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5 JUL 1949

See LEITH REPORT NO. 22467
REPORT ON OIL ENGINE MACHINERY.

No. 74179



Received at London Office 7 JUL 1949

Date of Writing Report 27th Jan. 1949. When handed in at Local Office 4 JUL 1949. Port of Glasgow.

No. in Reg. Book 40524. Survey held at Glasgow. Date, First Survey 19.4.49. Last Survey 24.6.49. Number of Visits 19.

Single Supplement on the Twin Triple Quadruple Screw vessel T.S.M.V. "MOMBASA". Tons Gross 2213. Net 1090.

Built at Leith. By whom built Messrs Henry Robb & Co. Ltd. Yard No. 379E. When built 1949.

Engines made at Glasgow. By whom made Messrs British India Engine Co. Ltd. Engine No. 739/40. When made 1949.

Donkey Boilers made at Glasgow. By whom made Messrs British India Engine Co. Ltd. Boiler No. - When made -

Brake Horse Power 1600. Owners British India Steam Navigation Co. Ltd. Port belonging to London.

M.N. Power as per Rule 367. Is Refrigerating Machinery fitted for cargo purposes Yes. Is Electric Light fitted Yes.

Trade for which vessel is intended Open Sea.

OIL ENGINES, &c. - Type of Engines Heavy oil M.A.S.M. 2 or 4 stroke cycle 2 Single or double acting Single.

Maximum pressure in cylinders 855 lbs/sq. in. Diameter of cylinders 13 3/8. Length of stroke 570. No. of cylinders 5. No. of cranks 5.

Mean Indicated Pressure 100 lbs/sq. in. Ahead Firing Order in Cylinders 1.5.2.3.4. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 494.

Is there a bearing between each crank No. Revolutions per minute 250.

Flywheel dia. 1550. Weight 6,900 lbs. Moment of inertia of flywheel (lbs. in.² or Kg. cm.²) 8060. Means of ignition Comp. Kind of fuel used Diesel.

Crank Shaft, Solid forged dia. of journals as per Rule 2.7. Crank pin dia. 235. Crank webs Mid. length breadth 324.3. Thickness parallel to axis shrunk. Thickness around eye-hole.

Flywheel Shaft, diameter as per Rule 2.7. Intermediate Shafts, diameter as per Rule 6. Thrust Shaft, diameter at collars as fitted 250.

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

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 propeller boss.

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 tube shaft.

Propeller, dia. 75. Pitch 3.5. No. of blades 3. Material Cast Iron. whether moveable. Total developed surface 11.5. sq. feet.

Moment of inertia of propeller (lbs. in.² or Kg. cm.²). Kind of damper, if fitted.

Method of reversing Engines Direct. Is a governor or other arrangement fitted to prevent racing of the engine when declutched. Means of lubrication Hand.

Thickness of cylinder liners 25.5. Are the cylinders fitted with safety valves. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material.

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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.

Bilge Pumps worked from the Main Engines, No. 2. Diameter. Stroke. Can one be overhauled while the other is at work.

Pumps connected to the Main Bilge Line No. and size. How driven.

Is the cooling water led to the bilges. 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. Power Driven Lubricating Oil Pumps, including spare pump, No. and size.

Are two independent means arranged for circulating water through the Oil Cooler. Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces. In pump room. In holds, &c.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size.

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes. Are the bilge suction 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.

Are all Sea Connections fitted direct on the skin of the Ship. Are they fitted with valves or cocks. Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates.

Are the overboard discharges above or below the deep water line. Are they each fitted with a discharge valve always accessible on the plating of the vessel. 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.

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times.

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. Is the shaft tunnel watertight. Is it fitted with a watertight door. worked from.

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. 2. No. of stages. diameters. stroke. driven by.

Auxiliary Air Compressors, No. 2. No. of stages. diameters. stroke. driven by.

Small Auxiliary Air Compressors, No. 2. No. of stages. diameters. stroke. driven by.

