

REPORT ON OIL ENGINE MACHINERY.

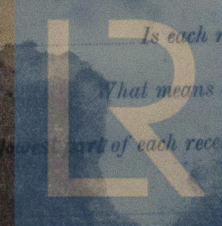
No. 2463
21 JUN 1926

Received at London Office

Date of writing Report 24th May 1926 When handed in at Local Office 19 Port of Shanghai
 No. in Survey held at Shanghai Date, First Survey 28th April, 1925 Last Survey 8th May, 1926
 Reg. Book. Single Twin Triple Screw vessels "HAI-KWANG" Number of Visits 1
 Master Shanghai Built at Shanghai By whom built Shanghai S.S. Co. Ltd. Yard No. 568 When built 1926
 Engines made at Lincoln By whom made Ruston & Hornsby Ltd. Engine No. 10796 When made 1919
 Donkey Boilers made at Shanghai By whom made Shanghai S.S. Co. Ltd. Boiler No. 570 When made 1926
 Brake Horse Power Total 640 Owners Anglo Siam Petroleum Co. Port belonging to Shanghai
 Nom. Horse Power as per Rule 183 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Type of Engines Bolinder Guide Oil. 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 300 lbs sq. in. No. of cylinders 4 in each No. of cranks 4 Diameter of cylinders 16 $\frac{1}{2}$ "
 Length of stroke 18 $\frac{1}{16}$ " Revolutions per minute 225 Means of ignition Hot Bull Kind of fuel used Shale & kerosene
 Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) ✓
 Distance between centres of main bearings 2' 9 $\frac{1}{16}$ " Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule 7 $\frac{3}{32}$ "
 Diameter of crank pins 7 $\frac{3}{32}$ " Breadth of crank webs as per Rule 10 $\frac{5}{8}$ " Thickness of ditto as per Rule 4 $\frac{3}{32}$ "
 Diameter of flywheel shaft as per Rule 7 $\frac{1}{4}$ " Diameter of tunnel shaft as per Rule 6 $\frac{3}{8}$ " Diameter of thrust shaft as per Rule 6 $\frac{3}{8}$ "
 Diameter of screw shaft as per Rule 7 $\frac{1}{2}$ " Is the screw shaft fitted with a continuous liner the whole length of the stern tube None
 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 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 fitted, is the shaft lapped or protected between the liners ✓ If without liners, is the shaft arranged to run in oil Yes
 Is the propeller fitted to stern tube Fixed Ring Length of stern bush 2' 10" Diameter of propeller 6' 0"
 Diameter of propeller 6' 3" No. of blades 3 state whether moveable no Total surface 10 sq. square feet
 Method of reversing Reversing on engine which at time would be disconnected Is a governor or other arrangement fitted to prevent racing of the engine when disclutched Yes Thickness of cylinder liners ✓
 Are the cylinders fitted with safety valves no Means of lubrication Forced sight feed Are the exhaust pipes and silencers water cooled or lagged with Water cooled
 Is the exhaust material silenced If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓
 Is the exhaust led up funnel ✓ No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared ✓
 Is the vessel Yes No. of bilge pumps fitted to the main engines 1 each engine Diameter of ditto 3 $\frac{19}{32}$ " Stroke 5 $\frac{1}{8}$ "
 Can one be overhauled while the other is at work ✓ No. of auxiliary pumps connected to the main bilge lines 1 How driven Steam
 Sizes of pumps 7 $\frac{1}{2}$ x 5 x 6" No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2-2"
 In holds, etc. ✓ No. of ballast pumps 1 How driven Steam Sizes of pumps 7 $\frac{1}{2}$ x 5 x 6"
 Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size 2 $\frac{1}{2}$ " Is a separate auxiliary pump suction fitted in ✓
 Engine Room and size 1-2" h.c. Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes
 Are the sluices on Engine Room bulkheads always accessible ✓ Are all connections with the sea direct on the skin of the ship Yes
 Are they valves or cocks Valves Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates Yes
 Are the discharge pipes above or below the deep water line Below Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes
 Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any ✓
 Communication between the sea and the bilges Yes Is the screw shaft tunnel watertight ✓ Is it fitted with a watertight door ✓
 Is it fitted 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 2 Diameters 4" 4 $\frac{1}{2}$ " Stroke 5 $\frac{1}{8}$ " Driven by Cap & Fly wheel
 No. of auxiliary air compressors 1 No. of stages 2 Diameters 3" 4" Stroke 4" Driven by Steam and
 No. of small auxiliary air compressors None No. of stages — Diameters — Stroke — Driven by CRANK OUT Unit
 No. of scavenging air pumps ✓ Diameter ✓ Stroke ✓ Driven by ✓
 Are the air compressors and their coolers made so as to be easy of access ✓

