

REPORT ON MACHINERY.

No. 15461.

Port of GreenockReceived at London WED. 16 SEP 1908No. in Survey held at GreenockDate, first Survey 10th Jan'y 07 Last Survey 5th Sept 1908

Reg. Book.

(Number of Visits 98)134 on the SCREW STEAMER BANNOCKBURNTons { Gross 4935.63
Net 3155.75
When built 1908Master N. A. Willett Built at Port Glasgow By whom built Russell & CoEngines made at Greenock By whom made Rankin & Blackmore when made 1908Boilers made at Greenock By whom made Rankin & Blackmore when made 1908Registered Horse Power _____ Owners R. Shankland & Co Port belonging to GreenockNom. Horse Power as per Section 28 471 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YesENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 27-14-73 Length of Stroke 48 Revs. per minute 41 Dia. of Screw shaft 14.89 Material of IronIs 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners _____ Length of stern bush 64Dia. of Tunnel shaft 13.3 as per rule 13.3 Dia. of Crank shaft journals 14 as per rule 14 Dia. of Crank pin 14 Size of Crank webs 9x18.8 Dia. of thrust shaft under collars 14 Dia. of screw 18.5 Pitch of Screw 18.9 No. of Blades 4 State whether moveable No Total surface 110 sq. ft.No. of Feed pumps 1 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes (Lamonts Feed pumps)No. of Bilge pumps 2 Diameter of ditto 4.5 Stroke 26 Can one be overhauled while the other is at work Yes 8x6x8No. of Donkey Engines Three Sizes of Pumps 9x11x10 7x11x8 4x24x5 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Three - 3.5 dia. In Holds, &c. No. 1 Hold: Two - 3.5 dia. No. 2 Hold: Two - 3.5 dia.No. 3 Hold (Deep Tank): Two - 3.5 dia. + Two - 6 dia. No. 4 Hold: Two - 3.5 dia. Tunnel Well: One - 2.5 dia.No. of Bilge Injections 1 sizes 5.5 Connected to condenser, or to circulating pump C. P. Is a separate Donkey Suction fitted in Engine room & size Yes - 3.5Are 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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 AboveAre 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 YesWhat pipes are carried through the bunkers None How are they protected _____Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 23/6/08 of Stern Tube 26/5/08 Screw shaft and Propeller 23/6/08Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platformBOILERS, &c.—(Letter for record \$) Manufacturers of Steel Steel Coy of Scotland J. Dunlop 1897Total Heating Surface of Boilers 6546 Is Forced Draft fitted Yes No. and Description of Boilers Two: Cylindrical: SingleWorking Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 24/6/08 No. of Certificate 899Can each boiler be worked separately Yes Area of fire grate in each boiler 68 sq. ft. No. and Description of Safety Valves toeach boiler Two: Spring loaded Area of each valve 12.56 Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork About 12 Mean dia. of boilers 16.6 Length 12.0 Material of shell plates SteelThickness 1.5 Range of tensile strength 28.5 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap doublelong. seams Offset Straps Diameter of rivet holes in long. seams 1.8 Pitch of rivets 9 Lap of plates or width of butt straps 20.5Per centages of strength of longitudinal joint 86.8 Working pressure of shell by rules 182 lbs. Size of manhole in shell 16 x 12Size of compensating ring 33 x 27 x 1.5 No. and Description of Furnaces in each boiler 4: Doughton's Material Steel Outside diameter 44.5Length of plain part 8.1 Thickness of plates 1.5 Description of longitudinal joint Weld No. of strengthening rings NoneWorking pressure of furnace by the rules 185 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5 Back 8 Top 5 Bottom 4Pitch of stays to ditto: Sides 9.5 x 8 Back 9.5 x 7.5 Top 9.5 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs.Material of stays Steel Diameter at smallest part 1.5 Area supported by each stay 74 Working pressure by rules 192 lbs. End plates in steam space:Material Steel Thickness 1.5 Pitch of stays 16.5 x 20.5 How are stays secured By nuts Working pressure by rules 182 lbs. Material of stays SteelDiameter at smallest part 2.5 Area supported by each stay 341 sq. in. Working pressure by rules 84 lbs. Material of Front plates at bottom SteelThickness 1.5 Material of Lower back plate Steel Thickness 1.5 Greatest pitch of stays 12.5 Working pressure of plate by rules 192 lbs.Diameter of tubes 2.5 Pitch of tubes 3.5 x 3.5 Material of tube plates Steel Thickness: Front 4 Back 3.5 Mean pitch of stays 9.5Pitch across wide water spaces 13.5 Working pressures by rules 248 lbs. Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 10 x 1.5 Length as per rule 35 Distance apart 9.5 Number and pitch of stays in each 3: 8Working pressure by rules 184 lbs. 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 _____