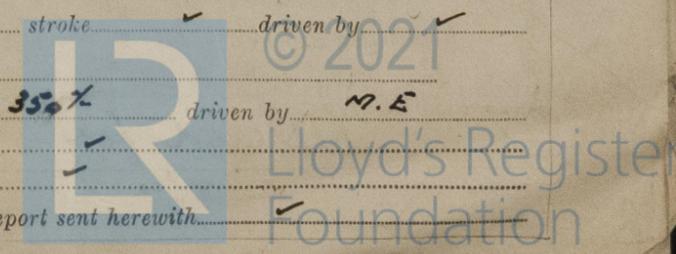
What provision is made for first charging the air receivers.

Scavenging Air Pumps, No. 2. diameter 850. stroke 350. driven by M.E.

Auxiliary Engines crank shafts, diameter as per Rule. Position. Have the auxiliary engines been constructed under special survey. Is a report sent herewith.

P.S.
18/7/49
T.V.Cs
TORSIOPT

014873-014886-0319



AIR RECEIVERS:—Have they been made under survey... State No. of report or certificate... 6. 71212.

Is each receiver, which can be isolated, fitted with a safety valve as per Rule...

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

Injection Air Receivers, No. 3... Cubic capacity of each... Internal diameter... thickness...

Seamless, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...

Starting Air Receivers, No. 3... Total cubic capacity 100 cu ft... Internal diameter 25 1/2... thickness 9/16...

Seamless, welded or riveted longitudinal joint... Riveted... Material S.M. steel... Range of tensile strength 28 1/2 to 70... Working pressure...

IS A DONKEY BOILER FITTED... 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... Receivers... Separate fuel tanks...

Donkey boilers... General pumping arrangements... Pumping arrangements in machinery space...

Oil fuel burning arrangements...

Have Torsional Vibration characteristics been approved... Provided Torsion Reports... Date of approval 28.4.48.

SPARE GEAR.

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

State the principal additional spare gear supplied...

The foregoing is a correct description, G. Scott B.P.E.L.D. Manufacturer.

Dates of Survey while building... During progress of work in shops... 19th Apr. 10. 11. 13. 17. 18. 19. 20. 25. 26. May. 1. 6. 8. 24. June. 1949.

Dates of Survey while building... During erection on board vessel...

Total No. of visits (incl. in shops.)

Dates of examination of principal parts—Cylinders... Covers... Pistons... Rods... Connecting rods...

Crank shaft... Flywheel shaft... Thrust shaft... Intermediate shafts... Tube shaft...

Screw shaft... Propeller... Stern tube... Engine seatings... Engine holding down bolts...

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

Crank shaft, material S.M. steel... Identification mark... Flywheel shaft, material... Identification mark...

Thrust shaft, material S.M. steel... Identification mark... Intermediate shafts, material... Identification marks...

Tube shaft, material... Identification mark... Screw shaft, material... Identification mark...

Identification marks on air receivers... 3-off. No. 71212. LLOYD'S TEST. 250 lbs/in. W.P. 255.

Welded receivers, state Makers' Name... R.S. 26.4.49.

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...

Description of fire extinguishing apparatus fitted...

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... If so, state name of vessel...

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines have been built under special survey and in accordance with the Rules and approved Plans. The materials used and workmanship are good, and on completion the Engines were tried on the test bed at the makers works with satisfactory results. The Engines are eligible in my opinion for the record of 4% L.M.C. (with data) when efficiently installed on board steamship Robb. Ltd. yard No. 379.E. T.S.M. "Mambasa". The torsional vibration characteristics have been approved for a service speed of 250 R.P.M. provided records taken from the completed installation confirm dampness efficiency limits. The vibration stress in crankshafts to not more than 3.700 lbs/in. (See fender letter of 28.4.48.)

The amount of Entry Fee... £162-2-0. Special £108-0-0. Donkey Boiler Fee... £54-2-0. Travelling Expenses (if any) £...

When applied for... 19. When received... 19.

Signature of Engineer Surveyor to Lloyd's Register of Shipping.



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

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