

REPORT ON MACHINERY

No. 30018

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Date of writing Report 29/3 1911 When handed in at Local Office 22/4 1911 Port of Glasgow
No. in Survey held at Glasgow Date, First Survey 18th March Last Survey 27-3 1911
Reg. Book. 46 on the Twin S/S "EDAVANA" (Number of Visits 100)

Master H. C. Fenwick Built at Whiteinch By whom built Barclay Curle & Co. Ltd. Tons {Gross 4999
Net 2900 When built 1911

Engines made at Glasgow By whom made Barclay Curle & Co. Ltd. when made 1911

Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd. when made 1911

Registered Horse Power _____ Owners British India Steam Navigation Co. Ltd. Port belonging to Glasgow

Nom. Horse Power as per Section 28 1086 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion (Twin) No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 23 1/2 - 39 1/2 - 67 Length of Stroke 48 Revs. per minute 95 Dia. of Screw shaft 13.925 Material of steel
as fitted 14 1/4 screw shaft

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 no 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 no If two
liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 4-9

Dia. of Tunnel shaft 12.96 as per rule 13.5 Dia. of Crank shaft journals 13.5 Dia. of Crank pin 13 7/8 Size of Crank webs 9 1/2 x 20 Dia. of thrust shaft under
collars 13 7/8 Dia. of screw 16-0 Pitch of Screw 19-6 No. of Blades 3 State whether moveable yes Total surface 65.5

No. of Feed pumps two Weirs Diameter of ditto 10 1/2 Stroke 26 Can one be overhauled while the other is at work yes

No. of Bilge pumps one duplex Diameter of ditto 6 Stroke 6 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 11 x 10 7 x 12 2 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 @ 3 1/2" E. Room Aft. + 2 @ 3 1/2" Stokehold Aft. In Holds, &c. 2 @ 3 1/2" to Bunker Hold, 2 @ 3 1/2" No. 1 Hold,
2 @ 3 1/2" No. 2 Hold, 2 @ 3 1/2" No. 3 Hold, 1 @ 2 1/2" Tunnel well + 1 @ 3 1/2" to Hat Box.

No. of Bilge Injections 2 sizes 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 4"

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 BELOW the deep water line yes

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 no

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 1-2-11 of Stern Tube 1-2-11 Screw shaft and Propeller 1-2-11

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from capl platform

BOILERS, &c.—(Letter for record 11065) Manufacturers of Steel D. Colville & Sons, Steel Company of Scotland & Glasgow S.S. Co. Ltd.

Total Heating Surface of Boilers 16851 Forced Draft fitted yes No. and Description of Boilers 2 Double Ended

Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 22-12-10 No. of Certificate 10715

Can each boiler be worked separately yes Area of fire grate in each boiler 143 1/2 No. and Description of Safety Valves to
each boiler three spring loaded Area of each valve 12.56 Pressure to which they are adjusted 220 lbs Are they fitted with easing gear yes

Smallest distance between boilers 18" Mean dia. of boilers 15-9" Length 21-0" Material of shell plates steel

Thickness 1 5/8" Range of tensile strength 30/34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams T.R.
long. seams T.R. D.B.S. Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23"

Per centages of strength of longitudinal joint 94.4 Working pressure of shell by rules 250 Size of manhole in shell 17 x 13"
plate 83.7

Size of compensating ring 10 x 1 5/8" No. and Description of Furnaces in each boiler 8 horizontal suspension Material steel Outside diameter 3-7 1/4"

Length of plain part top Thickness of plates bottom 3 5/8" Description of longitudinal joint weld No. of strengthening rings no

Working pressure of furnace by the rules 232 Combustion chamber plates: Material steel Thickness: Sides 2 1/2" Back no Top 2 1/2" Bottom 1 5/8"

Pitch of stays to ditto: Sides 8 x 8" Back no Top 7 3/4 x 8 3/4" stays are fitted with nuts or riveted heads nuts Working pressure by rules 232

Material of stays steel Area at smallest part 1.73 Area supported by each stay 64 Working pressure by rules 216 End plates in steam space:

Material steel Thickness 1 1/4" Pitch of stays 20 x 15 1/4" How are stays secured D. nuts Working pressure by rules 221 Material of stays steel

Area at smallest part 7.24 Area supported by each stay 305 Working pressure by rules 246 Material of Front plates at bottom steel

Thickness 2 1/2" Material of Lower back plate no Thickness no Greatest pitch of stays no Working pressure of plate by rules no

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 x 3 5/8" Material of tube plates steel Thickness: Front 3 1/2" Back 1 5/8" Mean pitch of stays abt. 7 3/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 224 Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 9 x 20 3/4" Length as per rule 4-7 3/4" Distance apart 8 1/2" Number and pitch of stays in each 6 @ 7 3/4"

Working pressure by rules 292 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
separately yes Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet
holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

If stiffened with rings yes Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no

Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

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 connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bridge pump valves, 1 set of piston springs, a quantity of assorted bolts & nuts, & iron of various sizes, and one propeller shaft.

