

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) Tons Gross 244.85
Net 130.93

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 12 1/2, 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 2 1/2 scrap 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' 8"

Dia. of Tunnel shaft as per rule 6.656 Dia. of Crank shaft journals as per rule 6.988 Dia. of Crank pin 4 1/8 Size of Crank webs 9 1/2 x 4 1/2 Dia. of thrust shaft under collars 4 1/8 Dia. of screw 9' 0" Pitch of Screw 11' 0" No. of Blades 4 State whether moveable No Total surface 357

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 Feed 4 1/2 x 3 1/2, Bilge 5 x 5 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 of 2" In Holds, &c. 1 of 2" 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 dia.

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 & Co. Ltd. The Lanarkshire S. Co. Ltd.

Total Heating Surface of Boilers 14447 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 No. and Description of Safety Valves to each boiler 2: direct spring Area of each valve 4.91 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" Mean dia. of boilers 13.9 Length 10.6 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 3/16 Pitch of rivets 8 3/8 Lap of plates or width of butt straps 18" out. 1 1/2"

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 44 Thickness of plates 3 Description of longitudinal joint weld No. of strengthening rings 2

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 1/16

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 Nuts 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 double nuts Working pressure by rules 184 Material of stays S

Diameter at smallest part 2 1/16 Area supported by each stay 361 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 Pitch of tubes 4 3/4 x 4 3/4 Material of tube plates S Thickness: Front 1 3/16 Back 1 3/16 Mean pitch of stays 9 1/2

Pitch across wide water spaces 15 Working pressures by rules 190.0 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, Lie, Seed, & 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 & bottom brasses; 1 each complete front & back pump links; 1 piston rod with shoe, 1 slide valve spindle & ecc. rod complete; 1 Air pump rod & each Seed & 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 & boiler. James McAlister & 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, 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, 1912
Total No. of visits 44
Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders	11/7, 16/8, 24/9, 13/10	Slides	18/9, 10/10	Covers	16/8, 24/9, 13/10	Pistons	16/8, 13/9, 10/10	Rods	16/8, 18/9, 10/10
Connecting rods	16/8, 13/9, 10/10	Crank shaft	18, 10, 11	Thrust shaft	18, 10, 11	Tunnel shafts	18, 10, 11	Screw shaft	18, 10, 11
Stern tube	13/8, 3/10	Steam pipes tested	2, 11, 11	Engine and boiler seatings	4/7, 13/10	Engines holding down bolts	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 3 1/2" - Starboard 3 1/2" 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, 3 3/4" bore, No. 6, 70, 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,	22.1.1912
Special classification	£ 13 : 19	When received,	22.1.1912
Donkey Boiler Fee	£ 13 : 19		
Travelling Expenses (if any)	£ :		22.1.1912

It is submitted that this vessel is eligible for THE RECORD # L.M.C. 1.12.
Ridley Howell
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute AN. 23. 1912
Assigned + L.M.C. 1.12
MACHINERY CERTIFICATE WRITTEN

Certificate (if required) to be sent to Aberdeen Office

