Rpt. 4,

REPORT ON MACHINERY.

No. 18284

Port of Hull

Received at London Office NED. 29 AUG 1906

No. in Reg. Book. 14 App on the Steel Sc. Sr. Tees — Survey held at Hull — Date, first Survey May 4/04 — Last Survey 18th Augt 1906 (Number of Visits 49)

Master — Built at Goole — By whom built Goole S.B.+R. Co Ltd — Tons Gross 507 Net 222 — When built 1906

Engines made at Hull — By whom made Earle's S.+E. Co Ltd — when made 1906

Boiler/ made at do — By whom made do — when made 1905

Registered Horse Power / — Owners E. & H. Hutchinsoon — Port belonging to Hull

Nom. Horse Power as per Section 28 80 — Is Refrigerating Machinery fitted for cargo purposes No — Is Electric Light fitted No

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

Dia. of Cylinders 13", 21", 35" — Length of Stroke 24" — Revs. per minute 130 — Dia. of Screw shaft as per rule 7.9½" as fitted 8¼" — Material of screw shaft Scrap Iron

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 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 ✓ ✓ — Length of stern bush 2'-10"

Dia. of Tunnel shaft as per rule 6.49 as fitted 6½" — Dia. of Crank shaft journals as per rule 6.8" as fitted 7" — Dia. of Crank pin 7" — Size of Crank webs 4⅝"×13" — 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 sq. ft.

No. of Feed pumps 2 — Diameter of ditto 2¼" — Stroke 12" — Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 — Diameter of ditto 2¼" — Stroke 12" — Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 — Sizes of Pumps 6"×6"×6" + 2½"×5"×5" — No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two. One 2½" + one 3½" — In Holds, &c. One each 2½", to each, the tunnel well, port + stbd sides of hold, aft peak, aft tank, fore hold, and fore peak. ✓

No. of Bilge Injections 1 — sizes 5½" — 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 O

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 18.8.06 — of Stern Tube 18.8.06 — Screw shaft and Propeller 18.8.06

Is the Screw Shaft Tunnel watertight Yes — Is it fitted with a watertight door yes — worked from top platform

BOILERS, &c.—(Letter for record) — Manufacturers of Steel Koerder & Co Germany

Total Heating Surface of Boilers 1450 sq ft — Is Forced Draft fitted No — No. and Description of Boilers One S.E. Cyl. Mult.

Working Pressure 180 lbs — Tested by hydraulic pressure to 360 lbs — Date of test 20.1.05 — No. of Certificate 1362

Can each boiler be worked separately ✓ — Area of fire grate in each boiler 40½ sq. ft. — No. and Description of Safety Valves to each boiler Two Spring — Area of each valve 3.97 □" — Pressure to which they are adjusted 195 lbs — Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 10½" — Int. Mean dia. of boilers 12'-6" — Length 10'-3" — Material of shell plates Steel

Thickness 1" — Range of tensile strength 29-32 Tons — Are the shell plates welded or flanged No — Descrip. of riveting: cir. seams D.R. Lap

long. seams D.B.S.S. Rivets — Diameter of rivet holes in long. seams 1 1/16" — Pitch of rivets 7½" — ~~Lap of plates~~ or width of butt straps 16"

Per centages of strength of longitudinal joint rivets 88 plate 85.8 — Working pressure of shell by rules 181 lbs — Size of manhole in shell end 16"×12"

Size of compensating ring Flanged — No. and Description of Furnaces in each boiler Three plain — Material Steel — Outside diameter 3'-2¼"

Length of plain part top 6'-7" bottom 7'-4" — Thickness of plates crown 49/64" bottom 49/64" — Description of longitudinal joint Welded — No. of strengthening rings ✓

Working pressure of furnace by the rules 185 lbs — Combustion chamber plates: Material Steel — Thickness: Sides 5/8" — Back 5/8" — Top 5/8" — Bottom 5/8"

Pitch of stays to ditto: Sides 7¾"×8½" — Back 9"×7½" — Top 7¾"×8½" — If stays are fitted with nuts or riveted heads Nuts — Working pressure by rules 197 lbs

