

REPORT ON OIL ENGINE MACHINERY.

No. 46775

6 JUL 1927

Date of writing Report 13th June, 1927 When handed in at Local Office 16th June, 1927 Port of GLASGOW.
 No. in Survey held at Glasgow Date, First Survey 29th Oct 1926 Last Survey 9th June, 1927
 Reg. Book. PAVA Number of Visits 4
 on the Single } Screw vessels
Twin }
Triple }
 Master ✓ Built at Glasgow By whom built Harlands & Wolff Ltd. and No. 7504. When built 1927-6.
 Engines made at Glasgow By whom made Harlands & Wolff Ltd. Engine No. 750. When made 1927-6.
 Donkey Boiler made at Belfast By whom made Harlands & Wolff Ltd. Boiler No. 7504. When made 1927.
 Brake Horse Power 700 Owners Anglo-Saxon Petroleum Coy. Ltd. Port belonging to London.
 Nom. Horse Power as per Rule 225. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

IL ENGINES, &c.—Type of Engines Vertical reciprocating 2 or 4 stroke cycle 4 Single or double acting single
 Maximum pressure in cylinders 500 lbs./in² No. of cylinders 6 No. of cranks 6 Diameter of cylinders 500 mm.
 Length of stroke 900 mm. Revolutions per minute 130 Means of ignition Compression Kind of fuel used diesel
 Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 688 mm.

Distance between centres of main bearings 1000 mm. Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 310 mm.
 as fitted 320 mm. Diameter of crank pins 320 mm. Thickness of crank webs as per Rule 194 mm. as fitted 200 mm. Thickness of ditto as per Rule 133 mm.
 as fitted 140 mm. Diameter of flywheel shaft as per Rule 320 mm. as fitted 320 mm. Diameter of tunnel shaft as per Rule 8 3/4" as fitted 9 1/2" Diameter of thrust shaft as per Rule 9 3/4" as fitted 10"

Diameter of screw shaft as per Rule 9 7/16" as fitted 10 3/8" Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes
 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 joints burned ✓
 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 ✓ If without liners, is the shaft arranged to run in oil ✓

Type of outer gland fitted to stern tube Vickers' rings Length of stern bush 3'-10" Diameter of propeller 10'-0"
 Pitch of propeller 8'-9" No. of blades 4 state whether moveable no Total surface 305 square feet

Method of reversing Compressed air Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 36 mm top
32 mm bottom
 Are the cylinders fitted with safety valves yes Means of lubrication Forced & gravity 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 ✓

No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
 No. of bilge pumps fitted to the main engines 2 Diameter of ditto 130 mm. Stroke 254 mm.
 Can one be overhauled while the other is at work yes No. of auxiliary pumps connected to the main bilge lines 2 How driven Steam

Sizes of pumps 7"x8"x8" Duplex No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2@3 1/2" 1@3 1/2" 4@2 1/2"
 and in holds, etc. None No. of ballast pumps 1 How driven Steam Sizes of pumps 7"x8"x8" Duplex

Is the ballast pump fitted with a direct suction from the engine room bilges yes State size 3 1/2" Is a separate auxiliary pump suction fitted in Engine Room and size yes: 5"
 Are all the bilge suction pipes fitted with roses yes Are the roses in Engine Room always accessible yes
 Are the sluices on Engine Room bulkheads always accessible none Are all connections with the sea direct on the skin of the ship yes

Are they valves or cocks both Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates yes
 Are the discharge pipes above or below the deep water line On load line Are they each fitted with a discharge valve always accessible on the plating of the vessel yes

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges yes
 Is the screw shaft tunnel watertight no 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 ✓

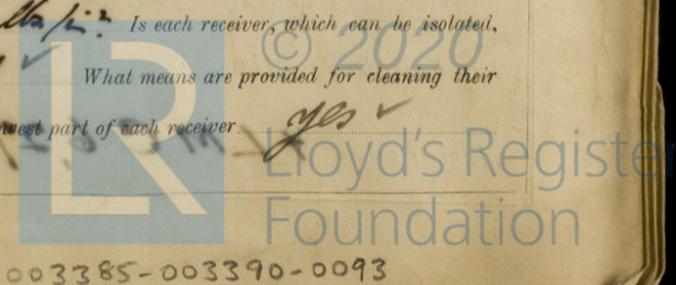
No. of main air compressors 1 No. of stages 3 Diameters 102, 465, 500 mm. Stroke 340 mm. Driven by Main engine
 No. of auxiliary air compressors 1 No. of stages 3 Diameters 82, 350, 400 mm. Stroke 260 mm. Driven by Diesel engine

No. of small auxiliary air compressors 1 No. of stages 2 Diameters 2 1/8" & 6" Stroke 4 1/2" Driven by Steam engine
 No. of scavenging air pumps None Diameter — Stroke — Driven by —

Diameter of auxiliary Diesel Engine crank shafts as per Rule 167 mm. as fitted 185 mm. Are the air compressors and their coolers made so as to be easy of access yes
 AIR RECEIVERS:—No. of high pressure air receivers 3 Internal diameter { 2 @ 400 mm. { 2 @ 290 mm.
{ 1 @ 295 mm. Cubic capacity of each { 1 @ 88 litres

