 relief valves complete, 1 fuel pump duct chamber, 2 fuel pump heads complete, 1 sea pump duct & valve complete, 1 roller chain for cam shaft drive, 1 C.I. propeller, 1 tail shaft, 2 pads for int. tail shaft bearings, 1 set for nut block & C.*
 THE WILLIAM DOXFORD & SONS, Limited. Manufacturer.
25 St. George's Road, London, E.C. 4.

Dates of Survey while building	During progress of work in shops -	1945 Aug 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 31	Sep 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 30, 31	Oct 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 30, 31
	During erection on board vessel -	Jan 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 30, 31	Feb 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 30, 31	Mar 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 30, 31
	Total No. of visits	7+		
Dates of examination of principal parts—Cylinders		3/10/45, 5/10/45		
	Covers	-		
	Pistons	9/11/45		
	Rods	12/11/45		
	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. 7.1) 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 ^o 436 WHF			
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 ^o 14550-802 WHF 29/1/46			
Tube shaft, material	-			
Identification mark	-			
Screw shaft, material	Ingot Steel			
Identification mark	N ^o 14550-80 WHF 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 *Yes*.
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes*.
 Description of fire extinguishing apparatus fitted *1 1/2 x 1. Perforated pipe for steam led around ER & RH. For Phoenix & Butler with spraying for boiler fronts.*
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo (Tanker) *Yes*. 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 cyl. 650 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 of L.M.C. 7.46, 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*
 Committee's Minute *FRI 16 AUG 1946*
 Assigned *L.M.C. 7.46 Oil Eng. C.L. 2 DB 150 hp.*
 Engineer Surveyor to Lloyd's Register of Shipping.

