

## REPORT ON MACHINERY.

No. 31078

WED. FEB. 14. 1912

Date of writing Report 5-1-1912 When handed in at Local Office 5-1-1912 Port of Glasgow  
No. in Survey held at Glasgow Date, First Survey and Last Survey 22 Nov 1911.  
Reg. Book. 49 on the S/S "Bruce" (Number of Visits 1)  
Master Built at Glasgow By whom built Napier & Miller Ltd Tons Gross  
Engines made at Greenock By whom made J & H Macaulay & Co Ltd Net  
Boilers made at ditto By whom made ditto When built 1912  
Registered Horse Power Owners Reid & Huxford & Co Port belonging to St John NFL  
Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted. Yes

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders No. of Cranks  
Dia. of Cylinders Length of Stroke Revs. per minute Dia. of Screw shaft as per rule Material of screw shaft as fitted  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made water tight in the propeller boss 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  
Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under collars Dia. of screw Pitch of Screw No. of Blades State whether moveable Total surface  
No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room In Holds, &c.  
No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size  
Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible  
Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate  
What pipes are carried through the bunkers How are they protected  
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times  
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges  
Dates of examination of completion of fitting of Sea Connections 22. 11. 11 of Stern Tube 22. 11. 11 Screw shaft and Propeller 22. 11. 11  
Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

## BOILERS, &amp;c.—(Letter for record ) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers  
Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate  
Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates  
Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps  
Per centages of strength of longitudinal joint rivet plate Working pressure of shell by rules Size of manhole in shell  
Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter  
Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings bottom  
Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space: Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays  
Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom  
Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules  
Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays  
Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each  
Working pressure by rules 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 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 :—

The foregoing is a correct description,  
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 Manufacturer.

Dates of Survey while building	{	During progress of work in shops - -	{	Is the approved plan of main boiler forwarded herewith
		During erection on board vessel - - -		
		Total No. of visits		
<div> <div> <div>Dates of Examination of principal parts—</div> <div>Cylinders</div> <div>Slides</div> <div>Covers</div> <div>Pistons</div> <div>Rods</div> </div> <div> <div>Connecting rods</div> <div>Crank shaft</div> <div>Thrust shaft</div> <div>Tunnel shafts</div> <div>Screw shaft</div> <div>Propeller</div> </div> <div> <div>Stern tube</div> <div>Steam pipes tested</div> <div>Engine and boiler seatings 22-11-11</div> <div>Engines holding down bolts</div> </div> <div> <div>Completion of pumping arrangements</div> <div>Boilers fixed</div> <div>Engines tried under steam</div> </div> <div> <div>Main boiler safety valves adjusted</div> <div>Thickness of adjusting washers</div> </div> <div> <div>Material of Crank shaft</div> <div>Identification Mark on Do.</div> <div>Material of Thrust shaft</div> <div>Identification Mark on Do.</div> </div> <div> <div>Material of Tunnel shafts</div> <div>Identification Marks on Do.</div> <div>Material of Screw shafts</div> <div>Identification Marks on Do.</div> </div> <div> <div>Material of Steam Pipes</div> <div>Test pressure</div> </div> </div>				

General Remarks (State quality of workmanship, opinions as to class, &c. The Engine, Boiler seatings also sea connection examined, found satisfactory. This Report accompanies trial of the Machinery, Boiler.

Certificates (if required) to be sent to  
 Surveyors are requested not to write on or below the space for Committee's Minute.)

The Charge of Entry Fee	:	:	When applied for,
Donkey Boiler Fee	:	:	When received,
Travelling Expenses (if any) £	:	:	

Committee's Minute GLASGOW 13 FEB 1912  
 Assigned See minute on Ex. Rpt. No. 16182.

Wm Gordon Murchison.  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.