RECEIVERS:—No. of high pressure air receivers ✓ Internal diameter ✓ Cubic capacity of each ✓
 Is the receiver Seamless, lap welded or riveted longitudinal joint Range of tensile strength ✓
 Working pressure by Rules ✓ No. of starting air receivers 5 Internal diameter 17 $\frac{1}{4}$ "
 Cubic capacity 44,400 material Steel Seamless, lap welded or riveted longitudinal joint Both 2+3
 Thickness 3/8 Working pressure by rules ✓ Is each receiver which can be isolated ✓
 Is there a safety valve as per Rule Yes Can the internal surfaces of the receivers be examined no What means are provided for cleaning their ✓
 Surfaces None Is there a drain arrangement fitted at the lowest part of each receiver ✓

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HYDRAULIC TESTS:—				
DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	REMARKS.
ENGINE CYLINDERS				
" " Cast COVERS 7.			650 lbs.	
" " JACKETS.....			40 H.	
" " PISTON WATER PASSAGES.....				
MAIN COMPRESSORS—1st STAGE.....				
" 2nd "				
" 3rd "				
AIR RECEIVERS—STARTING				
" INJECTION				
AIR PIPES				
FUEL PIPES				
FUEL PUMPS				
SILENCER			35 H.	
" WATER JACKET				
SEPARATE FUEL TANKS				

PLANS. Are approved plans forwarded herewith for shafting *Twelve 7 1/2* Receivers
(If not, state date of approval)
SPARE GEAR Two complete sets of engines are kept at the Store room Shanghai
Spare parts are taken from these engines as necessary.

Ca Shirees

Manufacturer

Dates of Survey while building	During progress of work in shops--	1925. 29 th April, Oct 24, Dec 3, 8, 22 26, 28
	During erection on board vessel--	1926 Jan 6, 11, 18 31, 27. Feb. 2, 11, 18, 24 March 3, 5, 12, 17, 31. April 9, 13, 15, 26, 28/29
	Total No. of visits	27

white building board vessel ---
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Dates of Examination of principal parts—Cylinders 24/10/25 Covers 24/10/25 Pistons 24/10/25 Rods 24/10/25 Connecting rods 24/10/25
Crank shaft 28/4/25 Thrust shaft 13/12/25 Tunnel shafts 28/12/25 Screw shaft 28/12/25 Propeller 28/12/25 Stern tube 26/12/25 Engine seatings 8/12/25
Engines holding down bolts 18/2/26 Completion of pumping arrangements 15/4/26 Engines tried under working conditions 8/5/26
Completion of fitting sea connections 22/12/25 Stern tube 28/12/25 Screw shaft and propeller 4/4/26
Material of crank shaft Steel Identification Mark on Do. - Material of thrust shaft Steel Identification Mark on Do. -
Identification Marks on Do. 28/12/25

Is the flash point of the oil to be used over 150° F.

Is this machinery duplicate of a previous case. *Yes* If so, state name of vessel *Lim Report 50866/7/8.*

General Remarks (State quality of workmanship, opinions as to class, etc.)

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These engines have not been built under special survey. The materials have been tested by Admiralty Officers who also applied the hydraulic tests. The engines intended for this vessel were Nos 10776 & 10796. Tri-Tests Reports 110 & 11100. Upon examination of these engines at Shanghai, the crank shafts were found to badly fitted not fit for use. A spare crank shaft was taken from the Lu-Hwang, and another one was sent from Singapore; shaft No 53021.

The machinery has been installed on board in accordance with the Rules and satisfactorily tried under working and is eligible, in my opinion, for notation of LME 5, 26

The amount of Entry Fee ... £ 24⁰⁰

When applied for,

11-5-1926

When received.

8.5.
AUG 1926

M. Boylan
Engineer Surveyor to Lloyd's Register of Shipping

TUES. 21 SEP 1928

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