Rpt. 4.

REPORT ON MACHINERY.

No. 22923

Received at London Office FRI 2 SEP 1910

Date of writing Report ____ 10__ When handed in at Local Office 1-9-1010 Port of Hull

No. in Reg. Book. ____ Survey held at Hull Date, First Survey Feb 28th Last Survey 20th Augt 1910 (Number of Visits 45)

on the Steel Sc. Sr. Brittany Tons Gross 618 Net 252

Master ____ Built at Hull By whom built Messrs Earles Co Ld When built 1910

Engines made at ____ By whom made Messrs when made 1910

Boilers made at Hull By whom made Earle's Co Ld when made 1910

Registered Horse Power ____ Owners London, Brighton & S. Coast Rly Co Port belonging to Newhaven

Nom. Horse Power as per Section 28 149 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

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

Dia. of Cylinders 15½" ~ 25" ~ 40" Length of Stroke 24" Revs. per minute 150 Dia. of Screw shaft as per rule 7·78" as fitted 8·5" 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 —— 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 7·24" as fitted 7·625" Dia. of Crank shaft journals as per rule 7·63" as fitted 8" Dia. of Crank pin 8¼" Size of Crank webs 16" × 5¼" Dia. of thrust shaft under collars 8" Dia. of screw 8'-9" Pitch of Screw 9'-4½" No. of Blades 4 State whether moveable No Total surface 29 ☐ft

No. of Feed pumps Two Diameter of ditto 2¾" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 2¾" Stroke 12" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 7" × 4½" × 8" and 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 2½", One 5" In Holds, &c. Two 2½" in fore hold, one 2½" in aft hold, One 2" in tunnel well. One 4" fore peak, One 6" to aft peak.

No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 2½"

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 4·7·10 of Stern Tube 4·7·10 Screw shaft and Propeller 4·7·10

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

BOILERS, &c.—(Letter for record r) Manufacturers of Steel W. Beardmore & Co Consett Iron Co Iron. Kirkstall Forge Co Leeds

Total Heating Surface of Boilers 3200 ☐ft Is Forced Draft fitted No No. and Description of Boilers Two Cyl. Mult. Single Ends

Working Pressure 165 lbs Tested by hydraulic pressure to 330 lbs Date of test 22·6·10 No. of Certificate 1756

Can each boiler be worked separately Yes Area of fire grate in ~~each~~ boiler 44½ ☐ft No. and Description of Safety Valves to each boiler Two Spring Area of each valve 4·91 ☐" Pressure to which they are adjusted 170 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 11" Ex Mean dia. of boilers 13'-0" Length 10'-0" Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 29 ~ 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L D long. seams D.B.S.R Diameter of rivet holes in long. seams 1⅛" Pitch of rivets 7⅝" ~~Lap of plates or~~ width of butt straps 16¼"

Per centages of strength of longitudinal joint rivets 91· plate 85·24 Working pressure of shell by rules 189 lbs Size of manhole in ~~shell~~ end plt 16" × 12"

~~Size~~ of compensating ring End plt flgd No. and Description of Furnaces in each boiler Two Morisons Material Steel Outside diameter 4'-1¼"

Length of plain part top ____ bottom ____ Thickness of plates crown 9/16" bottom ____ Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 178 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 19/32"

Pitch of stays to ditto: Sides 9⅛" × 7⅛" Back 8" × 7¾" Top 9" × 6¾" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 174 lbs

Material of stays Iron Diameter at smallest part 1⅜" Area supported by each stay 68·43 ☐" Working pressure by rules 173 lbs End plates in steam space:

Material Steel Thickness 13/32" Pitch of stays 17½" × 18" How are stays secured D. N. Working pressure by rules 170 lbs Material of stays Steel

Diameter at smallest part 2 13/16" Area supported by each stay 315 ☐" Working pressure by rules 205 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 15" × 7¾" Working pressure of plate by rules 172 lbs

Diameter of tubes 3" Pitch of tubes 4¼" × 4¼" Material of tube plates Steel Thickness: Front ⅞" Back 13/16" Mean pitch of stays 8½"

Pitch across wide water spaces 13" Working pressures by rules 174 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8" × 1½" Length as per rule 2'-4 19/32" Distance apart 9" Number and pitch of stays in each 3 ~ 6¾"

Working pressure by rules 189 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 ____

W1378-0131

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

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops — 1910 :- Feb 28. Mar 7. 9. 16. 21. 23. Apr 8. 21. 22. 26. 27 May 4. 10. 23. 26. 28. 30. Jun 2

During erection on board vessel — Jun 6. 7. 9. 16. 18. 21. 22. 23. July 4. 6. 8. 11. 12. 14. 16. 19. 20. 21. 22. 25. 27. 28. 30 Aug 15. 17. 19. 2

Total No. of visits 45

Is the approved plan of main boiler forwarded herewith Yes

" " " *donkey* " " " "

Dates of Examination of principal parts— *Cylinders* 6.6.10 *Slides* 6.6.10 *Covers* 9.6.10 *Pistons* 9.6.10 *Rods* 9.6.10

Connecting rods 22.4.10 *Crank shaft* 28.5.10 *Thrust shaft* 28.5.10 *Tunnel shafts* 28.5.10 *Screw shaft* 6.6.10 *Propeller* 6.6.10

Stern tube 10.5.10 *Steam pipes tested* 19.7.10 *Engine and boiler seatings* 8.7.10 *Engines holding down bolts* 21.7.10

Completion of pumping arrangements 28.8.10 *Boilers fixed* 21.7.10 *Engines tried under steam* 21.7.10

Main boiler safety valves adjusted 21.7.10 *Thickness of adjusting washers* 3/8 3/8 3/8 3/8

Material of Crank shaft Steel *Identification Mark on Do.* 2491 W.D.H *Material of Thrust shaft* Steel *Identification Mark on Do.* 2491 WDH

Material of Tunnel shafts Steel *Identification Marks on Do.* 2490 WDH *Material of Screw shafts* Steel *Identification Marks on Do.* 2491 WDH

Material of Steam Pipes Solid drawn Copper *Test pressure* 360 lbs per square inch

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 Society's Rules. The materials and workmanship are sound and good. The boiler tested by hydraulic pressure, and with the engines secured on board and tested under steam, they are now in good orders, and safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of ✠ L.M.C. 8.10 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. ✠ LMC 8.10.

J.W.D. 7/9/10

J.M.

The amount of Entry Fee	£ 2 : - : -	When applied for, 30.8.1910
Special	£ 22 : 7 : -	
Donkey Boiler Fee	£ ✓ : :	When received, 5/9/10
Travelling Expenses (if any)	£ ✓ : :	

6/9/10

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

TUE. 6 SEP 1910

Committee's Minute

Assigned ✠ LMC 8.10

Certificate (if required) to be sent to Hull

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