

# REPORT ON OIL ENGINE MACHINERY.

No. 42215

Received at London Office  
 Date, First Survey 25th Sept 1922 Last Survey Oct 13 1922  
 Port of Glasgow  
 When handed in at Local Office 17.10.22  
 Date, First Survey 25th Sept 1922 Last Survey Oct 13 1922  
 Number of Visits 138  
 Tons { Gross 7241  
 Net 4450  
 in Survey held at Glasgow  
 on the Single { Screw vessels  
 Twin {  
 Triple {  
 Built at Port Glasgow By whom built Robt Duncan & Co Yard No. 349 When built 1922  
 Engines made at Glasgow By whom made North British Diesel Eng Works Engine No. 27 When made 1922  
 Key Boilers made at Annan By whom made Cochran & Co Annan Lim Boiler No. 8642 When made 1921  
 Horse Power Owners British India & Nav Co Port belonging to Glasgow  
 n. Horse Power as per Rule 963 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Type of Engines Diesel (Twin) 2 or 4 stroke cycle 4 Single or double acting single  
 Minimum pressure in cylinders 450 No. of cylinders 8 each Eng No. of cranks 8 each Eng Diameter of cylinders 26 1/2"  
 Length of stroke 47" Revolutions per minute 98 Means of ignition Compression Kind of fuel used Heavy oil  
 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 54" Is a flywheel fitted yes Diameter of crank shaft journals as per Rule app  
 as fitted 16 5/8"  
 Diameter of crank pins 16 5/8" Breadth of crank webs as per Rule app  
 as fitted 3 1/2" Thickness of ditto as per Rule app  
 as fitted 10"  
 Diameter of flywheel shaft as per Rule app  
 as fitted 16 5/8" Diameter of tunnel shaft as per Rule app  
 as fitted 13 3/8" Diameter of thrust shaft as per Rule app  
 as fitted 14"  
 Diameter of screw shaft as per Rule app  
 as fitted 14 1/4" Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes  
 If the liner is in more than one length are the joints burned one length  
 Is the after end of the liner made watertight in the propeller boss 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 fit  
 If without liners, is the shaft arranged to run in oil  
 Do liners are fitted, is the shaft lapped or protected between the liners  
 Diameter of outer gland fitted to stern tube none Length of stern bush 60" Diameter of propeller 15'-0"  
 Diameter of propeller 15'-6" No. of blades 3 state whether moveable yes Total surface 64 5/8 square feet  
 Method of reversing traversing air cam shaft Is a governor or other arrangement fitted to prevent racing of the engine when detached 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  
 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 funnel light  
 No. of cooling water pumps 3 Is the sea suction provided with an efficient strainer which can be cleared  
 Is there a bilge pump in the vessel yes No. of bilge pumps fitted to the main engines none Diameter of ditto — Stroke —  
 Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines 2 bilge  
 1 Ballast How driven electric  
 1 Sanitary  
 Sizes of pumps 200 ton  
 No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps: In engine room 4 of 3 1/2"  
 2-50 ton reciprocating  
 1-200 ton reciprocating  
 No. of ballast pumps 1 How driven electric  
 2-1-2-3-4 holds each 2 of 3 1/2"-No 5-2 of 3"  
 Tunnel well 1 of 2 1/2"  
 State size 5" Is a separate auxiliary pump suction fitted in  
 the ballast pump fitted with a direct suction from the engine room bilges yes  
 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  
 Is the 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  
 No. of main air compressors two each ing No. of stages 3 Diameters 17 1/2"-15 1/2"-4 1/4" Stroke 12 7/8" Driven by main engine  
 No. of auxiliary air compressors 1 duplex No. of stages 3 Diameters 17 1/2"-14 1/4"-4 1/4" Stroke 10" Driven by electric motor  
 No. of small auxiliary air compressors 1 No. of stages 2 Diameters 6 1/2"-2 1/4" Stroke 6 Driven by steam  
 No. of scavenging air pumps — Diameter — Stroke — Driven by —  
 Diameter of auxiliary Diesel Engine crank shafts as per Rule app  
 as fitted 6 7/8" Are the air compressors and their coolers made so as to be easy of access yes  
 Internal diameter 2 of 15 3/4"  
 4 of 17 3/4" Cubic capacity of each 14.0 cu ft  
 16.3 cu ft  
 IR RECEIVERS:—No. of high pressure air receivers 6 Range of tensile strength 28/32 tons  
 Material steel Seamless, lap welded or riveted longitudinal joint Seamless No. of starting air receivers 4 Internal diameter 5'-8"  
 Thickness 7/8" Working pressure by Rules 12/14 lbs. Seamless, lap welded or riveted longitudinal joint DR-Lap  
 Total cubic capacity 1522 cu ft Material steel Working pressure by rules 350 Is each receiver, which can be isolated,  
 Range of tensile strength 28/32 tons thickness 1 5/16" Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their  
 fitted with a safety valve as per Rule yes 5" dia Is there a drain arrangement fitted at the lowest part of each receiver yes  
 Inner surfaces manhole for access



