

## REPORT ON MACHINERY.

No. 7621

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28.10

1912

Port of Middlesbrough

No. in Survey held at Stockton-on-Tees

Date, First Survey 31st May

Last Survey 20th Oct. 1912

Reg. Book. on the Steel Screw Steamer "Cabo Menor"

(Number of Visits 5. S. N. 350)

Tons Gross

Net

Master Built at Grangemouth By whom built Greenock Grangemouth &amp; Co. When built 1912

Engines made at Stockton By whom made Messrs Blair &amp; Co Ltd (No 1758) when made 1912

Boilers made at Stockton By whom made Messrs Blair &amp; Co Ltd when made 1912

Registered Horse Power Owners Port belonging to Seville

Nom. Horse Power as per Section 28 188 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines *Tri-compound* No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders  $19\frac{1}{2} - 32\frac{1}{2} - 52\frac{1}{2}$  Length of Stroke 36 Revs. per minute 65 Dia. of Screw shaft as per rule 11.38 Material of *2y steel*  
as fitted 12.38 screw shaft

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 *in one* 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 *tight-fit* If two liners are fitted, is the shaft lapped or protected between the liners *yes* Length of stern bush 4'-3"

Dia. of Tunnel shaft as per rule 9.78 Dia. of Crank shaft journals as per rule 10.28 Dia. of Crank pin 11" Size of Crank webs  $21\frac{1}{2} \times 6\frac{3}{4}$  Dia. of thrust shaft under collars 11 Dia. of screw 14'-6" Pitch of Screw 16'-0" No. of Blades 4 State whether moveable *no* Total surface 63 sq ft

No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 26 Can one be overhauled while the other is at work *yes*

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 26 Can one be overhauled while the other is at work *yes*

No. of Donkey Engines 2 Sizes of Pumps *Ballast = 9 x 10*  
*Fud = 4 x 8* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 @ 3" In Holds, &c. 2 @ 2 3/4 each hold & tunnel will *one @ 2 1/2*

No. of Bilge Injections 1 sizes 4 1/2 Connected to condenser, or to circulating pump *yes* Is a separate Donkey Suction fitted in Engine room & size *yes - 4"*

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 *fore hold* How are they protected *wood ceiling*

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 7.8.12 \* of Stern Tube 7.10.12 Screw shaft and Propeller 10.10.12

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

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel *Messrs John & Sons*  
*David Colville & Sons*

Total Heating Surface of Boilers 3008 Is Forced Draft fitted *no* No. and Description of Boilers 2 single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 15.7.12 No. of Certificate 4908

Can each boiler be worked separately *yes* Area of fire grate in each boiler 35 1/2 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 4.91 Pressure to which they are adjusted 185 Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" External Mean dia. of boilers 13'-0" Length 10'-0" Material of shell plates *steel*

Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams 2-R. lap long. seams 2-B-3 Riv Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 8" Lap of plates or width of butt straps 16 3/4 x 1

Per centages of strength of longitudinal joint rivets 86.0 plate 85.9 Working pressure of shell by rules 184 Size of manhole in shell 16 x 12

Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 2 Morrison Material *steel* Outside diameter 45 3/8

Length of plain part top *yes* Thickness of plates crown 9/16 bottom *yes* Description of longitudinal joint *weld* No. of strengthening rings *yes*

Working pressure of furnace by the rules 192 Combustion chamber plates: Material *steel* Thickness: Sides 1/8 Back 1/8 Top 1/8 Bottom 1/8

Pitch of stays to ditto: Sides 9 3/8 x 9 3/8 Back 9 3/8 x 9 3/8 Top 10 x 8 3/8 If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules 185

Material of stays *steel* Diameter at smallest part 1.99 Area supported by each stay 87.9 Working pressure by rules 204 End plates in steam space: *9 x 1 washers*

Material *steel* Thickness 1 1/2 Pitch of stays 17 3/8 } 116 1/2 How are stays secured *nuts* Working pressure by rules 184 Material of stays *steel*

Diameter at smallest part 5.56 Area supported by each stay 270.5 Working pressure by rules 209 Material of Front plates at bottom *steel*

Thickness 1 1/2 Material of Lower back plate *steel* Thickness 1 1/2 Greatest pitch of stays 14 1/4 } x 9 3/8 Working pressure of plate by rules 348

Diameter of tubes 3 1/4 Pitch of tubes 4 5/8 x 4 5/8 Material of tube plates *steel* Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 10 3/2

Pitch across wide water spaces 14 1/2 Working pressures by rules 181 Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre 7 1/8 x 1 3/4 Length as per rule 27 Distance apart 10 Number and pitch of stays in each 2 @ 8 3/4

Working pressure by rules 192 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

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# VERTICAL DONKEY BOILER—

Manufacturers of Steel *See Glasgow Report No. 31482*

No.	Description	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	Date of adjustment
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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 of con. rod top end, bottom end, and main bearing bolts and nuts; one set of coupling bolts and nuts; one set of feed and bilge pump valves; one set each H.P. & M.P. piston rings; one valve spindle; one propeller; assorted bolts & nuts and iron of various sizes*

The foregoing is a correct description,

*Geo. H. Hutchings* Manufacturer

Dates  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits

**SECRETARY.** 1912 May 21. June 3. 6. 10. 11. 12. 14. 15. 17. 19. 20. 21. 22. 24. 26. 27. 29. July 1. 5. 8. 11. 15. 22. 24. 29. Sept. 9.  
16. 19. 7. 10. 15. 16. 21. 22. 23. 25.

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

Dates of Examination of principal parts—Cylinders 20.6.12 Slides 20.6.12 Covers 27.6.12 Pistons 26.6.12 Rods 27.6.12  
Connecting rods 27.6.12 Crank shaft 26.6.12 Thrust shaft 10.6.12 Tunnel shafts 29.6.12 Screw shaft 29.7.12 Propeller 22.7.12  
Stern tube 9.9.12 Steam pipes tested 15.10.12 Engine and boiler seatings 7.8.12 \*Engines holding down bolts 10.10.12  
Completion of pumping arrangements 22.10.12 Boilers fixed 22.10.12 Engines tried under steam 22.10.12  
Main boiler safety valves adjusted 22.10.12 Thickness of adjusting washers Port Plr P-3/8 Star Plr 3-11/32  
Material of Crank shaft *By steel* Identification Mark on Do. 6749 Material of Thrust shaft *By steel* Identification Mark on Do. 8885.N  
Material of Tunnel shafts *By steel* Identification Marks on Do. 8885.N Material of Screw shafts *By steel* Identification Marks on Do. 6749  
Material of Steam Pipes *Solid drawn copper (5 x 1/2 + 4 x 3/4)* Test pressure 400 lbs.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory. The machinery is now in a good and safe working condition and eligible in my opinion to have the notation of LMC-10.12 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD + LMC. 10.12.

*JWR*  
20/10/12

*Wm Morrison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee £ 2-0-0  
Special £ 28-4-0  
Donkey Boiler Fee £  
Traveling Expenses (if any) £  
When applied for, 19.10.12  
When received, 7-11-12  
10/6/12 Rendered from 1th office  
Committee's Minute FRI. NOV. 1-1912  
Assigned + L.M.C. 10.12