

## REPORT ON MACHINERY.

No. 10102.

FRI 28 JAN 1910

Date of writing Report 26.1.1910 When handed in at Local Office 24.1.1910 Port of Aberdeen  
 No. in Survey held at Aberdeen Date, First Survey 4.10.09 Last Survey 20.1.1910  
 Reg. Book. on the steel S.S. Celtic Pride (Number of Visits 22)  
 Master R. B. Reed Built at Aberdeen By whom built A. Hall & Co. Ltd. Tons { Gross 436.49  
 Engines made at Aberdeen By whom made A. Hall & Co. Ltd. when made 1910  
 Boilers made at do By whom made do do do when made 1910  
 Registered Horse Power 80 Owners Joseph Rance Ltd. Port belonging to Gull  
 Nom. Horse Power as per Section 28 80.06 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 14 1/2" 39" Length of Stroke 24" Revs. per minute 105 Dia. of Screw shaft 8 1/2" as per rule 8 1/2" Material of screw shaft iron  
 Is 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 ✓ 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 ✓ Length of stern bush 2' 9"  
 Dia. of Tunnel shaft 8 1/2" as per rule 8 1/2" Dia. of Crank shaft journals 8 1/2" as per rule 8 1/2" Dia. of Crank pin 8 1/2" Size of Crank webs 12 1/2" x 5" Dia. of thrust shaft under  
 collars 8 1/2" Dia. of screw 8 1/2" Pitch of Screw 12' 6" No. of Blades 4 State whether moveable No Total surface 34 1/2"  
 No. of Feed pumps 2 ✓ Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 ✓ Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 ✓ Sizes of Pumps Ballast 6x4x8" General 4 1/2 x 3 x 6" Duplex. No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room one of 2" ✓ After each one of 2" In Holds, &c. one in each wing of 2" ✓

No. of Bilge Injections 1 sizes 3" ✓ Connected to condenser, or to circulating pump C. P. ✓ Is a separate Donkey Suction fitted in Engine room & size one, 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 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 Suctions from hold ✓ How are they protected Strong 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 ✓  
 Dates of examination of completion of fitting of Sea Connections 21.12.09 of Stern Tube 21.12.09 Screw shaft and Propeller 23.12.09  
 Is the Screw Shaft Tunnel watertight None ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record (7)) Manufacturers of Steel W. Beardsmore & Co. Ltd. & Colville & Sons Ltd. The S. Coy. of Scot. & L.  
 Total Heating Surface of Boilers 1343 1/2 Is Forced Draft fitted No No. and Description of Boilers two, Cyl. mult., single ended  
 Working Pressure 135 lbs Tested by hydraulic pressure to 240 Date of test 30.12.09 No. of Certificate 601  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 50 1/2 No. and Description of Safety Valves to  
 each boiler 2: direct spring Area of each valve 4.04 ✓ Pressure to which they are adjusted 140 lbs Are they fitted with easing gear yes ✓  
 Smallest distance between boilers or uptakes and bunkers or woodwork about 6" Mean dia. of boilers 13' 0" Length 18' 6" Material of shell plates S  
 Thickness 1 1/2" ✓ 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 1/2" ✓ Pitch of rivets 5 1/2" ✓ Lap of plates or width of butt straps 10 1/2" x 12 1/2" ✓  
 Per centages of strength of longitudinal joint 80.69 Working pressure of shell by rules 140 Size of manhole in shell 16 1/2" x 12 1/2"  
 Size of compensating ring 28" dia x 1 1/2" No. and Description of Furnaces in each boiler 3: plain ✓ Material S Outside diameter 41" ✓  
 Length of plain part top 1 1/2" Thickness of plates crown 1 1/2" Description of longitudinal joint weld ✓ No. of strengthening rings none ✓  
 Working pressure of furnace by the rules 148 Combustion chamber plates: Material S Thickness: Sides 3/32 ✓ Back 3/32 ✓ Top 3/32 ✓ Bottom 3/32 ✓  
 Pitch of stays to ditto: Sides 10 1/4" x 9 1/2" Back 10 1/4" x 10" Top 10 1/4" x 9 1/2" If stays are fitted with nuts or riveted heads none Working pressure by rules 150 End plates in steam space:  
 Material of stays S Diameter at smallest part 1 1/2" Area supported by each stay 100" Working pressure by rules 140 Material of stays S  
 Material S Thickness 1 1/2" Pitch of stays 18" x 16" How are stays secured down Working pressure by rules 140 Material of Front plates at bottom S  
 Diameter at smallest part 2 1/2" Area supported by each stay 288" Working pressure by rules 151 Material of Front plates at bottom S  
 Thickness 1 1/2" Material of Lower back plate S ✓ Thickness 3/4" Greatest pitch of stays 13" x 10" Working pressure of plate by rules 140  
 Diameter of tubes 3 1/2" ext Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S Thickness: Front 1 1/2" ✓ Back 1 1/2" ✓ Mean pitch of stays 9 1/2"  
 Pitch across wide water spaces 15" Working pressures by rules B. 155 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 8 1/2" x 1 1/2" ✓ Length as per rule 32" ✓ Distance apart 10" ✓ Number and pitch of stays in each 2: 9 1/2"  
 Working pressure by rules 151 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 2020 ✓ 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 ✓

