

REPORT ON OIL ENGINE MACHINERY.

No. 7567.

Received at London Office

27 OCT 1927

Date of writing Report 22nd October 1927 When handed in at Local Office

Port of

Copenhagen

No. in Survey held at Copenhagen

Date, First Survey 22nd February Last Survey 4th October 1927.

Reg. Book.

Number of Visits 58.

Single
on the ~~Twin~~ Motor
Triple Screw vessel
Quadruple

Tons
Gross
Net

Built at Dundee By whom built Caledon Shipbuilding & Engineering Co. Ltd. No. 313 When built
Engines made at Copenhagen By whom made Akt. Burmeister & Wain's Engine No. 1367 When made
Donkey Boilers made at By whom made (Designated CALEDON I.) Boiler No. When made
Brake Horse Power 3000. Owners Port belonging to
Nom. Horse Power as per Rule 653. Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Vertical Diesel Oil Engine (Crosshead type) 2 or 4 stroke cycle 4 Single or double acting Single
Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 740 mm = 29 1/8" Length of stroke 600 mm = 23 1/2" No. of cylinders 8 No. of cranks 8
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 mm Is there a bearing between each crank Yes
Revolutions per minute 105 Turning Wheel dia. 2136 mm Weight 1950 kg Means of ignition Air compression Kind of fuel used Crude oil, flash point above 150°F
Crank Shaft, dia. of journals as per Rule 480.6 mm as fitted 486 mm Crank pin dia. 486 mm Crank Webs Mid. length breadth 820 mm Mid. length thickness 270 mm Thickness parallel to axis 310 mm Thickness around eye hole 217 mm
Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube screw shaft fitted with a continuous liner
Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per rule as fitted 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 the tube shaft
Length of Bearing in Stern Bush next to and supporting propeller
Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet
Method of reversing Engines Direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when decoupled yes Means of lubrication
Lubrication Thickness of cylinder liners 53.5 mm 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
Cooling Water Pumps, No. 2 off, centrifugal, 150 tons each 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 off Diameter of tanks 160 mm Stroke 290 mm Can one be overhauled while the other is at work yes
Pumps connected to the Main Bilge Line No. and Size How driven
Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size 2 off, cog wheel pumps, 60 tons each
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 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 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
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. 1 off. No. of stages 3. Diameters 760 mm - 675 mm - 160 mm Stroke 630 mm Driven by the main engine.
Auxiliary Air Compressors, No. 2 off. No. of stages 3. Diameters 318 mm - 255 mm - 75 mm Stroke 220 mm Driven by the auxiliary engine.
Small Auxiliary Air Compressors, No. 1 off. No. of stages 2. Diameters 160 mm - - - 34 mm Stroke 80 mm Driven by a steam engine.
Scavenging Air Pumps, No. Diameter Stroke Driven by
Auxiliary Engines crank shafts, diameter as per Rule 161.6 mm as fitted 170.0 mm

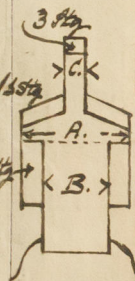
IR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes

Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces

Is there a drain arrangement fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. 2 off. I - 500 litres II - 250 " III - 25 " Internal diameter I - 450 mm II - 404 mm III - 7 1/4 " thickness I - 25 mm II - 25 mm III - 5/8 " Seamless, lap welded or riveted longitudinal joint I - lap welded II - lap welded III - seamless Material S.M. steel Range of tensile strength I - 38.4 - 35.6 kg/mm² II - 38.4 - 35.6 kg/mm² III - 28.4 - 28.0 kg/mm² Working pressure by Rules I - 66.3 kg/cm² II - 66.3 kg/cm² III - 28.5 kg/cm²

Starting Air Receivers, No. Total cubic capacity Internal diameter thickness
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules



IS A DONKEY BOILER FITTED? ✓

If so, is a report now forwarded? ✓

PLANS. Are approved plans forwarded herewith for Shafting *for crank shaft* Receivers *None* Separate Tanks *None*
(If not, state date of approval)

Donkey Boilers *none* General Pumping Arrangements *none* Oil Fuel Burning Arrangements *None*

SPARE GEAR *Delivered as per accompanying list, - to be checked when placed onboard.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 22 Feb. 9. March. 4, 6, 7, 8, 9, 11, 12, 13, 19, 20, 21, 22, 23, 25, 27, 30 April, 2, 3, 4, 6, 10, 12, 16, 24, 31 May, 2, 8, 11, 13, 16, 20, 23, 25, 29 June, 1, 5, 6, 7, 11, 12, 13, 22, 27 July, 4, 8, 12, 17, 18, 20, 24, 27, 29 Aug. 13, 23, 28 Sept. - 4 Oct. 1927.
During erection on board vessel - - }
Total No. of visits in shop 58

Dates of Examination of principal parts - Cylinders - - and - - Covers ^{3/4, 2 1/4, 3 1/5, 10/5} 2 1/2, 1 3/4, 1 1/4, 27. Pistons ^{1 1/4, 3 3/4, 10/5} 2 1/2, 1 1/4, 27. Rods ^{4 1/4, 1 1/4, 12 1/5, 2 1/6} 1 1/2, 1 1/4, 27. Connecting rods ^{9 1/4, 4 1/5, 10 1/5, 3 1/5} 1 1/2, 1 1/4, 27.

Crank shaft ^{3 1/5, 1 1/6, 2 1/6, 27.} Flywheel shaft ✓ 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 in shop ^{8 1/8, 12 1/8, 2 1/8, 13 1/8, 13 1/9.}

Crank shaft, Material *S.M.I. Steel* Identification Mark *Q 20.6.27.* 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. *Yes*

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.)

In accordance with the Rules for Special Survey the material and workmanship have been examined from the commencement of construction of the above described machinery, until the running test under full power working condition on the test bench in shop, and found it good in every respect and the engines worked satisfactorily.

The material used in the construction of the engines and the air receivers has been tested as required by the Rules either by us or as per certificates produced. -

The dimensions are as specified and in accordance with the requirements of the Rules, - the approved plans and as per Secretary's letter E. dated the 31st March 1927.

*Recommend the vessel to have notation in the Register Book of **LMC** - with date, and record of "OIL ENGINES" when the machinery has been fitted on board under the supervision and tested to the satisfaction of the Surveyors to this Society. -*

The amount of Entry Fee ... *4/6* 87.17 : When applied for, 25. 10 1927.
" 4/5 - Special Survey " ... *4/6* 1563.95 :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) *4/6* 4.30 :
See Sec. letter
17-11-1927

Committee's Minute

FRI. 27 JAN 1928

Assigned

See Run. Log rpt to 8626

A. F. Deitch.
Engineer Surveyor to Lloyd's Register of Shipping.



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