

# REPORT ON MACHINERY.

No. 20531

FRI. 18 SEP 1908

Received at London Office

Date of writing Report Sept 12 1908 When handed in at Local Office Sept 16 1908 to SE. Port of Hull  
 No. in Survey held at Hull Date, First Survey Mar 3 Last Survey Sept 8 1908  
 Reg. Book. 1/1 Lawrence - HERMIONE (Number of Visits 3) Tons } Gross 200  
 } Net 78  
 Master W. Lawrence Built at Hull By whom built Carver & Co. When built 1908  
 Engines made at Hull By whom made Amos & Smith when made 5  
 Boilers made at 5 By whom made 5 when made 5  
 Registered Horse Power 46 Owners Hellyer & Co. Fishing & Ice Port belonging to Hull  
 Nom. Horse Power as per Section 28 46 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Success Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 10-16 1/2-28 Length of Stroke 21 Revs. per minute 96 Dia. of Screw shaft 6 1/2 Material of screw shaft Iron  
 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 water tight in the propeller boss Yes  
 If the liner is in more than one length are the joints burned Yes 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 Yes  
 If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 32  
 Dia. of Tunnel shaft 5 7/8 Dia. of Crank shaft journals 6 1/2 Dia. of Crank pin 6 1/2 Size of Crank webs 12 1/2 x 10 Dia. of thrust shaft under collars 6 1/2 Dia. of screw 10-0 Pitch of Screw 9 1/2 (Mean) No. of Blades 4 State whether moveable No Total surface 29.8 ft.  
 No. of Feed pumps 1 Diameter of ditto 2 1/2 Stroke 11 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 1 Diameter of ditto 2 1/2 Stroke 11 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 6x3x6, 5x5x5 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2-2 (Fwd. Aft) In Holds, &c. 2-2 (Ballast tank, main hold)  
2 Green suction from all holds with discharge on deck.  
 No. of Bilge Injections 1 sizes 2 1/2 Connected to condenser, or to circulating pump Condenser Is a separate Donkey Suction fitted in Engine room & size 2 Green  
 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 None  
 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 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 Hold suction How are they protected Wood casing  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings 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  
 Dates of examination of completion of fitting of Sea Connections 27.7.08 of Stern Tube 27.7.08 Screw shaft and Propeller 27.7.08  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Phoenix & Worcester, Westphalia  
 Total Heating Surface of Boilers 750 ft. Is Forced Draft fitted No No. and Description of Boilers 1 S.F. Mountbatten  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 18.8.08 No. of Certificate 1666  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 25.5 ft. No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 3.14 Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 5 Mean dia. of boilers 10.7 Length 9.37 Material of shell plates Steel  
 Thickness 3/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Skrap. long. seams Skrap.  
 Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7.6 Lap of plates or width of butt straps 16 1/2  
 Per centages of strength of longitudinal joint rivets 100 Working pressure of shell by rules 201 Size of manhole in shell 16 x 12  
 Size of compensating ring 40 x 30 x 3/16 No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 2-11 1/32  
 Length of plain part top 6.7 bottom 6.6 Thickness of plates crown 1/4 bottom 3/16 Description of longitudinal joint welded No. of strengthening rings 1  
 Working pressure of furnace by the rules 228 Combustion chamber plates: Material Steel Thickness: Sides 3/32 Back 1/16 Top 1/16 Bottom 23/32  
 Pitch of stays to ditto: Sides 8 1/2 x 8 1/2 Back 8 1/2 x 8 Top 7 1/2 x 8 1/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 239  
 Material of stays Steel Diameter at smallest part 1 1/2 = 2.06 Area supported by each stay 74.3 Working pressure by rules 249 End plates in steam space: Material Steel Thickness 15 Pitch of stays 12 1/4 x 13 1/2 How are stays secured Skrap. Working pressure by rules 246 Material of stays Steel  
 Diameter at smallest part 4.1 Area supported by each stay 169 Working pressure by rules 250 Material of Front plates at bottom Steel  
 Thickness 15 Material of Lower back plate Steel Thickness 15 Greatest pitch of stays 14 x 8 Working pressure of plate by rules 234  
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plate Steel Thickness: Front 15/16 Back 7/8 Mean pitch of stays 9 1/2 x 8 1/2  
 Pitch across wide water spaces 13 1/4 Working pressures by rules 203 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 8 1/4 x 1 1/4 Length as per rule 30.7 Distance apart 7 3/8 Number and pitch of stays in each 208 1/4  
 Working pressure by rules 232 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately Yes  
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

Is a Report also sent on the Hull of the ship?

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

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

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety Valves \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *Two top & two bottom end connecting rods & nuts, two main bearing bolts, one set of coupling bolts & nuts, one set of feed & bilge pump valves, one set of air & circulating pump valves, one main & one donkey feed check valves, assorted bolts & nuts etc.*

The foregoing is a correct description,

FOR AMOS & SMITH

Manufacturer.

Dates of Survey while building { During progress of work in shops - *Mar 3, 9, 14, 18, 31, Apr 6, 13, 16, 22, 28, May 2, 6, 9, 16, 19, 25, 26, 30, June 2, 6, 19, 27.* MANAGING PARTNER *J. W. H. S.*  
 { During erection on board vessel - *July 2, 4, 11, 13, 18, 21, 24, 27, 30, Aug 1, 7, 12, 18, 25, 26, 29, Sept 8*  
 Total No. of visits *39.* In the approved plan of main boiler forwarded herewith *Ref No 20331*

Dates of Examination of principal parts—	Cylinders	16.5.08	Slides	6.6.08	Covers	26.5.08	Pistons	6.6.08	Rods	28.4.08	
Connecting rods	26.5.08	Crank shaft	6.6.08	Thrust shaft	4.7.08	Tunnel shafts	✓	Screw shaft	4.7.08	Propeller	4.7.08
Stern tube	2.7.08	Steam pipes tested	26.8.08	Engine and boiler seatings	27.7.08	Engines holding down bolts	25.8.08				
Completion of pumping arrangements	8.9.08	Boilers fixed	29.8.08	Engines tried under steam	29.8.08						
Main boiler safety valves adjusted	29.8.08	Thickness of adjusting washers	<i>P 3/8 S 5/16</i>								
Material of Crank shaft	<i>Steel</i>	Identification Mark on Do.	<i>437.5116</i>	Material of Thrust shaft	<i>Steel</i>	Identification Mark on Do.	<i>437.5116</i>				
Material of Tunnel shafts	✓	Identification Marks on Do.	<i>437.5116</i>	Material of Screw shafts	<i>Iron</i>	Identification Marks on Do.	<i>437.5116</i>				
Material of Steam Pipes	<i>Solia drawn Copper</i>	Test pressure	<i>400 lbs.</i>								

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery & tubes of this vessel have been constructed under Special Survey, are of good material & workmanship & have been fitted & secured on board in accordance with the Rules. They are now in good working condition & eligible in my opinion to have access of T.H.M.C. 9.08 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD, L.M.C. 9.08.

*J. W. H. S.*  
18.9.08

The amount of Entry Fee	£	7	0	0	When applied for,
Special	£	8	0	0	When received,
Donkey Boiler Fee	£				
Travelling Expenses (if any)	£				

*John. W. Gwynne*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 22 SEP 1908**  
Assigned *+ L.M.C. 9.08*

MACHINERY CERTIFICATE WRITTEN.



Certificate (if required) to be sent to

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