

REPORT ON MACHINERY.

No. 10444.

Received at London Office

TUE. JAN. 23. 1912

Date of writing Report 20. 1. 1912 When handed in at Local Office 20. 1. 1912 Port of Aberdeen
 No. in Survey held at Aberdeen Date, First Survey 23. 6. 11. Last Survey 19. 1. 1912
 Reg. Book. on the Steel S. S. "DAISY" (Number of Visits 44)
 Master Built at Aberdeen By whom built The John Buttie & Co. S. S. Co. No. 363 When built 1912.
 Engines made at Aberdeen By whom made James Abernethy & Co. No. 845. when made 1912.
 Boilers made at ditto By whom made ditto ditto when made 1912.
 Registered Horse Power 61. Owners British Admiralty. Port belonging to
 Nom. Horse Power as per Section 28 93. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 22", 21", 35" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 4 1/2" Material of screw shaft as fitted 4 1/2" Material of expansion
 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' 8"
 Dia. of Tunnel shaft as per rule 6. 6 5/8 Dia. of Crank shaft journals as per rule 6. 9 3/8 Dia. of Crank pin 4 1/2" Size of Crank webs 9 1/2" x 4 1/2" Dia. of thrust shaft under
 collars 4 1/2" Dia. of screw 9' 0" Pitch of Screw 11' 0" No. of Blades 4. State whether moveable No Total surface 35 1/2"
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 5" x 3" x 6" Feed 4 1/2" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 of 2" In Holds, &c. 1 of 1" Bunker, Spiritroom, Store room, Canvas
 room, and Chain locker, 1 each of 2" Also ejector connected to main line suction, with separate suc. to engine room 2 1/2".
 No. of Bilge Injections 1 sizes 3 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 No
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both valves & cocks
 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 21. 10. 11. of Stern Tube 13. 10. 11. Screw shaft and Propeller 18. 10. 11.
 Is the Screw Shaft Tunnel watertight apparently Is it fitted with a watertight door Yes worked from upper grating in engine room.

BOILERS, &c.—(Letter for record (S.)) Manufacturers of Steel Glasgow S. S. Co. & The Lanarkshire S. Co.
 Total Heating Surface of Boilers 1444 1/2 Is Forced Draft fitted No No. and Description of Boilers 1. Cyl. mult. single ended.
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 3. 10. 11. No. of Certificate 680.
 Can each boiler be worked separately Area of fire grate in each boiler 46.25 1/2 No. and Description of Safety Valves to
 each boiler 2: direct spring Area of each valve 4.91 1/2 Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork about 4" external Mean dia. of boilers 13.9" Length 10.6" Material of shell plates S.
 Thickness 1/32" Range of tensile strength 28-32. Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d. r. lap.
 long. seams d. r. straps Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 3/8" 4 1/16" Lap of plates or width of butt straps 18" out. 1 1/16"
 Per centages of strength of longitudinal joint rivets 84.2 Working pressure of shell by rules 180.5 Size of manhole in shell 16" x 12"
 plate 86.2 Size of compensating ring McNeil No. and Description of Furnaces in each boiler 3: plain Material S. Outside diameter 40 1/2"
 Length of plain part top 44" Thickness of plates crown 3" Description of longitudinal joint weld No. of strengthening rings
 bottom 44" bottom 4" Working pressure of furnace by the rules 182. Combustion chamber plates: Material S. Thickness: Sides 2 1/2" Back 2 3/32" Top 1 1/16" Bottom 3 1/32"
 Pitch of stays to ditto: Sides 8 1/2" x 9 1/2" Back 11 1/2" x 8" Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads No Working pressure by rules 180.
 Material of stays S. Diameter at smallest part 1 5/8" Area supported by each stay 90.25 Working pressure by rules 205. End plates in steam space:
 Material S. Thickness 1 3/32" Pitch of stays 19" x 19" How are stays secured d. r. nuts Working pressure by rules 184. Material of stays S.
 Diameter at smallest part 2 1/16" Area supported by each stay 36.1 Working pressure by rules 183. Material of Front plates at bottom S.
 Thickness 1 3/16" Material of Lower back plate S. Thickness 1 3/16" Greatest pitch of stays 14" x 4 1/2" Working pressure of plate by rules 180.8
 Diameter of tubes 3 1/2" x 4 1/4" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 1 3/16" 9 1/16" d. r. Back 1 3/16" Mean pitch of stays 9 1/2"
 Pitch across wide water spaces 15" Working pressures by rules 182.2.1 Girders to Chamber tops: Material S. Depth and
 thickness of girder at centre 8 3/4" x 1 1/2" Length as per rule 3 1/2" Distance apart 9 1/2" Number and pitch of stays in each 2 — 9 1/2"
 Working pressure by rules 185. 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:—2 top, & 2 bottom end, 2 main bearings, & 1 set coupling bolts & nuts; 1 set each, Air, Feed, & Bilge pump valves; 1 each, main & donkey check valve; 1 set rings & springs for HP, MP, & LP pistons & piston valves; 1 pair each main bearing, top & bott end brasses; 1 each complete front & back pump link; 1 piston rod with shoe, 1 slide valve spindle & ecc. rod complete; 1 Air pump rod & each feed & bilge pump plungers; 1 propeller & shaft; 1 safety & 1 escape valve, spring; bolts & nuts assorted, & iron of various sizes -

