

## REPORT ON OIL ENGINE MACHINERY.

No. 46030

Date of writing Report *12. Oct. 1926* When handed in at Local Office *15.10.26* Port of *Glasgow* Received at London Office *20 OCT 26*  
 No. in Survey held at *Glasgow* Date, First Survey *25.8.25* Last Survey *8.10.1926*  
 Reg. Book. *Single* on the *Twin* Screw vessels *'SHROPSHIRE'* Number of Visits *154* Tons *Gross 10560*  
*Triple* Net *6629*  
 Built at *Glasgow* By whom built *The Fairfield S.B. & E. Co. Ltd. Yard No. 619. When built 1926.10*  
 Engines made at *Glasgow* By whom made *The Fairfield S.B. & E. Co. Ltd. Engine No. 619 When made 1926*  
 Donkey Boilers made at *Aman* By whom made *Cochran & Co. Aman Ltd. Boiler No. 9653 When made 1926*  
 Brake Horse Power *7700* Owners *Bibby Bros & Co.* Port belonging to *Limpud.*  
 Nom. Horse Power as per Rule *2196* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

OIL ENGINES, &c.—Type of Engines *Fairfield Sulzer* 2 or 4 stroke cycle *2* Single or double acting *Single*  
 Maximum pressure in cylinders *600 lb. sq. in.* No. of cylinders *8* Diameter of cylinders *28"* No. of cranks *8* Length of stroke *39"*  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *38 1/2"* Is there a bearing between each crank *Yes*  
 Revolutions per minute *110* Flywheel dia. *86 7/8"* Weight *10.5 Tons* Means of ignition *Compression* Kind of fuel used *Diesel fuel oil*  
 Crank Shaft, dia. of journals *as per Rule 18.23 18.3* Crank pin dia. *19"* Crank Webs *Mid. length breadth 32"* Thickness parallel to axis *12"*  
 as fitted *19"* Mid. length thickness *12"* Thickness around eyehole *8 1/2"*  
 Flywheel Shafts, diameter *as per Rule 18.23* Intermediate Shafts, diameter *as per Rule 14.11 14.2* Thrust Shaft, diameter at collar *as per Rule 14.81 14.98*  
 as fitted *19"* as fitted *14 3/8"* as fitted *15 1/4"*  
 Tube Shafts, diameter *as per Rule 15.53 15.6* Is the tube screw shaft fitted with a continuous liner *Yes*  
 as fitted *16"* as fitted *16"*  
 Bronze Liners, thickness in way of bushes *as per Rule .78"* Thickness between bushes *as per rule .61"* Is the after end of the liner made watertight in the propeller boss *Yes*  
 as fitted *13/16"* as fitted *5/8"* If the after end of the liner made watertight in the propeller boss *Yes*  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *No joints*  
 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 *No* Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft *No*  
 Propeller, dia. *17'-0"* Pitch *14'-3" to 15'-9"* Length of Bearing in Stern Bush next to and supporting propeller *66"*  
 No. of blades *3* Material *Bronze* whether Moveable *Yes* Total Developed Surface *87.1* sq. feet  
 Method of reversing Engines *Cams* Is a governor or other arrangement fitted to prevent racing of the engine *Yes* Means of lubrication *Mechanical*  
 Thickness of cylinder liners *2 5/8" / 1"* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *Lagged*  
 If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *Water cooled*  
 Cooling Water Pumps, No. *Two jacket, Two piston* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes*  
 Bilge Pumps fitted to the Main Engines, No. *None* Diameter *—* Stroke *—* Can one be overhauled while the other is at work *Yes*  
 Pumps connected to the Main Bilge Line { No. and Size *1 Bilge 100, 1 Ground Suction 100, 1 Ballast 200, 1 Emergency 100* How driven *Electromotors*  
 Ballast Pumps, No. and size *One, as above* Lubricating Oil Pumps, including Spare Pump, No. and size *Two 8" x 7 1/2" Duplex*  
 Are two independent means arranged for circulating water through the Oil Cooler *Yes* Suctions, connected to both Main Bilge Pump and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room *5-3 1/2", 1-5 1/2" Trunnels 1-3", 4-2 1/2", Trunnel Well 1-2 1/2" Bore.*  
 In Holds, &c. *In 1 Hold 3-2 1/2", In 2 Hold 2-3 1/2", In 3 Hold 2-3 1/2", In 4 Hold 2-3 1/2", In 5 Hold 3-3" In 6 Hold 3-3"*  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1-8" Bore*  
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *Yes*  
 Are all Sea Connections fitted direct on the skin of the ship *Yes & on walls* Are they fitted with Valves or Cocks *Bath*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stowage plates *Yes* Are the Overboard Discharges 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 the Blow Off Cocks fitted with a spigot and brass covering plate *Yes*  
 What pipes pass through the bunkers *None* How are they protected *—*  
 What pipes pass through the deep tanks *None* Have they been tested as per Rule *—*  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*  
 Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another *Yes* Is the Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Bridge Deck*  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *—*  
 Main Air Compressors, No. *Two 2 Cyl.* No. of stages *3* Diameters *23 5/8", 21 1/4", 5 7/8"* Stroke *20"* Driven by *Main Crankshaft*  
 Auxiliary Air Compressors, No. *Two 2 Cyl.* No. of stages *3* Diameters *14 1/2", 12, 3 1/2"* Stroke *7 1/2"* Driven by *Electromotors*  
 Small Auxiliary Air Compressors, No. *One 1 Cyl.* No. of stages *2* Diameters *6", 2 1/8"* Stroke *4 1/2"* Driven by *Steam*  
 Scavenging Air Pumps, No. *Two Blowers* Capacity Each *600 CF of free air per Sec* Driven by *Electromotors*  
 Auxiliary Engines crank shafts, diameter *as per Rule 226 7/8"* *See London Report No 90085.* as fitted *235 7/8"*

