

# REPORT ON OIL ENGINE MACHINERY.

Belfast. 91147.

No. 43115.

Received at London Office WFO. 31 OCT. 1923

Date of writing Report 19

When handed in at Local Office 29. 10. 1923

Port of Glasgow.

No. in Reg. Book.

Survey held at Glasgow.

Date, First Survey 15th July 1920.

Last Survey 13th Sept 1923.

on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ Screw vessels

M/S "LOCHMONAR"

Tons { Gross 9103 Net 5815

Master

Built at BELFAST

By whom built HARLAND & WOLFF Yard No. 517

When built 1921

Engines made at GLASGOW

By whom made HARLAND & WOLFF LTD. Engine No. 517 When made 1923-4

Donkey Boilers made at ~~Human~~

By whom made Cochran & Co

Boiler No. 8164 When made 1921

Brake Horse Power 4500

Owners ROYAL MAIL STEAMSHIP CO LTD Port belonging to London

Nom. Horse Power as per Rule 1144

Is Refrigerating Machinery fitted for cargo purposes YES

Is Electric Light fitted YES

OIL ENGINES, &c.—Type of Engines DIESEL 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 500 LBS/SQ IN No. of cylinders 16 No. of cranks 16 Diameter of cylinders 740 mm

Length of stroke 1150 mm Revolutions per minute 115 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) 990 mm

Distance between centres of main bearings 1500 mm Is a flywheel fitted YES Diameter of crank shaft journals as per Rule 451 mm as fitted 465 mm

Diameter of crank pins 465 mm Breadth of crank webs as per Rule 600 mm as fitted 710 mm Thickness of ditto as per Rule 252 mm as fitted 300 mm

Diameter of flywheel shaft as per Rule 451 mm as fitted 465 mm Diameter of tunnel shaft as per Rule 13.8" as fitted 14" Diameter of thrust shaft as per Rule 14.5" as fitted 15"

Diameter of screw shaft as per Rule 14 3/4" as fitted 15 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 CONTINUOUS FIT

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 WOOD LINED STERN BUSH Length of stern bush 5'-8" Diameter of propeller 14'-0"

Pitch of propeller 12'-9" mean No. of blades 3 state whether moveable MOVEABLE Total surface 106 square feet

Method of reversing AIR Is a governor or other arrangement fitted to prevent racing of the engine YES Thickness of cylinder liners 60 mm

Are the cylinders fitted with safety valves YES Means of lubrication FORCED & SIGHT FEED Are the exhaust pipes and silencers lagged with non-conducting material YES

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 2 Diameter of ditto 8" duplex Stroke 6" Can one be overhauled while the other is at work YES

No. of auxiliary pumps connected to the main bilge lines 1 (Ballast) How driven Electric Motor Sizes of pumps 10" x 10" duplex 9-3 1/2" in hold holds 3-3 1/2" deep tank bilges 5-3 1/2" aft holds 1-3 1/2" tunnel well 2-2 1/2" coffee dam

No. of ballast pumps 1 How driven Electric Motor Is the ballast pump fitted with a direct suction from the engine room bilges YES State size 5" 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 shutces 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

No. of main air compressors 4 No. of stages 3 Diameters 600-640-148" Stroke 350 mm Driven FROM MAIN ENGINE

No. of auxiliary air compressors No. of stages 2 Diameters 545-485" Stroke 280 mm Driven by ELECTRIC MOTOR

No. of small auxiliary air compressors 1 No. of stages 2 Diameters 106-84" Stroke 80 mm Driven by STEAM

No. of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule 167 mm as fitted 170 mm Are the air compressors and their coolers made so as to be easy of access YES

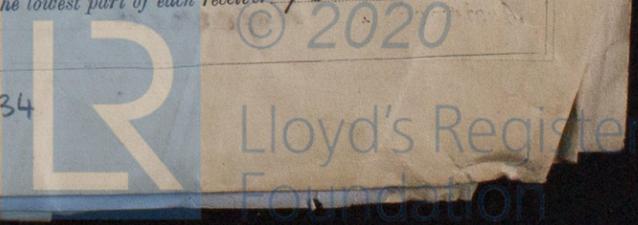
AIR RECEIVERS:—No. of high pressure air receivers 9 MAIN & AUXILIARY internal diameter 295 mm Cubic capacity of each 50 150 40 88 LITRES

material STEEL Seamless, lap welded or riveted longitudinal joint SEAMLESS Range of tensile strength 28/32 thickness .58" working pressure by Rules 1375 LBS/SQ IN No. of starting air receivers 3 Internal diameter 6'-0 3/4"

Total cubic capacity 20 1/6 Cubic ft. Material Steel Seamless, lap welded or riveted longitudinal joint Riveted Range of tensile strength 28 5/32 & 26-30 thickness 1 3/32 shell Working pressure by rules 398 lbs/SQ IN Is each receiver, which can be isolated, fitted with a safety valve as per Rule WITH SAFETY VALVES on the internal surfaces of the receivers be examined YES What means are provided for cleaning their inner surfaces DETACHABLE HEADS FOR CLEANING WITH SODA Is there a drain arrangement fitted at the lowest part of each receiver YES

