

REPORT ON OIL ENGINE MACHINERY.

No. 65

Received at London Office

Date of writing Report 4-9-25 When handed in at Local Office 4-9-25 Port of Winterthur
 No. in Survey held at Winterthur Date, First Survey 22-9-24 Last Survey 21-8-1925
 Reg. Book. Number of Visits
 on the ^{Single} Twin ^{Triple} Screw vessels Tons ^{Gross} ^{Net}
 Built at Nagasaki By whom built Mitsubishi Zosen Kaisha Yard No. 411 When built 1925.
 Engines made at Winterthur By whom made Messrs. Sulzer Bros. Engine No. 5477 When made 1925.
 Donkey Boilers made at By whom made Boiler No. When made
 Brake Horse Power 2300 each Eng = 4600 Total Owners Osaka Shosen Kaisha Port belonging to
 Nom. Horse Power as per Rule 1164 (Two Eng) Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes.

II. ENGINES, &c.—Type of Engines Sulzer Diesel Engines 2 or 4 stroke cycle 2 Single or double acting single
 Maximum pressure in cylinders 38 Ats. No. of cylinders 12 Total Diameter of cylinders 600 mm No. of cranks 12 Total Length of stroke 1060 mm
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 810 mm Is there a bearing between each crank Yes.
 Revolutions per minute 112 Flywheel dia. 2100 mm Weight 10300 kg Means of ignition Compression Kind of fuel used heavy fuel oil
 Crank Shaft, dia. of journals as per Rule 386 mm as fitted 405 Crank pin dia. 405 mm Crank Webs Mid. length breadth 550 mm Thickness parallel to axis shrunk
 Flywheel Shafts, diameter as per Rule 386 as fitted 405 Intermediate Shafts, diameter as per Rule 292 mm as fitted 292 Thrust Shaft, diameter at collars as per Rule 306.6 mm as fitted 390
 Tube Shafts, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube 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
 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
 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 Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Means of lubrication
oil Thickness of cylinder liners 45 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with
 non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
Boiling Water Pumps, No. 2 Electric driven centrifugal pumps the sea suction provided with an efficient strainer which can be cleared within the vessel
Bilge Pumps fitted to the Main Engines, No. 2 Diameter 6" Stroke 6" Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size 2 - 6" x 6" Capacity of each 50 cub. metres per hour
 How driven Electric motion
Ballast Pumps, No. and size 2 electric driven, Capacity of each 25 m³ per hour, one stand by.
 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 Engine and Boiler Room
 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 Space
 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
 Are all pipes pass through the bunkers How are they protected
 Are all 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
 apartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from
 Is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
Auxiliary Air Compressors, No. Two each engine No. of stages 3 Diameters 640/580/140 Stroke 560 mm Driven by Crank shaft
Auxiliary Air Compressors, No. one No. of stages 40/35/2 Diameters 110/35 Stroke 120 mm Driven by hot bulb engine
Scavenging Air Pumps, No. Two each having an intake Volume of 660 cub. metres of free air per min. Driven by Electric motion
Auxiliary Engines crank shafts, diameter as per Rule 152.5 mm as fitted 175

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes H.P. In air rec. hole 150 mm & at one end.
 Are the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces H.P. starting air rec. holes 270 mm & at each end.
 Is there a drain arrangement fitted at the lowest part of each receiver Yes
High Pressure Air Receivers, No. 2 Cubic capacity of each 150 LITRES Internal diameter 300 mm thickness 15 mm
 Seamless, lap welded or riveted longitudinal joint Seamless Material SM Steel Range of tensile strength 50 to 60 kg/cm² Working pressure by Rules 102.5 Ats @ 47 kg/cm²
Working Air Receivers, No. 10 Total cubic capacity 800 Internal diameter 280 to 350 mm thickness 9.7
 Seamless, lap welded or riveted longitudinal joint Material SM Steel Range of tensile strength 28 to 35 Tons per sq. in. Working pressure by Rules

