

# REPORT ON MACHINERY.

No.

14145

Port of

Glasgow

MON. DEC 30 1895

No. in Survey held at  
Reg. Book.

Glasgow

Date, first Survey 10<sup>th</sup> October

Last Survey 23 December 1895

(Number of Visits)

on a boiler intended for Shipment (Ross & Duncan No 657)

Tons { Gross  
Net

Master

Built at

By whom built

When built

Engines made at

Glasgow

By whom made

Ross & Duncan

when made 1895

Boilers made at

Glasgow

By whom made

Ross & Duncan

when made 1895

Registered Horse Power

Owners

Not known

Port belonging to

Nom. Horse Power as per Section 28

## ENGINES, &c.—

Description of Engines

Compound (Interclass)

No. of Cylinders

2

Diameter of Cylinders

13" 26"

Length of Stroke

18"

Revolutions per minute

Diameter of Screw shaft

as per rule

Diameter of Tunnel shaft

as per rule

Diameter of Crank shaft journals

Diameter of Crank pin

Size of Crank webs

Diameter of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

In Holds, &c.

No. of bilge injections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

worked from

## BOILERS, &c.—

(Letter for record S.)

Total Heating Surface of Boilers

616 sq ft

No. and Description of Boilers

one Cylindrical return tubular

Working Pressure

110 lbs

Tested by hydraulic pressure to

220 lbs

Date of test 20.12.95 Can each boiler be worked separately

Area of fire grate in each boiler

26.5 sq ft

No. and Description of safety valves to

each boiler not fitted

Area of each valve

Pressure to which they are adjusted

Are they fitted

with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean diameter of boilers 102"

Length 9' 0"

Material of shell plates

Steel

Thickness

3/32"

Description of riveting: circum. seams

Lap 1 Knot

long. seams

Lap 3 Knots

Diameter of rivet holes in long. seams

1"

Pitch of rivets

4"

Lap of plates or width of butt straps

7 1/4"

Per centages of strength of longitudinal joint

76.2

plate

75

Working pressure of shell by rules

116 lbs

Size of manhole in shell

15 x 11 1/2"

Size of compensating ring

6" x 3" x 1 1/2"

No. and Description of Furnaces in each boiler

two plain

Material

Steel

Outside diameter 33"

Length of plain part

top 6' 4"

bottom 8' 4"

Thickness of plates

crown 7/32"

bottom 7/32" and 7/16"

Description of longitudinal joint

weld

No. of strengthening rings on plates

Working pressure of furnace by the rules

129

Combustion chamber plates: Material

Steel

Thickness: Sides

7/16"

Back

7/16"

Top

7/16"

Bottom

Pitch of stays to ditto: Sides

7"

Back

7"

Top

7"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

110 lbs

Material of stays

Steel

Diameter at smallest part

80 1/4"

Area supported by each stay

49 sq in

Working pressure by rules

131 lbs

End plates in steam space:

Material

Steel

Thickness

5/8"

Pitch of stays

13 x 12"

How are stays secured

Double nuts & washers

Working pressure by rules

110 lbs

Material of stays

Diameter at smallest part

1 1/4"

Area supported by each stay

156 sq in

Working pressure by rules

115 lbs

Material of Front plates at bottom

Steel

Thickness

7/8"

Material of Lower back plate

Steel

Thickness

5/8"

Greatest pitch of stays

11"

Working pressure of plate by rules

111 lbs

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/4 x 4 1/8"

Material of tube plates

Steel

Thickness: Front

5/8"

Back

5/8"

Mean pitch of stays

10' 4.5"

Pitch across wide water spaces

13"

Working pressures by rules

162

Girders to Chamber tops: Material

Iron

Depth and

thickness of girder at centre

4 3/4" 2 x 7/8"

Length as per rule

Working pressure by rules

223 lbs

Superheater or Steam chest; how connected to boiler

Flange

Can the superheater be shut off and the boiler worked

separately

Diameter

24"

Length

2 1/6"

Thickness of shell plates

3/8"

Material

Steel

Description of longitudinal joint

Lap 2 1/2"

Diam. of rivet

holes

3/4"

Pitch of rivets

2 3/4"

Working pressure of shell by rules

224 lbs

Diameter of flue

—

Material of flue plates

—

Thickness

—

If stiffened with rings

—

Distance between rings

—

Working pressure by rules

—

End plates: Thickness

1/16"

How stayed

double 2 1/4" radius

Working pressure of end plates

250 lbs

Area of safety valves to superheater

—

Are they fitted with easing gear

—

—

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Lloyd's Register

Foundation

965173-0351



14145 JLD

**DONKEY BOILER—** Description none

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_

joint \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied :—

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

**General Remarks** (State quality of workmanship, opinions as to class, &c. This boiler has been built under the conditions of special survey of good material and workmanship and has been satisfactorily tested by hydraulic pressure.  
The engines have not been built under survey.

These engines and boilers are being shipped to Rio de Janeiro but the name of the future owner is not known to the builders

This case is submitted for the favourable consideration of the Committee

This Boiler has been built under Special Survey but as it appears to be intended for an unclassified vessel, it is submitted that no further action be taken in this report.

Emd.  
30-12-95

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee	£	:	:	When applied for,
Special	£	3	3	26/12/95
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	24/12/95

C. J. Bromeyer  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned Not for Council