

## REPORT ON OIL ENGINE MACHINERY

No. 42371

REC'D. 20 1922

Received at London Office

Date of writing Report 18. 12. 22 When handed in at Local Office 18. 12. 22 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 15. 7. 1920. Last Survey 13. 12. 22  
 Reg. Book. Number of Visits 151  
 on the <sup>Single</sup> ~~Twin~~ <sup>Triple</sup> Screw vessels T.M.S. "LOCHGOIL" Tons { Gross 9462 Net 5873  
 Master Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 516 When built 1922  
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 516 When made 1922  
 Donkey Boilers made at Annan By whom made Cochran & Co., Annan. Boiler No. 8470 When made 1921  
 Brake Horse Power 4500 Owners Royal Mail S.S. Pk. Co. 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, &amp;c.—Type of Engines

*Diesel* 2 or 4 stroke cycle 4 Single or double acting *Single*  
 Maximum pressure in cylinders 500 lbs No. of cylinders 16 No. of cranks 16 Diameter of cylinders 740 mm = 29 1/8"  
 Length of stroke 1150 mm = 45 1/4" Revolutions per minute 115 Means of ignition *Compression* Kind of fuel used *above 150°*  
 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 as per Rule 451 mm as fitted 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 145 mm as fitted 145 mm Diameter of tunnel shaft as per Rule 138 mm as fitted 14" Diameter of thrust shaft as per Rule 145 mm 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 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 *fits whole length*  
 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 *wood lined stern bush* Length of stern bush 5'-8" Diameter of propeller 15'-0" square feet  
 Pitch of propeller 12'-0" No. of blades 3 state whether moveable Yes Total surface 120 ft 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 water cooled & 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  
 4 Rotary Pumps for Lubricating Oil fitted No. of cooling water pumps 2 PISTON COOLING 2 SEA Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes No. of bilge pumps fitted 2 No. of bilge pumps connected to the main bilge lines 3 How driven *Electric*  
 Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines 3 How driven *Electric*  
 Sizes of pumps 2 @ 8" x 9" @ 10" x 10" No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2 @ 5" x 3" for Bilge 2 @ 3" x 3" for Bilge 1 @ 2" x 3" for Bilge  
 and in holds, etc. 5 @ 3" x 4" 1 @ 3" x 4" 2 @ 3" x 4" No. of ballast pumps 1 How driven *Electric* Sizes of pumps 10" x 10"  
 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 *Bilge Ballast Pump have separate suction* 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 Below 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 4 No. of stages 3 Diameters 500-540-148 Stroke 350 mm Driven by *off main shaft*  
 No. of auxiliary air compressors 2 No. of stages 2 Diameters 545-485 Stroke 250 mm Driven by *Electric*  
 No. of small auxiliary air compressors 1 No. of stages 2 Diameters 106-34 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. Nos 433 to 441. Internal diameter 295 mm Cubic capacity of each 4 @ 68 LITRES  
 material *Steel* Seamless, lap welded or riveted longitudinal joint *Seamless* Range of tensile strength 28/32 tons  
 thickness 59 working pressure by Rules 1400 lbs/sq. in. No. of starting air receivers 3/ Separate Report No. 41339 Internal diameter 6'-0 3/8"  
 Total cubic capacity 2076 Cubic feet Material *Steel* Seamless, lap welded or riveted longitudinal joint *Riveted D.B.S.*  
 Range of tensile strength 28/32 tons thickness 13/32" Working pressure by rules 398 lbs Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Compressors fitted with Safety valves* Yes What means are provided for cleaning their inner surfaces *detachable heads for cleaning with soda* Yes Is there a drain arrangement fitted at the lowest part of each receiver Yes



If so, is a report now forwarded? *Yes.*

| DESCRIPTION.                     | DATE OF TEST.                        | WORKING PRESSURE. | TEST PRESSURE. | STAMPED. | REMARKS. |
|----------------------------------|--------------------------------------|-------------------|----------------|----------|----------|
| ENGINE CYLINDERS .....           |                                      |                   |                |          |          |
| " " COVERS <i>Water passages</i> | 16/1/22, 17/1/22, 10/10/21, 2/10/21. | ✓                 | 50 lbs ✓       | J. E. S. |          |
| " " JACKETS.....                 | 28/9/21, 12/10/21, 2/11/21, 31/10/21 | ✓                 | 50 lbs ✓       | J. E. S. |          |
| " PISTON WATER PASSAGES.....     | 13/1/22, 7/12/21, 28/6/21, 2/8/21    | ✓                 | 50 lbs ✓       | J. E. S. |          |
| MAIN COMPRESSORS—1st STAGE.....  | 29/3/22, 11/4/22, 23/3/22, 28/3/22   |                   | 150 lbs.       | J. E. S. |          |
| " 2nd ".....                     | 6/4/22, 10/4/22, 5/4/22, 4/4/22.     |                   | 500 lbs.       | J. E. S. |          |
| " 3rd ".....                     | 30/3/22, 4/4/22, 27/3/22, 28/3/22    | 1000 lbs          | 2000 lbs ✓     | J. E. S. |          |
| AIR RECEIVERS—STARTING .....     | <i>See separate report</i>           |                   |                |          |          |
| " INJECTION .....                |                                      |                   |                |          |          |
| AIR PIPES <i>4 Tee pieces</i>    | 31/5/22, 31/6/22, 3/5/22.            | 356 lbs           | 712 lbs        | J. E. S. |          |
| FUEL PIPES .....                 | ✓                                    | ✓                 |                |          |          |
| FUEL PUMPS .....                 | ✓                                    | ✓                 |                |          |          |
| SILENCER .....                   | ✓                                    | ✓                 |                |          |          |
| " WATER JACKET .....             | ✓                                    | ✓                 |                |          |          |
| SEPARATE FUEL TANKS .....        | ✓                                    | ✓                 |                |          |          |

