

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

18 SEP 1924

Date of writing Report 19 When handed in at Local Office 13/9/24 Port of Middlesbrough  
 No. in Survey held at South Bank Date, First Survey 15<sup>th</sup> May 1924 Last Survey 3<sup>rd</sup> Sept 1924  
 Reg. Book. on the S.S. "HARTLEY" (Number of Visits 32)  
 Built at South Bank By whom built Messrs Smiths Dock Co Yard No. 797 When built 1924  
 Engines made at South Bank By whom made Messrs Smiths Dock Co Engine No. 263 when made 1924  
 Boilers made at Stockton-on-Tees By whom made Messrs Blair & Co Boiler No. A100 when made 1924  
 Registered Horse Power Owners Port belonging to  
 Nom. Horse Power as per Rule 229 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

## ENGINES, &amp;c.—Description of Engines

Triple expansion  
 Dia. of Cylinders 20 $\frac{1}{2}$ " x 33" x 54" Length of Stroke 39" Revs. per minute 73 No. of Cylinders 3 No. of Cranks 3  
 Dia. of Crank shaft journals as per rule 10.72" as fitted 11" Dia. of Crank pin 11" Crank webs Mid. length breadth 17 $\frac{1}{4}$ " If shrunk Thickness parallel to axis 7"  
 Diameter of Thrust shaft under collars as per rule 10.72" as fitted 11 $\frac{1}{4}$ " Diameter of Tunnel shaft as per rule 10.21" as fitted 10 $\frac{1}{2}$ " Diameter of Screw shaft as per rule 11.48" as fitted 12 $\frac{1}{8}$ " Is the Screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made watertight in the propeller boss Yes  
 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 Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated No Length of Stern Bush 4'-7 $\frac{1}{2}$ " Diameter of Propeller 15'-3"  
 Pitch of Propeller 15'-9" No. of Blades 4 State whether Moveable No Total Surface 69 square feet.  
 No. of Feed Pumps fitted to the Main Engines 2 Diameter of ditto 3 $\frac{1}{4}$ " Stroke 20" Can one be overhauled while the other is at work Yes  
 No. of Bilge Pumps fitted to the Main Engines 2 Diameter of ditto 3 $\frac{1}{4}$ " Stroke 20" Can one be overhauled while the other is at work Yes  
 Total number and size of power driven Feed and Bilge Auxiliary Pumps 2 @ 6" x 4" x 6" & 1 @ 8" x 10" x 10"  
 No. and size of Pumps connected to the Main Bilge Line 1 @ 8" x 10" x 10"  
 No. and size of Ballast Pumps 1 Duplex 8" x 10" x 10" No. and size of Lubricating Oil Pumps, including Spare Pump  
 Are two independent means arranged for circulating water through the Oil Cooler No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 3 @ 3" + 1-3" tunnel well and in Holds, &c. Forward hold 2 @ 3" aft hold 2 @ 3"

No. and size of Main Water Circulating Pump Bilge Suctions 1 @ 6" No. and size of Donkey Pump Direct Suctions  
 to the Engine Room Bilges 1 @ 4" Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes  
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Main below not above  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
 What Pipes are carried through the bunkers None How are they protected  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Is the 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 compartment to another Yes Is the Screw Shaft Tunnel watertight Yes it fitted with a watertight door Yes worked from Upper Deck

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 3947 sq. ft.  
 Is Forced Draft fitted No No. and Description of Boilers 2 Single ended 2 SB. Working Pressure 180 lbs.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting No Main Boilers No Auxiliary Boilers Donkey Boilers  
 (If not state date of approval)

General Pumping Arrangements Yes return for duplicate work, uel Burning Piping Arrangements

SPARE GEAR. State the articles supplied:—1 set spare suction and delivery valves for each auxiliary pump, 2 bottom end bolts and nuts, 2 top end bolts and nuts, 2 main bearing bolts and nuts, 6 coupling bolts and nuts, 1 set each feed and bilge pump valves,  $\frac{1}{2}$  cut of iron plating,  $\frac{1}{2}$  cut of iron bars, 100 bolts and nuts, 12 junk ring studs and nuts, 6 cylinder cover studs, 12 condenser tubes, 12 Boiler tubes.

The foregoing is a correct description,

For Smiths Dock Co.

J. H. Scott.

Manufacturer.



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Lloyd's Register  
Foundation



1924 May 15 23 26 28 30 June 2 4 6 12 16 19 23 25 27 30 July 3 4 10 17 18 22 24 25 28  
Aug. 1 5 25 26 28 30 Sep. 3  
During progress of work in shops - -  
Dates of Survey while building  
During erection on board vessel - - -  
Total No. of visits 32

Dates of Examination of principal parts - Cylinders 4-7-24 Slides 28-7-24  
Covers 19-6-24 Pistons 17-7-24 Rods 17-7-24  
Connecting rods 22-7-24 Crank shaft 16-5-24 Thrust shaft 16-5-24  
Tunnel shafts 16-5-24 Screw shaft 16-5-24 Propeller 14-7-24  
Stern tube 22-7-24 Engine and boiler seatings 18-7-24 Engines holding down bolts 28-8-24  
Completion of pumping arrangements 30-8-24 Boilers fixed 8-8-24 Engines tried under steam 30-8-24  
Completion of fitting sea connections 28-7-24 Stern tube 5-8-24 Screw shaft and propeller 5-8-24  
Main boiler safety valves adjusted 30-8-24 Thickness of adjusting washers Port P $\frac{5}{16}$  S $\frac{3}{8}$  Starb P $\frac{5}{16}$  S $\frac{1}{2}$   
Material of Crank shaft Sngot steel Identification Mark on Do. 833  
Material of Thrust shaft Sngot steel Identification Mark on Do. 835  
Material of Tunnel shafts Sngot steel Identification Marks on Do. 834  
Material of Screw shafts Sngot steel by M. Simer Identification Marks on Do. 836  
Material of Steam Pipes Solid Drawn Copper Test pressure 360 lbs Date of Test 25-8-24  
Is an installation fitted for burning oil fuel No ✓ Is the flash point of the oil to be used over 150°F. ✓  
Have the requirements of the Rules for carrying and burning oil fuel been complied with ✓

Is this machinery duplicate of a previous case Yes ✓ If so, state name of vessel Smith's No 262 (SS. STELLING)

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey. The material and workmanship are sound and good. The engines and boilers and auxiliaries were examined under steam and all found satisfactory. The machinery is now in a good and safe working condition and renders the vessel eligible in our opinion to have the notation + LMC 9-24 in the Register Book. Note This vessel is fitted with electric light and wireless

It is submitted that this vessel is eligible for THE RECORD, + LMC 9. 24. CL.

The amount of Entry Fee ... £ 4 : 0 : When applied for, 14-9-1924  
Special ... £ 30 : 19 :  
Donkey Boiler Fee ... £ : : When received, 27-9-24  
Travelling Expenses (if any) £ : :  
Committee's Minute  
Assigned

Arthur W. Oxford  
Engineer Surveyor to Lloyd's Register of Shipping.



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