

REPORT ON OIL ENGINE MACHINERY.

No. 55933

Received at London Office 24 JUL 1935

Date of writing Report 16. 7. 35 Port of Glasgow
 in Survey held at Glasgow Date, First Survey 20. 12. 34 Last Survey 14. 7. 1935
 Reg. Book. Number of Visits 14

on the Single Twin Triple Quadruple Screw vessel NO. Karu
 Tons Gross 1044
 Net 529

Built at Glasgow By whom built Alas. 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 & 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

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

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 44.3 in Is there a bearing between each crank Ys.
 Revolutions per minute 225 Flywheel dia. 1250 in Weight 2.55 tons Means of ignition Comp. Kind of fuel used Distil oil

Crank Shaft, dia. of journals as per Rule 216 in as fitted 230 in Crank pin dia. 230 in Crank Webs Mid. length breadth 360 in Thickness parallel to axis shrunk
 Mid. length thickness 118 in Thickness around eyehole —

Flywheel Shaft, diameter as per Rule 216 in as fitted 250 in Intermediate Shafts, diameter as per Rule 164 in as fitted 165 in Thrust Shaft, diameter at collars as per Rule 142 in as fitted 250 in

Tube Shaft, diameter as per Rule — as fitted — Screw Shaft, diameter as per Rule 191 in as fitted 194 in Is the tube screw shaft fitted with a continuous liner Ys.

Bronze Liners, thickness in way of bushes as per Rule 12 in as fitted 12 in Thickness between bushes as per rule 12 in as fitted 12 in 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 Brass 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 Forced
 Thickness of cylinder liners 26 in 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. 6 @ DA Diameter 85 in Stroke 160 in Can one be overhauled while the other is at work —
 Pumps connected to the Main Bilge Line No. and Size 1 @ 85 in x 160 in DA How driven Main Engines

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. For 2 @ 3' + 2 @ 3'
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 3'

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 shut
 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 in Stroke 34.0 in Driven by Main Engines
 Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 5 1/2 x 2 Stroke 4 3/4 Driven by Elec Motn

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 engines
 Scavenging Air Pumps, No. 1 tan 4 in DA Diameter 410 in Stroke 34.0 in Driven by Main Engines

Auxiliary Engines crank shafts, diameter as per Rule — as fitted See Ldnm Report No. 101595

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

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

High Pressure Air Receivers, No. *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *by Rules* *✓*

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

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

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 *Yps.* *93.10.34* Receivers *Yps.* Separate Tanks *Yps.*

Donkey Boilers *—* General Pumping Arrangements *Yps.* Oil Fuel Burning Arrangements *—*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yps.*

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. 4. 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 *148 - 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 *and* 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 *—* Flywheel shaft, Material *and* Identification Mark *and*

Thrust shaft, Material *SM. Ingt. Steel* Identification Mark *40609 & 4070* Intermediate shafts, Material *for Ingt. Steel* Identification Marks *4094-4097-54*

Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *SM. Ingt. Steel* Identification Marks *4092 & 4093-5*

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

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

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *✓* 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 Book 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, *23 JUL 1935*

Special £ *52 : 10* : When received, *23 JUL 1935*

Donkey Boiler Fee £ *4 : 4* : *23 JUL 1935*

Travelling Expenses (if any) £ : : *4.9.35*

Committee's Minute *GLASGOW 23 JUL 1935 9.5 a.m.*

Assigned *+LMC 7.35*

subject re.

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



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