IS A DONKEY BOILER FITTED? *yes*

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS <i>Cover face</i>	12.8.20 to 18.5.22	450	900 ✓	cm HC	
" " COVERS	5.10.20 to 25.5.22	15	30 ✓	cm HC	
" " JACKETS	11.1.22 to 25.1.22	15	30 ✓	cm	
" " PISTON WATER PASSAGES	27.1.22 to 8.2.22	15	30 ✓	cm HC	
MAIN COMPRESSORS—1st STAGE					
" 2nd "					
" 3rd "	8.2.22 to 9.5.22	950	2000 ✓	HC	
AIR RECEIVERS—STARTING	7.7.21	575	350 ✓	IS	
" INJECTION	Sheffield				
AIR PIPES	7.3.22 to 26.7.22	350	1050 ✓	HC JMC	
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" WATER JACKET					
SEPARATE FUEL TANKS	7.7.21 - 12.8.21		60	IS HC	

PLANS. Are approved plans forwarded herewith for shafting *yes*

Receivers *yes*

Separate Tanks *yes*

SPARE GEAR *Main Engines*. 2 main bearing studs nuts. 2 main bearing bushes. 4 Con Rod top end bushes, and ditto 8 top end 14 bottom end bolts nuts. 16 coupling bolts crank shaft. 8 cyl cover studs. 2 cylinder covers. 64 piston rings. 1 complete set spur wheels. 16 exhaust valves reages. 8 fuel valves complete. 4 starting valves. 4 sets piston cooling gears. 1 fuel pump. *Compressor* 1 main bearing, 2 top 1 bottom end bushes, 2 bottom end bolts and studs. 3 sets of valves. 4 sets piston rings. 1 set valve cages. *Aux Compressor* 1 set valves reages. 2 sets piston for each stage. 1 pair main bearing brasses bolts nuts. 1 set top bottom end brasses bolts nuts. 1 set valves for bil daily service. Lubricating oil pump. 1 propeller shaft. 2 propeller blades. *Auxiliary Dynamo Eng.* 2 sets main bearing studs. 1 top 1 bottom end bush, bolts nuts. 1 cyl cover. 1 piston. 30 piston rings. 6 fuel valves. 12 inlet exhaust valves. 2 starting valves and a number of other spares.

The foregoing is a correct description.

*North British Diesel Engine Works (1922) LTD.*

*Les Howson.* Assistant Manager.

Dates of Survey while building

During progress of work in shops -	1919 Sep 25 Nov 4.14.19.28 Dec 2 1920 Jan 8.14 Feb 26 Mar 18 Apr 14.19 May 5.10.19.28 Jun 2.9.12.23.25 July 9 Aug 12.18 Sep 28.30
During erection on board vessel -	6.11.13.27.28 Aug 5 Oct 6.13.18.20.27.31 Nov 2.10.14.24.29 Dec 1.5.13.15.19.25 1922 Jan 11.13.23.25.30 Feb 6.8.10.14.16.22 Mar 8.20.22.24.27
Total No. of visits	138

Dates of Examination of principal parts—Cylinders 11.1.22 Covers 12.8.20 Pistons 30.1.22 Rods 13.12.21 Connecting rods 13.12.21

Crank shaft 5.12.21 Thrust shaft 31.3.22 Tunnel shafts 31.3.22 Screw shaft 8.2.22 Propeller 8.2.22 Stern tube 8.2.22 Engine seatings 9.2.22

Engines holding down bolts 26.7.22 Completion of pumping arrangements 30.9.22 Engines tried under working conditions 30.9.22

Completion of fitting sea connections *Gak* Stern tube *Gak* Screw shaft and propeller *Gak*

Material of crank shaft *stul* Identification Mark on Do. 4046 Material of thrust shaft *stul* Identification Mark on Do. 4046

Material of tunnel shafts *stul* Identification Marks on Do. 4046 Material of screw shafts *stul* Identification Marks on Do. 4046

Is the flash point of the oil to be used over 150° F. *yes*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Somala*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been constructed under special survey in accordance with the rules and approved plans - Materials workmanship are good. The machinery has been securely fitted on board, tested under working conditions and is eligible in my opinion to be classed +LMC 10.22.

It is submitted that this vessel is eligible for THE RECORD. + LMC 10.22. CL. Oil Engines 4 SC. SA. 16 Cy. 26½ - 47. DB 100 lb. (Annual Survey)

The amount of Entry Fee ... £ 6 : 0 : When applied for, 17.10.1922.

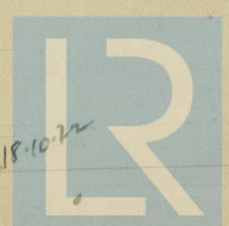
Special ... £ 123 : 3 : When received, 28.10.22

Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ 8 : 2/8

Committee's Minute

Assigned + LMC 10.22

*Harry Clarke*  
Engineer Surveyor to Lloyd's Register of Shipping



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