

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office

TUES. 30 OCT 1906

No. in Survey held at Glasgow

Date, first Survey 26 Oct 05 Last Survey 19 Oct 1906

Reg. Book.

(Number of Visits)

on the S. S. Galava

Tons } Gross
 } Net

Master _____ Built at Wokington By whom built R. Williamson & Son When built 1906

Engines made at Glasgow By whom made Ross & Duncan (N° 674) when made 1906

Boilers made at Glasgow By whom made Ross & Duncan (N° 1067) when made 1906

Registered Horse Power _____ Owners R. Williamson & Son Port belonging to Wokington

Nom. Horse Power as per Section 28 81 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Compound S.E. No. of Cylinders 2 No. of Cranks 2
Dia. of Cylinders 19" - 38" Length of Stroke 27" Revs. per minute 120 Dia. of Screw shaft 8 1/4" Material of screw shaft 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 See 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 no If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 2'-9"

Dia. of Tunnel shaft 7 1/2" Dia. of Crank shaft journals 8 1/8" Dia. of Crank pin 8 1/8" Size of Crank webs 5 5/16 x 11 3/8" Dia. of thrust shaft under collars 8 1/8" Dia. of screw 9'-6" Pitch of Screw 13'-0" No. of Blades 4 State whether moveable no Total surface 38 sq.

No. of Feed pumps 2 Diameter of ditto 3" Stroke 13 1/2" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 3 1/4" Stroke 13 1/2" Can one be overhauled while the other is at work yes
No. of Donkey Engines 1 Sizes of Pumps 5 1/4" x 3 1/2" x 5" duplex No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room one 2 1/4" & one 2" In Holds, &c. Three - 2" holds & one 2"

No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size one 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 yes

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 Hold suction for fire How are they protected 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 Before landing Stern Tube " Screw shaft and Propeller "
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Stewart & Lloyds. L^{td}

Total Heating Surface of Boilers 1499 sq. Is Forced Draft fitted no No. and Description of Boilers One single ended.
Working Pressure 125 lbs Tested by hydraulic pressure to 250 lbs Date of test 20-4-06 No. of Certificate 7786

Can each boiler be worked separately ✓ Area of fire grate in each boiler 47 sq. No. and Description of Safety Valves to each boiler pair Spring loaded Area of each valve 6.49 sq. Pressure to which they are adjusted 125 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-6" Mean dia. of boilers 12'-6" Length 10'-0" Material of shell plates Steel
Thickness 1 3/16" Range of tensile strength 27-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R.
long. seams J. R. D. B. S. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 6" Lap of plates or width of butt straps 14 3/4"

Per centages of strength of longitudinal joint 84.25 Working pressure of shell by rules 129 lbs Size of manhole in shell 16" x 12"
Size of compensating ring 6 3/4" x 1 3/16" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 37"
Length of plain part 76" Thickness of plates 19/32" Description of longitudinal joint weld No. of strengthening rings 1, 3 x 3 x 5/8"

Working pressure of furnace by the rules 133 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"
Pitch of stays to ditto: Sides 7 3/4" Back 7 3/4" Top 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 128 lbs

Material of stays Steel Diameter at smallest part 1.01" Area supported by each stay 60 sq. Working pressure by rules 134 lbs End plates in steam space: Material Steel Thickness 7/8" Pitch of stays 16 1/2" x 17 1/2" How are stays secured D. nuts & washers Working pressure by rules 125 lbs Material of stays Steel

Diameter at smallest part 3.77" Area supported by each stay 289 sq. Working pressure by rules 130 lbs Material of Front plates at bottom Steel
Thickness 1 1/16" Material of Lower back plate same Thickness 5/8" Greatest pitch of stays 13" Working pressure of plate by rules 229 lbs
Diameter of tubes 3 1/4" Pitch of tubes 4 1/4" Material of tube plates Steel Thickness: Front 1 1/16" Back 2 1/32" Mean pitch of stays 11 1/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 148 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 5 3/4" x 1 3/4" Length as per rule 27" Distance apart 7 3/4" Number and pitch of stays in each 2 x 7 3/4"

Working pressure by rules 129 lbs Superheater or Steam chest; how connected to boiler ✓ 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 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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Two connecting rod top end bolts & nuts, ditto bottom end, two main bearing bolts one set of coupling bolts, one set of feed and bilge pump valves, one set piston springs, a quantity of assorted bolts & nuts, etc.*

The foregoing is a correct description,
Ross & Duncan Manufacturer.

Dates of Survey while building

During progress of work in shops - -	1905: Oct 26 Nov 8 16 Dec 9 14 28	1906: Jan 9 16 24 31 Feb 5 21 Mar 8 Apr 20
	During erection on board vessel - -	

Total No. of visits *19.* Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts—Cylinders *24-1-06* Slides *24-1-06* Covers *24-1-06* Pistons *24-1-06* Rods *24-1-06*

Connecting rods *5-2-06* Crank shaft *16-1-06* Thrust shaft *21-2-06* Tunnel shafts *5-2-06* Screw shaft *5-2-06* Propeller *31-1-06*

Stern tube *31-1-06* Steam pipes tested *12-10-06* Engine and boiler seatings Engines holding down bolts *6-10-06*

Completion of pumping arrangements *15-10-06* Boilers fixed *5-10-06* Engines tried under steam *19-10-06*

Main boiler safety valves adjusted *15-10-06* Thickness of adjusting washers *For 1 1/2" Starb 1 1/2" full*

Material of Crank shaft *Iron* Identification Mark on Do. *674* Material of Thrust shaft *Iron* Identification Mark on Do. *674*

Material of Tunnel shafts *Iron* Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. *674*

Material of Steam Pipes *Copper* Test pressure *250 lbs.*

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

The engines and boiler of this vessel have been built under special survey the materials and workmanship are of good description, they have been securely fitted on board and satisfactorily tried under steam. It is in my opinion eligible for notation L. M. C. 10, 06 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 10.06.

Jas Cairns
 31.10.06 31-10-06

The amount of Entry Fee. . . £ 1 : : When applied for. 29 OCT 1906

Special £ 11 : 4 : : When received, 31.10.06

Donkey Boiler Fee £ : : : : : 31.10.06

Travelling Expenses (if any) £ : : : : : 31.10.06

Committee's Minute *Glasgow 29 OCT 1906*

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

Assigned *L.M.C. 10.06.*
 (Subject to classification of hull)

FRI. NOV 2 1906



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