

AUXILIARY ENGINES. REPORT ON OIL ENGINE MACHINERY.

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Survey Report ^{23rd Feb. 1924} When handed in at Local Office ^{23rd Feb. 1924} Port of Winterthur Date, First Survey 29th May, 1923 Last Survey 22nd Feb. 1924
 Survey held at Winterthur Number of Visits _____

on the ^{Single} ^{Twin} ^{Triple} Screw vessels **TSMV "ATAGO MARU"** Tons ^{Gross} 7559 ^{Net} 4670
 Built at Port Glasgow By whom built Messrs. Lithgows' Yard No. 762 When built 1924
 made at Winterthur By whom made Messrs. Sulzer Bros. Engine No. ¹⁴⁰⁰¹ ¹⁴⁰⁰⁵ ¹⁴⁰⁰⁹ When made 1924
 Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 Horse Power 600 Total 3 Engines Owners Nippon Yusen Kaisha Port belonging to Tokio
 Horse Power as per Rule 172 Total Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

ENGINES, &c.—Type of Engines Sulzer airless injection Int. Comb. Engines 2 or 4 stroke cycle 2 Single or double acting single
 Pressure in cylinders 35 ATs. No. of cylinders 4 each eng. No. of cranks 4 each eng. Diameter of cylinders 310 mm.
 Stroke 420 mm. Revolutions per minute 300 Means of ignition Temperature due to compression Kind of fuel used Heavy fuel oil
 Clearing between each crank yes. Span of bearings (Page 90, Section 3, par. 2 of Rules) 370 mm.
 Between centres of main bearings 590 mm. Is a flywheel fitted yes. Diameter of crank shaft journals ^{as per Rule} 153 mm. ^{as fitted} 175 "
 Diameter of crank pins 175 mm. Breadth of crank webs ^{as per Rule} 203.5 mm. ^{as fitted} 240 " Thickness of ditto ^{as per Rule} 85.7 mm. ^{as fitted} 98 "
 Diameter of flywheel shaft ^{as per Rule} flywheel fitted to crank shaft. ^{as fitted} Diameter of tunnel shaft ^{as per Rule} ✓ ^{as fitted} ✓ Diameter of thrust shaft ^{as per Rule} ✓ ^{as fitted} ✓
 Diameter of screw shaft ^{as per Rule} ✓ ^{as fitted} ✓ Is the screw shaft fitted with a continuous liner the whole length of the stern tube ✓
 Is the end of the liner made watertight in the propeller boss ✓ If the liner is in more than one length are the joints burned ✓
 Does the end of the liner 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 ✓
 Are the bearings fitted, is the shaft lapped or protected between the liners ✓ If without liners, is the shaft arranged to run in oil ✓
 Is a propeller gland fitted to stern tube ✓ Length of stern bush ✓ Diameter of propeller ✓

Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 28 mm.
 Are the exhaust pipes and silencers water cooled or lagged with insulation led to
 Is the exhaust 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 led to
 Is the bilge suction provided with an efficient strainer which can be cleared aux. how
 No. of bilge pumps fitted to the aux. how engines how Diameter of ditto ✓ Stroke ✓
 Are the bilge pumps overhauled while the other is at work ✓ No. of auxiliary pumps connected to the main bilge lines ✓ How driven ✓
 No. and sizes of suction pipes connected to both main bilge pumps and auxiliary bilge pumps:—In engine room ✓
 No. of ballast pumps ✓ How driven ✓ Sizes of pumps ✓
 Is the first pump fitted with a direct suction from the engine room bilges ✓ State size ✓ Is a separate auxiliary pump suction fitted in ✓
 Are all the bilge suction pipes fitted with roses ✓ Are the roses in Engine Room always accessible ✓
 Are all connections with the sea direct on the skin of the ship ✓
 Are the valves or cocks ✓ Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates ✓
 Are the discharge pipes 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 bilge suction pipes, cocks and valves arranged so as to prevent any ✓
 Is the screw shaft tunnel watertight ✓ Is it fitted with a watertight door ✓
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓

Number of air compressors ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
 Number of auxiliary air compressors ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
 Number of all auxiliary air compressors ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by Extension to crank shaft.
 Number of engineering air pumps 1 double acting for each Eng. Diameter 530, 530/200 mm. Stroke 420 mm. Driven by Extension to crank shaft.
 Are the auxiliary Diesel Engine crank shafts ✓ ^{as per Rule} ✓ ^{as fitted} ✓ Are the air compressors and their coolers made so as to be easy of access ✓

RECEIVERS:—No. of high pressure air receivers ✓ Internal diameter ✓ Cubic capacity of each ✓
 Are the receivers ✓ Seamless, lap welded or riveted longitudinal joint ✓ Range of tensile strength ✓
 Working pressure by Rules ✓ No. of starting air receivers ✓ Internal diameter ✓
 Capacity ✓ Material ✓ Seamless, lap welded or riveted longitudinal joint ✓
 Tensile strength ✓ thickness ✓ Working pressure by rules ✓ Is each receiver, which can be isolated, ✓
 Is a safety valve as per Rule ✓ Can the internal surfaces of the receivers be examined ✓ What means are provided for cleaning their ✓
 Is there a drain arrangement fitted at the lowest part of each receiver ✓



