

REPORT ON MACHINERY.

JUL 14 AUG 1890

Port of

Received at London Office

18

No. in Survey held at *Greenock & Port Glasgow* Date, first Survey *15th March 1899* Last Survey *10th August 1900*
 Reg. Book. (Number of Visits *148.*)
320 on the *Screw Steamer "Jupiter"* Tons { Gross *4896.00.*
 Net *3216.81.*
 Master *Abilio de ligante.* Built at *Port Glasgow* By whom built *Russell & Coy.* When built *1900.*
 Engines made at *Greenock* By whom made *Rankin & Blackmore.* when made *1900.*
 Boilers made at *do* By whom made *do do* when made *1900.*
 Registered Horse Power Owners *Francisco Martinez Rodas.* Port belonging to *Bilbao.*
 Nom. Horse Power as per Section 28 *403.* Is Refrigerating Machinery fitted *no.* Is Electric Light fitted *no.*

ENGINE, &c.—Description of Engines *Inverted Direct acting Triple Expansion* No. of Cylinders *Three* No. of Cranks *Three*
 Dia. of Cylinders *27. 4 3/4 & 72* Length of Stroke *48* Revs. per minute *66* Dia. of Screw shaft *as per rule 13.92* Lyth. of stern bush *59*
 Dia. of Tunnel shaft *as per rule 12.59* Dia. of Crank shaft journals *as per rule 13.26* Dia. of Crank pin *13 1/2* Size of Crank webs *18 1/2 x 9* Dia. of thrust shaft under collars *13 1/2* Dia. of screw *18.6* Pitch of screw *17.0* No. of blades *Four* State whether moreable *no* Total surface *110 sq.*
 No. of Feed pumps *Two* Diameter of ditto *3 1/2* Stroke *26* Can one be overhauled while the other is at work *yes.*
 No. of Bilge pumps *Two* Diameter of ditto *4 1/2* Stroke *26* Can one be overhauled while the other is at work *yes.*
 No. of Donkey Engines *Two* Sizes of Pumps *14 x 10 & Duplex 4 1/2 x 8* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Four 3 1/2* In Holds, &c. *Sight 3 1/2 in holds & one 2 1/2 in tunnel well.*

No. of bilge injections *one* sizes *6 inches* Connected to condenser, or to circulating pump & pump 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 *yes*
 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 *Bilge pipes* 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.*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *before launching* 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*) Total Heating Surface of Boilers *5121.* Is forced draft fitted *yes.*
 No. and Description of Boilers *Two cylindrical. Multitubular* Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs.*
 Date of test *23-6-00* Can each boiler be worked separately *yes.* Area of fire grate in each boiler *61 sq.* No. and Description of safety valves to each boiler *Two direct spring* Area of each valve *11.04 sq.* Pressure to which they are adjusted *184 lbs.* Are they fitted with easing gear *yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *17.* Mean dia. of boilers *13.6* Length *11.6* Material of shell plates *Steel*
 Thickness *1 3/32* Range of tensile strength *29632.* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap double, long. seams 2.35 triple.*
 Diameter of rivet holes in long. seams *1 1/4* Pitch of rivets *8 3/4 & 1 1/8.* Lap of plates or width of butt straps *18 1/4 straps.*
 Per centages of strength of longitudinal joint *ribs 85.8, plate 85.7.* Working pressure of shell by rules *181.7 lbs* Size of manhole in shell *16 x 12*
 Size of compensating ring *30 x 26 x 1 3/32* No. and Description of Furnaces in each boiler *Three Dightons* Material *Steel* Outside diameter *50.*
 Length of plain part *top 19, bottom 32* Thickness of plates *ribs 19, bottom 32* Description of longitudinal joint *welded.* No. of strengthening rings *4*
 Working pressure of furnace by the rules *188 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *9/16* Back *9/16* Top *19/32* Bottom *3/4*
 Pitch of stays to ditto: Sides *7 3/4 x 7 3/4* Back *7 1/2 x 7 1/2* Top *8 x 8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *182.6 lbs.*
 Material of stays *Steel* Diameter at smallest part *1 3/8. 1 1/2* Area supported by each stay *59.676 sq.* Working pressure by rules *183.6 lbs.* End plates in steam space:
 Material *Steel* Thickness *1.* Pitch of stays *16 x 15 3/8* How are stays secured *double nuts* Working pressure by rules *182 lbs.* Material of stays *Steel.*
 Diameter at smallest part *2 7/16* Area supported by each stay *246 sq.* Working pressure by rules *192 lbs.* Material of Front plates at bottom *Steel.*
 Thickness *7/8* Material of Lower back plate *Steel* Thickness *1 3/16* Greatest pitch of stays *12 1/2 to 14* Working pressure of plate by rules *180 lbs.*
 Diameter of tubes *2 1/2* Pitch of tubes *3 3/32 x 3 3/32* Material of tube plates *Steel* Thickness: Front *3/4 & 1/2 double* Back *3/4* Mean pitch of stays *9.63*
 Pitch across wide water spaces *13 1/4* Working pressures by rules *204 lbs.* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *10 3/4 x 5/8 double* Length as per rule *3 1/4* Distance apart *8* Number and pitch of Stays in each *Three 8.*
 Working pressure by rules *202 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*

