

## REPORT ON MACHINERY. SAT. 29 SEP 1906

Port of

Belfast

Received at London Office

19

No. in Survey held at  
Reg. Book.

Belfast

Date, first Survey 8 Dec 1905 Last Survey 20 Sept 1906

(Number of Visits 67)

Gross 604 1/2

on the

Japan

Tons

Net 3806

Master

J. J. J. J.

Built at

Belfast

By whom built

Workman Clark &amp; Co

Engines made at

Belfast

By whom made

Boilers made at

Belfast

By whom made

Registered Horse Power

Owners

Ascar &amp; Co

Port belonging to Calcutta

Nom. Horse Power as per Section 28

996

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

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

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders

31"-52 1/2"-88"

Length of Stroke 60

Revs. per minute 75

Dia. of Screw shaft

as per rule 17.63  
as fitted 18.0

Material of screw shaft

I. Steel

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

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

Yes

Length of stern bush 72"

Dia. of Tunnel shaft

as per rule 16.47  
as fitted 16.47

Dia. of Crank shaft journals

as per rule 17.3  
as fitted 17.3

Dia. of Crank pin

17 1/2"

Size of Crank web

33 1/2" x 12"

Dia. of thrust shaft under

collars

Dia. of screw

19'-0"

Pitch of Screw

21'-6"

No. of Blades 4

State whether moveable

Yes

Total surface

105 sq ft.

No. of Feed pumps

2

Diameter of ditto

5 1/2"

Stroke 30"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4 1/2"

Stroke 30"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

See other sheet

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

In Engine Room

4-3 1/2"

In Holds, &amp;c.

9-8 1/2"

1-2 1/2"

No. of Bilge Injections

1

sizes 11"

Connected to condenser, or to circulating pump

Pump

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

Fore lock suction

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

2-7-06

of Stern Tube

2-7-06

Screw shaft and Propeller

2-7-06

Is the Screw Shaft Tunnel watertight

Stated to be

it fitted with a watertight door

Yes

BOILERS, &amp;c.—(Letter for record 5)

Manufacturers of Steel

Guest Keen

Metropolitan

Steel Coy

Sect

3. Double End Cyl

No. and Description of Boilers

1

No. of Certificate

384

Total Heating Surface of Boilers

13227 sq ft

Is Forced Draft fitted

Yes

Working Pressure

200 lbs

Tested by hydraulic pressure to

400 lbs

Date of test

8-8-06

No. of Certificate

384

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

END 59

No. and Description of Safety Valves to

each boiler

3

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

20

Mean dia. of boilers

14'-6"

Length

19'-0"

Material of shell plates

Steel

Thickness

1 1/2"

Range of tensile strength

28-32 tons

Are the shell plates welded or flanges

No

Descrip. of riveting: cir. seam

L. Riv.

long. seams

Butt

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/4"

Length of plates or width of butt straps

21 1/4"

Per centages of strength of longitudinal joint

rivets 88.2

plate 85.0

Working pressure of shell by rules

228 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

McNeill

No. and Description of Furnaces in each boiler

6-Doyleton

Material

Steel

Outside diameter

47 1/4"

Length of plain part

top 4

Thickness of plates

crown 3 1/2

bottom 3 1/4

Description of longitudinal joint

Weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

284 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

3 1/2"

Back

Yes

Top

2 1/2"

Bottom

1"

Pitch of stays to ditto: Sides

8 1/4" x 8"

Back

Yes

Top

8 1/4" x 7 1/4"

If stays are fitted with nuts or riveted heads

Nuts inside

Working pressure by rules

251 lbs

plates in steam space:

Material of stay

Steel

Material of stay

Steel

Diameter at smallest part

1 1/2"

Area supported by each stay

70 sq"

Working pressure by rules

281 lbs

Material of stay

Steel

Material of stay

Steel

Thickness

1 1/4"

Pitch of stays

17 1/2" x 15 1/2"

How are stays secured

Nuts inside

Material of Front plates at bottom

Steel

Diameter at smallest part

24" x 36"

Area supported by each stay

27 1/4 sq"

Working pressure by rules

275 lbs

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Yes

Thickness

Yes

Greatest pitch of stays

Yes

Working pressure of plate by rules

Yes

Diameter of tube

2 1/2"

Pitch of tubes

35" x 3 1/2"

Material of tube plates

Steel

Thickness: Front

1"

Back

1 1/8"

Mean pitch of stays

7 1/8" x 7 1/4"

Pitch across wide water spaces

13 1/2"

Working pressures by rules

2 1/2 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

13 1/2" x (1/4" x 2)

Length as per rule

46 3/8"

Distance apart

8" x 7 1/4"

Number and pitch of stays in each

4-8 1/4"

Working pressure by rules

2 1/6 lbs

Superheater or Steam chest; how connected to boiler

Yes

Can the superheater be shut off and the boiler worked

Yes

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

Lloyd's Register

Foundation

W. 1480-0015



# 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 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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *See other sheet*

The foregoing is a correct description,

FOR WORKMAN, CLARK & CO., LIMITED

*M. H. Bell*

Manufacturer.

Dates of Survey while building { During progress of work in shops— 1905, Dec 18, 20, 1906, Jan 3, 8, 10, 17, 19, 24, 25, 29, Feb 2, 6, 8, 13.  
During erection on board vessel— 15, 20, 26, March 1, 5, 8, 13, 15, 22, 28, April 2, 11, up to 20 Sept 1906  
Total No. of visits 67

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders 8-1-06 Covers 6 Pistons 6 Rods 6

Connecting rods 2/8/06 Crank shaft 12/6/06 Thrust shaft do Tunnel shafts do Screw shaft do Propeller do

Stern tube 30/5/06 Steam pipes tested 28/8/06 Engine and boiler seatings 22/8/06 Engines holding down bolts 2/9/06

Completion of pumping arrangements 6/9/06 Boilers fixed 3/9/06 Engines tried under steam 20/9/06

Main boiler safety valves adjusted 20/9/06 Thickness of adjusting washers 12-7/8 82

Material of Crank shaft S. Steel Identification Mark on Do. 440588 7.5/8 12-6-06 Material of Thrust shaft do Identification Mark on Do. do

Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. do

Material of Steam Pipes W. Iron Test pressure 400

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

*The machinery of this vessel has been constructed under Special Surveys, and in accordance with the Rules. The workmanship, and the materials are of good description, and on trial in Belfast Lough the machinery worked satisfactorily. In my opinion, it is eligible for record of Survey + L.M.C. 9-06 in the Register Book, with notation "Forced Draft & Electric Light"*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.06 F.D. ELEC. LIGHT.

The amount of Entry Fee.. £ 3 : - : When applied for. 26/9/1906

Special .. £ 69 : 16 : When received. 29.9.06

Donkey Boiler Fee .. £ : : 1906

Travelling Expenses (if any) £ : : 1906

Committee's Minute

TUES. OCT 2 1906

Assigned

*R. L. Beveridge*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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MACHINERY CERTIFICATE WRITTEN

Certificate (if required) to be sent to this office

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

Is a Report also sent on the Hull of the Ship?

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