

REPORT ON MACHINERY.

Received at London Office

FRI. JUN. 21. 1912

Date of writing Report 12-6-12 19 When handed in at Local Office 12-6-12 19 Port of Hull

No. in Survey held at Hull & Gool Date, First Survey Dec. 1st Last Survey 7-6-12 1912
 Reg. Book. on the Machinery of S.S. Teign I (Number of Visits 37)

Master Built at Gool By whom built Gool J.B. & Repairing Co. When built 1912-6
 Engines made at Hull By whom made Earle's Co. Ltd when made 1912-6
 Boilers made at Hull By whom made Earle's Co. Ltd when made 1912-6
 Registered Horse Power Owners E. P. Hutchinson Port belonging to Hull

Nom. Horse Power as per Section 28 78 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks 3

Dia. of Cylinders 13'-2 1/2"-35" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 7.91" Material of screw shaft iron
 as fitted 8 1/4" Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight in the propeller boss ✓ 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 ✓ Length of stern bush 37"

Dia. of Tunnel shaft as per rule 6.49" Dia. of Crank shaft journals as per rule 6.81" Dia. of Crank pin 7" Size of Crank webs 13 1/2" x 4 1/2" Dia. of thrust shaft under collars 7" Dia. of screw 9'-9" Pitch of Screw 11'-0" No. of Blades 4 State whether moveable no Total surface 30 1/2"

No. of Feed pumps two Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Bilge pumps two Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work yes
 No. of Donkey Engines two Sizes of Pumps 6" x 6" Top bilge & ballast No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room two 2 1/2" 2 1/2" x 5 1/2" Feed In Holds, &c. two for ditto two of 2 1/2"

No. of Bilge Injections one sizes 3 1/2" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"

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 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 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
 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 17-4-12 of Stern Tube 17-4-12 Screw shaft and Propeller 30-3-12

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from deck

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Phoenix A.L. & Co. Hord.

Total Heating Surface of Boilers 1373 1/2 Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 9-5-12 No. of Certificate 1897

Can each boiler be worked separately ✓ Area of fire grate in each boiler 40 1/2 1/2 No. and Description of Safety Valves to each boiler two spring loaded Area of each valve 4.9" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 9' boiler caps mid dia. of boilers 150" Length 10'-3" Material of shell plates steel
 Thickness 1 1/32 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams Y.P. & B. Diameter of rivet holes in long. seams 13/32 Pitch of rivets 7 1/2" Lap of plates or width of butt straps 16"

Per centages of strength of longitudinal joint rivets 90.5 Working pressure of shell by rules 181 lbs Size of manhole in end 12" x 16"
 plate 85.4

Size of compensating ring plate flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 38 1/4"

Length of plain part top 78 Thickness of plates crown 7 1/4 1/4 Description of longitudinal joint welded No. of strengthening rings ✓
 bottom 91

Working pressure of furnace by the rules 181 Combustion chamber plates: Material steel Thickness: Sides 1 1/16" Back 10/16" Top 10/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 8 1/2 x 7 1/4 Back 9 x 7 1/2 Top 8 1/2 x 7 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 203

Material of stays steel Area at smallest part 2.07 Area supported by each stay 9.3 375 Working pressure by rules 199 End plates in steam space:
 Diameter 5.18 Area supported by each stay 2.55 Working pressure by rules 211 Material of Front plates at bottom steel

Thickness 7/8 Material of Lower back plate steel Thickness 7/8 Greatest pitch of stays 13 1/4 x 9 Working pressure of plate by rules 206

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 7/8 Back 7/8 Mean pitch of stays 9"

Pitch across wide water spaces 13 1/4 Working pressures by rules 189 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8" x 1 3/4 Length as per rule 32 Distance apart 8 1/2 Number and pitch of stays in each three 7 3/4

Working pressure by rules 181 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 _____ Radius of do. _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Two top end bolts, Two bottom end bolts, Two main bearing bolts. One set of coupling bolts, set of feed valve air and circulating pumps valves?*

FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED
 The foregoing is a correct description, *W.B.*
J. V. Palethorpe Manufacturer.
SECRETARY

Dates of Survey while building
 During progress of work in shops -- } 1911: Dec 1, 6, 15, 21. 1912: Jan 4, 6, 16, 19, 22, 25, 29, Feb 5, 8, 16. Mar 5, 8, 18, 21, 27, 30. Apr 3, 4, 11, 14, 17, 19. May 1, 6, 7, 9, 15, 17, 21, 22, 23, 24, 25. Jun 7
 During erection on board vessel --- }
 Total No. of visits *34*. Is the approved plan of main boiler forwarded herewith *yes*.
 " " " donkey " " *136/14*

Dates of Examination of principal parts—Cylinders *25-1-12* Slides *25-1-12* Covers *25-1-12* Pistons *22-1-12* Rods *29-1-12*
 Connecting rods *29-1-12* Crank shaft *18-3-12* Thrust shaft *1-5-12* Tunnel shafts *1-5-12* Screw shaft *30-3-12* Propeller *30-3-12*
 Stern tube *4-4-12* Steam pipes tested *21-5-12* Engine and boiler seatings *17-5-12* Engines holding down bolts *23-5-12*
 Completion of pumping arrangements *25-5-12* Boilers fixed *17-5-12* Engines tried under steam *7-6-12*
 Main boiler safety valves adjusted *24-5-12* Thickness of adjusting washers *Pos 1/32 Lank 9/6*
 Material of Crank shaft *Steel* Identification Mark on Do. *292PNDM* Material of Thrust shaft *iron* Identification Mark on Do. *786 FLS*
 Material of Tunnel shafts *iron* Identification Marks on Do. *786 FLS* Material of Screw shafts *iron* Identification Marks on Do. *789 FL*
 Material of Steam Pipes *copper* Test pressure *360 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this society, the materials & workmanship are good. The Boiler was tested by hydraulic pressure to 340 lbs of found sound tight. The machinery has been properly fitted on board & on completion was tried under steam & found satisfactory. In my opinion the vessel is eligible for the record + L.M.C. 6, 12*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.12

FRS

The amount of Entry Fee .. £ 1 : 0 :
 Special .. £ 11 : 14 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *20/6/12*
 When received, *24.7.12*

Frank A. Livingston
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *THE JUN 25 1912*
 Assigned *+ L.M.C. 6.12.*



Certificate (if required) to be sent to

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