Material steel Seamless, lap welded or riveted longitudinal joint seamless Range of tensile strength 28-32 tons
 thickness .60 ins. working pressure by Rules 1080 lbs./in² No. of starting air receivers 2 Internal diameter 5'-0"
 Total cubic capacity 250 ft³ each Material steel Seamless, lap welded or riveted longitudinal joint riveted

Range of tensile strength 28-32 tons thickness 27/32" Working pressure by rules 372 lbs./in² 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 yes What means are provided for cleaning their inner surfaces store heads in air bottles
men-holds & air reservoirs Is there a drain arrangement fitted at the lowest part of each receiver yes



IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes. Ref. 9715*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	13+17-1-27	15 lbs./in ²	50 lbs./in ²	<i>J.D.B.</i>	
COVERS	13+17-1-27	15 lbs./in ²	50 lbs./in ²	<i>J.D.B.</i>	
JACKETS	13+17-1-27	15 lbs./in ²	50 lbs./in ²	<i>J.D.B.</i>	
PISTON WATER PASSAGES	18, 20+24-1-27	15 lbs./in ²	50 lbs./in ²	<i>J.D.B.</i>	
MAIN COMPRESSORS—1st STAGE	4-3-27	60 lbs./in ²	500 lbs./in ²	<i>L.B.D.</i>	
2nd	4-3-27	210 lbs./in ²	500 lbs./in ²	<i>L.B.D.</i>	
3rd	4-3-27	1000 lbs./in ²	2000 lbs./in ²	<i>L.B.D.</i>	
AIR RECEIVERS—STARTING	2+4-4-27	356 lbs./in ²	712 lbs./in ²	<i>R.A.A.</i>	<i>Ref. Rpt. 9716</i>
INJECTION	2+3-2-27	1000 lbs./in ²	2000 lbs./in ²	<i>J.D.B.</i>	<i>A.V. Nos 923, 4</i>
AIR PIPES	5-5-27 + 24-5-27	356 lbs./in ²	750 lbs./in ²	<i>J.D.B.</i>	
FUEL PIPES	30-5-27; 3+7-6-27; 30-5-27	150 lbs./in ²	400 lbs./in ²	<i>J.D.B.</i>	
FUEL PUMPS	✓				
SILENCER	✓				
WATER JACKET	✓				
SEPARATE FUEL TANKS	<i>None</i>				

PLANS. Are approved plans forwarded herewith for shafting *Yes.* Receivers *Yes* Separate Tanks *None.*
 SPARE GEAR *As per attached list.*

The foregoing is a correct description,
 HARLAND & WOLFF, LTD.
S. A. Green Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1926 Oct 29 Nov 5-8 Dec 10-17 (1927) Jan 18-17-18-20-24-26-28-31 Feb 3-10-22-23-24-28 Mar 1-4-7-8-9-10-14-15
 During erection on board vessel - 18-21-22-23-24-28-31 Apr 8-13-18-19-22 May 5-11-24-30 Jun 1-3-6-7-9
 Total No. of visits *49*

Dates of Examination of principal parts—Cylinders 13+17-1-27 Covers 13+17-1-27 Pistons 18, 20+24-1-27 Rods 18+20-1-27 Connecting rods 8-3-27
 Crank shaft 31-1-27 Thrust shaft 3-2-27 *Hybrid* Shaft 3-2-27 Screw shaft 8-3-27 Propeller 8-3-27 Stern tube 8-3-27 Engine seatings { 31-8-4
 Engines holding down bolts 11-5-27 Completion of pumping arrangements 3-6-27 Engines tried under working conditions 9-6-27
 Completion of fitting sea connections 8-4-27 Stern tube { 16-3-27 28-3-27 Screw shaft and propeller 28-3-27

Material of crank shaft *steel* Identification Mark on Do. *None as attached sheet.* Material of thrust shaft *steel* Identification Mark on Do. *None*
 Material of tunnel shafts *Hy. wheel* *LLOYD'S 8267 J.D.B.* Identification Marks on Do. *None* Material of screw shaft *steel* Identification Marks on Do. *LLOYD'S 8291 L.C.P.*

Is the flash point of the oil to be used over 150° F. *Yes*
 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. *These engines have been built under special survey in accordance with the Rules & the approved plans. The material & workmanship are good. They have been properly fitted on board & tried under full power at sea with satisfactory result.*

Donkey Boiler Report — Ref. 9715.
Air Reservoirs Report — Ref. 9716.
Kronhant Semi-diesel Engine Report — Ans. 10578.
This Machinery is eligible, in my opinion, to be classed in the Register Book with notation "L.M.C." — 6, 27: T.S. — C.L.

The amount of Entry Fee ... £ 4 : -
 Special ... £ 56 : 5/-
 Donkey Boiler Fee ... £ - : -
 Travelling Expenses (if any) £ - : -
 When applied for: 5-JUL-1927
 When received: 2/8/27

J. D. Boyle
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5-JUL-1927

Assigned + LMC 6, 27



Certificate (if required) to be sent to GLASGOW

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

CERTIFICATE WRITTEN 6/7/27

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