

# REPORT ON MACHINERY.

No. 10242

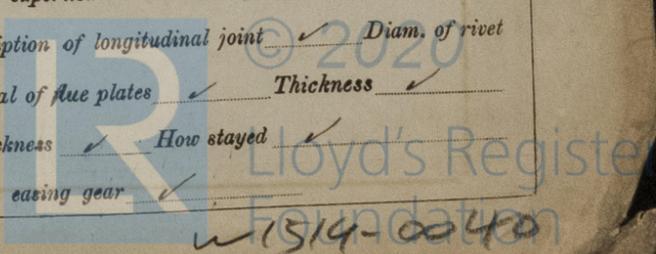
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Date of writing Report 10. 5. 1910 When handed in at Local Office 13. 5. 1910 Port of Aberdeen  
 No. in Survey held at Aberdeen Date, First Survey 28. 1. 10 Last Survey 5. 5. 1910  
 Reg. Book. on the steel S.S. Maggie Gault (Number of Visits 14) Gross 90.75  
 Master Jas Gault Built at Aberdeen By whom built John Buchie Torry & Co. No 339. Tons } Net 34.91  
 Engines made at Aberdeen By whom made Jas Abernethy & Co. No 815 when made 1910  
 Boilers made at do. By whom made do do do when made 1910  
 Registered Horse Power 42 Owners James Gault Port belonging to Inverness  
 Nom. Horse Power as per Section 28 42 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 9 1/4", 15 1/2", 26" Length of Stroke 18" Revs. per minute 142 Dia. of Screw shaft 5 1/2" Material of screw shaft as per rule  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 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 ✓ 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 ✓ If two  
 liners are fitted, is the shaft lapped or protected between the liners parcelled & served Length of stern bush 2' 0 3/4"  
 Dia. of Tunnel shaft 4 1/4" Dia. of Crank shaft journals 4 9/8" Dia. of Crank pin 5 1/4" Size of Crank webs 9 3/8" x 3 1/4" Dia. of thrust shaft under  
 collars 5" Dia. of screw 6" x 6" Pitch of Screw 8' 6" No. of Blades 4 State whether moveable no Total surface 20 1/2 sq ft  
 No. of Feed pumps 1 Diameter of ditto 2 7/8" Stroke 8" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps 1 Diameter of ditto 2" Stroke 8" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines one Sizes of Pumps 4 1/2" x 2 3/4" x 4" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room one of 2" In Holds, &c. Fishhold one of 2" Aft hold one of 2"  
Also ejector with separate suction to engine room, & fishhold.  
 No. of Bilge Injections 1 sizes 2 1/2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes: 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 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 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 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. 4. 10 of Stern Tube 4. 4. 10 Screw shaft and Propeller 12. 4. 10  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

