

# REPORT ON OIL ENGINE MACHINERY.

No. 2010

Date of writing Report 17th Dec. 1920 When changed in at Local Office Stockholm Port of Stockholm Received at London Office WED. DEC. 22 1920

No. in Survey held at Stockholm Date, First Survey 1st January 1918 Last Survey 8th Dec. 1920  
 Reg. Book. Stockholm Number of Visits 23

on the Single } Screw vessels M.S. "Flanchford" Tons } Gross \_\_\_\_\_  
Triple } Net \_\_\_\_\_

Master \_\_\_\_\_ Built at \_\_\_\_\_ By whom built \_\_\_\_\_ Yard No. \_\_\_\_\_ When built \_\_\_\_\_  
 Engines made at Stockholm By whom made J. E. G. Bolinder's Co. Ltd. Engine No. Cy. 14/20/23 When made 1920

Boilers made at \_\_\_\_\_ By whom made \_\_\_\_\_ Boiler No. \_\_\_\_\_ When made \_\_\_\_\_

Horse Power 320 Owners Messrs. James Pollak, Sons & Co., Port belonging to London  
Pollak's Order no 35143

Horse Power as per Rule 91 Is Refrigerating Machinery fitted for cargo purposes \_\_\_\_\_ Is Electric Light fitted \_\_\_\_\_

ENGINES, &c.—Type of Engines Cylinder Oil Engine 2 or 4 stroke cycle Single or double acting reversible

Maximum pressure in cylinders 18.5 kg/cm<sup>2</sup> No. of cylinders 4 No. of cranks 4 Diameter of cylinders 420 mm.

Stroke of stroke 480 mm. Revolutions per minute 225 Means of ignition Hot bulb Kind of fuel used Crude oil

Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 544 mm.

Distance between centres of main bearings 840 mm. Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 176 mm. ✓  
as fitted 180 mm.

Diameter of crank pins 180 mm. Breadth of crank webs as per Rule 234 mm. ✓ Thickness of ditto as per Rule 98.5 mm. ✓  
as fitted 270 mm. ✓ as fitted 105 mm. ✓

Diameter of flywheel shaft as per Rule \_\_\_\_\_ Diameter of tunnel shaft as per Rule \_\_\_\_\_ Diameter of thrust shaft as per Rule 169 mm. ✓  
as fitted 178 mm. ✓ as fitted \_\_\_\_\_ as fitted 175 mm. ✓

Diameter of screw shaft as per Rule \_\_\_\_\_ Is the screw shaft fitted with a continuous liner the whole length of the stern tube \_\_\_\_\_  
as fitted \_\_\_\_\_

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 liners fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ If without liners, is the shaft arranged to run in oil \_\_\_\_\_

Diameter of outer gland fitted to stern tube \_\_\_\_\_ Length of stern bush \_\_\_\_\_ Diameter of propeller \_\_\_\_\_

Diameter of propeller \_\_\_\_\_ No. of blades \_\_\_\_\_ state whether moveable \_\_\_\_\_ Total surface \_\_\_\_\_ square feet

Method of reversing Timing Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners none fitted.

Are the cylinders fitted with safety valves no Means of lubrication pumps Are the exhaust pipes and silencers water cooled or lagged with \_\_\_\_\_

Conducting material \_\_\_\_\_ 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 one Is the sea suction provided with an efficient strainer which can be cleared \_\_\_\_\_

No. of bilge pumps fitted to the main engines one Diameter of ditto 110 mm. Stroke 130 mm.

Can one be overhauled while the other is at work \_\_\_\_\_ No. of auxiliary pumps connected to the main bilge lines \_\_\_\_\_ How driven \_\_\_\_\_

No. of pumps \_\_\_\_\_ No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room \_\_\_\_\_

No. 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 \_\_\_\_\_

Is the 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 \_\_\_\_\_

Is there communication between the sea and the bilges \_\_\_\_\_ Is the screw shaft tunnel watertight \_\_\_\_\_ Is it fitted with a watertight door \_\_\_\_\_

Is it sealed 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 2 Diameters 275/100 mm. Stroke 240 mm. Driven by main engine

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 none fitted Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

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 yes  
as fitted \_\_\_\_\_

RECEIVERS:—No. of high pressure air receivers 1 Internal diameter 143 mm. Cubic capacity of each 20 litres

Material S.M. Steel Seamless, lap welded or riveted longitudinal joint Seamless Range of tensile strength min. 23 tons/sq. inch

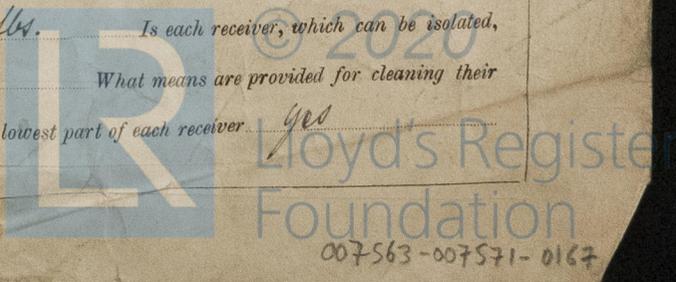
Thickness 4.5 mm. Working pressure by Rules 517 lbs. No. of starting air receivers 1 Internal diameter 434 mm.

