

REPORT ON MACHINERY.

Port of Glasgow

Received at London Office TUES. 11 APL 1893

No. in Survey held at Glasgow Date, first Survey 23 Oct. 1891 Last Survey 1st Apr. 1893
Reg. Book. (Number of Visits 30)

29 in on the S. S. Louisiana. (a Mandalay) Tons Gross 1942
Net 1263
Master Sinclair Built at Amburton By whom built H. Jemmy & Bros When built 1872

Trip Engines made at Glasgow By whom made Muir & Houston when made 1893

Boilers made at Glasgow By whom made Muir & Houston when made 1893

Registered Horse Power 185 Owners Columbass & Co Port belonging to Glasgow

Nom. Horse Power as per Section 28 -

MEMO attached to book to read

ENGINES, &c.— Description of Engines Triple Exp. two Cranks Tandem No. of Cylinders Four
 Diameter of Cylinders 15, 35 & 55" Length of Stroke 42" Revolutions per minute 70 Diameter of Screw shaft as per rule 11"
 Diameter of Tunnel shaft as per rule 10 7/8" Diameter of Crank shaft journals 11" Diameter of Crank pin 10 7/8" Size of Crank webs old shaft
 Diameter of screw 15-0" Pitch of screw 17-0" No. of blades 4 State whether moveable no Total surface 62 sq. ft
 No. of Feed pumps 2 Diameter of ditto 2 7/8" Stroke 21" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 2 7/8" Stroke 21" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 6" x 3 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room old arrangement old donkey In Holds, &c. old arrangement
 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 yes
 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 about
 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 bilge suction How are they protected flooring
 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 29/3/93. Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from upper deck.

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 2516.
 No. and Description of Boilers One Cyl. Multitubular Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs
 Date of test 15/4/92 Can each boiler be worked separately - Area of fire grate in each boiler 110 sq ft No. and Description of safety valves to
 each boiler two direct spring Area of each valve 12.5" Pressure to which they are adjusted 150 lbs Are they fitted
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 13-0"
 Length 15-6" Material of shell plates Steel Thickness 1 3/32" Description of riveting: circum. seams Lap long. seams d. butt str.
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 17 1/8"
 Per centages of strength of longitudinal joint rivets 86 Working pressure of shell by rules 155 lbs Size of manhole in shell 12 x 16" plate 85
 Size of compensating ring McUells No. and Description of Furnaces in each boiler Six plain Material Steel Outside diameter 39"
 Length of plain part top 5-7" Thickness of plates crown 3 1/16" Description of longitudinal joint butt No. of strengthening rings Iron bottom 6-0" C. Ch = butt
 Working pressure of furnace by the rules 153 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back - Top 9/16" Bottom
 Pitch of stays to ditto: Sides 8" Back - Top 8 x 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 151 lbs
 Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 64 x 56" Working pressure by rules 150 lbs End plates in steam space:
 Material Steel Thickness 1 3/16" Pitch of stays 14" How are stays secured Nuts & wash Working pressure by rules 159 lbs Material of stays Steel
 Diameter at smallest part 2 7/8" Area supported by each stay 196 sq. in Working pressure by rules 150 lbs Material of Front plates at bottom Steel
 Thickness 1/16" Material of Lower back plate Steel Thickness 1/16" Greatest pitch of stays 10" Working pressure of plate by rules 163 lbs
 Diameter of tubes 3" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 1/16" Back 1/16" Mean pitch of stays 8 1/2"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 39" Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 8 x 1" dbl. Length as per rule 39" Distance apart 7" Number and pitch of Stays in each 4. 8"
 Working pressure by rules 157 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 -



12133 8/16

DONKEY BOILER— Description *Vertical with cross tubes*
 Made at *Glasgow* By whom made *Muir & Houston* When made *1893* Where fixed *Stokholm*
 Working pressure *70 lbs* tested by hydraulic pressure to *140 lbs* No. of Certificate *2255* Fire grate area *22 sq ft* Description of safety valves *d. spring*
 No. of safety valves *2* Area of each *5* 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 *6'-0"* Length *13'-0"* Material of shell plates *steel* Thickness *3/8"*
 Description of riveting long seams *d.r. lap* Diameter of rivet holes *19/16* Whether punched or drilled *drill* Pitch of rivets *3 1/2*
 Lap of plating *4 1/2* Per centage of strength of joint *107* Rivets *107* Thickness of shell crown plates *1/16* Radius of do. *flat* No. of Stays to do. *11*
 Dia. of stays. *2"* Diameter of furnace Top *21'-7"* Bottom *5'-6"* Length of furnace *5'-6"* Thickness of furnace plates *9/16* Description of joint *lap* Thickness of furnace crown plates *9/16* Stayed by *as above* Working pressure of shell by rules *81 lbs*
 Working pressure of furnace by rules *71 lbs* Diameter of uptake *16"* Thickness of uptake plates *9/16* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Half crank shaft Piston Rod - 2 Valve Spindle Propeller - also old spare gear originally supplied.*

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

General Remarks (State quality of workmanship, opinions as to class, &c. *The above mentioned vessel's*)
machinery has been converted into triple expansion by means of two high pressure cylinders being fitted on the top of the old ones and working on the same connecting rods. All parts of machinery overhauled and put in good working order. L.p. cylinder lined up. Vessel put in dry dock and necessary alterations made to sea connections. Propeller shaft drawn and fitted with a new propeller. - New boilers complete as above. -
The above was carried out under the late Mr Robson's survey. -
*The machinery has been tried under steam with satisfactory results and the vessel is now in my opinion eligible to the notation: **L.M.C. 4.93 & F.N.B. 93.** -*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 4-93 and F.N.B. 93 and to have its name removed from the limited list.
 W.A.
 11-4-93

Certificate (if required) to be sent to
 The amount of Entry Fee... £ **MACHINERY CERTIFICATE**
 Special £ **12:12** WRITTEN
 Donkey Boiler Fee £ : : When applied for, **4/4/93**
 Travelling Expenses (if any) £ : : When received, **5/4/93**

John Sanderson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Glasgow.

Committee's Minute **FRI 14 APR 1893** **FRI 27 MAY 1898** **TUES. 23 AUG 1898**
 Assigned **L.M.C. 4.93 + F.N.B. 93** **TUES. 11 APR 1899** **TUES. 19 SEP 1899**
Note non limit Tripled 93

The Surveys are requested not to write on or behind the space for Committee's Minutes.

