

REPORT ON OIL ENGINE MACHINERY

10 MAY 1934

Received at London Office

Date of writing Report

19 ³⁴ When handed in at Local Office 9th May 1934 Port of Belfast.

No. in Reg. Book

Survey held at Belfast

Date, First Survey 6th Oct. 1933

Last Survey 20th Apr 1934

Number of Visits 42

Single on the Twin Triple Screw vessel

"INCOMATI."

Tons Gross 7368.57 Net 4539.9

Built at Belfast

By whom built Workman, Clark (1928) Ltd.

Yard No. 532. When built 1934-4.

Engines made at Belfast

By whom made " " " "

Engine No. 532. When made 1934

Donkey Boilers made at Annan

By whom made Lochran & Co Annan Ltd.

Boiler No. 12623. When made 1934

Brake Horse Power 2875

Owners Bank Line Ltd

Port belonging to Belfast

Nom. Horse Power as per Rule 1387

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

Trade for which vessel is intended India - Africa

IL ENGINES, &c.—Type of Engines *Doxford* 2 or 4 stroke cycle 2 Single or double acting *Simple*

Maximum pressure in cylinders Diameter of cylinders 600 m/m. Length of stroke 1800 m/m. No. of cylinders 8 No. of cranks 24

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 2010 m/m. Is there a bearing between each crank 3 throats cranks between bearings

Revolutions per minute 115. Flywheel dia. 2110 m/m. Weight 25 tons 3 cwt. Means of ignition *compression*. Kind of fuel used *Heavy oil*

Crank Shaft, dia. of journals as per Rule *As approved*. Crank pin dia. 460 m/m. Crank Webs Mid. length breadth 650 x 800 m/m. Thickness parallel to axis 260 x 197 m/m

Flywheel Shaft, diameter as per Rule *As approved*. Intermediate Shafts, diameter as fitted 13 3/8. Thrust Shaft, diameter at collars as per Rule *As approved*

Tube Shaft, diameter as fitted 430 m/m. Screw Shaft, diameter as fitted 15". Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule *As approved*. Thickness between bushes as fitted 31/32". 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 junctions made by fusion through the whole thickness of the liner 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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No

Length of Bearing in Stern Bush next to and supporting propeller 5'-0"

Propeller, dia. 14'-6" Pitch 15'-0" No. of blades 4 Material *brass*. whether Moveable Yes. Total Developed Surface 58 sq. feet

Method of reversing Engines *air*. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication *forced*

Thickness of cylinder liners 25 m/m. min. 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 2 sea water 200 ton/hr.

Cooling Water Pumps, No. 2. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. *None*. Diameter 3-5" (100 tons/hr) Stroke 1-7" (200 tons/hr)

Pumps connected to the Main Bilge Line No. and Size 3-5" (100 tons/hr) How driven *electric motor*

Ballast Pumps, No. and size 1-7" (200 tons/hr). Lubricating Oil Pumps, including Spare Pump, No. and size 2-5" (60 ton per hr)

Are two independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 4-3" In Pump Room Yes

In Holds, &c. No 1 hold 2-3" No 2 hold 2-3 1/2" No 3 hold (Dup tank) 2-3" No 5 hold 3-3"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3-5"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. 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 Yes

Are all Sea Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Yes

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform 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 How are they protected Yes

What pipes pass through the deep tanks *fore hold bilge pipes*. Have they been tested as per Rule Yes

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 *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

Main Air Compressors, No. 1. No. of stages 1. Diameters 12 3/4" Stroke 7" Driven by *Electric motors*

Auxiliary Air Compressors, No. 2. No. of stages 3. Diameters 6 1/4 x 2 1/4" Stroke 4 1/2" Driven by *Steam*

Small Auxiliary Air Compressors, No. 1. No. of stages 2. Diameters 6 1/4 x 2 1/4" Stroke 4 1/2" Driven by *main engine*

Scavenging Air Pumps, No. 1 each engine. Diameter 1580 m/m. Stroke 880 m/m. Driven by *main engine*

Auxiliary Engines crank shafts, diameter as per Rule *As approved*. No. 4. Position — 2 port & 2 starboard of main engine room

Is each receiver, which can be isolated, fitted with a safety valve as per Rule *fitted with fusible plugs. Safety valves on inlet line*

