

YACHT.

pt. 4b.

REPORT ON OIL ENGINE MACHINERY.

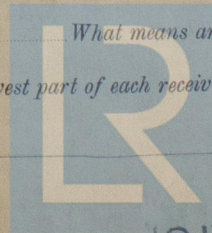
No. 38.

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
 in Survey held at Winterthur Date, First Survey 16th January 23. Last Survey 26th June 1923.
 Book. Number of Visits

on the ^{Single} Twin } Screw vessels Tons { Gross
 Triple }
 Built at Stockton on Tees By whom built Messrs. Furness, B.B. & Co. Yard No. 46 When built 1923.
 Engines made at Winterthur By whom made Messrs. Sulzer Bros. Engine No. 5367. When made 1923.
 Monkey Boilers made at By whom made Boiler No. When made
 Brake Horse Power 1040 (Two Eng) Owners Port belonging to
 m. 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 338. 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 pins 250^{mm}. Breadth of crank webs *as per Rule 324.5^{mm}
 as fitted 340^{mm}.* Thickness of ditto *as per Rule 136.6^{mm}
 as fitted 140^{mm}.*
 Diameter of flywheel shaft *as per Rule 244^{mm}
 as fitted 250^{mm}.* Diameter of tunnel shaft *as per Rule 244^{mm}
 as fitted 250^{mm}.* Diameter of thrust shaft *as per Rule 244^{mm}
 as fitted 250^{mm}.* *Flywheel & thrust on one shaft.*
 Diameter of screw shaft *as per Rule 244^{mm}
 as fitted 250^{mm}.* 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
 Is 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
 Are two liners are fitted, is the shaft lapped or protected between the liners If without liners, is the shaft arranged to run in oil
 Is the 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. of pumps No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room
 Are in holds, etc. 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 marked from If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

of main air compressors 1 Each Engine No. of stages 3 Diameters 450/410/95 Stroke 300^{mm}. Driven by *main shaft.*
 of auxiliary air compressors No. of stages Diameters Stroke Driven by
 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*
 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 244^{mm}
 as fitted 250^{mm}.* Are the air compressors and their coolers made so as to be easy of access *yes.*
 RECEIVERS:—No. of high pressure *Injection* 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. ^{mm}² 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
 inner 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.



Lloyd's Register Foundation

W317-0125

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.	45 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, 4-5-23	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 "	14-4-23, 18-4-23	70.	140 ATS	R.	-do-
AIR RECEIVERS—STARTING	31-5-23, 1-6-23	40.	" "	R.	-do-
" INJECTION	24-4-23	40.	" "	R.	-do-
AIR PIPES	9-5-23, 23-5-23	40.	" "	R.	-do-
FUEL PIPES	" "	40.	" "	R.	-do-
FUEL PUMPS AND VALVES	19-3-23, 22-3-23	40.	" "	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
(If not, state date of approval)

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 & 4 delivery valves for fuel pump, 4 fuel pump plungers, 4 fuel valve needles, 2 suction & 2 delivery valves for both cooling water & bilge pumps, 1 suction & 1 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 true and correct description,

Limited

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, 4-5-23, 9-5-23, 15-5-23, 28-5-23, 29-5-23
	During erection on board vessel - -	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
	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

Cranks 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 LING STEEL Identification Mark on Do. (5371) 3553 Material of thrust shafts S.M. AND LING STEEL Identification Mark on Do. (5371) 3622 LLOYD'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.

The amount of Entry Fee ... £ 4-0-0 When applied for,
Special 1/5 due mail ... £ 57-0-0 29th June, 1923
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : : 30th June, 1923

Committee's Minute FRIDAY 49 1924

Assigned

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



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