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:-

| DESCRIPTION. | DATE OF TEST. | WORKING PRESSURE. | TEST PRESSURE. | STAMPED. | REMARKS. |
|----------------------------------|---|-------------------|-----------------|---------------------|----------------------|
| ENGINE CYLINDERS | 11-5-25, 12-5-25, 19-5-25 | 38 ATS. | 75 ATS. | R. | Tests satisfactory |
| " " COVERS | " " " | " " | " " | R. | " " |
| " " JACKETS | " " " | 1 " | 6 " | R. | " " |
| " " PISTON WATER PASSAGES | 4-6-25, 12-6-25. | 2 " | " " | R. | " " |
| MAIN COMPRESSORS—1st STAGE | 8-5-25, 12-5-25. | 3 " | 50 " | R. | " " |
| " 2nd " | " " | 17.5 " | " " | R. | " " |
| " 3rd " | 13-5-25, 14-5-25. | 70 " | 150 " | R. | " " |
| AIR RECEIVERS—STARTING | 25-8-20, 20-6-24, 7-7-25. | " " | " " | M.B. H.K. J.A. & R. | Tested in Düsseldorf |
| " INJECTION | 15-7-20, 27-3-25. | " " | " " | K.H. & R. | Tests satisfactory |
| AIR PIPES | 7-7-25, 9-7-25, 22-7-25, 23-7-25, 24-7-25 | " " | " " | R. | " " |
| FUEL PIPES | " " " " " " | " " | " " | R. | " " |
| FUEL PUMPS & VALVES | 16-1-25, 19-1-25, 3-3-25, 14-4-25. | " " | 140 or 150 ATS. | R. | " " |
| SILENCERS | 22-7-25, 4-8-25. | 0.5 " | 2.5 ATS. | R. | " " |
| " WATER JACKET | | | | | |
| SEPARATE FUEL TANKS | | | | | |

PLANS. Are approved plans forwarded herewith for Shafting 13-11-24.

Eng. rec. 7-6-20
Receivers/Starting H.P. rec. 25-5-20 Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR

The foregoing is a correct description

Manufacturer.

| | | | |
|--------------------------------|---|------------------------------------|---|
| Dates of Survey while building | { | During progress of work in shops-- | 22-9-24, 23-9-24, 29-9-24, 1-10-24, 10-10-24, 29-10-24, 17-11-24, 16-12-24, 9-1-25, 12-1-25, 13-1-25, 16-1-25, 19-1-25, 2-2-25, 17-2-25, 20-2-25, 3-3-25, 10-3-25, 17-3-25, 27-3-25, 31-3-25, 14-4-25, 20-4-25, 8-5-25, 11-5-25, 12-5-25, 14-5-25, 19-5-25, 28-5-25, 4-6-25, 11-6-25, 12-6-25, 19-6-25, 22-6-25, 6-7-25, 7-7-25, 9-7-25, 22-7-25, 23-7-25 |
| | | During erection on board vessel-- | 25-7-25, 30-7-25, 3-8-25, 4-8-25, 6-8-25, 7-8-25, 10-8-25, 14-8-25, 17-8-25, 21-8-25 |
| | | Total No. of visits | |

Dates of Examination of principal parts—Cylinders 30-7-25, 17-8-25 Covers 30-7-25, 14-8-25 Pistons 30-7-25, 14-8-25 Rods 30-7-25, 14-8-25 Connecting rods 30-7-25, 17-8-25

Crank shafts 3-4-25, 17-8-25 Flywheel shafts 4-8-25, 17-8-25 Thrust shafts 4-8-25, 17-8-25 Intermediate shafts 21-8-25 Tube shaft 21-8-25

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

Crank shafts, Material Ann. S.M. Eng. Stl. Identification Mark Eng. N° 5477, Lloyd's M.B. 5424, K.H. 2152 16-4-25 or 4-2-25 4-6-25 4-8-25

Thrust shaft, Material " " " Identification Mark Eng. N° 5485, Lloyd's K.H. 2151, S. 1-25 4-8-25

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 Yes. If so, state name of vessel Messrs. Mitsubishi Josen Kaisha's N°

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery together with three auxiliary engines N° 14189-93 and 97 Type 4RH31, one auxiliary engine N° 14215 Type 2RH24, and one auxiliary compressor N° 269 Type MCG, with their accessories have been constructed under Special Survey in accordance with the requirements of the Rules. The Secretary's list and the approved plans. Materials and workmanship good. Full power trials engines and compressor in shop satisfactory.

The amount of Entry Fee ... £ 6 - 0 - 0 : When applied for,
Special ... £ 12 - 2 - 0 : 31st Aug. 1925
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 1st Sept. 1925

Committee's Minute

TUES. 8 JUN 1926

Assigned

See Reg. J.E. A. 1533

W.S. Gallis

Engineer Surveyor to Lloyd's Register of Shipping.



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