PLANS. Are approved plans forwarded herewith for shafting *No. sent with Rpt No 41757 M/S "GLEN GARRY"*  
(If not, state date of approval) Receivers  
SPARE GEAR *See attached list of all spare gear supplied to vessel* Separate Tanks

For HARLAND & WOLFF, LTD.

*Manufacturer.*

|                                |                                    |  |
|--------------------------------|------------------------------------|--|
| Dates of Survey while building | During progress of work in shops-- | 1920 July 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, 31<br>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, 31<br>Sept. 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, 31<br>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, 31<br>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, 31<br>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, 31   |
|                                | During erection on board vessel--  | 1921 Jan. 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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31<br>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, 31 |
|                                | Total No. of visits                | 151  |

Dates of Examination of principal parts—Cylinders 26-1-22 Covers 30-1-22 Pistons 30-1-22 Rods 30-1-22 Connecting rods 30-1-22

Crank shaft 13-5-21 Thrust shaft 10-8-21 Tunnel shafts 12-7-22 Screw shaft 9-5-22 Propeller 29-5-22 Stern tube 12-7-22 Engine seatings 4/9/22

Engines holding down bolts 4/10/22, 13/10/22 Completion of pumping arrangements 28/11/22. Engines tried under working conditions 13/12/22 ✓

Completion of fitting sea connections 21/8/22      Stern tube 21/8/22      Screw shaft and propellers 21/8/22

Material of crank shaft S Identification Mark on Do. 5-21 : J.E. Material of thrust shaft S Identification Mark on Do. 7.327 " 2462

|                           |   |                            |           |                           |   |                            |                    |
|---------------------------|---|----------------------------|-----------|---------------------------|---|----------------------------|--------------------|
| Material of tunnel shafts | 5 | Identification Marks on Dr | SEE UNDER | Material of cavern shafts | 5 | Identification Marks on Dr | 3292 440908-2383 M |
|---------------------------|---|----------------------------|-----------|---------------------------|---|----------------------------|--------------------|

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

Is this machinery duplicate of a previous case? *Yes* If so, state name of vessel *Elmer* class *motor*

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

These Engines have been built under Special Survey and in accordance with the Rules and approved Plans, the materials and workmanship are sound & good.

| TUNNEL SHAFTS |        |        |        |        |        |        |       |        |       |       |
|---------------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 3693          | 3433   | 3326   | 3288   | 2437   | 3408   | 3326   | 3694  | 3327   | 3324  |       |
| 46045         | 46045  | 46045  | 46045  | 46045  | 46045  | 46045  | 46045 | 46045  | 46045 | 46045 |
| 2645          | 2642   | 2492   | 2582   | 2512   | 2639   | 2582   | 5266  | 2455   | 5071  |       |
| W.G.H.        | W.G.H. | W.G.H. | W.G.H. | W.G.H. | W.G.H. | W.G.H. | J.P.  | W.G.H. | J.P.  |       |

These engines have been fitted on board in an efficient manner and in our opinion are eligible to be classed and to have record of + L.M.C. 12-22

|                                |              |                   |
|--------------------------------|--------------|-------------------|
| The amount of Entry Fee ...    | £ 6 : 0 :    | When applied for, |
| Special ...                    | £ 128 : 12 : | 19. 12. 19. 32.   |
| Donkey Boiler Fee ...          | £ ✓ :        | When received,    |
| Travelling Expenses (if any) £ | ✓ :          | 22. 12. 19. 32.   |

*J. S. Sella & H. M. Crisick.*  
*Engineer Surveyors to Lloyd's Register of Shipping.*

Committee's Minute

Assigned + LMC 1222. *YH* TUE. 16 JAN. 1923

MACHINERY CERT.  
WHITING  
20/12/22