AIR RECEIVERS:—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 *Access by opening in end.*  
 Is there a drain arrangement fitted at the lowest part of each receiver *Yes*  
 High Pressure Air Receivers, No. *2* Cubic capacity of each *5.5' 28.0 CF* Internal diameter *11 7/8"* Thickness *9/16"* INSN. STARTS. *21 1/4"*  
 Seamless, lap welded or riveted longitudinal joint *Seamless* Material *S.75* Range of tensile strength *32, 1/37.4* Working pressure by Rules *1270, 1500 lb*  
 Starting Air Receivers, No. *4* Total cubic capacity *868 CF* Internal diameter *48"* Thickness *1 1/8"*  
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *S.* Range of tensile strength *28/32 Tons* Working pressure by Rules *606 lb*



IS A DONKEY BOILER FITTED? *Yes*  
HYDRAULIC TESTS:—

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

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....	15.2.26 - 14.4.26	600 <i>40"</i>	1070 <i>40"</i>	<i>✓</i>	
"    "    COVERS .....	15.2.26 - 14.4.26	600 .	1070 .	<i>✓</i>	
"    "    JACKETS .....	11.3.26 - 26.4.26	15 .	45 .	<i>✓</i>	
"    PISTON WATER PASSAGES .....	20.5.26 - 15.6.26	15 .	70 .	<i>✓</i>	
MAIN COMPRESSORS—1st STAGE .....	20.4.26 - 2.6.26	45 .	500 .	<i>✓</i>	
"    2nd " .....	20.4.26 - 2.6.26	145 .	500 .	<i>✓</i>	
"    3rd " .....	2.4.26 - 9.4.26	1000 .	2000 .	<i>✓</i>	
AIR RECEIVERS—STARTING .....	2.3.26 - 5.3.26	600 .	1000 .	<i>✓</i>	
"    INJECTION .....	6.5.26 - 19.5.26	1000 .	2000 .	<i>✓</i>	
AIR PIPES .....	23.2.26 - 27.8.26	350 .	700 .	<i>✓</i>	
FUEL PIPES .....	✓	1000 .	✓	✓	
FUEL PUMPS .....	22.1.26 - 4.2.26	1000 .	2000 .	<i>✓</i>	
SILENCER .....	✓	✓	✓	✓	
"    WATER JACKET .....	✓	✓	✓	✓	
SEPARATE FUEL TANKS .....	7.6.26 - 14.7.26	✓	20 .	<i>✓</i>	

