

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

SAT. SEP. 4 1920

No. 4.

14 JAN 1925

Date of writing Report 30th August 1920 When handed in at Local Office 30th August 1920 Port of Winterthur
 No. in Survey held at Winterthur Date, First Survey 11th June 20 Last Survey 19
 Reg. Book. Single on the Twin Screw vessels AORANGI Tons Gross 1746 1
Quadruple Triple Master Built at Gungah By whom built Finlay S.E.C. Yard No 603 When built 1914
 Engines made at Winterthur By whom made Sulzer Bros. Soc. Anon Engine No. 2959 When made 1920
 Donkey Boilers made at By whom made Boiler No. When made
 Brake Horse Power 420 Owners Port belonging to
 Nom. Horse Power as per Rule 82 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

OIL ENGINES, &c.—Type of Engines Sulzer Marine Diesel Engine 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 35 ATs No. of cylinders 4 No. of cranks 4 Diameter of cylinders 340^{mm}
 Length of stroke 540^{mm} Revolutions per minute 200 Means of ignition Temperature due to compression Kind of fuel used Heavy fuel oil
 Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 430^{mm}
 Distance between centres of main bearings 650^{mm} Is a flywheel fitted Yes to Crankshaft Diameter of crank shaft journals as per Rule 204^{mm}
 Diameter of crank pins 215^{mm} Breadth of crank webs as per Rule 275^{mm} Thickness of ditto as per Rule 116^{mm}
 Diameter of flywheel shaft as per Rule 204^{mm} Diameter of tunnel shaft as per Rule 215^{mm} Diameter of thrust shaft as per Rule 115^{mm}
 Diameter of screw shaft as per Rule Is the screw shaft fitted with a continuous liner the whole length of the stern tube

or end of the liner made watertight in the propeller boss If the liner is in more than one length are the joints burned
 or 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
 ers are fitted, is the shaft lapped or protected between the liners If without liners, is the shaft arranged to run in oil
 ater gland fitted to stern tube Length of stern bush Diameter of propeller
 propeller No. of blades state whether moveable Total surface square feet
 reversing Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners 27^{mm}
 binders fitted with safety valves Yes Means of lubrication Forced lubrication Are the exhaust pipes and silencers water cooled or lagged with
 eling 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
 No. of cooling water pumps double acting Is the sea suction provided with an efficient strainer which can be cleared
 vessel No. of bilge pumps fitted to the main engines double acting Diameter of ditto 115^{mm} Stroke 110^{mm}
 overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines How driven
 pumps No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room
 , etc. No. of ballast pumps How driven Sizes of pumps
 last pump fitted with a direct suction from the engine room bilges State size Is a separate auxiliary pump suction fitted in
 room and size Are all the bilge suction pipes fitted with roses Are the roses in Engine Room always accessible
 pipes on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship
 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 all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Are the bilge suction pipes, cocks and valves arranged so as to prevent any
 communication between the sea and the bilges Is the screw 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
 No. of main air compressors 1 No. of stages 3 Diameters 390/350/155^{mm} Stroke 280^{mm} Driven by Engine Shaft
 No. of auxiliary air compressors No. of stages Diameters Stroke Driven by
 No. of small auxiliary air compressors No. of stages Diameters Stroke Driven by
 No. of scavenging air pumps 1 double acting Diameter 400^{mm} Stroke 450^{mm} Driven by Engine Shaft
 Diameter of auxiliary Diesel Engine crank shafts as per Rule Are the air compressors and their coolers made so as to be easy of access

AIR RECEIVERS:—No. of high pressure air receivers 1 Internal diameter 250^{mm} Cubic capacity of each 100 litres
 material S.M. Steel Seamless, lap welded or riveted longitudinal joint Seamless Range of tensile strength 45/55 Kg. per ^{mm}²
 thickness 10^{mm} working pressure by Rules 75 ATs No. of starting air receivers Internal diameter
 Total cubic capacity Material Seamless, lap welded or riveted longitudinal joint
 Range of tensile strength thickness Working pressure by rules 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



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	17-8-20	35 ATS.	75 ATS.	R	Test Satisfactory
" " COVERS	-do-	-do-	-do-	"	-do-
" " JACKETS	-do-	1 ATS.	3 ATS.	"	-do-
" PISTON WATER PASSAGES	18-8-20	5 "	5 "	"	-do-
MAIN COMPRESSORS—1st STAGE	13-8-20	3 "	35 "	"	-do-
" 2nd "	-do-	17.5.	35 "	"	-do-
" 3rd "	14-8-20	40.	140.	"	-do-
AIR RECEIVERS—STARTING					
" INJECTION	19-8-20	70 ATS.	140 ATS.	R	-do-
AIR PIPES	6-8-20	40.	140 "	"	-do-
FUEL PIPES	-do-	40.	140 "	"	-do-
FUEL PUMPS & VALVES	16-8-20	40.	140 "	"	-do-
SILENCER	9-8-20	1 "	3 "	"	-do-
" WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting **SENT TO LONDON 31/1/20** Receivers **IN LONDON OFFICE 7/6/20 APPROVED** Separate Tanks
(If not, state date of approval.)

SPARE GEAR

The foregoing is a correct description.

Sulzer Frères
Rec'd to Anonymous
[Signature] Manufacturer.

Dates of Survey while building { During progress of work in shops - - 6-8-20, 9-8-20, 13-8-20, 14-8-20, 16-8-20, 17-8-20, 18-8-20, 19-8-20, 22-10-20, 23-10-20, 6-12-20, 22-12-20
During erection on board vessel - -
Total No. of visits

Dates of Examination of principal parts—Cylinders 17-8-20 Covers 17-8-20 Pistons 18-8-20 Rods 22-12-20 Connecting rods 22-12-20

Crank shaft 22-12-20 Thrust shaft Tunnel shafts Screw shaft Propeller Stern tube Engine seatings

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shaft **S.M. INHOT STEEL** Identification Mark on Do. **R** 22-12-20 Material of thrust shaft Identification Mark on Do.

Material of tunnel shafts Identification Marks on Do. Material of screw shafts Identification Marks on Do.

Is the flash point of the oil to be used over 150° F. **Yes**

Is this machinery duplicate of a previous case **Yes** **NP 4** If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, etc. **Stock Engine Constructed under Ordinary**

Survey. Materials and workmanship good. Full power trial in shops satisfactory

This machinery has been satisfactorily fitted on board the above vessel

The amount of Entry Fee ... £ **2-0-0.** When applied for.

Special ... £ **20:10-0** **27th Dec. 1920**

Donkey Boiler Fee ... £ : : When received.

Travelling Expenses (if any) £ : : **3rd Jan 1921**

Committee's Minute

GLASGOW

13 JAN 1925

See Winterthur Rpt 40

Assigned **attached to Glasgow Rpt 442 PS.**

W.G. Vallis. M. L.
Engineer Surveyor to Lloyd's Register of Shipping



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Foundation