

REPORT ON OIL ENGINE MACHINERY.

No. 55933

Received at London Office 24 JUL 1935

Date of writing Report 16. 7. 35 Port of Glasgow
When handed in at Local Office 20. 12. 34 Date, First Survey 14. 7. 1935
Last Survey 14. 7. 1935
Number of Visits 14. 8

in Survey held at Glasgow
Reg. Book. Single Screw vessel MV. Karu
Tons Gross 1044
Net 529

Built at Glasgow By whom built Alex. Stephen & Sons Ltd. Yard No 546 When built 1935
Engines made at do By whom made do Engine No 546 When made 1935
Donkey Boilers made at - By whom made - Boiler No. - When made -
Brake Horse Power 810 Owners Muir J. & Co. of New Zealand Port belonging to Wellington
Nom. Horse Power as per Rule 210 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Ys.
Trade for which vessel is intended New Zealand Coasting 23 5/8

TYPE OF ENGINES, &c.—Type of Engines Stephen-Sulzer Heavy oil 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 850 lb Diameter of cylinders 360 1/2 Length of stroke 600 1/2 No. of cylinders 6 No. of cranks 6
Mean Indicated Pressure 80 1/2

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 443 1/2 Is there a bearing between each crank Ys.
Revolutions per minute 225 Flywheel dia. 1250 1/2 Weight 2.55 tons Means of ignition Comp. Kind of fuel used Diesel oil.

Crank Shaft, dia. of journals as per Rule 216 1/2 as fitted 230 1/2 Crank pin dia. 230 1/2 Crank Webs Mid. length breadth 360 1/2 Thickness parallel to axis 118 shrunk Thickness around eyehole
Flywheel Shaft, diameter as per Rule 216 1/2 as fitted 250 1/2 Intermediate Shafts, diameter as per Rule 164 1/2 as fitted 165 1/2 Thrust Shaft, diameter at collars as per Rule 142 1/2 as fitted 250

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 191 1/2 as fitted 194 Is the tube screw shaft fitted with a continuous liner Ys.
Bronze Liners, thickness in way of bushes as per Rule 3 1/2 as fitted 14 1/2 Thickness between bushes as per rule 13 1/2 as fitted 16 Is the after end of the liner made watertight in the propeller boss Ys. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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
If two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No. If so, state type Length of Bearing in Stern Bush next to and supporting propeller 2' 6"

Propeller, dia. 8' 0" Pitch 6' 3" No. of blades 3 Material Bronze whether Moveable Solid Total Developed Surface 22 sq. feet
Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when declutched Ys. Means of lubrication Fuel Thickness of cylinder liners 26 1/2 Are the cylinders fitted with safety valves Ys. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Ys. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

Cooling Water Pumps, No. 2 @ 18 tons + 1 @ 80 tons Is the sea suction provided with an efficient strainer which can be cleared within the vessel Ys.
Bilge Pumps worked from the Main Engines, No. 2 @ DA Diameter 85 1/2 Stroke 160 1/2 Can one be overhauled while the other is at work
Pumps connected to the Main Bilge Line No. and Size 1 @ 85 1/2 x 160 1/2 DA } 1 @ 80 tons/hr + 1 @ 60 tons/hr
How driven Main engine } Elec motor

Is the cooling water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements
Ballast Pumps, No. and size 1 @ 90 tons/hr Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 @ 29 tons/hr + 1 @ 30 tons/hr
Are two independent means arranged for circulating water through the Oil Cooler Ys. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 3 @ 3" + 2 @ 3" In Pump Room

In Holds, &c. 1 @ 2 @ 3" + 1 @ 2 @ 3"
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 3 1/2"
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Ys. Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Ys.

Are all Sea Connections fitted direct on the skin of the ship Ys. Are they fitted with Valves or Cocks 1 shot
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Ys. 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 Ys. Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected
What pipes pass through the deep tanks Have they been tested as per Rule Ys.
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Ys.