PLANS. Are approved plans forwarded herewith for Shafting *No. 11.8.1925*, Receivers *E. D. C. Stork*, Separate Tanks *Yes*,  
Donkey Boiler *Yes*, General Pumping Arrangements *Yes*, Oil Fuel Burning Arrangements *✓*  
(If not, state date of approval)

SPARE GEAR *In accordance with Rule Requirements, a number of items additional thereto, on propeller shaft. Two propeller blades.*

The foregoing is a correct description,

**THE FAIRFIELD SHIPBUILDING AND  
ENGINEERING CO., LIMITED.**

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1925. Aug. 25-28, Sept. 15-18, 10-18, 29, Oct. 5-13, 16-20, 23-26, 28, Nov. 2-4, 6-11, 12-17, 19-23, 24, 26, 30, Dec. 2-4, 8-10, 14, 18, 22, 24, 26, 28, 30, 1926. Jan. 7-11, 12-13, 14-15, 19, 21, 22, 26-27, 29, Feb. 2-4, 8-9, 10-11, 12-15, 16-17, 18, 19, 22, 23, 24-25, 26, Mar. 1-2, 4-5, 8-11, 15-16, 17-19, 22-23, 25-26, 27, 30, 31, Apr. 1-2, 4-7, 8-9, 12-13, 14-15, 16-20, 24, 26, 28-29, 30, May 3-4, 6-7, 10-11, 12-14, 17-19, 20, 24, 26-28, 30, June 1-7, 8-9, 10-15, 16-21, 23-25, 28, July 2-7, 8-14, 28, Aug 6-7, 13-16, 17-19, 20, 23, 26-27, Sept 7-15, 20, 23-29, Oct 1-4, 7-8.
	During erection on board vessel --	15.2.26, 14.4.26, 15.4.26, 20.5.26, 15.6.26, 14.6.26, 14.4.26, 15.4.26, 16.3.26, 16.3.26, 19.5.26, 17.5.26, 27.7.26, 9.8.26
	Total No. of visits	154

Dates of Examination of principal parts—Cylinders 19.2.26, Covers 14.4.26, Pistons 15.4.26, Rods 16.3.26, Connecting rods 16.3.26, 19.5.26

Crank shaft 15.3.26, Flywheel shaft 15.3.26, Thrust shaft 15.3.26, Intermediate shafts 17.5.26, Tube shaft 27.7.26

Screw shaft 17.5.26, Propeller 19.5.26, Stern tube 19.5.26, Engine seatings 1.4.26, Engines holding down bolts 9.8.26

Completion of fitting sea connections 7.6.26, Completion of pumping arrangements 7.10.26, Engines tried under working conditions 7.8.10.26

Crank shaft, Material S.Y.S., Identification Mark L 619.4, Flywheel shaft, Material S.Y.S., Identification Mark 8/5.8/6.4

Thrust shaft, Material S.Y.S., Identification Mark 8/5.8/6.4, Intermediate shafts, Material S.Y.S., Identification Mark 8/5.8/6.4

Tube shaft, Material ✓, Identification Mark ✓, Screw shaft, Material S.Y.S., Identification Mark 8/5.8/6.4

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.) *The machinery of this vessel has been constructed under special survey in accordance with the Society's Rules and approved plans. The materials and workmanship employed in its manufacture are sound and good. It has been satisfactorily fitted on board and proved satisfactory under working conditions, and, in my opinion, is eligible for record + L.M.C. 10.26*

The amount of Entry Fee ... £ 6 : 0

Special ... £ 154 : 18

4 Printed Air Reverses £ 12 : 12

Travelling Expenses (if any) £ —

Committee's Minute **GLASGOW 19 OCT 1926**

Assigned *+ L.M.C. 10.26*

When applied for,

16/10/26

When received,

4.2.27

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation

CERTIFICATE WRITTEN