

REPORT ON MACHINERY.

No. 14240

Port of Glasgow

SAT. MAR 7 1896

No. in Survey held at Glasgow
Reg. Book.

Date, first Survey 17 May 1895 Last Survey 29 Feb 1896
(Number of Visits 51)

Received at London Office

on the SS. "Leopolde"

Tons { Gross 643
Net 199

Master W. M. Andrew Built at Robertson By whom built Scott & Sons

When built 1896

Engine made at Glasgow By whom made Muir & Houston, Lem^s when made 1896

Boiler made at Glasgow By whom made Muir & Houston, Lem^s when made 1896

Re Horse Power 90 Owners M^r Robertson

Port belonging to Glasgow

Power as per Section 28 61 102 HP

Description of Engines Triple Expansion, Direct Acting No. of Cylinders Three

Diameter of cylinders 16" - 24" - 42" Length of Stroke 33" Revolutions per minute 90 Diameter of Screw shaft as per rule 7.9"
as fitted 8.0"

Diameter of Crank shaft journals 8" Diameter of Crank pin 8" Size of Crank webs 15 1/2" x 5 3/4"

Pitch of screw 6" No. of blades Four State whether moveable No Total surface 36 sq ft

No. of Feed pumps Two Diameter of ditto 2 1/2" Stroke 16 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 2" Stroke 16 1/2" Can one be overhauled while the other is at work Yes

No. of Donkey Engines One + Calc^s Sizes of Pumps 5 1/2" x 9 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 2 1/2" In Holds, &c. Two - 2 1/2"

No. of bilge injections Two sizes 2 1/2" Connected to condenser, or to circulating pump Calc^s Is a separate donkey suction fitted in Engine room & size Yes - 2 1/2"

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 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 Hot Suctions How are they protected Wood casings

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launching the screw shaft tunnel watertight No tunnel

Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c. — (Letter for record S) Total Heating Surface of Boilers 1550 sq ft.

No. and Description of Boilers One - Cylindrical Multitube Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 11-5-95 Can each boiler be worked separately Yes Area of fire grate in each boiler 55 sq ft No. and Description of safety valves to each boiler Two - Direct Spring Area of each valve 5.9 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 14'-0"

Length 10'-6" Material of shell plates Steel Thickness 1 1/8" Description of riveting: circum. seams Lap, Riv^s Riv^s long. seams Butt, Lap Riv^s

Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 1 1/4" Lap of plates or width of butt straps 18"

Per centages of strength of longitudinal joint rivets 91.5% Working pressure of shell by rules 161 lbs Size of manhole in shell 16" x 12"

Size of compensating ring W. Hails No. and Description of Furnaces in each boiler Three - Plain Material Steel Outside diameter 42"

Length of plain part top 5'-10" bottom 9'-2" Thickness of plates crown 3 1/4" bottom 3 1/4" Description of longitudinal joint Double Strap Butt No. of strengthening rings Yes

Working pressure of furnace by the rules 160 lbs Combustion chamber plates: Material Steel Thickness: Sides 7/8" Back 7/8" Top 7/8" Bottom 1 1/8"

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 8 1/2" x 8 1/2" Top 8" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 161 lbs

Material of stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 68 sq in Working pressure by rules 170 lbs End plates in steam space: Material Steel Thickness 7/8" Pitch of stays 15" x 15" How are stays secured Nuts & Wash^r Working pressure by rules 174 lbs Material of stays Steel

Diameter at smallest part 4 3/4" Area supported by each stay 225 sq in Working pressure by rules 174 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13" Working pressure of plate by rules 170 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 5/8" + 1/8" Back 5/8" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2" Working pressures by rules 216 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 8 1/2" x (1 x 2) Length as per rule 39" Distance apart 4 1/2" Number and pitch of Stays in each Four - 8"

Working pressure by rules 160 lbs Superheater or Steam chest; how connected to boiler Yes 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 _____

142-L.R.P.H.-2,000

Lloyd's Register
GLS 174-0159

1427096

DONKEY BOILER— Description *Vertical - Two Course Tubes*
 Made at *Glasgow* By whom made *Muir & Houston* When made *1896* Where fixed *Stokehold*
 Working pressure *Tested by hydraulic pressure to 140 lbs* No. of Certificate *2139* Fire grate area *10 sq ft* Description of safety valves *Reset Spring*
 No. of safety valves *One* Area of each *4.9* Pressure to which they are adjusted *70 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *4'-3"* Length *9'-6"* Material of shell plates *Steel* Thickness *3/8"*
 Description of riveting long seams *Lap Rivet* Diameter of rivet holes *5/8"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/2"*
 Lap of plating *4 1/2"* Per centage of strength of joint *96%* Rivets *9/16"* Thickness of shell crown plates *1/2"* Radius of do. *4'-6"* No. of Stays to do. *None*
 Dia. of stays *5/8"* Diameter of furnace Top *1'-0 1/2"* Bottom *1'-7"* Length of furnace *4'-10"* Thickness of furnace plates *3/8"* Description of joint *Lap Rivet* Thickness of furnace crown plates *3/8"* Stayed by *Shell crown* Working pressure of shell by rules *103 lbs*
 Working pressure of furnace by rules *87 lbs* Diameter of uptake *10"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two connecting rods top bottom end bolts & nuts; two main bearing bolts; set coupling bolts; set feed & bilge pump valves, bolts, nuts & set*

The foregoing is a correct description,
Muir & Houston Manufacturer.

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

The machinery of this vessel has been built under Special Survey, and in accordance with the Rules of this Society - It has been securely fitted on board, and worked satisfactorily under steam. In my opinion it is eligible for record of + L.M.C. 2-96 in the Register Book.

Enclosed are two Forging Reports, and the approved boiler tracing.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2-96.

W.S. *W.S.*
7.3.96 *7.3.96*

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee..	£ 1 : " :	When applied for,
Special	£ 13 : 10 :	4/31 96
Donkey Boiler Fee .. .	£ " : " :	When received,
Travelling Expenses (if any) £	" : " :	5/31 96

R. J. Bennett
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. MAR 10 1896**
 Assigned *+ L.M.C. 2, 96*

White Duns.

