

YACHT.

REPORT ON OIL ENGINE MACHINERY.

No. 38.

pt. 4b.

Date of writing Report 29th June 1923 When handed in at Local Office 29th June 1923 Port of Winterthur Received at London MON. 9 JUL. 1923
 No. in Survey held at Winterthur Date, First Survey 16th January 23 Last Survey 26th June 1923
 No. of Book. Number of Visits

on the Single } Screw vessels
Twin }
Triple }
 Master Built at Stockton on Tees By whom built Messrs. Furness, S.B. Co. Yard No. 46 When built 1923
 Engines made at Winterthur By whom made Messrs. Sulzer Bros. Engine No. 5367 When made 1923
 Smoke Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 Brake Horse Power 1040 (Two Eng) Owners _____ Port belonging to _____
 Nom. Horse Power as per Rule 228 (Two Eng) Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted Yes.

ENGINES, &c.—Type of Engines Sulzer Diesel Engines Type 336, 2 or 4 stroke cycle 2 Single or double acting single
 Maximum pressure in cylinders 38 ATs. No. of cylinders 4 EACH ENG. No. of cranks 4 EACH ENG. Diameter of cylinders 380 mm.
 Length of stroke 660 mm. Revolutions per minute 170 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) 500 mm.
 Distance between centres of main bearings 460 mm. Is a flywheel fitted Yes. Diameter of crank shaft journals as per Rule 244 mm
as fitted 250 mm. Diameter of crank shaft journals as fitted 250 mm.
 Diameter of crank pins 250 mm. Breadth of crank webs as per Rule 324.5 mm Thickness of ditto as per Rule 136.6 mm
as fitted 340 mm. Thickness of ditto as fitted 140 mm.
 Diameter of flywheel shaft as per Rule 244 mm Diameter of tunnel shaft as per Rule 244 mm Diameter of thrust shaft as per Rule 244 mm
as fitted 250 mm as fitted 250 mm as fitted 250 mm } Flywheel & thrust on one shaft.

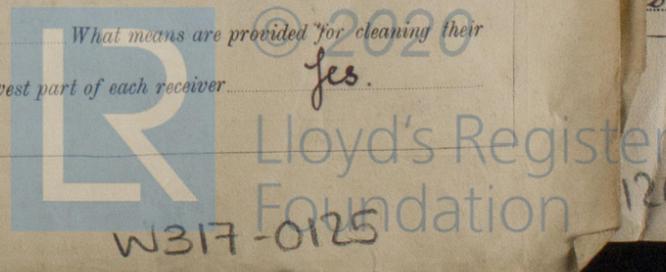
Is the screw shaft fitted with a continuous liner the whole length of the stern tube _____
 Is the after end of the liner made watertight in the propeller boss _____ If the liner is in more than one length are the joints burned _____
 Does the liner do not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive _____
 Are two liners fitted, is the shaft lapped or protected between the liners _____ If without liners, is the shaft arranged to run in oil _____
 Is the diameter of outer gland fitted to stern tube _____ Length of stern bush _____ Diameter of propeller _____
 Pitch of propeller _____ No. of blades _____ state whether moveable _____ Total surface _____ square feet
 Method of reversing direct Is a governor or other arrangement fitted to prevent racing of the engine when disconnected Yes Thickness of cylinder liners 30 mm.

Are the cylinders fitted with safety valves Yes. Means of lubrication forced. Are the exhaust pipes and silencers water cooled or lagged with _____
 Insulating 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 1 Double Acting each engine Is the sea suction provided with an efficient strainer which can be cleared _____
 No. of bilge pumps fitted to the main engines 1 Double Acting each engine Diameter of ditto 115 mm Stroke 85 mm.
 Can one be overhauled while the other is at work Yes. No. of auxiliary pumps connected to the main bilge lines _____ How driven _____
 No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room _____
 No. of ballast pumps _____ How driven _____ Sizes of pumps _____

Is the ballast pump fitted with a direct suction from the engine room bilges _____ State size _____ Is a separate auxiliary pump suction fitted in _____
 Engine Room and size _____ Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine Room always accessible _____
 Are the sluices on Engine Room bulkheads 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 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 _____

Is the vessel 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 Each Engine No. of stages 3 Diameters 450/410/95 Stroke 300 mm. Driven by main shaft.
 No. of auxiliary air compressors _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
 No. of small auxiliary air compressors 1 Type M.C.G. No. of stages 2 Diameters 110/35 Stroke 120 mm Driven by Hot bulb engine
 No. of scavenging air pumps 1 Double acting each eng. Diameter 800 mm Stroke 520 mm Driven by main shaft.
 Diameter of auxiliary Diesel Engine crank shafts as per Rule 246 mm Are the air compressors and their coolers made so as to be easy of access Yes.

RECEIVERS:—No. of high pressure Injection air receivers 1 EACH ENG. Internal diameter 246 mm Cubic capacity of each 85 LITRES.
 Material S.M. Steel Seamless, lap welded or riveted longitudinal joint seamless. Range of tensile strength 28 to 32 Tons per sq.
 Thickness 12 mm Working pressure by Rules 92 ATs. No. of starting air receivers 10 Internal diameter 410 mm.
 Total cubic capacity 10 x 380 = 3800 LITRES Material S.M. Steel Seamless, lap welded or riveted longitudinal joint Seamless.
 Range of tensile strength 60 to 70 Kg. mm² thickness 17.5 mm Working pressure by rules 106 ATs. 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 _____
 Internal surfaces Starting Receivers: Hole 200 mm dia @ each end Is there a drain arrangement fitted at the lowest part of each receiver Yes.
Injection " " 125 " " top end.



