

## REPORT ON OIL ENGINE MACHINERY.

No. 77

8 MAR 1928

25<sup>th</sup> Feb. 2825<sup>th</sup> Feb. 28 Port of Winterthur

Received at London Office

Writing Report

When handed in at Local Office

Survey held at Winterthur

Date, First Survey 14-12-26

Last Survey 3-2 1928

Number of Visits

on the *Single* Screw vesselsTons { Gross  
Net

at Helburn

By whom built Messrs. Palmers, S.B. &amp; L. Co. Ltd. Yard No. 970 When built 1928

Ships made at Winterthur

By whom made Messrs. Sulzer Bros., Engine No. 5684 When made 1928

Boilers made at

By whom made Boiler No. When made

Horse Power 2700

Owners Messrs. Tankers Ltd., Port belonging to London.

Horse Power as per Rule 748.

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ENGINES, &c. Type of Engines *Sulzer Diesel Engine* 2 or 4 stroke cycle 2 Single or double acting *single*

Pressure in cylinders 550 lbs. No. of cylinders 6 Diameter of cylinders 680 mm. No. of cranks 6 Length of stroke 1200 mm

Bearings, adjacent to the Crank, measured from inner edge to inner edge 880 mm. Is there a bearing between each crank *Yes*Revolutions per minute 100 Flywheel dia. 2200 mm. Weight 4300 kg. Means of ignition *Compression* Kind of fuel used *Heavy fuel oil*

Shaft, dia. of journals as per Rule 442 mm. Crank pin dia. 470 mm. Crank Webs Mid. length breadth 620 mm. Thickness parallel to axis

Intermediate Shafts, diameter as per Rule 442 mm. Thrust Shaft, diameter at collars as per Rule 360 mm.

Screw Shaft, diameter as per Rule 470 mm. Is the tube shaft fitted with a continuous liner

Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the

boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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

Liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after

Stern tube shaft Length of Bearing in Stern Bush next to and supporting propeller

Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

of reversing Engines *direct* Is a governor or other arrangement fitted to prevent racing of the engine *when decelerated* *Yes* Means of lubricationThickness of cylinder liners 53 mm. Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged withActing material *Yes* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engineWater Pumps, No. *2 Combined Cylinder Pumps (1 Stand by)* Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Pumps fitted to the Main Engines, No. 1. D.A. Diameter 190 mm Stroke 150 mm. Can one be overhauled while the other is at work

connected to the Main Bilge Line { No. and Size How driven

Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size *2 Combined gear pumps for bearing & crosshead lubrication (1 Stand by)*Independent means arranged for circulating water through the Oil Cooler *Yes* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

No. and size:—In Engine and Boiler Room

, &amp;c.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. Are the Bilge Suctions in the Machinery Space

easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

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

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

How are they protected

Have they been tested as per Rule

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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

vent to another. Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

If vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Air Compressors, No. 1 No. of stages 3 Diameters 570/480/150 Stroke 600 mm Driven by *Crank shaft*

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Suctioning Air Pumps, No. 2. D.A. in tandem Diameter 1400 mm. Stroke 750 mm. Driven by *Crank shaft*

Crank shafts, diameter as per Rule 146 mm. as fitted 160 "

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes*Internal surfaces of the receivers be examined *Yes* What means are provided for cleaning their inner surfaces *1. P. starting air res. manhole 300x400 mm. 2. Poles 270 mm at each end. 3. hole 150 " " " one end*

Is a drain arrangement fitted at the lowest part of each receiver

Pressure Air Receivers, No. *Starting & Injection* Cubic capacity of each 800 litres Internal diameter 540 mm. thickness 25 mm.Seamless Material S.M. Steel Range of tensile strength 28 to 32 tons Working pressure by Rules 97.7 kg/cm<sup>2</sup>Suctioning Air Receivers, No. 1 Total cubic capacity 8.5 m<sup>3</sup> Internal diameter 1200 mm. thickness 21 mm.Seamless Material S.M. Steel Range of tensile strength 26 to 30 " end plates Working pressure by Rules 31 kg/cm<sup>2</sup>Seamless Material S.M. Steel Range of tensile strength 26 to 30 " end plates Working pressure by Rules 31 kg/cm<sup>2</sup>Seamless Material S.M. Steel Range of tensile strength 26 to 30 " end plates Working pressure by Rules 31 kg/cm<sup>2</sup>Seamless Material S.M. Steel Range of tensile strength 26 to 30 " end plates Working pressure by Rules 31 kg/cm<sup>2</sup>Seamless Material S.M. Steel Range of tensile strength 26 to 30 " end plates Working pressure by Rules 31 kg/cm<sup>2</sup>