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

High Pressure Air Receivers, No. 2. Cubic capacity of each 450 cu ft. Internal diameter 5'-0" thickness 1 1/2"

Seamless, lap welded or riveted longitudinal joint *DB straps* Material *steel*. Range of tensile strength 29/33 ton Working pressure *600 lbs 0"*

Starting Air Receivers, No. 2. Total cubic capacity 450 cu ft. Internal diameter 5'-0" thickness 1 1/2"

Seamless, lap welded or riveted longitudinal joint *DB straps* Material *steel*. Range of tensile strength 29/33 ton Working pressure *600 lbs 0"*

Seamless, lap welded or riveted longitudinal joint *Incl riveted*



IS A DONKEY BOILER FITTED? *Yes.*

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

Is the donkey boiler intended to be used for domestic purposes only? *No.*

PLANS. Are approved plans forwarded herewith for Shafting *31/7/33. 18/10/33.* Receivers *31/7/33.* Separate Tanks *Yes.*

Donkey Boilers *Yes.* General Pumping Arrangements *Yes.* Oil Fuel Burning Arrangements *✓*

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yes.*

State the principal additional spare gear supplied

See separate list.

The foregoing is a correct description,
pro WORKMAN CLARK (1928) LIMITED.

Birmingham Secretary.

Manufacturer.

Dates of Survey while building
During progress of work in shops - - *1933 Oct 6. 11. 16. 24. 25. 30 Nov 3. 16. 20. 28. 29 1934 Jan 9. 10. 11. 18. 19. 23. 25. Feb 2. 5. 8. 12*
During erection on board vessel - - *22. 26. 27 Mar 2. 8. 9. 13. 15. 19. 23. 27 Apr 4. 10. 11. 12. 13. 17. 18. 19. 20*
Total No. of visits *42*

Dates of Examination of principal parts—Cylinders *11/10/33.* Covers *11/10/33.* Pistons *16/11/33. 20/11/33.* Rods *20/11/33. 19/1/34.* Connecting rods *30/10/33.*

Crank shaft *27/2/34. 8/3/34.* Flywheel shafts *8/3/34. 27/2/34.* Thrust shaft *27/2/34. 8/3/34.* Intermediate shafts *10/1/34.* Tube shaft *✓*

Screw shaft *11/1/34. 17/1/34. 18/1/34.* Propellers *18/1/34.* Stern tube *29/12/33. 19/1/34.* Engine seatings *19/2/34.* Engines holding down bolts *19/3/34.*

Completion of fitting sea connections *10/1/34. 10/4/34.* Completion of pumping arrangements *17/4/34.* Engines tried under working conditions *18/4/34.*

Crank shaft, Material *Steel* Identification Mark *P. LLOYD'S Nos 2541. 2543. J.L. 16/3/27. J.K.W. 27/2/34.* Flywheel shaft, Material *Steel.* Identification Mark *As thrust shaft.*

Thrust shaft, Material *Steel.* Identification Mark *ditto.* Intermediate shafts, Material *Steel.* Identification Marks *LLOYD'S Nos 1702. 5283 to 5294 & 5859 R.L.A. Identification Marks J.K.W. 10/1/34.*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel.* Identification Mark *✓*

Is the flash point of the oil to be used over 150° F. *✓*
P. LLOYD'S Nos. 1702. 5299. R.L.A. 22/4/27. J.K.W. 11/1/34.
S. " " " 5296 " " " 17/1/34.
SPARE. " " " 5297. " " " 18/1/34.

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

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

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 for this vessel has been re-constructed under special survey. The materials and workmanship are sound & good. The machinery, auxiliary machinery and donkey boiler have been efficiently installed in the vessel and the main and auxiliary machinery tried out under working conditions at a moored and sea trials with satisfactory results. In my opinion, the vessel is now eligible for notation in the Society's Register Book of +LMC. 4, 34. CL. Donkey boiler pressure 100 lbs sq. in. Fitted for oil fuel 4, 34. FP above 150° F. Electric light.*

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee .. £ 6 : 0 :
Special £ 134 : 13 : 6
Donkey Boiler Fee £ 6 : 6 : 0
Travelling Expenses (if any) £ : :
When applied for, *4th May 1934.*
When received, *2.7 34 RD.*

John K. Williams.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 18 MAY 1934*
Assigned *+ Lmb H. 34 LB-100th*