The foregoing is a correct description, **FOR BARCLAY, CURLE & CO., LTD.**
 Manufacturer *Mark Randolph Smith* Director

Dates of Survey while building	During progress of work in shops—	1910 Mar 18, Apr 25, May 23, June 9, 16, 27, July 1, 2, 8, 13, 28, Aug 5, 11, 17, 24, Sep 5, 6, 9, 13
	During erection on board vessel—	15, 17, 20, 21, 27, Oct 4, 6, 10, 11, 13, 18, 21, 25, 28, 31, Nov 2, 7, 8, 9, 10, 11, 12, 14, 18, 16, 17, 18, 21, 22, 23, 25, 28, 29, Dec 2, 5, 6, 7, 8, 11, 12, 15, 19, 20, 21, 22, 23, 26, 27, 29, 1911 Jan 10, 16, 17, 21, 24, 26, 30, Feb 1, 2, 6, 7, 8, 9, 13, 15, 16, 20, 21, 24, 28, Mar 2, 6, 10, 16, 24, 27, 31, Apr 2, 6, 7, 12
	Total No. of visits	180

Is the approved plan of main boiler forwarded herewith **Yes**

“ “ “ donkey “ “ “ **Yes**

Dates of Examination of principal parts—Cylinders **30-9-10** Slides **4-10-10** Covers **30-9-10** Pistons **4-10-10** Rods **29-9-10**

Connecting rods **29-9-10** Crank shaft **30-9-10** Thrust shaft **30-9-10** Tunnel shafts **25-10-10** Screw shaft **2-11-10** Propeller **2-11-10**

Stern tube **29-9-10** Steam pipes tested **28-2-11** Engine and boiler seatings **17-2-11** Engines holding down bolts **15-2-11**

Completion of pumping arrangements **20-2-11** Boilers fixed **2-3-11** Engines tried under steam **27-3-11**

Main boiler safety valves adjusted **6-3-11** Thickness of adjusting washers **D.E. Star 7/16, S.E. Star 5/16, D.K.Y. Star 5/16**

Material of Crank shaft **steel** Identification Mark on Do. **486** Material of Thrust shaft **steel** Identification Mark on Do. **486**

Material of Tunnel shafts **steel** Identification Marks on Do. **486** Material of Screw shafts **steel** Identification Marks on Do. **486**

Material of Steam Pipes **Wrot. Iron** Test pressure **645 lbs. per sq. inch**

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The machinery of this vessel has been constructed under special survey in accordance with the rules and approved plans, and has been seen working satisfactorily under steam. The materials and workmanship are good. This machinery is eligible, in my opinion, to be classed **+ L.M.C. 4-11**.

At the end of the 48 hours trial it was unfortunately found that the furnaces of the Star double ended main boiler were down. On examination the furnaces were found distorted as follows:— Port Port Wing 3 1/2" down on crown; Port Port Lower furnace 4 1/2" down on crown; and the Port Star Wing 3 1/2" down on crown; these three furnaces were removed and new ones fitted; the remaining five furnaces were found to be slightly down on the crowns and were jacked up to true form. On completion of the repairs the boiler was subjected to a test of 330 lbs. per sq. inch with satisfactory results.

The three replace furnaces are of the same type as the original furnaces (Chorison's Suspension)

The amount of Entry Fee .. £ **72.3** : : When applied for, **24/4/11**

Special .. £ **72.3** : : When received, **25/5/11**

Donkey Boiler Fee .. £ : : **J.M.**

Travelling Expenses (if any) £ : : **J.M.**

Committee's Minute **25 APR 1911 Glasgow**

Assigned **+ L.M.C. 4.11**

THE RECORD, + L.M.C. 4.11
F.D. J.W.D. A.P. Gorster
 Engineer/Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to Glasgow.



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