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 .....	15-6-27.	38.5 Kg.cm <sup>2</sup>	80 Kg. cm <sup>2</sup>	R	Tests satisfact
" " COVERS .....	"	" "	" "	R	" "
" " JACKETS .....	"	0.75 "	6 "	R	" "
" PISTON WATER PASSAGES .....	9-8-27.	2.0 "	" "	R	" "
MAIN COMPRESSORS—1st STAGE .....	10-5-27	3.0 "	20 "	R	" "
" 2nd " .....	"	15.0 "	50 "	R	" "
" 3rd " .....	"	75.0 "	150 "	R	" "
AIR RECEIVERS—STARTING .....	H.P. 30-8-27 L.P. 14-11-27	1070 LBS. P. 427 "	2140 LBS. P. 627 "	P.R. W.G.V.	Tested at Disseld Test satisfactory
" INJECTION .....	29-10-25	1065 "	2130 "	H.T.	Tested at Disseld
AIR PIPES .....	28-6-27, 7-9-27, 8-11-27.	30+75 Kg.cm <sup>2</sup>	60+150 Kg.cm <sup>2</sup>	R	Tests satisfacto
FUEL PIPES .....	7-9-27, 8-11-27.	75 "	150 "	R	" "
FUEL PUMPS & VALVES .....	11-4-27, 4-5-27.	" "	" "	R	" "
SILENCER .....	13-9-27.	0.05 "	2.5 "	R	" "
" WATER JACKET .....					
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for Shafting.  
(If not, state date of approval)

21-2-27.

Receivers 7-6-27, L.P. riveted receivers  
2-5-27, 800 L.T. H.P.  
7-5-20 150 " Eng. " Separate Tanks  
Oil Fuel Burning Arrangements

Donkey Boilers

General Pumping Arrangements

SPARE GEAR

The foregoing is a correct description.

Sulzer Brothers

Co. Ltd.

Manufacturers.

Dates of Survey while building	During progress of work in shops--	14-12-26, 21-12-26, 3-1-27, 13-1-27, 4-2-27, 21-2-27, 22-2-27, 11-3-27, 1-4-27, 6-4-27, 11-4-27, 2-5-27, 4-5-27, 9-5-27, 10-5-27, 17-5-27, 10-6-27, 15-6-27, 20-6-27, 28-6-27, 6-7-27, 26-7-27, 29-7-27, 9-8-27, 30-8-27, 7-9-27, 13-9-27, 16-9-27, 20-9-27, 4-10-27, 12-10-27, 25-10-27, 8-11-27, 9-11-27, 14-11-27, 23-11-27, 28-11-27, 6-12-27, 8-12-27, 12-12-27, 15-12-27, 31-12-27.
	During erection on board vessel---	
	Total No. of visits	

Dates of Examination of principal parts—Cylinders 8-12-27 Covers 6-12-27 Pistons 6-12-27, Rods 6-12-27, Connecting rods 8-12-27

Crank shaft 12-12-27 Flywheel shaft 12-12-27 Thrust shaft 12-12-27, 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. P. M. Ing. Stl. Identification Mark Lloyd's J.L. 3409 1-10-27 M.B. 7682 255-27 Flywheel shaft, Material Ann. P. M. Ing. Stl. Identification Mark Lloyd's J.L. 1935

Thrust shaft, Material see flywheel shaft Identification Mark see flywheel shaft Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark 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 Yes. If so, state name of vessel "British Loyalty"

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, the approved plans, materials and workmanship good. Full power trials of engine in shop satisfactory.

The amount of Entry Fee ...	£ 6-0-0	When applied for,
Special ...	£ 112-8-0	12 Feb. 1928
Donkey Boiler Fee ...	£ :	When received,
Travelling Expenses (if any) £	:	3 Feb. 1928

Committee's Minute

TUES. 14 AUG 1928

Assigned

See Proc. 1st apt. No. 83093.

W.G. Vallis

Engineer Surveyor to Lloyd's Register of Shipping.



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