

REPORT ON OIL ENGINE MACHINERY.

No. 41575

Date of writing Report 20-12-31 When handed in at Local Office 20-12-31 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 16.1.1919 Last Survey 13.12.1921
 Reg. Book. Single motor Domala Number of Visits 204
 on the Twin Screw vessels
 Master Glasgow Built at Glasgow By whom built Barclay Curle & Co. Ltd. No. 579 When built 1921
 Engines made at Glasgow By whom made North British Diesel Works Engine No. 25 When made 1921
 Donkey Boilers made at do. By whom made N. Beardmore & Co. Boiler No. 22893 When made 1921
 Brake Horse Power 963 Owners British India & Nav. Co. Ltd. Port belonging to Glasgow
 Nom. Horse Power as per Rule 963 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

OIL ENGINES, &c.—Type of Engines Twin Diesel 2 or 4 stroke cycle 4 Single or double acting single
 Maximum pressure in cylinders 450 lbs. No. of cylinders 8 each No. of cranks 8 Diameter of cylinders 26 1/2
 Length of stroke 47 Revolutions per minute 98 Means of ignition Compression Kind of fuel used about 150°F
 Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 35
 Distance between centres of main bearings 57 Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 16 7/8
 Diameter of crank pins 16 7/8 Breadth of crank webs as per Rule 13.1 Thickness of ditto as per Rule 10
 Diameter of flywheel shaft as per Rule 16 7/8 Diameter of tunnel shaft as per Rule 13.187 Diameter of thrust shaft as per Rule 13.75
 Diameter of screw shaft as per Rule 14.02 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 yes
 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 yes
 If two liners are fitted, is the shaft lapped or protected between the liners yes If without liners, is the shaft arranged to run in oil yes
 Type of outer gland fitted to stern tube yes Length of stern bush 60 Diameter of propeller 15'-0"
 Pitch of propeller 15'-6" No. of blades 3 Is the propeller moveable yes Total surface 645 square feet
 Method of reversing can shaft and adjustment Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 2 1/4
 Are the cylinders fitted with safety valves yes Means of lubrication forced sight feed 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 yes
 No. of cooling water pumps 3 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 none Diameter of ditto yes Stroke yes
 Can one be overhauled while the other is at work yes No. of auxiliary pumps connected to the main bilge lines 2 + 2 driven electric
 Sizes of pumps 2 - 2 1/2 in. centrifugal and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps: In engine room + from main cooling pumps
 and in holds, etc. 2 - 3 1/2 in. holds + 2 1/2 in. tunnel well No. of ballast pumps one How driven electric Sizes of pumps 100 tons
 Is the ballast pump fitted with a direct suction from the engine room bilges no State size yes Is a separate auxiliary pump suction fitted in Engine Room and size see above
 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 yes 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 above 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 yes Is it fitted with a watertight door yes
 worked from upper deck If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes
 No. of main air compressors 2 triple no of stages 3 Diameters 17 1/2 - 15 1/2 - 4 1/2 Stroke 12 Driven by Aux. Diesel
 No. of auxiliary air compressors 1 No. of stages 2 Diameters 10 - 3 1/2 Stroke 6 Driven by Steam
 No. of small auxiliary air compressors no No. of stages no Diameters no Stroke no Driven by no
 No. of scavenging air pumps yes Diameter yes Stroke yes Driven by yes
 Diameter of auxiliary Diesel Engine crank shafts as per Rule 8.5 6.5 8 1/8 6 1/8 Are the air compressors and their coolers made so as to be easy of access yes
 AIR RECEIVERS:—No. of high pressure air receivers 8 Internal diameter 17 1/4 Total Cubic capacity of each receiver 28.5 20.32
 material S Seamless, lap welded or riveted longitudinal joint Seamless Range of tensile strength 28.5
 thickness 16.75 working pressure by Rules 12.14 lb. No. of starting air receivers 4 Internal diameter 69
 Total cubic capacity 1570 cub. ft. Material S Seamless, lap welded or riveted longitudinal joint S. riv. lap
 Range of tensile strength 28.32 thickness 15.16 Working pressure by rules 343 lb. 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 manholes for access
 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

