

# REPORT ON MACHINERY.

No. 21, 113

Received at London Office

WED. 28 APR 1909

Date of writing Report 26.4.09 When handed in at Local Office 27.4.09 Port of Hull  
 No. in Survey held at Hull Date, First Survey Dec 12/08. Last Survey 21<sup>st</sup> Apr 1909  
 Reg. Book. 8 Suff on the Steel S. K. Yokohama (Number of Visits 25) Tons } Gross 291  
 Master Built at Hull By whom built Earles & Co Ltd } Net 117  
 Engines made at } By whom made } when made 1909  
 Boilers made at } Hull By whom made } Earles & Co Ltd when made 1909  
 Registered Horse Power Owners Pickering & Haldane S. J. Co's Port belonging to Hull  
 Nom. Horse Power as per Section 28 89 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 13" - 22 1/2" - 37" Length of Stroke 26" Revs. per minute 111 Dia. of Screw shaft as per rule 7.82" Material of screw shaft Steel  
 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 one length 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 fits tightly If two  
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 36"  
 Dia. of Tunnel shaft as per rule 7" Dia. of Crank shaft journals as per rule 7.36" Dia. of Crank pin 7 1/2" Size of Crank webs 14" x 4 1/8" Dia. of thrust shaft under  
 collars 7 1/2" Dia. of screw 9" - 6" Pitch of Screw 11" - 9 mean No. of Blades 4 State whether moveable No Total surface 29.0 sq ft  
 No. of Feed pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work  
 No. of Bilge pumps 1 Diameter of ditto 3" Stroke 12" Can one be overhauled while the other is at work  
 No. of Donkey Engines Two Sizes of Pumps one Centrif. 4 1/2" x 4 1/2" x 5" pipes No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room one 2", one 3", one 3 1/2" In Holds, &c. one 2" to fore hold, one 2" to fish  
 room, one 2" to slush well, Ejector suction from all parts.  
 No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3"  
 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 0  
 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 awash  
 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 16.4.09 of Stern Tube 16.4.09 Screw shaft and Propeller 16.4.09  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record 8) Manufacturers of Steel Phoenix Akt. Ges. Abt. Hoerder Verein  
 Total Heating Surface of Boilers 1490 sq ft Is Forced Draft fitted No No. and Description of Boilers One cyl. Mult.  
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 19.3.09 No. of Certificate 1694  
 Can each boiler be worked separately Area of fire grate in each boiler 42.5 sq ft No. and Description of Safety Valves to  
 each boiler Two Spring Area of each valve 4.9 sq ft 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" Int diam. of boilers 13" - 9" Length 10" - 6" Material of shell plates Steel  
 Thickness 1 1/4" Range of tensile strength 28-30 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D.  
 long. seams D. B. S. Y. R Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/8" Lap of plates or width of butt straps 17 3/4"  
 Per centages of strength of longitudinal joint rivets 90. plate 84.6 Working pressure of shell by rules 203 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 30" x 40" x 1 1/4" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 3' - 3 1/4"  
 Length of plain part top 5' - 9 3/4" Thickness of plates crown 49" bottom 64" Description of longitudinal joint Welded No. of strengthening rings 0  
 Working pressure of furnace by the rules 203 lbs Combustion chamber plates: Material Steel Thickness: Sides 33/32" Back 11/16" Top 11/16" Bottom 23/32"  
 Pitch of stays to ditto: Sides 9 1/4" x 8 1/2" Back 9 1/4" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 208 lbs  
 Material of stays Steel Diameter at smallest part } margin stays } 1 3/4" Area supported by each stay 106.375 Working pressure by rules 203 lbs End plates in steam space:  
 Material Steel Thickness 1 3/16" Pitch of stays 18 1/2" x 17" How are stays secured D. Nuts Working pressure by rules 200 lbs Material of stays Steel  
 Diameter at smallest part 2 1/16" Area supported by each stay 314.50 Working pressure by rules 206 lbs Material of Front plates at bottom Steel  
 Thickness 31/32" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14 1/2" x 9 1/4" Working pressure of plate by rules 210 lbs  
 Diameter of tubes 3 1/2" Pitch of tubes 5" x 5 1/8" Material of tube plates Steel Thickness: Front 31/32" Back 1/8" Mean pitch of stays 10 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 201 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 10" x 13 1/4" Length as per rule 36" Distance apart 8 1/2" Number and pitch of stays in each 3 - 8 1/2"  
 Working pressure by rules 221 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked  
 separately 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

**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 \_\_\_\_\_ 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 each top and bottom end, connecting rod bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts and nuts, one set each feed, bilge, air pump valves, and a quantity of assorted bolts nuts etc.*

The foregoing is a correct description.  
**F. J. Palethorpe** Manufacturer.

**SECRETARY:** 1908:— Dec 12. 1909:— Jan 11. 22. 30. Feb 3. 9. 10. 13. 15. 24. Mar 3  
 Dates of Survey while building { During progress of work in shops - - }  
 { During erection on board vessel - - } Mar 5. 6. 12. 19. 26. 27. 30. 31. Apr 3. 5. 14. 16. 17. 21.  
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *24 2 09* Slides *3 3 09* Covers *9 2 09* Pistons *15 2 09* Rods *15 2 09*  
 Connecting rods *15 2 09* Crank shaft *24 2 09* Thrust shaft *24 2 09* Tunnel shafts \_\_\_\_\_ Screw shaft *3 3 09* Propeller *3 3 09*  
 Stern tube *3 3 09* Steam pipes tested *31 3 09* Engine and boiler seatings *26 3 09* Engines holding down bolts *5 4 09*  
 Completion of pumping arrangements *17 4 09* Boilers fixed *5 4 09* Engines tried under steam *17 4 09*  
 Main boiler safety valves adjusted *5 4 09* Thickness of adjusting washers  $\frac{13}{32} + \frac{14}{32}$

Material of Crank shaft *Steel* Identification Mark on Do. *2215. ATC* Material of Thrust shaft *Steel* Identification Mark on Do. *161GAH*  
 Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts *Steel* Identification Marks on Do. *161GAH*  
 Material of Steam Pipes *Solid drawn Copper* Test pressure *400 lbs per sq inch*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The engines and boiler of this vessel have been constructed under special survey in accordance with the Rules, and in conformity with approved plan, the boiler tested by hydraulic pressure, found satisfactory and with the engines fitted and secured onboard, tested under steam and found satisfactory, and being now in good order and safe working condition are respectfully submitted as being eligible in my opinion to be classed with the notation of *L.M.C. 4 09* in the Register Book. Attached is letter from Owners agreeing to the fitting of one feed and one bilge pump to the Main Engines.*

It is submitted that this vessel is eligible for THE RECORD + LMC 4 09 *JWS*  
*JWS* 28/4/09

The amount of Entry Fee .. £ 1 : : : When applied for,  
 Special .. £ 13 . y : : : 27.4.09  
 Donkey Boiler Fee .. £ . : : :  
 Travelling Expenses (if any) £ . : : : When received, 12.5.09

**James Barclay**  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 30 APL 1909**

Assigned

+ LMC 4.09

MACHINERY CERTIFICATE WRITTEN.



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