

REPORT ON OIL ENGINE MACHINERY.

No. 18789
15 FEB 1934

Received at London Office

Date of writing Report 10th Feb 34 When handed in at Local Office 14 2 - 19 24 Port of Grimsby

No. in Survey held at Lincoln Date, First Survey 4th Sept 1933 Last Survey 8th Feb 1934
Reg. Book. Number of Visits 44

on the Single } Screw vessel M/V "INCOMATI" Tons { Gross 7368.51
Twin } Net 4539.9
Triple }
Quadruple }

Built at Belfast By whom built Woolman Clark & Co. Ltd Yard No. 532 When built 1934

Engines made at Sunderland By whom made H. Doreford & Sons Ltd Engine No. 170053 54.55 & 56 When made 1927

Aux. Engines made at Lincoln By whom made Ruston & Hornsby Ltd Engg. No. 170053 54.55 & 56 When made 1934

Brake Horse Power 150 each Owners Bank Line Ltd Port belonging to Belfast

Tom. Horse Power as per Rule 31 each Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which vessel is intended [Four Aux. engines. Type 5 V.C.R.Z.]

A. ENGINES, &c. Type of Engines Oilless injection, cold starting 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 650 lbs. Diameter of cylinders 8" Length of stroke 10 3/4" No. of cylinders 5 No. of cranks 5

Mean Indicated Pressure 73 lbs. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 9 1/2" Is there a bearing between each crank yes

Revolutions per minute 600 Flywheel dia. 3'-4" Weight 17 1/2 cwt Means of ignition Compression Kind of fuel used Crude oil

Crank Shaft, dia. of journals as approved Crank pin dia. 4 3/4" Crank Webs Mid. length breadth 8" Thickness parallel to axis shrunk
as fitted 6" Mid. length thickness 2 1/2" Thickness around eye-hole shrunk

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule
as fitted as fitted as fitted as fitted

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner yes
as fitted as fitted as fitted as fitted

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the stern tube yes
as fitted as fitted as fitted as fitted

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 yes

If so, state type yes Length of Bearing in Stern Bush next to and supporting propeller yes

Propeller, dia. 3'-4" Pitch 18" No. of blades 3 Material cast iron whether Moveable no Total Developed Surface 100 sq. feet

Method of reversing Engines None Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication oil

Exhaust Pipes, thickness of cylinder liners 3/4" Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material water

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes

Cooling Water Pumps, No. 1 Bronze centrifugal 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. 1 Diameter 10" Stroke 10" Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line { No. and Size 1
How driven by Main Engines

Is the cooling water led to the bilges yes If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements yes

Ballast Pumps, No. and size 1 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one geared

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 1 In Pump Room 1

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces 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 yes

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

How are they protected yes 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 yes

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes

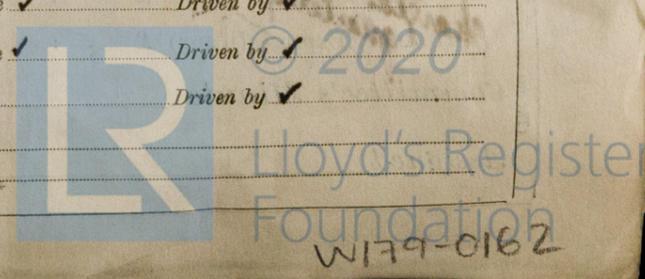
Air Compressors, No. 1 No. of stages 1 Diameters 10" Stroke 10" Driven by yes

Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 10" Stroke 10" Driven by yes

Other Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 10" Stroke 10" Driven by yes

Refrigerating Air Pumps, No. 1 Diameter 10" Stroke 10" Driven by yes

Auxiliary Engines crank shafts, diameter as per Rule as fitted as fitted



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 and cleaned *yes.* Is a drain fitted at the lowest part of each receiver *yes.*

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 *✓*
Actual *✓*

Starting Air Receivers, No. *one.* Total cubic capacity *11.2 cubic feet.* Internal diameter *2'-0"* thickness *5/16"*

Seamless, lap welded or riveted longitudinal joint *seamless.* Material *sm. steel* Range of tensile strength *26/30 tons* Working pressure by Rules *325 lbs*
Actual *300 lbs.*

IS A DONKEY BOILER FITTED? *None.* 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 *11.11.32.* Receivers *15.2.33.* Separate Tanks *✓*
(If not, state date of approval)

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

SPARE GEAR.

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

State the principal additional spare gear supplied *one cylinder cover complete with studs, joints + water pipe connections, 2 fuel valves complete, 2 pairs of bottom end brasses, 1 cylinder liner with joints, piston rings, 2 sets of springs of each kind, 1 set ball valves for fuel pump, etc.*

Ruston & Hornsby, Limited,

The foregoing is a correct description,

R. O'Neil 9/2/34

Manufacturer.

Oil & Gas Engine Dept

Dates of Survey while building
During progress of work in shops— *1933 Sep 4. 7. 11. 14. 18. 21. 25. 28 Oct 2. 5. 9. 12. 17. 19. 23. 26. 30 Nov 2. 6. 9. 13. 16. 20. 23. 27. 30 Dec 4. 7. 11. 14. 18. 21. 28*
During erection on board vessel— *1934 Jan 2. 8. 11. 15. 18. 22. 25. 29 Feb 1. 5. 8*
Total No. of visits *44.*

Dates of Examination of principal parts—Cylinders *23.10.33.* Covers *7.12.33.* Pistons *23.10.33.* Rods *✓* Connecting rods *23.10.33.*
Crank shaft *4.12.33, 7.12.33* Flywheel shaft *4.12.33.* Thrust shaft *2.1.34.* Intermediate shafts *14.12.33.* Tube shaft *✓*

Screw shaft *✓* Propeller *✓* Stern tube *✓* Engine seatings *✓* Engines holding down bolts *✓*

Completion of fitting sea connections *✓* Completion of pumping arrangements *✓* Engines tried under working conditions *8.2.34.*

Crank shaft, Material *sm. steel* Identification Mark *Nº 3190 A, B, C, D* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *✓* Identification Mark *✓* Intermediate shafts, Material *✓* Identification Marks *✓*

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

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

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

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 *yes.* If so, state name of vessel *"M/V 'Isipingo' and 'Inckango'."*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The workmanship + materials are good.*

The engines have been built under Special Survey in accordance with the Rules + the approved plans.

Running trials were carried out at the maker's works with satisfactory results.

The engines have been despatched to Belfast, where they will be fitted on board the vessel by Messrs Workman Clark + Co.

No. Refee:— 1V.3162; 1V.3163; 1V.3164; 1V.3446.

The amount of Entry Fee .. £	:	:	When applied for,
Special <i>in case</i> .. £	:	:	19.
Donkey Boiler Fee .. £	:	:	When received,
Traveling Expenses (if any) £	:	:	19.

A.L. Silditch
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 18 MAY 1934*

Assigned *See Bel. J.C. 11296*



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