254  
127  
391

W1020-0234



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					
COVERS	12-3-23 TO 1-8-23	15 LBS/SQ	50 LBS/SQ	<i>H.M.C.</i>	
JACKETS	15-3-23 TO 18-5-23	" "	" "	<i>H.M.C.</i>	
PISTON WATER PASSAGES	9-5-23 TO 28-5-23	" "	" "	<i>H.M.C.</i>	
MAIN COMPRESSORS—1st STAGE	23-4-23 TO 4-5-23	71 LBS/SQ	150 LBS/SQ	<i>H.M.C.</i>	
2nd	9-4-23 TO 21-6-23	220 LBS/SQ	500 LBS/SQ	<i>H.M.C.</i>	
3rd	23-3-23 TO 8-6-23	1060 LBS/SQ	2000 LBS/SQ	<i>H.M.C.</i>	
AIR RECEIVERS—STARTING					
INJECTION	30-5-23 & 4-6-23	1000 LBS/SQ	2000 LBS/SQ	<i>H.M.C.</i>	
AIR PIPES ENGINE STARTING	6-7-23 TO 6-9-23	356 LBS/SQ	712 LBS/SQ	<i>H.M.C.</i>	A.V. N <sup>o</sup> 495 TO 503
FUEL PIPES					
FUEL PUMPS					
SILENCER					
WATER JACKET					
SEPARATE FUEL TANKS	15-16-8-23		7 1/2 LBS/SQ	<i>H.M.C.</i>	

PLANS. Are approved plans forwarded herewith for shafting. *No. sent with Report 12*  
(If not, state date of approval) *41757 N/S 'GLENHARRY' Receivers*

SPARE GEAR *List of spare gear which has been sent to Belfast attached.*  
*Spare gear checked on board.*

The foregoing is a correct description.  
*FOR HARLAND & WOLFF, LTD.*

*J. C. Green*  
MANAGER FINNIESTON WORKS  
Manufacturer.

Dates of Survey while building	During progress of work in shops --	1920 Jul 15 Sep 24 Oct 5 Nov 3 1921 Jan 24 Feb 4 18 Mar 9 Apr 26 May 11 26 Jun 7 8 9 13 27 Jul 1 4 7 11 Aug 14 27 1923 Jan 22 Feb 1 6 8 9 12 14 16 19 21 23 26 28 Mar 1 2 12 15 20 23 26 28 30 Apr 3 4 9 10 16 17 19 23 May 1 2 7 9 11 14 16 18 21 23 24 28 30 Jun 4 5 8 Jul 6 9 13 Aug 1 2 6 15 16 27 28 29 Sep 3 4 6 13 Oct 20 25 May 2 8 24 30 June 3 5 9 12 13 14 17 18 24 26 1922 Jan 2 3 4 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Feb 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Mar 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Apr 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 May 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Jun 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Jul 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Aug 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Sep 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Oct 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Nov 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Dec 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Total No. of visits		<i>87 + 49 Total 136</i>

Dates of Examination of principal parts—Cylinders *15/5/23* Covers *3/23 TO 8/23* Pistons *28/5/23* Rods *6/8/23* Connecting rods *6/8/23, 13/9/23*  
 Crank shaft *23/4/23* Thrust shaft *6/2/23* Tunnel shafts *1/2 23.70* Screw shafts *2/10-23* Propeller *1-10-23* Stern tube *2/10-23* Engine seatings *5-12-23*  
 Engines holding down bolts *26-2-23* Completion of pumping arrangements *5-6-23* Engines tried under working conditions *26-6-23*  
 Completion of fitting sea connections *5-12-23* Stern tube *5* *1-11-23* Screw shaft and propeller *5-12-23*  
 Material of crank shaft *S* Identification Mark on Do. *10/4/23, 23/4/23* Material of thrust shaft *S* Identification Mark on Do. *78471, 734, 2905, 2901, W.G.H., W.G.H.*  
 Material of tunnel shafts *S* Identification Marks on Do. *SEE UNDER* Material of screw shafts *S* Identification Marks on Do. *114/1 W.B., 1139 W.B.*  
 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 *N/S 'LOCHGOIL'*

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

TUNNEL SHAFTS	<i>T.3600</i>	<i>3764</i>	<i>78748</i>	<i>78775</i>	<i>T.3677</i>	<i>78753</i>	<i>78618</i>	<i>78755</i>	<i>76777</i>	<i>78675</i>
	<i>LLOYDS</i>									
	<i>5347</i>	<i>6241</i>	<i>2776</i>	<i>6292</i>	<i>2490</i>	<i>5212</i>	<i>2740</i>	<i>6296</i>	<i>6264</i>	<i>2638</i>
	<i>J.P.</i>	<i>J.P.</i>	<i>W.G.H.</i>	<i>J.P.</i>	<i>W.G.H.</i>	<i>J.P.</i>	<i>W.G.H.</i>	<i>J.P.</i>	<i>J.P.</i>	<i>W.G.H.</i>

*These engines have been built under special survey in accordance with the rules and approved plans, the materials and workmanship are sound and good. Engines are being forwarded to Belfast to be fitted on board. This machinery is installed in the vessel in an efficient manner & is securely fixed. The machinery has been tried under working conditions & tested in accordance with the Rules & is in good safe working condition & eligible in my opinion for classed & have permits + L.M.C. 6-24*  
 The amount of Entry Fee ... £ *6* : *0* : *0* When applied for *30/10/23*  
 Special ... £ *128* : *12* : *0* When received *6-12-1923*  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) ... £ : :  
 Total ... £ : : *6-12-1923*

Committee's Minute. *GLASGOW 30 OCT 1923*  
 Assigned *Deferred.*  
 Engineer Surveyor *H.M. Carrick*  
 Engineer Surveyor in Lloyd's Register of Shipping  
*William Dutton*

*TUES. 15 JUL 1924*  
*+ Durb 6.24 6.20*  
*Oil 100lb*  
*Lloyd's Reg*  
*Foundation*