

# REPORT ON MACHINERY

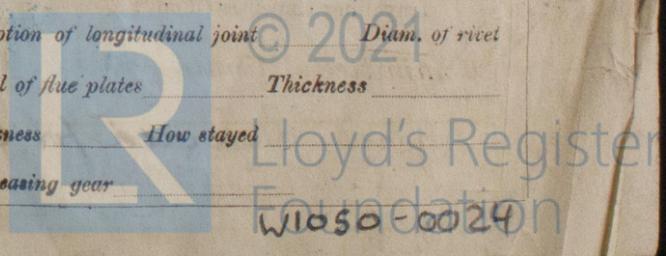
No. 38033

Received at London Office

Date of writing Report 5. 8. 1918 When handed in at Local Office 10. 8. 1918 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 13<sup>th</sup> July, 1917 Last Survey 8<sup>th</sup> August 1918  
 Reg. Book. on the Machinery for the Twin Screw Steamer "SAINTS"  
 Master J. H. Spence Built at Chepstow By whom built Finch & Co. G. & E.  
 Engines made at Glasgow By whom made The North British Diesel Eng. Co. Ltd. when made 1918.  
 Boilers made at Glasgow By whom made W. Beardmore & Co. G. & B. when made 1918.  
 Registered Horse Power Owners H. M. Government Port belonging to London  
 Nom. Horse Power as per Section 28 204 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion Twin Screw No. of Cylinders 6 No. of Cranks 6  
 Dia. of Cylinders 15", 23 1/2", 36" Length of Stroke 24" Revs. per minute 7.62 Dia. of Screw shaft 4.63" Material of screw shaft S  
 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 — 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 No liners Ticker's Patent Length of stern bush 2-6"  
 Dia. of Tunnel shaft as per rule None Dia. of Crank shaft journals as per rule 4.12" Dia. of Crank pin 4 1/2" Size of Crank webs 6 1/2" x 8 1/2" Dia. of thrust shaft under collars 4 1/4" Dia. of screw 8-0" Pitch of Screw 10-6" No. of Blades 4 State whether moveable No Total surface 25 sq ft  
 No. of Feed pumps 1 M.I. Aux. Diameter of ditto 5 1/2" Stroke 15" Can one be overhauled while the other is at work Yes.  
 No. of Bilge pumps 1 Diameter of ditto 8" Stroke 15" Can one be overhauled while the other is at work Yes.  
 No. of Donkey Engines 3 Sizes of Pumps see above No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3-2" In Holds, &c. 1-2" fore peak, 1-2" fore hold, 1-2" after well, 1-2" A.P.T.  
 No. of Bilge Injections 2 sizes 3" Connected to circulating pump B.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 at  
 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 Yes  
 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 July 23 of Stern Tubes July 20, 23 Screw shafts and Propellers July 25.  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record) Manufacturers of Steel  
 Total Heating Surface of Boilers 4216 sq ft Is Forced Draft fitted No No. and Description of Boilers 2 Single ended marine  
 Working Pressure 160 lb? 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: air 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 rivets Working pressure of shell by rules Size of manhole in shell  
 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:  
 2 1/2" 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  
 5 1/2" 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  
 plates Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 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	When made	Where fixed
Made at	By whom made	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with casing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Date of adjustment
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stays by
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey

**SPARE GEAR.** State the articles supplied: — 1 piston rod & packing; 1 pair guide shoes, main bearing & connecting rod brasses 4 bottom end, 8 top end, 4 main bearing bolts. Eccentric rod & strap; slide rod & brasses. 1 set piston & piston valve rings & springs. Studs & nuts for covers, 1 assorted. 40 condenser tubes. Metallic valves; set of thrust collars. 8 stay 12 1/2 plain boiler tubes. 4 safety valve springs. Spare gear for auxiliaries, steering & capstan engines.

The foregoing is a correct description,

John Holloway  
Manufacturer.

Dates of Survey while building: During progress of work in shops — 1914 July 13, Aug 4, 31, Sept 6, 7, 20, Oct 3, 4, 22, 30, Nov 5, 7, 8, 12, 15, 20, 21, 26, 27, 29, 30, Dec 3, 14, 7, 12, 14, 18, 21, 22  
 During erection of board vessel — 1915 Jan 4, 11, 14, 24, 25, 30, 31, Feb 8, 12, 21, 26, Mar 5, 11, 16, 18, 27, Apr 4, 15, 22, 25, 29, May 1, 6, 14, 23, 24, 27, Jun 1, 5, 10, 29, July 5, 8, 23, Aug 8.

Total No. of visits: 66 + 24 = 90

Is the approved plan of main boiler forwarded herewith:  Yes

Dates of Examination of principal parts: Cylinders 31-1-18, Slides 26-11-14, Covers 31-1-18, Pistons 26-11-14, Rods 26-11-14  
 Connecting rods 26-11-14, Crank shaft 26-1-18, Thrust shaft 26-9-18, Tunnel shafts 26-9-18, Screw shaft 29-6-18, Propeller 1-6-18  
 Stern tube 1-6-18, Steam pipes tested 12-7-18, Engines and boiler seatings 22-7-18, Engines holding down bolts 21-8-18  
 Completion of pumping arrangements 6-9-18, Boilers fixed 9-8-18, Engines tried under steam 12-9-18  
 Main boiler safety valves adjusted 6-9-18, Thickness of adjusting washers F/13/32, A/3/85 5/16, P.  
 Material of Crank shafts 3, Identification Mark on Do. [Stamp], Material of Thrust shafts 3, Identification Mark on Do. [Stamp]  
 Material of Tunnel shafts 2, Identification Marks on Do. [Stamp], Material of Screw shafts 2, Identification Marks on Do. [Stamp]  
 Material of Steam Pipes Shel. lap welded, Test pressure 480 lbs.

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

The machinery has been built under special survey in accordance with the Rules of the Society & the approved Admiralty specifications & has been forwarded to Glasgow to be fitted on board. The workmanship & materials are good. The machinery is eligible, in my opinion, to have notation + L.M.C. with date when it has been securely fitted on board & tried under steam with satisfactory results.

The machinery of this vessel has now been fitted on board efficiently, & is now eligible to be classed with record of + L.M.C. 9.18, having been tried under steam & found satisfactory, in accordance with specificia.

**It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.18**

The amount of Survey Fee £ 32 : 4 : 0  
 Special Installation fee £ 16 : 2 : 0  
 Donkey Boiler Fee £ : :  
 Travelling Expenses (if any) £ : :

When applied for: 20/11/18  
 When received: 29/10/18

Assigned Deferred for completion

Committee's Minute GLASGOW. 12/8/18

John A. Ferguson, R. Rowland  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

TUE. 15 OCT. 1918

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