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	21-3-23, 22-3-23, 11-4-23, 12-4-23	38 ATs.	75 ATs.	R.	Test satisfactory
" " COVERS	" " " "	-do-	-do-	R.	-do-
" " JACKETS.....	24-3-23, 26-3-23, 9-4-23, 17-4-23, 18-4-23	1 ATs.	3 ATs.	R.	-do-
" " PISTON WATER PASSAGES.....	24-4-23, 7-5-23	3 ..	6 ..	R.	-do-
MAIN COMPRESSORS—1st STAGE.....	12-4-23, 16-4-23	3 ..	35 ..	R.	-do-
" " 2nd	" " "	17.5.	-do-	R.	-do-
" " 3rd	17-4-23, 18-4-23	70..	140 ATs	R.	-do-
AIR RECEIVERS—STARTING	31-5-23, 1-6-23	70..	" ..	R.	-do-
" " INJECTION	24-4-23	70..	" ..	R.	-do-
AIR PIPES	9-5-23, 23-5-23	70..	" ..	R.	-do-
FUEL PIPES	" " "	70..	" ..	R.	-do-
FUEL PUMPS AND VALVES.....	19-3-23, 22-3-23	70..	" ..	R.	-do-
SILENCER EXHAUST PIPES.....	21-3-23	1 ..	6 ..	R.	-do-
" " WATER JACKET	8-6-23, 14-6-23	1 ..	3 ..	✓	-do-
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting **15-2-23** INJECTION. 16-2-23
 Receivers STARTING. 16-2-23. Separate Tanks

* SPARE GEAR | Cylinder cover complete with valves, 1 combined fuel air starting valve, 1 aux. starting valve, 1 piston complete with rod, rings
 1 Rotary scavenging valve, 1 set of piston rings for main engine piston, 1 set of each size of compressor pistons, 1 set for scavenging pump piston
 1 complete set of skew wheels, 2 top + 2 bottom end bolts, 2 main bearing bolts, 6 crank shaft coupling bolts, 9 inner + 9 outer valves for 1st + 2nd stage
 compressor, 2 suction + 2 delivery valves for 3rd stage compressor, 2 valves for scavenging pump, 4 suction + delivery valves for fuel pump
 4 fuel pump plungers, 4 fuel valve needles, 2 suction + delivery valves for both cooling water + bilge pumps, 1 suction + delivery valve for both
 piston cooling + lubricating pumps, 1 piston with con. rod for lubricating pump, 1 set of cyl. cover studs nuts, HP fuel + air pipes with connection
 1 spare lubricating oil pump, M.C.G. Compressor, 1 flame plate, 1 atomizer spiral, 1 set of working springs, 2 piston rings for working
 cylinder, + 2 each for 1st + 2nd stage compressor cylinders.

The foregoing is a description,
Sulzer Brothers Limited

Schender & Hall
 Manufacturer.

Dates of Survey while building	During progress of work in shops - -	16-1-23, 19-1-23, 23-1-23, 26-1-23, 31-1-23, 6-2-23, 14-2-23, 15-2-23, 16-2-23, 26-2-23, 9-3-23, 15-3-23, 19-3-23, 21-3-23, 22-3-23, 24-3-23, 26-3-23, 6-4-23, 9-4-23, 10-4-23, 11-4-23, 12-4-23, 13-4-23, 16-4-23, 17-4-23, 18-4-23, 24-4-23, 3-5-23, 7-5-23, 9-5-23, 28-5-23, 29-5-23, 31-5-23, 1-6-23, 7-6-23, 8-6-23, 14-6-23, 15-6-23, 18-6-23, 21-6-23, 25-6-23, 26-6-23.
	During erection on board vessel - -	
	Total No. of visits	

Dates of Examination of principal parts—Cylinders 18-6-23, 25-6-23 Covers 18-6-23, 25-6-23 Pistons 15-6-23, 25-6-23 Rods 15-6-23, 25-6-23 Connecting rods 15-6-23, 25-6-23

Crane shafts 16-6-23, 25-6-23 Thrust shafts 16-6-23, 25-6-23 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 (5367) 3527 LLOYD'S No 72 R 15-2-23 AND FLYWHEEL Screw shaft and propeller

Material of crank shafts S.M. AND ING. STEEL. Identification Mark on Do. (5371) 3553 Material of thrust shafts S.M. AND ING. STEEL Identification Mark on Do. (5371) 3622 L.D.'s No 72 R 14-2-23

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.** If so, state name of vessel **"ITAGUASSU"**.

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has 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 in shop satisfactory.

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute)

The amount of Entry Fee ...	£ 4-0-0	When applied for,
Special $\frac{1}{2}$ duty mail ...	£ 57-0-0	29 th June, 1923
Donkey Boiler Fee ...	£ :	When received,
Travelling Expenses (if any) £	:	30 th June, 1923.

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

Committee's Minute **FRI. MAY. 4 9 1924**

Assigned

