

REPORT ON MACHINERY.

Port of *Hull*

Received at London Office *MUN. 4 JUL 1910*

No. in Survey held at *Selby & Hull* Date, first Survey *Mar 18th* Last Survey *20th June* 1910

Reg. Book. on the *Steel S.S. Co. Mank Prince* (Number of Visits *20*)

Master *Selby* Built at *Selby* By whom built *Messrs Cochrane Sons* Tons *Gross 221 Net 109* When built *1910*

Engines made at *Hull* By whom made *Messrs Charles D. Holmes & Co* when made *1910*

Boilers made at *Hull* By whom made *Charles D. Holmes & Co* when made *1910*

Registered Horse Power *68* Owners *M. H. Busby* Port belonging to *Grimby*

Nom. Horse Power as per Section 28 *68* 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 *12 1/2 - 22 - 35* Length of Stroke *24* Revs. per minute *110* Dia. of Screw shaft *7.2* 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 *No* If two liners are fitted, is the shaft lapped or protected between the liners *No* Length of stern bush *36*

Dia. of Tunnal shaft *6.43* as per rule *6.43* Dia. of Crank shaft journals *6.45* as per rule *6.45* Dia. of Crank pin *4* Size of Crank webs *13 3/8 x 4 1/2* Dia. of thrust shaft under collars *7* Dia. of screw *8 - 7 1/2* Pitch of Screw *11.6* as fitted *7* No. of Blades *4* State whether moveable *No* Total surface *28*

No. of Feed pumps *One* Diameter of ditto *2 1/2* Stroke *24* Can one be overhauled while the other is at work *No*

No. of Bilge pumps *One* Diameter of ditto *2 1/2* Stroke *24* Can one be overhauled while the other is at work *No*

No. of Donkey Engines *One* Sizes of Pumps *5 x 2 1/2 x 5* No. and size of Suctions connected to both Bilge and Donkey pumps *In Engine Room Two 2" In Holds, &c. One 2" to slush well, and one 2" in fore hold, and ejector suction from all parts.*

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

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 *4.6.10* of Stern Tube *4.6.10* Screw shaft and Propeller *4.6.10*

Is the Screw Shaft Tunnel watertight *None* Is it fitted with a watertight door *No* worked from *No*

BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *The Steel Company of Scotland*

Total Heating Surface of Boilers *1070* Is Forced Draft fitted *No* No. and Description of Boilers *One byl. Mult. Single ended*

Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *3.6.10* No. of Certificate *1746*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *33* No. and Description of Safety Valves to each boiler *Two Spring* Area of each valve *3.97* 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 *6* Mean dia. of boilers *12.6* Length *10.0* Material of shell plates *Steel*

Thickness *1 1/16* Range of tensile strength *28 32* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *L.D.*

long. seams *D. B. S. J. R.* Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *4* Lap of plates or width of butt straps *15*

Per centages of strength of longitudinal joint rivets *88.5* plate *84.8* Working pressure of shell by rules *187 lbs* Size of manhole in shell *16" x 12"*

Size of compensating ring *4" x 1 1/16"* No. and Description of Furnaces in each boiler *2 plain (Material Steel Outside diameter 3.7)*

Length of plain part top *69.5* Thickness of plates crown *4.9* bottom *6.4* Description of longitudinal joint *welded* No. of strengthening rings *0*

Working pressure of furnace by the rules *186 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *23/32* Back *11/16* Top *23/32* Bottom *23/32*

Pitch of stays to ditto: Sides *10 x 8 1/2* Back *10 x 9* Top *10 x 8 1/2* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *180 lbs*

Material of stays *Steel* Diameter at smallest part *1 5/8* Area supported by each stay *90.7* Working pressure by rules *207 lbs* End plates in steam space: Material *Steel* Thickness *1 1/16* Pitch of stays *14 x 14* How are stays secured *D. N. Wash* Working pressure by rules *185 lbs* Material of stays *Steel*

Diameter at smallest part *2 1/16* Area supported by each stay *289 lbs* Working pressure by rules *208 lbs* Material of Front plates at bottom *Steel*

Thickness *7/8* Material of Lower back plate *Steel* Thickness *29/32* Greatest pitch of stays *14 1/2 x 9* Working pressure of plate by rules *195 lbs*

Diameter of tubes *3 1/2* Pitch of tubes *5 x 5* Material of tube plates *Steel* Thickness: Front *7/8* Back *7/8* Mean pitch of stays *10 x 10*

Pitch across wide water spaces *15* Working pressures by rules *249 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9" x 1 1/4* Length as per rule *2 - 1/2* Distance apart *8 1/2* Number and pitch of stays in each *Two 10"*

Working pressure by rules *260 lbs* Superheater or Steam chest; how connected to boiler *No* Can the superheater be shut off and the boiler worked separately *No*

Diameter *No* Length *No* Thickness of shell plates *No* Material *No* Description of longitudinal joint *No* Diam. of rivet holes *No* Pitch of rivets *No* Working pressure of shell by rules *No* Diameter of flue *No* Material of flue plates *No* Thickness *No*

If stiffened with rings *No* Distance between rings *No* Working pressure by rules *No* End plates: Thickness *No* How stayed *No*

Working pressure of end plates *No* Area of safety valves to superheater *No* Are they fitted with easing gear *No*

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
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
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 coupling bolts and nuts, air, circulating, feed and bilge pump valves, main check valves, safety valve springs, and a quantity of assorted bolts, nuts etc.*

The foregoing is a correct description,
p. pro **CHARLES D. HOLMES & Co. LTD.** Manufacturer.

S. Arthur Holmes DIRECTOR.
 Dates of Survey while building: During progress of work in shops - 1910: - Mar 18. 22, Apr 22, 26, 28 May 7, 9, 11, 25, 31. Jun 2, 3, 7, 10, 11, 14, 15, 16, 20.
 Total No. of visits 20.
 Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 28.4.10 Slides 31.5.10 Covers 31.5.10 Pistons 28.4.10 Rods 25.5.10
 Connecting rods 11.5.10 Crank shaft 11.5.10 Thrust shaft 28.4.10 Tunnel shafts Screw shaft 28.4.10 Propeller 11.5.10
 Stern tube 11.5.10 Steam pipes tested 13.6.10 Engine and boiler seatings 7.6.10 Engines holding down bolts 15.6.10
 Completion of pumping arrangements 20.6.10 Boilers fixed 15.6.10 Engines tried under steam 20.6.10
 Main boiler safety valves adjusted 16.6.10 Thickness of adjusting washers 3/8" - 5/16"

Material of Crank shaft *Iron* Identification Mark on Do. *609 JB* Material of Thrust shaft *Steel* Identification Mark on Do. *609 JB*
 Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. *609 JB*
 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, the materials and workmanship are sound and good. The boiler tested by hydraulic pressure and with the engine secured on board and tested under steam, they are now in good order, and safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of L.M.C. 6.10 in the Register Book*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.10.

The amount of Entry Fee £ 10 : 4 : 29.6.1910
 Special Donkey Boiler Fee £ - : 8 : 30.6.1910
 Travelling Expenses (if any) £ - : 8 : 30.6.1910

J.W.D.
 4/7/10
James Barclay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 5 JUL 1910**
 Assigned *thmc 6.10*

Certificate (if required) to be sent to Hull. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

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