Total cubic capacity 296 litres Material S.M. Steel Seamless, lap welded or riveted longitudinal joint Lapwelded

Range of tensile strength min. 23 tons/sq. inch thickness 8 mm. Working pressure by rules 260 lbs. Is each receiver, which can be isolated, \_\_\_\_\_

Is it 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 \_\_\_\_\_

Are the internal 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	18.10.1920	18.5 kg./sq. cm.	37 kg./sq. cm.	Lloyd's Test 37 kg. Stem. 18.10.20. A.	
" " COVERS	18.10.1920.	ditto	ditto		
" " JACKETS	18.10.1920		3.5 kg./sq. cm.		
" " PISTON WATER PASSAGES	(Open pistons)				
MAIN COMPRESSORS—1st STAGE	18.10.20.	8 kg./sq. cm.	16 kg./sq. cm.	A	
" 2nd "	18.10.20.	30 kg./sq. cm.	60 kg./sq. cm.		
" 3rd "					
AIR RECEIVERS—STARTING	18.10.20	15 kg./sq. cm.	30 kg./sq. cm.	starting Lloyd's Test 30 kg. Working Pr. 15 kg. No. 2204. Stem. 18.10.20. A.	Injection Lloyd's Test 60 kg. Working Pr. 30 kg. No. 2203. Stem. 18.10.20. A.
" INJECTION					
AIR PIPES				2 spare starting air receivers	
FUEL PIPES				Lloyd's Test 30 kg. Working Pr. 15 kg. No. 2207-2208. Stem. 28.10.20. A.	
FUEL PUMPS					
SILENCER	1.10.20		3.5 kg./sq. cm.	Hydr. Test 3.5 kg. Stem. 1.10.20. A.	
" WATER JACKET	1.10.20		3.5 kg./sq. cm.		
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting <sup>See Secretary's letters</sup> E. 3.10.11; 1.7.14 & 10.1.16. Receivers <sup>Starting E. 8.3.16</sup> E 5.2.15 <sup>Injection E 5.2.15</sup> Separate Tanks

SPARE GEAR to be supplied and inspected on delivery.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1/11/13; 10/5; 29/7; 14/8; 2.8.20/9; 1.5.21/10; 15.22/11; 9/12 1918; 8/1.19/2; 14/3 1919; 8/6.13/7; 8.9.23/9; 18/10 1920  
During erection on board vessel --  
Total No. of visits 23

Dates of Examination of principal parts—Cylinders 18.10.20 Covers 18.10.20 Pistons 18.10.20 Rods Connecting rods 15/11; 22/11; 9/12 1918; 8/1.19/2; 14/3 1919; 8/6.13/7; 8.9.23/9  
Crank shaft 29/9; 1.5.10 1913 Thrust shaft 29/7; 14/8 1918 Compressor 29/7; 15/11; 2.8.9 1918 Propeller Engine seatings 18/10 1920  
Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions 23.9.1920.

Completion of fitting sea connections Stern tube Screw shaft and propeller  
Material of crank shaft S. M. Steel Identification Mark on Do. Lloyd's No. 3052 Stem. 18.10.20. A Material of thrust shaft S. M. Steel Identification Mark on Do. Lloyd's No. 3011 Stem. 18.10.20. A  
Material of compressor crank S. M. Steel Identification Marks on Do. Lloyd's No. 3024 Stem. 18.10.20. A 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 (See Stem Report No. 1944)

General Remarks (State quality of workmanship, opinions as to class, &c.)  
I am of opinion that this motor is of superior material and workmanship, and as it has been designed and constructed under my special survey I have respectfully to submit that it will be eligible to be classed \*LMC, as soon as it has been fitted in a classed vessel to the satisfaction of the Society's Surveyors

The amount of Entry Fee ... £ : : When applied for.  
Special Survey in ship ... £ 22 10/4 : 14.12.1920  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
Dec 27 1920

K. J. Andersson  
Engineer/Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 16 AUG. 1921  
Assigned See minute on Lon 84545



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