The foregoing is a correct description,

Manufacturers of main engines & Boilers.

James Macmillan & Co

Dates of Survey while building	During progress of work in shops - -	1911. June 23, 30. July 11. August. 16, 18, 25. September 1, 4, 7, 12, 18, 28. October 2, 10, 13, 18, 21, 24, 26, 28.
	During erection on board vessel - - -	November 2, 4, 10, 14, 20, 24, 27, 29. December. 4, 5, 6, 11, 14, 18, 22, 28. 1912. Jan 3, 6, 8, 10, 12, 15, 16, 17.
	Total No. of visits	44

Is the approved plan of main boiler forwarded herewith

Yes.

Dates of Examination of principal parts—Cylinders	$\frac{11}{9}$ $\frac{16.25}{9}$ $\frac{4}{9}$ $\frac{13}{10}$	Slides	$\frac{18}{9}$ $\frac{10.18}{10}$	Covers	$\frac{16}{8}$ $\frac{4}{9}$ $\frac{13}{10}$	Pistons	$\frac{16.25}{8}$ $\frac{13}{9}$ $\frac{10}{10}$	Rods	$\frac{16.25}{8}$ $\frac{13}{9}$ $\frac{10}{10}$
Connecting rods	$\frac{16.25}{8}$ $\frac{13}{9}$ $\frac{10}{10}$	Crank shaft	18.10.11	Thrust shaft	18.10.11	Tunnel shafts	18.10.11	Screw shaft	18.10.11
Stern tube	$\frac{13.18}{9}$ $\frac{3.10}{10}$	Steam pipes tested	2. 11. 11	Engine and boiler seatings	$\frac{4}{9}$ $\frac{13}{10}$	Engines holding down bolts	$\frac{26.28}{10}$		
Completion of pumping arrangements	3. 1. 12.	Boilers fixed	2. 11. 11.	Engines tried under steam	20. 11. 11. — 12. 1. 12.				
Main boiler safety valves adjusted	20. 11. 11.	Thickness of adjusting washers	Port $\frac{33}{32}$ - Starboard. $\frac{32}{32}$ bare.						
Material of Crank shaft	J & S.	Identification Mark on Do.	2815 (Lth)	Material of Thrust shaft	S.	Identification Mark on Do.	2815 (Lth)		
Material of Tunnel shafts	S.	Identification Marks on Do.	2815 (Lth)	Material of Screw shafts	J.	Identification Marks on Do.	2815 (Lth)		
Material of Steam Pipes	Copper, solid drawn, $\frac{3}{4}$ bore. No. 6, 10, 10, 4.	Test pressure	360 lbs. per square inch.						

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

These Engines together with the Boiler (Glasgow report No 30464.) have been constructed under Special Survey, and in accordance with the Secretary's letters, and the requirements of the Society's Rules. The materials, and workmanship are good, and the work throughout has been carried out as per the plans, and arrangements approved by the Admiralty. When completed, and properly fitted on board the vessel, they were tried under steam, as required by the conditions of Contract, and found in every way satisfactory, and are now in good working order, and in my opinion entitled to the record *L.M.C. 1. 12. in the Register Book.

A Special Certificate, certifying to the carrying out of the Specification by the builders, is attached hereto.

An electric light installation has been fitted on board, under Admiralty supervision and of materials direct from the Dockyard.

The amount of Entry Fee	£ 1 : 0 :	When applied for,	2.2.1. 19.12.
Special classification	£ 13 : 19 :		
Donkey Boiler Fee	£ 13 : 19 :	When received,	2.2.1. 19.12.
Travelling Expenses (if any)	£ :		

Committee's Minute

AN.23.1912

Assigned

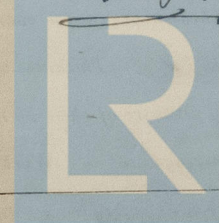
*L.M.C. 1. 12

MACHINERY CERTIFICATE
WRITTEN

It is submitted that
this vessel is eligible for
THE RECORD # LMC 1.12.

Ridley Howell.

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



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