

# AUXILIARY ENGINES. REPORT ON OIL ENGINE MACHINERY.

No. 42.

Received at London Office

Report of writing Report 17<sup>th</sup> Dec. 1923. When handed in at Local Office 17<sup>th</sup> Dec. 1923. Port of Winterthur.  
Date, First Survey 4<sup>th</sup> July, 1921. Last Survey 27<sup>th</sup> March, 1923  
No. in Survey held at Winterthur. Number of Visits  
g. Book.  
on the Single } Screw vessels  
Twin }  
Triple }  
laster. Built at Kobe. By whom built Kobe Steel Works. Yard No. When built  
Engines made at Winterthur. By whom made Messrs. Sulzer, Bros. Engine No. 5195 When made 1923.  
Boiler No. 5197  
5291  
When made  
Donkey Boilers made at By whom made  
Port belonging to  
Brake Horse Power 270 (3 ENG). TOTAL. Owners  
Is Electric Light fitted  
Nom. Horse Power as per Rule 42 (3 ENG). Is Refrigerating Machinery fitted for cargo purposes

ALL ENGINES, &c. Type of Engines Auxiliary Sulzer Diesel Engines. 2 or 4 stroke cycle 4 Single or double acting single  
Maximum pressure in cylinders 38 Atm. No. of cylinders 2 EACH ENG. No. of cranks 2 Each Eng. Diameter of cylinders 310 mm.  
Length of stroke 360 mm. Revolutions per minute 300 Means of ignition Impure air & diesel 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) 390 mm.  
Distance between centres of main bearings 620 mm. Is a flywheel fitted Yes. Diameter of crank shaft journals as per Rule 166 mm.  
as fitted 175 mm.  
Diameter of crank pins 175 mm. Breadth of crank webs as per Rule 221 mm.  
as fitted 270 mm. Thickness of ditto as per Rule 93 mm.  
as fitted 98 mm.  
Diameter of flywheel shaft as per Rule 166 mm.  
as fitted 185 mm. Diameter of tunnel shaft as per Rule 185 mm.  
as fitted 200 mm. Diameter of thrust shaft as per Rule  
Diameter of screw shaft as fitted 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  
If 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  
If two liners are fitted, is the shaft lapped or protected between the liners If without liners, is the shaft arranged to run in oil  
Type 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 Reversible Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes. Thickness of cylinder liners 24 mm.  
Are the cylinders fitted with safety valves Yes. Means of lubrication Forced. Are the exhaust pipes and silencers water cooled or lagged with  
non-conducting 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 Is the sea suction provided with an efficient strainer which can be cleared  
within the vessel No. of bilge pumps fitted to the main engines Diameter of ditto Stroke  
Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines How driven  
Sizes of pumps No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room  
and 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 they 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

AIR RECEIVERS:—No. of high pressure air receivers 1 Each eng. Internal diameter 190 mm. Cubic capacity of each 20 litres  
material B.M. Steel Seamless, lap welded or riveted longitudinal joint Beamsless. Range of tensile strength 28 to 32 Tons per sq.  
thickness 10 mm. working pressure by Rules 96 atm. 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 Opening 120 mm dia at upper end. Is there a drain arrangement fitted at the lowest part of each receiver.



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 .....	25-1-22, 28-1-22, 17-8-22	38 ATs.	75 ATs.	B.	Test satisfactory
" " COVERS .....	-do. -do. -do.	-do.	-do.	-do.	-do.
" " JACKETS.....	30-1-22 -do.	1 ATs.	3 ATs.	-do.	-do.
" PISTON WATER PASSAGES.....	✓	✓	✓	✓	none.
MAIN COMPRESSORS—1st STAGE.....	30-1-22 1-2-22, 2-2-22, 31-1-22, 13-4-22	3 ATs.	10 ATs.	B.	Test satisfactory
" 2nd " .....	" " " 6-2-22, "	17.5 "	35 "	-do.	-do.
" 3rd " .....	" " " 3-10-22	70 "	140 "	-do.	-do.
AIR RECEIVERS—STARTING .....	✓	✓	✓	✓	✓
" INJECTION .....	17-1-22, 24-11-22, 16-1-23	70 ATs.	140 ATs.	H.K. B.	Test satisfactory
AIR PIPES .....	6-9-22, 10-4-22, 1-3-23	70 ATs.	-do.	B.	-do.
FUEL PIPES .....	-do. -do. -do.	-do.	-do.	-do.	-do.
FUEL PUMPS + VALVES.....	9-2-22, 9-6-22, 9-8-22	-do.	-do.	-do.	-do.
STEAMER EXHAUST PIPE.....	30-5-22,	1 ATs.	3 ATs.	-do.	-do.
" WATER JACKET .....	-do., 2-6-22, 22-3-23	-do.	-do.	-do.	-do.
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for shafting 23-7-21  
(If not, state date of approval)

Receivers <sup>Injection</sup> 6-20, 10-4-22.

Separate Tanks ✓

SPARE GEAR

The foregoing is a correct description,

Switzer Brothers  
Limited  
Manufacturers.

Manufacturer.

Dates of Survey while building { During progress of work in shops - 4-7-21, 22-7-21, 7-11-21, 2-12-21, 24-12-21, 17-1-22, 25-1-22, 26-1-22, 30-1-22, 31-1-22, 1-2-22, 2-2-22, 6-2-22, 8-2-22, 9-2-22, 21-2-22, 24-2-22, 10-3-22, 22-3-22, 6-4-22, 10-4-22, 12-4-22, 20-4-22, 9-5-22, 11-5-22, 18-5-22, 26-5-22, 2-6-22, 28-7-22, 9-8-22, 17-8-22, 13-9-22, 3-10-22, 16-1-23, 1-3-23, 21-3-23, 22-3-23, 26-3-23 }  
Total No. of visits

Dates of Examination of principal parts—Cylinders 15-5-22, 9-6-22 Covers 18-5-22, 9-6-22 Pistons 18-5-22, 9-6-22 Rods ✓ Connecting rods 18-5-22, 17-6-22  
+ FLYWHEEL 26-3-23.

Crank shaft 18-5-22, 17-6-22 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 3846 B 7-11-21 HP 5145 + 5147. Screw shaft and propeller ✓

Material of crank shaft 5 M. Anting Steel Identification Mark on Do. 3656 B 10-3-22 HP 5291. 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 no. If so, state name of vessel

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 ... £ : : When applied for,  
Special ... £ : : 19  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) £ : : 19

Committee's Minute

FRI. 20 FEB 1925

TUES. 12 MAY 1925

Assigned

W.S. Fallis.

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation