

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 Linerln. Date, First Survey 4th Sept. 1933 Last Survey 8th Feb. 1934
 Reg. Book. Number of Visits 14

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

Built at Belfast By whom built Workman Clark & Co. Ltd. Yard No. 532 When built 1934
 Engines made at Lunderland By whom made H. Doreford & Sons Ltd. Engine No. 170053 When made 1927
Aux. Engines made at Lincoln By whom made Ruston & Hornsby Ltd. Eng. No. 54.55+56 When made 1934
 Brake Horse Power 150 each Owners Bank Line Ltd. Port belonging to Belfast
 Nom. 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 eyehole 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

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube screw shaft fitted with a continuous liner yes
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
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. yes Pitch yes No. of blades yes Material yes whether Moveable yes Total Developed Surface yes 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
forced 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. yes Diameter yes Stroke yes Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size How driven
yes 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 yes 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 yes In Pump Room yes

Holds, &c. yes Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size yes
 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

At pipes pass through the bunkers yes How are they protected yes
 At pipes pass through the deep tanks 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
 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

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

Oil Auxiliary Air Compressors, No. yes No. of stages yes Diameters yes Stroke yes Driven by yes
 Draining Air Pumps, No. yes Diameter yes Stroke yes Driven by yes

Auxiliary Engines crank shafts, diameter as per Rule
as fitted

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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 ✓

Starting Air Receivers, No. *one.*

Total cubic capacity *11.2 cubic feet.*

Internal diameter *2'-0"*

thickness *7/16"*

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 ✓

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 braces, 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 ✓
Crank shaft *4.12.33.* Flywheel shaft *4.12.33.* Thrust shaft ✓ Intermediate shafts ✓ 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 "Inkango."*

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.

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

The amount of Entry Fee .. £ : : When applied for,
Special *in ale* .. £ : : 19.
Donkey Boiler Fee .. £ : : When received,
Traveling Expenses (if any) £ : : 19.

Committee's Minute

FRI. 18 MAY 1934

Assigned

See Bel. J.C. 11296

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



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