Material of stays Steel — Diameter at smallest part 1½" — Area supported by each stay 67.5 □" — Working pressure by rules 208 lbs — End plates in steam space:

Material Steel — Thickness 1 1/32" — Pitch of stays 17"×15" — How are stays secured D.Nuts — Working pressure by rules 186 lbs — Material of stays Steel

Diameter at smallest part 2 9/16" — Area supported by each stay 255 □" — Working pressure by rules 204 lbs — Material of Front plates at bottom Steel

Thickness 7/8" — Material of Lower back plate Steel — Thickness 7/8"+¾" Dbld. — Greatest pitch of stays 16"×10" — Working pressure of plate by rules 304 lbs

Diameter of tubes 3¼" — Pitch of tubes 4½"×4½" — Material of tube plates Steel — Thickness: Front 7/8" — Back 7/8" — Mean pitch of stays 9"

Pitch across wide water spaces ~~13¼~~ 13¼" — Working pressures by rules 190 lbs — Girders to Chamber tops: Material Steel — Depth and thickness of girder at centre 8"×1¾" — Length as per rule 2'-8" — Distance apart 7.5" — Number and pitch of stays in each 3 @ 7¾"

Working pressure by rules 190 lbs — Superheater or Steam chest; how connected to boiler None — 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 ✓

If not, state whether, and when, one will be sent? Yes

If 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 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

Supplied by Shipbuilders

SPARE GEAR. State the articles supplied :— Two each top and bottom end connecting rod bolts nuts Two main bearing bolts and nuts, one set coupling bolts and nuts, one set feed bilge pump valves, and a quantity of assorted bolts nutsets.

FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED.

J Lowis Carlin MANAGER.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building — During progress of work in shops— 1904:- May 4. 11. 20. 27 June 14. 20. 24. 27. July 5. 19. 26. 29 Aug 4. 6. 19. 31 Sept 6. 14. 22. 27 Oct 3. 14. 18. 21

During erection on board vessel — Oct 26. 31. Nov 3. 15. 18. 22. 28. Dec 2. 9. 1905: Jan 20. 1906:- Mar 23 May 11. 22. June 7. 9. 11. 17. 18. July 19. 24. 27. Aug 16. 17. 18.

Total No. of visits 49

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft 7. 7. 06 Propeller 18. 8. 06

Stern tube 7. 7. 06 Steam pipes tested 19. 7. 06 Engine and boiler seatings 7. 7. 06 Engines holding down bolts 24. 7. 06

Completion of pumping arrangements 16. 8. 06 Boilers fixed 16. 8. 06 Engines tried under steam 16. 8. 06

Main boiler safety valves adjusted 20. 7. 06 Thickness of adjusting washers Star 9/32" Port 1/4 b.

Material of Crank shaft Iron Identification Mark on Do. 1434. T.F Material of Thrust shaft Iron Identification Mark on Do. 253

Material of Tunnel shafts Iron Identification Marks on Do. 253 Material of Screw shafts Iron Identification Marks on Do. 253

Material of Steam Pipes Solid drawn Copper Test pressure 360 lbs □"

General Remarks (State quality of workmanship, opinions as to class, &c. The engines and boilers of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are good. The boilers tested by hydraulic pressure, and with the engines fitted on board & tested under steam and found satisfactory. They are now in good order and safe working condition, and respectfully submitted as being eligible in our opinion to be classed with the notation of ✠ L.M.C. 8.06 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD ✠ L.M.C. 8.06

29.8.06

29.8.06

James Barclay and for James Keer.

Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee..	£ 1 : — : —	When applied for, 28/8/ 1906
Special	£ 12 : — : —	
Donkey Boiler Fee	£ — : — : —	When received, 1/10/ 1906
Travelling Expenses (if any)	£ — : 14 : 8	

Committee's Minute FRI. 31 AUG 1906

Assigned ✠ LMC 8.06

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

Certificate (if required) to be sent to Yard

MACHINERY CERTIFICATE WRITTEN.