

# REPORT ON OIL ENGINE MACHINERY.

No. 63.

4.8.25

Received at London Office

Date of writing Report 30-7 1925 When handed in at Local Office 30-7 1925 Port of Winterthur  
No. in Survey held at Reg. Book. Winterthur Date, First Survey 3-9-24 Last Survey 23-6 1925  
Number of Visits

on the <sup>Single</sup> ~~Twin~~ <sup>Triple</sup> Screw vessels Tons: Gross Net  
Built at Nagasaki By whom built Mitsubishi Zosen Kaisha Yard No. 410 When built 1925  
Engines made at Winterthur By whom made Messrs. Sulzer Bros. Engine Nos. 5465, 5471 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

**OIL ENGINES, &c.** Type of Engines Sulzer Diesel Engines 2 or 4 stroke cycle 2 Single or double acting single  
Maximum pressure in cylinders 38 at. 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 mm Crank pin dia. 405 mm Crank Webs Mid. length breadth 550 mm Mid. length thickness 225 mm Thickness parallel to axis shrunk Thickness around eye hole  
Flywheel Shafts, diameter as per Rule 386 mm as fitted 405 mm Intermediate Shafts, diameter as per Rule 292 mm as fitted Thrust Shaft, diameter at collars as per Rule 306.6 mm as fitted 390 mm

**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 { screw }  
**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

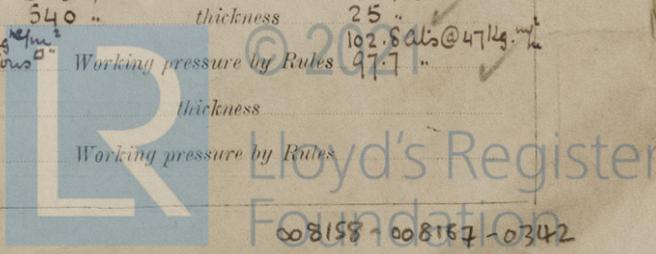
**Propeller, dia.** Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet  
**Method of reversing Engines** direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication forced  
Thickness of cylinder liners 45 mm Are 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  
**Cooling 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** 2 electric driven No. and size Capacity of each 50 m<sup>3</sup> per hour Stroke 6" 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 electric driven Capacity of each 25 m<sup>3</sup> per hour Stand by  
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 Engine and Boiler 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 Suctions in the Machinery Space 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.** Two each engine No. of stages 3 Diameters 640/580/140 Stroke 560 mm Driven by Crank shaft  
**Auxiliary Air Compressors, No.** 2 No. of stages 3 Diameters 325/290/65 Stroke 180 " Driven by electric motors  
**Small Auxiliary Air Compressors, No.** 1 No. of stages 2 Diameters 110/35 Stroke 120 mm Driven by hot bulb engine  
**Scavenging Air Pumps, No.** Two turbo scavenging blowers each having an intake Volume of 660 cu metres of free air per min. Driven by electric motors  
Auxiliary Engines crank shafts, diameter as per Rule 152.5 mm as fitted 175 "

**AIR RECEIVERS:—** Is each receiver, which can be isolated, fitted with a safety valve as per Rule  
Can the internal surfaces of the receivers be examined What means are provided for cleaning their inner surfaces  
Is there a drain arrangement fitted at the lowest part of each receiver  
**High Pressure Air Receivers, No.** 2 Cubic capacity of each 150 LITRES Internal diameter 300 mm thickness 15 mm  
800 " 50 to 60 kg/cm<sup>2</sup> Working pressure by Rules 102.8 at @ 47 kg/cm<sup>2</sup>  
Seamless, lap welded or riveted longitudinal joint Seamless Material S.M. Steel Range of tensile strength 28-35 Tons" Working pressure by Rules 97.7 "  
**Starting Air Receivers, No.** Total cubic capacity Internal diameter thickness Working pressure by Rules  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength



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 .....	16-1-25, 29-1-25, 6-2-25, 10-2-25	38 lbs.	75 lbs.	R.	Tests satisfactory
"    "    COVERS .....	"    "    "    "	"    "	"    "	R.	"    "
"    "    JACKETS .....	27-1-25, 30-1-25, 2-2-25, 4-2-25, 9-2-25	1    "	6    "	R.	"    "
"    "    PISTON WATER PASSAGES .....	10-2-25, 11-2-25, 13-2-25, 16-2-25, 27-4-25, 11-5-25.	2    "	"    "	R.	"    "
MAIN COMPRESSORS—1st STAGE .....	27-2-25, 7-3-25.	3    "	50    "	R.	"    "
"    "    2nd .....	"    "    "	17.5    "	"    "	R.	"    "
"    "    3rd .....	3-3-25, 5-3-25.	70    "	150    "	R.	"    "
AIR RECEIVERS—STARTING .....	25-8-20, 2-9-20, 11-9-20.	"    "	"    "	M. Boy H.K. & R.	Tested in Disseldorf district
"    "    INJECTION .....	15-7-20, 27-3-25	"    "	"    "	K.H. & R.	Tests satisfactory
AIR PIPES .....	30-4-25, 4-5-25, 5-5-25, 12-5-25,	"    "	"    "	R.	"    "
FUEL PIPES .....	13-5-25, 14-5-25, 15-5-25, 29-5-25.	"    "	"    "	R.	"    "
FUEL PUMPS & VALVES .....	8-1-25, 9-1-25, 16-1-25, 19-1-25.	"    "	140    "	R.	"    "
SILENCER .....	19-6-25, 23-6-25.	05    "	2.5    "	R.	"    "
"    "    WATER JACKET .....					
SEPARATE FUEL TANKS .....					

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

Eng Receivers 7-6-20.  
Startling " 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	3-9-24, 23-9-24, 1-10-24, 10-10-24, 29-10-24, 17-11-24, 16-12-24, 8-1-25, 9-1-25, 12-1-25, 15-1-25, 16-1-25, 19-1-25, 22-1-25, 27-1-25, 29-1-25, 30-1-25, 2-2-25, 4-2-25, 6-2-25, 9-2-25, 10-2-25, 11-2-25, 12-2-25, 13-2-25, 16-2-25, 17-2-25, 19-2-25, 20-2-25, 27-2-25, 28-2-25, 3-3-25, 5-3-25, 7-3-25, 10-3-25, 17-3-25, 27-3-25, 20-4-25, 27-4-25, 30-4-25, 4-5-25, 5-5-25, 11-5-25, 12-5-25, 13-5-25, 14-5-25, 15-5-25, 25-5-25, 26-5-25, 28-5-25, 29-5-25, 2-6-25, 3-6-25, 4-6-25, 6-6-25, 10-6-25, 11-6-25, 12-6-25, 19-6-25, 22-6-25, 23-6-25.
Total No. of visits	

Dates of Examination of principal parts—Cylinders 2-6-25, 10-6-25 Covers 2-6-25, 10-6-25 Pistons 2-6-25, 10-6-25 Rods 2-6-25, 10-6-25 Connecting rods 3-6-25, 10-6-25

Crank shafts 3-6-25, 10-6-25 Flywheel shafts 3-6-25, 10-6-25 Thrust shafts 3-6-25, 10-6-25 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

Crank shaft, Material Ann. S.M. Eng. Steel Identification Mark 25-10-24 or 21-10-24 or 16-1-25 Flywheel shaft, Material Ann. S.M. Eng. Steel Identification Mark 25-10-24 R. 16-1-25.

Thrust shaft, Material Identification Mark Eng. No. 5471, Lloyd's No. 45 or 66 J.L. 13-11-24 or 2-12-24. Eng. No. 5471, Lloyd's No. 12054 R. 19-2-25.

Tube shaft, Material Identification Mark Intermediate shafts, Material Identification Marks 25-10-24 R. 19-2-25.

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 *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery together with three auxiliary engines No. 14177-81 and 85, Type 4RH31, one auxiliary engine No. 14213, Type 2RH24, two auxiliary compressors No. 165 and 167, Type C100, and one auxiliary compressor No. 268, Type MCG, with their accessories have been constructed under Special Survey in accordance with the requirements of the Rules, the Secretary's letters, and the approved plans. Materials and workmanship good. Full power trials of engines and compressors in shop satisfactory.

The amount of Entry Fee ...	£ 6. 0. 0.	When applied for,
Special ...	£ 129. 2. 0.	31 <sup>st</sup> July 1925.
Donkey Boiler Fee ...	£ :	When received,
Travelling Expenses (if any) ...	£ :	1 <sup>st</sup> Aug. 1925.

*W.G. Gallis*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 26 FEB 1926

Assigned



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