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. ✓ Description Vertical Donkey Boiler

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

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 Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— one propeller and shaft. Packing Rings for H.P. & L.P. Pistons.
one set cylinder escape valve springs, 12 Boiler tubes, 12 Condenser tubes, 1 set Air pump valves
one set Safety valve springs, 1 set Crank pin Bushes, 56 lbs White metal, 2 Crank pin Bolts
two Crosshead Bolts, 2 main Bearing Bolts, 6 Holding down bolts, 6 Joint Ring Bolts, 12 Tyler Cover Screws
The foregoing is a correct description, 2 feed pump valves, 2 Bilge pump valves, Bolts & nuts assorted

Paulin Macdonald Manufacturer. ✓

Dates of Survey while building

During progress of work in shops—	1907. Jan 10. 24. Feb 18. 19. 22. 25. Mar 1. 9. 14. 21. 28. April 3. 5. 11. 15. 22. 26. May 3. 7. 13. 24. 28. 31. June 3. 7. 11. 14.
During erection on board vessel—	18. 25. July 18. 24. 31. Aug 23. 27. Sep 3. 6. Oct 11. 14. 18. 23. 30. Nov 1. 30. Dec 2. 5. 11. 19. 20. 24. 26. 27. 31. 1908. Jan 9.
Total No. of visits	21. 23. 28. Aug 4. 7. 10. 12. 17. 18. 21. 25. 31. Sep 5.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " Yes.

Dates of Examination of principal parts—Cylinders 5/9/08. Slides 12/3/08. Covers 12/3/08. Pistons 23/4/08. Rods 22/4/08.

Connecting rods 17/2/08. Crank shaft 24/4/08. Thrust shaft 24/4/08. Tunnel shafts 9/6/08. Screw shaft 15/6/08. Propeller 9/6/08.

Stern tube 4/5/08. Steam pipes tested 23/4/08. Engine and boiler seatings 16/6/08. Engines holding down bolts 12/5/08.

Completion of pumping arrangements 21/8/08. Boilers fixed 14/8/08. Engines tried under steam 5/9/08.

Main boiler safety valves adjusted 17/5/08. Thickness of adjusting washers 21/5/08. PORT. CK. 13.5 SK 3. STARB. CK. 13.5 SK 3. SV 1/2. CK. 3. full. AV. 3.2.

Material of Crank shaft Steel. Identification Mark on Do. 1374. Material of Thrust shaft Steel. Identification Mark on Do. Y33-

Material of Tunnel shafts Steel. Identification Marks on Do. Y37 & Y43. Material of Screw shafts Steel & Iron. Identification Marks on Do. Y36-A.

Material of Steam Pipes Copper 5 dia x 4 w. Seamless. Test pressure 360 lbs.

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

The Engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good.
When completed they were examined while running full power trials in the Firth and found to work well.

The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of
LMC 9.08. marked in the Society's Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD. L.M.C. 9.08.

ELEC. LIGHT.

F.D.

17.9.08

17.9.08

The amount of Entry Fee. . £ 3 : . : . When applied for, 2/9/1908.

Special £ 43 : 11 : . : . When received, 8/9/1908.

Donkey Boiler Fee £ : : .

Travelling Expenses (if any) £ : : .

Committee's Minute GLASGOW 15 SEP. 1908

Assigned + LMC 9.08.

b.B.6.

MACHINERY CERTIFICATE
 WRITTEN 16.9.08

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