

REPORT ON MACHINERY.

No. 36156

Received at London Office

WED. 19 JUL. 1916

Date of writing Report 19 *When handed in at Local Office* 19 *Port of* Glasgow.
 No. in Survey held at Glasgow. Date, First Survey 30/4/15 Last Survey 12/7/16 19
 Reg. Book. on the Machinery of the S.S. FERGA (Number of Visits 43)
 Master Dublin Built at Dublin By whom built Dublin Dockyard Co (1899) Tons Gross 1916 Net 1916
 Engines made at Glasgow. By whom made Ross & Duncan (19000) when made 1916
 Boilers made at Glasgow. By whom made Ross & Duncan (14984) when made 1916
 Registered Horse Power 155 Owners Michael Murphy & Co Port belonging to Dublin Cardiff
 Nom. Horse Power as per Section 28 155 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 17 1/2" 27 1/2" 45" Length of Stroke 33" Revs. per minute 93 Dia. of Screw shaft as per rule 9.6" Material of screw shaft W. 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 Yes 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 Yes If two
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 3'-6"
 Dia. of Tunnel shaft as per rule 8 7/8" Dia. of Crank shaft journals as per rule 9.1" Dia. of Crank pin 9 1/8" Size of Crank webs 6 1/2" x 17 1/2" Dia. of thrust shaft under
 collars 9 9/16" Dia. of screw 11-6" Pitch of Screw 14-3" No. of Blades 4 State whether moveable Yes Total surface 45 sq ft
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 16 1/2" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps Collect. Displ. 8" x 9" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-2 1/2" Bore In Holds, &c. 1 end side 2 1/2" Bore
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 1-2 1/2" Bore
 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 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 Forward suction How are they protected Bored in
 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 29/12/15 of Stern Tube 20/12/15 Screw shaft and Propeller 6/1/16
 Is the Screw Shaft Tunnel watertight No tunnel Is it fitted with a watertight door Yes worked from Yes

OILERS, &c.—(Letter for record 5) Manufacturers of Steel S. Colville & Sons.
 Total Heating Surface of Boilers 2784 sq ft Forced Draft fitted No No. and Description of Boilers 2 Single ended
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 23/1/16 No. of Certificate 13358
 Can each boiler be worked separately Yes Area of fire grate in each boiler 39.5 sq ft No. and Description of Safety Valves to
 each boiler 2 Direct Spring Area of each valve 3.98 sq in 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 3'-6" Mean dia. of boilers 12'-0" Length 10'-6" Material of shell plates Steel
 Thickness 1" Range of tensile strength 28632 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap J.R.
 long. seams She Lap J.R. Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7" Lap of plates or width of butt straps 17 1/4"
 Per centages of strength of longitudinal joint rivets 84.5 Working pressure of shell by rules 180 lbs. Size of manhole in shell 12 x 16"
 plates 83.9 Size of compensating ring 26 x 30 x 1" No. and Description of Furnaces in each boiler 2 Single Material Steel Outside diameter 3'-10 1/2"
 Length of plain part top Yes Thickness of plates crown 9/16" Description of longitudinal joint Weld No. of strengthening rings Yes
 bottom Yes Working pressure of furnace by the rules 190 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 7/8" Top 1/16" Bottom 1/16"
 Pitch of stays to ditto: Sides 9 1/2" x 9" Back 8 1/2" x 8 1/2" Top 9 1/2" x 9" If stays are fitted with nuts or riveted heads nutted Working pressure by rules 187 lbs.
 Material of stays Steel (open iron) Diameter at smallest part 1-7/8" Area supported by each stay 72.25 sq in Working pressure by rules 182 lbs. End plates in steam space:
 Material Steel Thickness 1 1/2" Pitch of stays 16 x 17" How are stays secured Double Nuts Working pressure by rules 185 lbs. Material of stays Steel
 Area at smallest part 5-1/8" Area supported by each stay 272 sq in Working pressure by rules 190 lbs. Material of Front plates at bottom Steel
 Thickness 27/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 14 x 8 1/2" Working pressure of plate by rules 183 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 27/32" Back 3/4" Mean pitch of stays 10-1/2"
 Pitch across wide water spaces 14" Working pressures by rules 196 lbs. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 7 1/4" x 1 1/4" Length as per rule 30 1/8" Distance apart 9" Number and pitch of stays in each 2-9 1/2"
 Working pressure by rules 192 lbs. Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked
 separately Diameter 14" Length 14" Thickness of shell plates 1/16" Material Steel Description of longitudinal joint Weld Diam. of rivet
 holes 1 1/8" Pitch of rivets 7" Working pressure of shell by rules 196 lbs. Diameter of flue 14" Material of flue plates Steel Thickness 1/16"
 If stiffened with rings Yes Distance between rings 14" Working pressure by rules 196 lbs. End plates: Thickness 1/16" How stayed Yes
 Working pressure of end plates 196 lbs. Area of safety valves to superheater 14 sq in Are they fitted with easing gear Yes

