

REPORT ON MACHINERY.

Date of writing Report 3. 4. 1911 When handed in at Local Office 3. 4. 1911 Port of Aberdeen
 No. in Survey held at Aberdeen Date, First Survey 4. 11. 10 Last Survey 1. 4. 1911
 Reg. Book. on the S.S. "ANN FORD MELVILLE" (Number of Visits 36)
 Master Wm. Robt. George. Built at Aberdeen By whom built A. Hall & Co. Ld.
 Engines made at Aberdeen By whom made A. Hall & Co. Ld.
 Boilers made at do. By whom made do do do when made 1911.
 Registered Horse Power 60. Owners James Sangster Melville. Port belonging to Aberdeen.
 Nom. Horse Power as per Section 28 60. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Triple expansion. No. of Cylinders 3. No. of Cranks 3.
 Dia. of Cylinders 12", 20", 33" Length of Stroke 23" Revs. per minute 110. Dia. of Screw shaft as per rule 6. 2 1/2" Material of screw shaft 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.
 Dia. of Tunnel shaft as per rule 6. 1 1/2" Dia. of Crank shaft journals as per rule 6. 4 1/2" Dia. of Crank pin 6 5/8" Size of Crank webs 10 1/2 x 4 3/8" Dia. of thrust shaft under collars 6 3/4" Dia. of screw 8 1/2" Pitch of Screw 11. 6" No. of Blades 4 State whether moceable no Total surface 30 1/2
 No. of Feed pumps 1. Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work.
 No. of Bilge pumps 1. Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work.
 No. of Donkey Engines 2. Sizes of Pumps 2 1/2" x 3 1/2" x 5" duplex. No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room one of 2". In Holds, &c. Fishhold & Slushwell, one each of 2".
 Also ejector drawing from Fishhold & Slushwell, with separate suction from engine room 2" dia.
 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 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 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 Fishhold, Slushwell & F.W. tank, 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. 3. 11 of Stern Tube 15. 3. 11 Screw shaft and Propeller 15. 3. 11
 Is the Screw Shaft Tunnel watertight none. Is it fitted with a watertight door worked from.

BOILERS, &c.—(Letter for record) Manufacturers of Steel The S. Co. of Scotland Ld. - B. Colville & Sons Ld.
 Total Heating Surface of Boilers 1149 1/2 Is Forced Draft fitted no. No. and Description of Boilers One, cyl., mult., single ended.
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360. Date of test 6. 3. 11 No. of Certificate 648.
 Can each boiler be worked separately. Area of fire grate in each boiler 50.6 1/2 No. and Description of Safety Valves to each boiler 2: direct spring. Area of each valve 5.94 1/2 Pressure to which they are adjusted 185. Are they fitted with easing gear yes.
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean dia. of boilers 12.6" Length 10.3" 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 A. T. Lap long. seams double straps Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/4" Lap of plates or width of butt straps 16 1/2" x 2 1/2"
 Per centages of strength of longitudinal joint rivets 92.3 plate 86.0 Working pressure of shell by rules 182.9 Size of manhole in shell 16 1/2" x 22"
 Size of compensating ring 28" dia. x 1 1/2" No. and Description of Furnaces in each boiler 3, plain Material S. Outside diameter 40 1/2"
 Length of plain part top 34 1/2" Thickness of plates crown 3 1/2" bottom 3 1/4" Description of longitudinal joint weld. No. of strengthening rings none.
 Working pressure of furnace by the rules 190. Combustion chamber plates: Material S. Thickness: Sides 5" Back 5" Top 5" Bottom 5"
 Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 8" Top 9 1/2" x 4 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 198.
 Material of stays S. Diameter at smallest part 1 1/2" full Area supported by each stay 68 1/2" Working pressure by rules 194. End plates in steam space: Material S. Thickness 1" Pitch of stays 14" x 15" How are stays secured A. n. + w. Working pressure by rules 184. Material of stays S.
 Diameter at smallest part 2 1/16" Area supported by each stay 255 1/2" Working pressure by rules 185. Material of Front plates at bottom S.
 Thickness 1 3/16" Material of Lower back plate S. Thickness 3 1/4" Greatest pitch of stays 13" x 8 1/2" Working pressure of plate by rules 286.
 Diameter of tubes 3 1/2" ext. Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 1 3/16" x 1/2" d. Back 1/16" Mean pitch of stays 9 1/2"
 Pitch across wide water spaces 15" Working pressures by rules F. 201. Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8" x 1 1/2" Length as per rule 32" Distance apart 4 1/2" Number and pitch of stays in each tier, 9 1/2"
 Working pressure by rules 189. 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 _____

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 bearings + 1 set coupling bolts + nuts; 1 set each, Air, Circulating, Feed + Bilge pump valves; 1 main + 1 donkey check valve; bolts + nuts assorted, + iron of various sizes.

The foregoing is a correct description,

for **ALEXANDER TYLE & CO., LTD.**
Arthur Langshaw Manufacturers of Main Engines + Boilers.

Dates of Survey while building

During progress of work in shops --	1910	Nov 4, 15, 18, 22, 28	Dec 6, 12, 16, 20, 22, 28	1911	Jan 6, 10, 13, 16, 24	Feb 3, 10, 14, 16
	During erection on board vessel ---	22, 24	March 3, 6, 10, 13, 15, 16, 17, 18, 20, 21, 23, 24, 29	April 1		
	Total No. of visits	36	Is the approved plan of main boiler forwarded herewith <u>Yes.</u>			

Dates of Examination of principal parts—

Cylinders	12.28 / 12	13 / 7	3 / 2	Slides	24 / 7	Covers	14 / 2	13 / 3	Pistons	28 / 12	6 / 7	3.14 / 2	3 / 2	Rods	28 / 12	10 / 7	10 / 2
Connecting rods	20.28 / 12	10 / 2	Crank shaft	22.28 / 4	13.24 / 7	Thrust shaft	24 / 7	Tunnel shafts	14.22 / 2	Screw shaft	10.24 / 7	3.22 / 2	Propeller	22.24 / 2			
Stern tube	6.10.13 / 3	Steam pipes tested	23.3.11	Engine and boiler seatings	20.22 / 12	24 / 7	Engines holding down bolts	18.20.23 / 3									

Completion of pumping arrangements 24.3.11. Boilers fixed 21.3.11. Engines tried under steam 29.3.11

Main boiler safety valves adjusted 29.3.11. Thickness of adjusting washers Port 1/4" Starboard 3/8" base.

Material of Crank shaft *I.S.* Identification Mark on Do. *569A* Material of Thrust shaft *S.* Identification Mark on Do. *569A*

Material of Tunnel shafts *S.* Identification Marks on Do. *572A* Material of Screw shafts *S.* Identification Marks on Do. *573A*

Material of Steam Pipes *Copper, solid drawn, 3 1/2" bore, No 6. B.M.G.* Test pressure 360 lbs per square 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 letter, the Rules, and approved plan. The materials, and workmanship are good. When completed, and properly fitted on board, they were tried under steam at moorings, with satisfactory results, and are now in good working order, and in my opinion, entitled to the record **L.M.C. 4.11** in the Register Book.

Certificate (if required) to be sent to Aberdeen Office.

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 4.11**

The amount of Entry Fee .. £	1	When applied for,	
Special £	9 18		3.14.1911
Donkey Boiler Fee £	-	When received,	
Travelling Expenses (if any) £	-		6/4/1911

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

Committee's Minute

FRI 7 APR 1911

Assigned

+ L.M.C. 4.11

MACHINERY CERTIFICATE WRITTEN



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