

## REPORT ON MACHINERY.

No. 10242

Received at London Office

MIN. 17 MAY 1910

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 Tons Net 34.91

Master Jas Gault Built at Aberdeen By whom built John Buchie Torry & Co. No 339. When built 1910

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 Scraper

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 & covered. 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 6" Dia. of screw 6" x 6" Pitch of Screw 8' 6" No. of Blades 4. State whether moveable No. Total surface 202 1/2"

No. of Feed pumps 1. Diameter of ditto 2 1/8" 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 1/4" 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 1/2 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. 7 No. and Description of Safety Valves to

each boiler 2. direct spring. Area of each valve 3.14 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 3 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"

Size of compensating ring McNeil. No. and Description of Furnaces in each boiler 2. plain Material S. Outside diameter 36"

Length of plain part top 4 1/2" bottom 4 1/2" Thickness of plates top 3/16" bottom 1/16" 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 8" Back 3 1/2" Top 3 1/2" Bottom 5"

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 Working pressure by rules 236. End plates in steam space:

Material S. Thickness 3/16" 3/32" 1/16" 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 2 1/2" Area supported by each stay 245 Working pressure by rules 191. Material of Front plates at bottom S.

Thickness 3/16" Material of Lower back plate S. Thickness 3/16" Greatest pitch of stays 13 3/4" x 8" Working pressure of plate by rules 180.

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 3/16" 2/16" 1/16" Back 3/16" 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
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
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 valve; 1 safety valve spring; bolts & nuts assorted, & iron of various sizes.

The foregoing is a correct description,

*James Abernethy 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

Plan returned 17/5/10

Dates of Examination of principal parts—	Cylinders	1910 Jan. 28, Feb. 4, 7, 10, 21, Mar. 2, 11, 21, Apr. 12, 14, 15, 18, 21, 24, 28.	Slides	21/3	Covers	21/3	Pistons	21/3	Rods	10, 21, 21, 21	
Connecting rods	4, 21, 21, 21	Crank shaft	21/3	Thrust shaft	4	Tunnel shafts	4	Screw shaft	4	Propeller	21/3
Stern tube	21/3	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						
Main boiler safety valves adjusted	28	Thickness of adjusting washers	Port 3/8" - S 3/2"								
Material of Crank shaft	S & S	Identification Mark on Do.	50. (Dan)	Material of Thrust shaft	S	Identification Mark on Do.	50. (Dan)				
Material of Tunnel shafts	S	Identification Marks on Do.	60. (Dan)	Material of Screw shafts	S	Identification Marks on Do.	60. (Dan)				
Material of Steam Pipes	Copper, solid drawn 3" bore N° 7. T.M.C.	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 knockings, 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.

*17/5/10*

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

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

Committee's Minute

WED. 18 MAY 1910

Assigned

+ L.M.C. 5.10

MACHINERY CERTIFICATE  
WRITTEN



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Foundation

Certificate (if required) to be sent to  
Aberdeen Office