**BOILERS, &c.**—(Letter for record (S)) Manufacturers of Steel The Steel Co of Scotland Ltd  
 Total Heating Surface of Boilers 811 sq ft Is Forced Draft fitted no No. and Description of Boilers one, Cyl. mult. Single ended.  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15. 4. 10 No. of Certificate 614  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 24 sq ft No. and Description of Safety Valves to  
 each boiler 2, direct spring Area of each valve 3.14 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4" Mean dia. of boilers 10' 0" Length 9' 6" Material of shell plates S.  
 Thickness 3/32" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d.r. lap  
 long. seams double straps Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 4 1/4" 3 5/8" Lap of plates or width of butt straps 15 1/2" x 2 1/2"  
 Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"  
 plate 85.3 Size of compensating ring no No. and Description of Furnaces in each boiler 2, plain Material S. Outside diameter 36"  
 Length of plain part top 4 1/2" Thickness of plates bottom 3/16" Description of longitudinal joint weld No. of strengthening rings none  
 Working pressure of furnace by the rules 184 Combustion chamber plates: Material S. Thickness: Sides 5/8" Back 3/2" Top 3/2" Bottom 5/8"  
 Pitch of stays to ditto: Sides 10" x 4" Back 9 3/4" x 8 1/4" Top 10 1/2" x 4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182  
 Material of stays S. Diameter at smallest part 1 5/8" Area supported by each stay 80.4 sq in Working pressure by rules 236 End plates in steam space:  
 Material S. Thickness 13/16" 3 1/4" 1 1/2" 1 1/2" Pitch of stays 22" x 12 1/2" How are stays secured all nuts Working pressure by rules 188 Material of stays S.  
 Diameter at smallest part 1 1/2" full Area supported by each stay 245 sq in Working pressure by rules 191 Material of Front plates at bottom S.  
 Thickness 13/16" Material of Lower back plate S. Thickness 13/16" Greatest pitch of stays 13 3/4" x 8" Working pressure of plate by rules 180  
 Diameter of tubes 5 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 13/16" 2 1/4" 1 1/2" Back 13/16" Mean pitch of stays 10 1/16"  
 Pitch across wide water spaces 15" Working pressures by rules B. 205 Girders to Chamber tops: Material S. Depth and  
 thickness of girder at centre 8" x 1 1/4" Length as per rule 25" Distance apart 10 1/2" Number and pitch of stays in each two: 4"  
 Working pressure by rules 181 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 \_\_\_\_\_

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 \_\_\_\_\_ Plates \_\_\_\_\_

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 \_\_\_\_\_ 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 top, & 2 bottom end bolts nuts; 2 main bearing, & 1 set, Coupling bolts nuts; 1 set each, Air, Circulating, Feed, & Bilge pump valves; 1 main & 1 donkey check valves; 1 safety valve spring; bolts, & nuts assorted, & iron of various sizes.*

The foregoing is a correct description, *James Bennett Esq*  
 Manufacturers of Main Engines & Boilers—

Dates of Survey while building { During progress of work in shops - - } 1910 Jan. 28, Feb. 4, 7, 10, 21, Mar. 2, 11, 21, Apr. 12, 14, 15, 18, 21, 24, 28.  
 { During erection on board vessel - - } May 5  
 Total No. of visits *14* Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders *19.21 2.11 4* Slides *21 3* Covers *21 4 4* Pistons *21 2.11 3* Rods *10.21 2.11 3*

Connecting rods *4.21 2.11 21* Crank shaft *21 3* Thrust shaft *due* Tunnel shafts *due* Screw shaft *due* Propeller *21 3*

Stern tube *21 11.21* Steam pipes tested *21 4* Engine and boiler seatings *4* Engines holding down bolts *21 4*

Completion of pumping arrangements *21 4* Boilers fixed *21 4* Engines tried under steam *28 4*

Main boiler safety valves adjusted *28 4* Thickness of adjusting washers *Port 3/8" - S 1/2"*

Material of Crank shaft *S & S* Identification Mark on Do. *50 (Dun)* Material of Thrust shaft *S* Identification Mark on Do. *50 (Dun)*

Material of Tunnel shafts *S* Identification Marks on Do. *60 (Dun)* Material of Screw shafts *S* Identification Marks on Do. *60 (Dun)*

Material of Steam Pipes *Copper, solid drawn 3" bore No. 2 wire* Test pressure *360 lbs per sq inch*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*These Engines, and the Boiler, have been constructed under Special Survey and in accordance with the Secretary's Letter the Rules and approved plan. The materials, and workmanship are good. When completed, and properly fitted on board, they were tried under steam at knowings, with satisfactory results, and are now in good working order, and in my opinion entitled to the record + L.M.C. 5.10 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.10

*Ridley Powell*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 1 : 0 :	When applied for,	
Special	£ 8 : 0 :	When received,	13.5.1910
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		28.5.1910

Committee's Minute **WED. 18 MAY 1910**  
 Assigned *H.M.C. 5.10*

Certificate (if required) to be sent to Aberdeen Office

