

REPORT ON OIL ENGINE MACHINERY

No. 41800.

RECD. 29 MAR. 1922

Received at London Office

Date of writing Report 21. 3. 1922. When handed in at Local Office 21. 3. 1922 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 26. 6. 1919 Last Survey 14. 3. 1922
 Reg. Book. on the Single Twin Triple Screw vessels Hauraki Number of Visits 148 Tons { Gross 7113 Net 4425
 Master Built at Dumbarton By whom built Wm Denny & Co. Bro. Yard No. 1039 When built 1922
 Engines made at Glasgow By whom made North British Diesel Works Engine No. 26 When made 1922
 Donkey Boilers made at Annan By whom made Cochran & Co. Annan, L. Boiler No. When made 1922
 Brake Horse Power Owners Union S.S. Co. of New Zealand Port belonging to London
 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 lb No. of cylinders 8 each No. of cranks 8 Diameter of cylinders 26 1/2
 Length of stroke 47" Revolutions per minute 96 Means of ignition Compression Kind of fuel used above 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 as fitted 16 7/8
 Diameter of crank pins 16 7/8 Breadth of crank webs as per Rule as approx. as fitted 31 1/2 Thickness of ditto as per Rule as approx. as fitted 16"
 Diameter of flywheel shaft as per Rule 16 7/8 as fitted 16 7/8 Diameter of tunnel shaft as per Rule 13.1 as fitted 13.187 Diameter of thrust shaft as per Rule 13.75 as fitted 14.0
 Diameter of screw shaft as per Rule 14.02 as fitted 14.25 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 14-7" No. of blades 3 state whether moveable yes Total surface 66.8 square feet
 Method of reversing can shaft end 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 oil 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 2 Is the sea suction provided with an efficient strainer which can be cleared yes

within the vessel yes No. of bilge pumps fitted to the main engines none Diameter of ditto 3 and 4 inches Stroke yes
 Can one be overhauled while the other is at work yes No. of auxiliary pumps connected to the main bilge lines from main cooling ballast pump How driven Electric
 Sizes of pumps 1 Centrif. 100 gals. 1 Recip. 50 gals. Ballast 200 gals. 1 Submersible 50 gals. No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps: In engine room ballast 7" cyl. driving 6" dia
 and in holds, etc. 2-3 1/2 in. hold. 1 3/4 in. tunnel mch. No. of ballast pumps 1 How driven Electric Sizes of pumps 200 gals
 Is the ballast pump fitted with a direct suction from the engine room bilges yes State size 7" suction 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 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 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 p. eng. No. of stages 3 Diameters 7 1/2 - 15 1/4 - 4 1/4 Stroke 26 Driven by main engines
 No. of auxiliary air compressors 1-2 ch. No. of stages 3 Diameters 15 1/2 - 13 1/2 - 3 3/4 Stroke 11 1/4 Driven by Aux. Diesel
 No. of small auxiliary air compressors 1 No. of stages 2 Diameters 6 1/2 - 2 1/4 Stroke 6" Driven by clean
 No. of scavenging air pumps yes Diameter yes Stroke yes Driven by yes
 Diameter of auxiliary Diesel Engine crank shafts as per Rule as approx. as fitted 6 7/8 Are the air compressors and their coolers made so as to be easy of access yes

AIR RECEIVERS:—No. of high pressure air receivers 6 Internal diameter (2 main) 15 3/4 - 4 1/4 (4 main) 17 1/4 main: 44.8 5" return: 17.8 5"
 material Seamless Range of tensile strength 28/32
 thickness 5/8" working pressure by Rules 1000 lb. No. of starting air receivers 4 Internal diameter 69"
 Total cubic capacity 1524 ft³ Material S Seamless, lap welded or riveted longitudinal joint Double mt. straps
 Range of tensile strength 28/32 thickness 1 1/2" Working pressure by rules 368 lb. Is each receiver, which can be isolated, fitted with a safety valve as per Rule 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:-

Rpt. 5b.

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	✓	✓	✓	✓	✓
COVERS	19/5/20 to 25/1/22	✓	30 lb.	2m rcm	✓
JACKETS	1/9/20 to 10/3/21	✓	30 lb.	2m.	✓
PISTON WATER PASSAGES	1/9/20 to 8/2/22	✓	30 lb.	2m rcm	✓
MAIN COMPRESSORS—1st STAGE					
2nd					
3rd					
AIR RECEIVERS—STARTING	31.3.21 - 7.4.21	350 lb.	613 lb.	A.H.B.	
INJECTION	29/8/21 to 20/10/21	1000 lb.	2000 lb.	C.M.	
AIR PIPES	31/8/21 to 26/10/21	350 lb.	1050 lb.	C.M.	
FUEL PIPES	✓				
FUEL PUMPS	✓				
SILENCER	✓				
WATER JACKET	✓				
SEPARATE FUEL TANKS	✓				

PLANS. Are approved plans forwarded herewith for shafting
(If not, state date of approval)

yes

Receivers

yes

Separate Tanks

SPARE GEAR

See separate sheet.

The foregoing is a correct description,

Manufacturer.

J. MacLagan

Dates of Survey while building
During progress of work in shops - 1919 Jun 26 Aug 5 Sep 16 23 25 Oct 29 Nov 4 11 14 19 23 Dec 4 16 22 (1920) Jan 8 12 14 26 Feb 6 12 18 26 Mar 1 8 13 23 Apr 1 12 14 19 24 26 30
During erection on board vessel - 15.20.28 (1921) Jan 19 21 24 28 Feb 1 4 8 14 16 17 22 28 Mar 2 4 7 10 14 17 22 24 Apr 1 5 19 21 May 4 16 Jun 1 2 8 9 Jul 1 4 6 28 Aug 12 31
Total No. of visits 147 148

Dates of Examination of principal parts—Cylinders 10.3.21 Covers 19.5.20 21.11.21 Pistons 6.7.20 Rods 6.7.20 Connecting rods 6.7.20
Crank shaft 6.7.20 Thrust shaft 14.11.21 Tunnel shafts 14.11.21 Screw shaft 5.1.4.21 Propellers 1.4.21 Stern tubes 5.8.6.21 Engine seatings 1.7.21
Engines holding down bolts 10.3.22 Completion of pumping arrangements 10.3.22 Engines tried under working conditions 10.3.22
Completion of fitting sea connections 1.7.21 Stern tube 1.7.21 Screw shaft and propeller 1.7.21
Material of crank shaft S Identification Mark on Do. 6.7.20 7.9.20 LLOYDS 3422 T.M.
Material of tunnel shafts S Identification Marks on Do. LLOYDS 3422 14.11.21 T.M.
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.)

This machinery has been built under special survey, and the materials and workmanship are good. It has been built in accordance with the approved plans. After being efficiently fitted on board the vessel, it was tried under full power and found to work satisfactorily.

It is now eligible in our opinion for record of + LMC 3.22.

It is submitted that this vessel is eligible for

THE RECORD. + L.M.C. - 3.22. (Annual Survey)

Cic Engines 4. S.C.S.A. 16 Cy. 26 1/2", 47".

963 N.H.P. D.B. 100 H.P. C.L.

North British Diesel Works, Ltd., Glasgow.

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

Special ... £ 123 : 3 : 21.5.22.

Donkey Boiler Fee ... £ 1 : 1 : : When received,

Travelling Expenses (if any) £ 1 : 1 : : 21.5.22

Committee's Minute

GLASGOW

28 MAR 1922

Assigned + L.M.C. 3.22

MACHINERY CERTIFICATE



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Survey Travell

Commit Assigned