W491-0078



# 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, the, oscillating, Fed & Bilge pump valves; 1 main & 1 donkey check valve; bolts & nuts assorted, & iron of various sizes.*

The foregoing is a correct description,

**FOR ALEXANDER HALL & CO, LTD**  
*Arthur Langhorne* Manufacturers of main Engines & Boilers.

Dates of Survey \_\_\_\_\_ During progress of work in shops— *1909 Oct. 7, 15, 25, 26. Nov. 2, 4, 8, 10, 18, 22, 24, 29. Dec. 2, 4, 6, 8, 11, 13, 16, 21, 23, 24, 28, 29, 30.*

\_\_\_\_\_ During erection on board vessel— *1910 Jan. 6, 10, 13, 14, 17, 18, 20.*

\_\_\_\_\_ Total No. of visits *32*

Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts—Cylinders *8.22.29* Slides *8.24* Covers *8.24* Pistons *8.22* Rods *26 18 8*

Connecting rods *26 18 8* Crank shaft *8* Thrust shaft *18 8.11* Tunnel shafts *✓* Screw shaft *18 16* Propeller *16*

Stern tube *29 2.11* Steam pipes tested *14.1.10* Engine and boiler seatings *7.22 8.22* Engines holding down bolts *30 19 6 10*

Completion of pumping arrangements *14.1.10* Boilers fixed *13.1.10* Engines tried under steam *18.1.10*

Main boiler safety valves adjusted *18.1.10* Thickness of adjusting washers *Port 3/8" Starboard 5/32"*

Material of Crank shaft *Iron* Identification Mark on Do. *2340 (LH)* Material of Thrust shaft *Iron* Identification Mark on Do. *482A*

Material of Tunnel shafts *Iron* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *484A*

Material of Steam Pipes *Copper, solid drawn, 4 1/2" bore, No 8 B.W.G.* Test pressure *240 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 letters, the Rules, & approved plan. The materials, and workmanship, are good and efficient. When completed, and properly fitted on board, they were tried under steam at moorings, with satisfactory results, and are now, in good order, and in my opinion, entitled to the record*

*+ L.M.C. 1.10 in the Register Book.*

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 1.10

*J.R.S.* *HED*  
*28.1.10.*

The amount of Entry Fee .. £ *1* : *0* : \_\_\_\_\_ When applied for, \_\_\_\_\_

Special .. £ *12* : *0* : \_\_\_\_\_ *26.1.1910.*

Donkey Boiler Fee .. £ \_\_\_\_\_ When received, \_\_\_\_\_

Travelling Expenses (if any) £ \_\_\_\_\_ *31.1.1910.*

Committee's Minute

TUES. 1 FEB 1910

Assigned

*+ L.M.C. 1.10*

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



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Foundation

MACHINERY CERTIFICATE  
WRITTEN.