DONKEY BOILER—
No. one
Description
Cylindrical Multitubular, see Glasgow report attached. C^o 18071

Made at
By whom made
When made
Where fixed

Working pressure
tested by hydraulic pressure to
No. of Certificate
Fire grate area
Description of safety 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
no.
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
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
Thickness of furnace crown plates
Stayed by
Working pressure of shell by rules

Working pressure of furnace by rules
Diameter of uptake
Thickness of uptake plates
Thickness of water tubes

SPARE GEAR. State the articles supplied:— 1 propeller. 3 Cylinders escape valves & springs. 12 shaft coupling bolts & nuts. 2 top & 2 bottom end do for connecting rods. 2 do for main bearing blocks. 6 holding down do. 6 junk ring pins. 6 Cylinder cover bolts. 6 do for valve chest covers. 2 sets of valves for circulating pump. 2 do metallic for air pump. 2 feed & 2 bilge pump valves. 2 feed check valves. 1 feed escape valve & spring.

The foregoing is a correct description,

Randall Macdonald Manufacturer.

Dates
of Survey
while building

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

1899. May 15. May 22. 24. 29. 31. June 2. 13. 15. 19. 21. 26. 30. July 3. 19. 26. 28. Aug 1. 3. 5. 15. 22. 25. 28. 31. Sep 4. 13. 16. 20. 22. 25. 27. 29. Oct 2. 4. 6. 11. 13. 16. 21. 27. 31. Nov 2. 4. 8. 11. 14. 18. 24. 29. Dec 1. 4. 6. 8. 12. 13. 15. 19. 21. 25. 27. 29. Jan 9. 11. 15. 19. 22. 25. 30. Feb 1. 3. 6. 9. 12. 14. 17. 20. 22. 24. 26. Mar 2. 6. 8. 13. 14. 21. 23. 26. 30. April 4. 6. 11. 14. 18. 20. 24. 25. 30. May 2. 4. 8. 10. 11. 14. 16. 17. 21. 22. 23. 24. 26. 28. 29. 31. June 1. 2. 5. 7. 9. 11. 12. 13. 14. 15. 16. 23. 26. 28. 30. July 2. 11. 13. 14. 16. 17. 19. 20. 23. 24. 25. 27. 30. 31. Aug 1. 2. 3. 7. 9. 10.

Is the approved plan of main boiler forwarded herewith
yes.

" " " donkey " " " yes

148

General Remarks (State quality of workmanship, opinions as to class, &c.)

These Engines & Boilers have been specially surveyed during construction, workmanship good. Shafts examined when being turned & found apparently sound. Main Steam pipes satisfactorily tested by hydraulic pressure to 400 lbs per sq. in. The Engines and Boilers are satisfactorily fitted in vessel, and have been tested under full steam, they are now in good order and safe working condition, and are in my opinion eligible to be noted in Register Book LMC. 8,00.

This vessels main Boilers are fitted with Howden's system of forced draught.

Spare gear continued

12 condenser tubes & 120 packing ferrules. 12 main boiler tubes. 6 do for Donkey boiler. 1 set safety valve springs. 2 valves & seats for feed Donkey pump. & 2 feed check valves. 1/2 set fire bars & a quantity of bolts nuts & iron assorted.

It is submitted that this vessel is eligible for THE RECORD, + LMC. 8-00 F.D.

60 14.8-00.

The amount of Entry Fee. £ 2 : " : "
Special " " " £ 10 : 3 : "
Donkey Boiler Fee " " " £ " : " : "
Travelling Expenses (if any) £ " : " : "

When applied for. 8.8.99
When received. 9.9.99

Committee's Minute Glasgow. 13 AUG 1900

Assigned + L.M.C. 8.00.

A. B. Heron
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
Greenock District



Lloyd's Register Foundation