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THE MARGIN.

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure _____ 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 casing 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 end bolts, 2 bottom end bolts, 2 main beam bolts, a set of coupling bolts all fitted with nuts, a set of feed & large pump valves, assorted bolt nuts, iron of various sizes, 4 propeller blades, boiler condenser tubes, eccentric strap etc etc.

The foregoing is a correct description,
Cross Duncan Manufacturer. *Robt. G. Kennedy*

| | | | | | | | | | |
|--------------------------------|----------------------------------|--------------|------------|----------|-----------------|--------------------|-------------------|-----------------|---------------------|
| Dates of Survey while building | During progress of work in shops | 1916 Apr 30 | Jun 14 | July 28 | Aug 12-17-25-27 | Sept 3-11-20-22-29 | Oct 8-12-13-19-26 | Nov 14-19-16-25 | Dec 2-7-17-21-27-19 |
| | During erection on board vessel | Jan 11-20-28 | Feb 1-3-17 | Apr 6-26 | May 1-10 | Jun 5-17-21 | July 4-6-12 | | |
| | Total No. of visits | 113 | | | | | | | |

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 25/8/15 Slides 14/9/15 Covers 14/9/15 Pistons 14/9/15 Rods 14/9/15

Connecting rods 3/9/15 Crank shaft 22/9/15 Thrust shaft 21/12/15 Tunnel shafts none Screw shaft 21/12/15 Propeller 17/12/15

Stern tube 21/12/15 Steam pipes tested 18/6/16 Engine and boiler seatings 4/3/16 Engines holding down bolts 6/7/16

Completion of pumping arrangements 6/7/16 Boilers fixed 6/7/16 Engines tried under steam 12/7/16

Main boiler safety valves adjusted 4/7/16 Thickness of adjusting washers Port 1 1/2 3 3/16 5 3/16

Material of Crank shaft *St. Steel* Identification Mark on Do. *ESR* Material of Thrust shaft *St. Steel* Identification Mark on Do. *ESR*

Material of Tunnel shafts Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. *ESR*

Material of Steam Pipes *Solid drawn Copper* Test pressure *360 lbs a'*

General Remarks (State quality of workmanship, opinions as to class, &c. *This machinery has been constructed under special survey in accordance with the Rules approved plans. It has been properly fitted on board & tried under steam & the case is eligible in my opinion for the notation + L.M.C. 7-16 (in red)*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7-16.

J.W.D.
20/7/16

| | | |
|--------------------------------|------------|-------------------|
| The amount of Entry Fee .. £ | 2 : 0 : 0 | When applied for, |
| Special £ | 23 : 5 : 0 | 17/7/1916 |
| Donkey Boiler Fee £ | : | When received, |
| Travelling Expenses (if any) £ | : | 20 : 9 : 0 |

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

Committee's Minute GLASGOW 18 JUL 1916 FRI 21 JUL 1916

Assigned + L.M.C. 7-16 subject to classification of hull.

WEB-FRA
 WEB-FRA
 WEB-FRA
 BULKHI
 W.T.BULL
 COLL
 PARTITI
 LONGITU
 FLAT PL
 GARBOARD
 THKNE
 CLEAR C
 DO. C
 DBLG. of
 POOP S
 SHORT
 FORECA
 Upp
 String
 QUAR
 String
 FRAM
 REVE
 LOWER
 BOWSP
 TOPMA
 RIGGI
 SAIS.

Glasgow

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