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	25-12-19, 19-1-20, 24/6/23/26/2-20	450 lb.	900 lb.	FF	
COVERS	8/2/20, 12/2-20, 6-2-20, 12/24-2-20	✓	30 lb.	FF	
JACKETS	18-12-19, 3-2-20, 1/19/4-20, 6-2-20, 12-2-20, 23-2-20, 1/15/15-2-20	✓	30 lb.	FF	
PISTON WATER PASSAGES	1/19/26-4-20, 10/24/5-2-20, 9/14/6-2-20	✓	30 lb.	FF	
MAIN COMPRESSORS—1st STAGE	9-6-20	60 lb.	120 lb.	HC	
2nd	"	225 lb.	450 lb.	HC	
3rd	"	1000 lb.	2000	HC	
AIR RECEIVERS—STARTING	4-6-20 to 26-10-20	300 lb.	525 lb.	H.C. A.H.B.	
INJECTION	8-12-20 to 15-12-20	950 lb.	3000 lb.	FF	
AIR PIPES	10-12-20 to 15-12-20	950 lb.	3000 lb.	FF	
FUEL PIPES	10-12-20 to 15-12-20	950 lb.	3000 lb.	FF	
FUEL PUMPS	/				
SILENCER	✓				
WATER JACKET	✓				
SEPARATE FUEL TANKS	✓				

PLANS. Are approved plans forwarded herewith for shafting

yes

Receivers

yes

Separate Tanks

yes.

SPARE GEAR

In excess of rule requirements. Brakes list with detailed items to follow.

The foregoing is a correct description.

G. Howson.

Manufacturer.

Dates of Survey while building: 1919 Jan 6 Feb 4 Mar 31 May 5 Jun 3-9-16-18-26 Aug 5-18-25-28 Sep 5-13-16-23-21-30 Oct 8-9-11-22-24-29-30 Nov 14-5-11-13-14-16-18-23-30-24-26-28-31 Dec 1-3-8-11-12-13-15-17-20-22-24-26-28-31

During progress of work in shops: 28 Dec 4-5-8-11-22-17-16-19-24-25-29-31 1920 Jan 8-12-14-19-25-26-28 Feb 2-4-6-12-13-16-18-23-30-24-26-28-31 Mar 1-3-8-11-12-13-15-17-20-22-24-26-28-31 Apr 1-7-12-14-19-21-26-28-30 May 5-10-19-24-26-28-30 Jun 1-2-9-14-17-23-25-28-30 Jul 6-9-29 Aug 12-13 Sep 3-7-14-20-22-24-26-28-31 Oct 6-7-8-13-21 Nov 2-8-10-18-22-25-29 Dec 1-4-5-6-7-8-11-13-14-19-22-26-28-29 May 2-4-5-8-10-13-16-17-19-24-27 Jun 2-9-27-28-29-30 July 4-6-11-13-14-21-22-27 Aug 31

During erection on board vessel: 1-4-5-6-7-8-11-13-14-19-22-26-28-29 May 2-4-5-8-10-13-16-17-19-24-27 Jun 2-9-27-28-29-30 July 4-6-11-13-14-21-22-27 Aug 31

Total No. of visits: 204

Dates of Examination of principal parts—Cylinders 19-5-20 Covers 28-5-20 Pistons 19-5-20 Rods 28-5-20 Connecting rods 28-5-20

Crank shaft 12-1-20 Thrust shaft 26-3-20 Tunnel shafts 26-3-20 Screw shafts 26-3-20 Propeller 7-9-20 Stern tube 7-9-20 Engine seatings 10-11-20

Engines holding down bolts 22-11-21 Completion of pumping arrangements 13-12-21 Engines tried under working conditions 13-12-21

Completion of fitting sea connections 10-11-20 Stern tube 28-9-20 Screw shaft and propeller 10-11-20

Material of crank shafts S Identification Mark on Do. LLOYD'S REGISTER 2871 J.D. 12-1-20 12-3-20

Material of tunnel shafts S Identification Marks on Do. LLOYD'S REGISTER 2871 J.D. 12-1-20 12-3-20

Material of screw shafts S Identification Marks on Do. LLOYD'S REGISTER 2871 J.D. 12-1-20 12-3-20

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.) There are two independent comp. rooms on this vessel driven by diesel engines.

The materials and workmanship are good. The machinery has been built under special survey and in accordance with the rules and approved plans. It has been tried under full power and found to work satisfactorily and is eligible in our opinion to be classed with record of + CMC 12-21.

It is submitted that this vessel is eligible for THE RECORD. + LMC 12.21. CL. Oil Engines. 4 SC. SA. 16 Cy. 26½" - 47" DB. 100 lb. (Annual Survey)

The amount of Entry Fee ... £ 6 : -

Special ... £ 123 : 3

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When applied for,

20/12/1921

When received,

28-2-22

Committee's Minute

GLASGOW 20 DEC 1921

Assigned + LMC 12, 21.

MACHINERY CERT - WRITTEN.



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