

## REPORT ON MACHINERY.

No. 31636

Received at London Office

WED. JUL. 10. 1912

Date of writing Report

19

When handed in at Local Office

6.7. 10 12 Port of Glasgow

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

6.4.11.

Last Survey

5.7. 1912

on the

S/S "Intoumbi"

(Number of Visits 69)

Gross 2884

Net 2504

Master

Built at

P. Glasgow By whom built J. H. Harrison

When built

1912

Engines made at

Glasgow

By whom made

Dunsmuir Jackson &amp; Co.

when made

1912

Boilers made at

ditto

By whom made

ditto

when made

1912

Registered Horse Power

Owners

J. H. Harrison

Port belonging to

Liverpool

Nom. Horse Power as per Section 28

364

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

## ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

22-34 62

Length of Stroke

48

Revs. per minute

45

Dia. of Screw shaft

as per rule 13.9

Material of

S

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

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

4-10

Dia. of Tunnel shaft

as per rule 12.5

Dia. of Crank shaft journals

as per rule 13.1

Dia. of Crank pin

13 3/4

Size of Crank webs

26 x 9

Dia. of thrust shaft under

collars

13 1/2

Dia. of screw

16.9

Pitch of Screw

17.0

No. of Blades

4

State whether moveable

Yes

Total surface

87.5

No. of Feed pumps

2

Diameter of ditto

3 3/4

Stroke

26

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4

Stroke

26

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

3

SIZES OF PUMPS

4 x 9 1/2 x 21

Pair WEIRS

4 x 4 1/2 x 8

Ball 10 x 10 x 10

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

In Engine Room

4

3 1/2

In Holds, &amp;c.

2

3 1/2 in each hold

No. of Bilge Injections

1

sizes

7"

Connected to condenser, or to circulating pump

Yes

Is a separate Donkey Suction fitted in Engine room &amp; size

Yes

3 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

None

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

Both

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

None

How are they protected

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

Report

of Stern Tube

Report

Screw shaft and Propeller

Report

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

U.E.R. Platform

## BOILERS, &amp;c.—(Letter for record)

Manufacturers of Steel

Steel &amp; Co. of Scotland James &amp; Co. Ltd.

Total Heating Surface of Boilers

6255

Is Forced Draft fitted

No

No. and Description of Boilers

3 Single Ended

Working Pressure

215

Tested by hydraulic pressure to

430

Date of test

29-11-11

No. of Certificate

11302

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

57.4

No. and Description of Safety Valves to

each boiler

Double Spring

Area of each valve

5.9

Pressure to which they are adjusted

220

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

1-6"

Mean dia. of boilers

15-1 3/4"

Length

11.9

Material of shell plates

S

Thickness

1 3/4"

Range of tensile strength

29-32

Are the shell plates welded or flanged

Yes

Descrip. of riveting: cir. seams

DR

long. seams

TR &amp; DBS

Diameter of rivet holes in long. seams

1 3/4"

Pitch of rivets

10 1/2"

Gap of plates or width of butt straps

1-11 1/2"

Per centages of strength of longitudinal joint

rivets

84-64

plate

85.7

Working pressure of shell by rules

233

Size of manhole in shell

16 x 12"

Size of compensating ring

McNeil

No. and Description of Furnaces in each boiler

3 Corrugated

Material

S

Outside diameter

3-10

Length of plain part

top

bottom

Thickness of plates

crown

11 1/6"

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

239

Combustion chamber plates: Material

S

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Pitch of stays to ditto: Sides

9 1/2 x 8 1/4"

Back

8 x 9 1/2"

Top

8 1/2 x 8 3/4"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

216

Material of stays

S

Diameter at smallest part

2 1/4 x 3 1/4"

Area supported by each stay

78"

Working pressure by rules

226

End plates in steam space:

Material

S

Thickness

13/16"

Pitch of stays

18 1/4 x 15 1/2"

How are stays secured

DN

Working pressure by rules

221

Material of stays

S

Diameter at smallest part

6.9"

Area supported by each stay

283"

Working pressure by rules

241

Material of Front plates at bottom

S

Thickness

15/32"

Material of Lower back plate

S

Thickness

1"

Greatest pitch of stays

15 x 9 1/2"

Working pressure of plate by rules

233

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2 x 4 9/16"

Material of tube plates

S

Thickness: Front

15/32"

Back

29/32"

Mean pitch of stays

11 1/32"

Pitch across wide water spaces

14 3/16"

Working pressures by rules

230

Girders to Chamber tops: Material

Iron

Depth and

thickness of girder at centre

11 x 1 (2)

Length as per rule

3-6"

Distance apart

8 3/4"

Number and pitch of stays in each

4 at 8 1/2"

Working pressure by rules

220

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

Yes

Foundation



VERTICAL DONKEY BOILER—

Manufacturers of Steel

None

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 easing 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 Connecting Rod bolts 1 Nut for bottom end ditto for top end  
 2 Main Bearing bolts 1 Set of Coupling bolts 1 Set of Feed Bridge Pump Valves 1 Set  
 of Piston Rings. A Quantity of Assorted bolts Nuts Iron of various sizes  
 1 Propeller Shaft. a number of Studs for Propeller Box 1 Air Pump Rod. &c

The foregoing is a correct description,

FOR DUNSMuir & JACKSON, Limited

James Fletcher Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1911. April 6. 10. 19. 28. May 2. 16. 24. 29. 31. June 7. 19. 26. 30. July 6. 26. 31. Aug. 7. 21. 31. Sept. 7. 11. 26.  
 During erection on board vessel --- Oct. 10. 17. 24. 30. Nov. 7. 9. 13. 16. 20. 25. 29. Dec. 5. 15. 19. 20. 1912. Jan. 8. 11. 17. 29. Feb. 6. 12. 15.  
 Total No. of visits 69- July 5. Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders 20-2-12 Slides 24 2. 12 Covers 20-2-12 Pistons 20-2-12 Rods 12. 2. 12  
 Connecting rods 12. 2. 12 Crank shaft 12. 2. 12 Thrust shaft 11-1-12 Tunnel shafts 20-11-11 Screw shaft 3-4-12 Propeller 6-5-12  
 Stern tube 6-5-12 Steam pipes tested 17-6-12 Engine and boiler seatings Report Engines holding down bolts 24. 6. 12  
 Completion of pumping arrangements 24 6. 12 Boilers fixed 10-6-12 Engines tried under steam 5- 7-12  
 Main boiler safety valves adjusted 26-6-12 Thickness of adjusting washers F 7/16 A 13/32 P 11/2 S 15/32 P 7/16 S 13/32  
 Material of Crank shaft Steel Identification Mark on Do. LLOYDS W.G.M. 400 Material of Thrust shaft Steel Identification Mark on Do. LLOYDS W.G.M. 400  
 Material of Tunnel shafts Steel Identification Marks on Do. ditto Material of Screw shafts ditto Identification Marks on Do. ditto  
 Material of Steam Pipes Iron Test pressure 645

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines & Boilers have been built under Special Survey in accordance with the approved plan & the workmanship and material are of good quality. The Machinery is eligible in my opinion for the record of L.M.C. 4-12.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 7.12.

JUN 11/3/12

Wm Gordon Murchie  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry fee .. £ 3 : - : When applied for, 26-6-12  
 Special .. £ 38. 4 : :  
 Donkey Boiler Fee .. £ : : :  
 Travelling Expenses (if any) £ : : : When received, 28-6-12.

Committee's Minute GLASGOW 9-JUL 1912  
 Assigned + L.M.C. 7.12



Lloyd's Register Foundation

Glasgow

Certificate (if required) to be sent to

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