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 Ys. Is the Shaft Tunnel watertight See hull Report. Is it fitted with a watertight door Ys. worked from upper deck platform
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. 1 No. of stages 1 Diameters 110 1/2 Stroke 34 0 1/2 Driven by Main engine
Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 5 1/4 x 2 Stroke 4 3/4 Driven by Elec motor
Small Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 2 3/4 Stroke 3 1/2 Driven by 2 1/2 hp + per engine

Scavenging Air Pumps, No. 1 tandem DA Diameter 410 1/2 Stroke 34 0 1/2 Driven by Main engine
Auxiliary Engines crank shafts, diameter as per Rule as fitted See London Report No. 101595

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule. *Y/s.*

Can the internal surfaces of the receivers be examined and cleaned. *Y/s.* Is a drain fitted at the lowest part of each receiver. *Y/s.*

High Pressure Air Receivers, No. *1* Cubic capacity of each *100 ft* Internal diameter *30"* thickness *3/4"*

Seamless, lap welded or riveted longitudinal joint. Material *S* Range of tensile strength *29-33 tons* Working pressure by Rules *503 lb.* Actual *500*

Starting Air Receivers, No. *2* Total cubic capacity *100 ft* Internal diameter *30"* thickness *3/4"*

Seamless, lap welded or riveted longitudinal joint. Material *S* Range of tensile strength *29-33 tons* Working pressure by Rules *503 lb.* Actual *500*

IS A DONKEY BOILER FITTED? *No.* If so, is a report now forwarded? *-*

Is the donkey boiler intended to be used for domestic purposes only. *-*

PLANS. Are approved plans forwarded herewith for Shafting *Y/s.* *93.10.34* Receivers *Y/s.* Separate Tanks *Y/s.*

(If not, state date of approval) *31.10.34*

Donkey Boilers *-* General Pumping Arrangements *Y/s.* Oil Fuel Burning Arrangements *-*

SPARE GEAR.

Has the spare gear required by the Rules been supplied. *Y/s.*

State the principal additional spare gear supplied. *See list attached.*

The foregoing is a correct description,
A. M. Stephen *Director* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *1934 Dec. 20. 21. 27 (1935) Jan. 4. 15. 22. 28 Feb. 7. 11. 14. 20. 22. 25 Mar. 1. 4. 12*
 { During erection on board vessel - - } *18. 22. 26. 28. 29 Apr. 8. 15. 19. 24. 26. 30 May 7. 13. 17. 21. 24. 28. 31 June 5. 11. 14*
 Total No. of visits *48 - 27. 28 July 3. 4. 8. 9. 10. 12. 13. 14*

Dates of Examination of principal parts—Cylinders *5-6-35* Covers *9-7-35* Pistons *31-5-35* Rods *-* Connecting rods *17-5-35*

Crank shaft *also* Flywheel shaft *out* Thrust shaft *11-3-35 (FR)* Intermediate shafts *13-5-35* Tube shaft *-*

Screw shaft *26-4-35* Propeller *28-3-35* Stern tube *15-4-35* Engine seatings *8-4-35* Engines holding down bolts *10-7-35*

Completion of fitting sea connections *26-4-35* Completion of pumping arrangements *13-7-35* Engines tried under working conditions *14-7-35*

Crank shaft, Material *also* Identification Mark *4069 & 4070* Flywheel shaft, Material *out* Identification Mark *out*

Thrust shaft, Material *S.M. Engr. Steel* Identification Mark *5226 - CSP* Intermediate shafts, Material *S.M. Engr. Steel* Identification Marks *4094 - 4097 - 51*

Tube shaft, Material *-* Identification Mark *-* Screw shaft, Material *S.M. Engr. Steel* Identification Mark *4092 & 4093 - 51*

Is the flash point of the oil to be used over 150° F. *Y/s.*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with. *Y/s.*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. *Y/s.* If so, have the requirements of the Rules been complied with. *-*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with. *-*

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 built under special survey and in accordance with the Rules. The materials & workmanship are good. It has been placed on board & apparently secured in position & on completion it has been tried under working conditions with satisfactory results with the exception of the small auxiliary compressor which could not be started up before the vessel left for Port Salut. The Swansea Surveyors have been advised of this outstanding item.

The machinery of this vessel is eligible, in my opinion, to be classed in the Register Books with notation of +LMC 7.35 Subject to the small auxiliary compressor being put in order and tried under working conditions.

23/7/35

The amount of Entry Fee .. £ 4 : - : When applied for, *all*

Special £ 52 : 10 : *23 JUL 1935*

Donkey Boiler Fee £ 4 : 4 : When received, *RD*

Travelling Expenses (if any) £ : : *4.9.35 5/9*

Geo. Munro
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 23 JUL 1935 9.30 a.m.** **FRI. 26 JUL 1935**

Assigned *+LMC 7.35* *subject re.*

GLASGOW
 Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

