

REPORT ON MACHINERY.

TUES. 14 AUG 1900

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"Master Abilio de Ugarte, Built at Port Glasgow By whom built Russell & Co.Engines made at GreenockBy whom made Rankin & Blackmorewhen made 1900Boilers made at doBy whom made dowhen made 1900Registered Horse Power —Owners Francisco Martinez RodasPort belonging to BilbaoNom. Horse Power as per Section 28 403Is Refrigerating Machinery fitted noIs Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted Direct acting, Triple Expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 27" 43" 72" Length of Stroke 48" Revs. per minute 66 Dia. of Screw shaft as per rule 13" 92 as fitted 14" 1 Lgth. of stern bush 59"
 Dia. of Tunnel shaft as per rule 12" 59 as fitted 12" 3/4 Dia. of Crank shaft journals as per rule 13" 26 as fitted 13" 1/2 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 moveable no Total surface 110 sq. ft.
 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. Eight 3 1/2" in holds, & one 2 1/2" in tunnel well.

No. of bilge injections one sizes 6" valve Connected to condenser, or to circulating pump no Is 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 in Channel Dock 27.7.00 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. ft. No. and Description of safety valves to each boiler Two direct spring Area of each valve 11.04 sq. in. 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 15" 6" Length 11" 6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 29632 Are they welded or flanged no Descrip. of riveting: cir. seams Lap double, long. seams 2.3.5 triple
 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" & 4 3/8" Lap of plates or width of butt straps 18" straps
 Percentages of strength of longitudinal joint rivets 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 1/2" 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 crown 19" bottom 32" Description of longitudinal joint Welded No. of strengthening rings —
 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 to 190
 Material of stays Steel Diameter at smallest part 1 3/8" 1 1/2" Area supported by each stay 59 to 76 sq. in. Working pressure by rules 183 to 194 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 7/8" Area supported by each stay 246 sq. in. Working pressure by rules 192 lbs Material of Front plates at bottom Steel
 Thickness 7/8" Material of Lower back plate Steel Thickness 1 3/8" 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 8" double Length as per rule 34" 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 rivets —
 Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 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, No 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 _____ 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 Cylindrical 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 Cylindrical 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,

James Macnamara Manufacturer.

Dates of Survey while building	During progress of work in shops—	1899. <i>March 15. May 22. 24. 29. 31. June 2. 13. 15. 19. 21. 26. 30. July 3. 19. 26. 28. Aug 1. 3. 8. 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. 1900. 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. 16. 21. 23. 26. 30. April 4. 6. 11. 14. 18. 20. 24. 25. 30. May 3. 10. 11. 14. 16. 17. 21. 22. 23. 24. 26. 28. 29. 31. June 1. 2. 5. 7. 9. 11. 12. 13. 14. 15. 18. 23. 26. 28. 30. July 2. 4. 13. 14. 16. 17. 19. 20. 23. 24. 25. 27. 30. 31. Aug 1. 2. 3. 7. 9. 10.</i>
		Is the approved plan of main boiler forwarded herewith <i>yes</i>
		“ “ “ donkey “ “ “ <i>yes</i>
		Total No. of visits <i>148</i>

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 vessel's 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.

14.8-00.

The amount of Entry Fee..	£ <i>2</i> : " : "	When applied for,
Special ..	£ <i>40</i> : <i>3</i> : "	<i>8.8.1900.</i>
Donkey Boiler Fee ..	£ " : " : "	When received,
Travelling Expenses (if any) £	" : " : "	<i>9.9.1900.</i>

Committee's Minute *Glasgow* 13 AUG 1900

Assigned *+ L.M.C. 8.00.*

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

MACHINERY CERTIFICATE WRITTEN.

Greenock

