

## REPORT ON MACHINERY.

2106 mab

Port of WEST HARTLEPOOL.

THUR, 24 JUN 1897

Received at London Office

No. in Survey held at  
Book.

WEST HARTLEPOOL.

Date, first Survey

12<sup>th</sup> Nov. 1896

Last Survey

30<sup>th</sup> April, 1897

on the

S.S. "Sai-Hoku"

Number of Visits

23<sup>rd</sup> June

Gross 3149.

Net 1834.

When built 1897

Master Charles George Bonar.

Built at

Middlesex

By whom built

Li Raylton Dixon &amp; Co

Engines made at

Hartlepool

By whom made

J. Richardson &amp; Son Ltd.

when made

1897

Milers made at

Do

By whom made

Do

Do

Do

Do

Do

when made

1897

Registered Horse Power

Owners

Osaka Shosen Kabushiki Kaisha

Port belonging to

Osaka

Horse Power as per Section 28

552

Is Electric Light fitted

Yes.

ENGINES, &amp;c.—Description of Engines

Triple expansion

No. of Cylinders

3

No. of Cranks

3

Diameter of Cylinders

28.46.77

Length of Stroke

48

Revolutions per minute

75

Diameter of Screw shaft

as per rule 13.68

Diameter of Tunnel shaft

as per rule 13.68

as fitted 13.68

Diameter of Crank shaft journals

14.4

Diameter of Crank pin

14.4

Size of Crank webs

9 1/2 x 2 1/2

Diameter of screw

17.6

Pitch of screw

18.0

No. of blades

4

State whether moveable

Yes

Total surface

85.4

No. of Feed pumps

Heirs

Diameter of ditto

8

Stroke

21

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

2

Diameter of ditto

4

Stroke

27

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

2

Sizes of Pumps

6 x 10 x 10.9

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

In Engine Room

Lap 3 1/2, two 3" bilge injection 9 1/4

In Holds, &amp;c.

Main Hold One 3 1/2 dia.

Tunnel well. One 3 1/2 dia.

No. of bilge injections

1 sizes 9 1/4

Connected to condenser, or to circulating pump

Pumps a separate donkey suction fitted in Engine room &amp; size 9 1/2 x 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

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

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

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

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

Since launch only

the screw shaft tunnel watertight

Apparently.

Is it fitted with a watertight door

Yes.

worked from

Upper platform of Engine Room.

BOILERS, &amp;c.—

(Letter for record B.)

Total Heating Surface of Boilers

10,000 sq

Is forced draft fitted

No

No. and Description of Boilers

Two double ended triple end

Working Pressure

180

Tested by hydraulic pressure to

360

Date of test

25.3.97

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

107 sq

No. and Description of safety valves to

each boiler

Two Spring

Area of each valve

14.18

Pressure to which they are adjusted

185 lb

Are they fitted

with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

18"

Length

16.6

Material of shell plates

Steel

Thickness

1 1/2

Description of riveting: circum. seams

Lap

long. seams

A.B. tie

Diameter of rivet holes in long. seams

1 3/4

Pitch of rivets

8 1/2"

Lap of plates or width of butt straps

19 1/2"

Per centages of strength of longitudinal joint

rivets

plate

84.92

Working pressure of shell by rules

187

Size of manhole in shell

16 1/2 x 13

Size of compensating ring

2.6 x 2.6 x 1 1/2

No. and Description of Furnaces in each boiler

6 Morrison

Material

Steel

Outside diameter

3.7

Length of plain part

top 6.0

bottom 6.6

Thickness of plates

crown 9/16

bottom 7/16

Description of longitudinal joint

Beaded

No. of strengthening rings

2

Working pressure of furnace by the rules

205

Combustion chamber plates: Material

Steel

Thickness: Sides

3/8"

Pitch of stays to ditto: Sides

8 1/4"

Back

8 1/4"

Top

8 1/4"

If stays are fitted with nuts or riveted heads

None

Working pressure by rules

187

Material of stays

Steel

Diameter at smallest part

1 1/8"

Area supported by each stay

72 sq

Working pressure by rules

258

End plates in steam space:

Material

Steel

Thickness

1 3/4"

Pitch of stays

18 x 17"

How are stays secured

None

Working pressure by rules

240

Material of stays

Steel

Diameter at smallest part

2 3/4"

Area supported by each stay

306 sq

Working pressure by rules

191

Material of Front plates at bottom

Steel

Thickness

1 3/4"

Material of Lower back plate

Steel

Thickness

1 3/4"

Greatest pitch of stays

Working pressure of plate by rules

187

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2"

Material of tube plates

Steel

Thickness: Front

1"

Back

1"

Mean pitch of stays

9"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

189

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

11 x 1 3/4"

Length as per rule

3.3

Distance apart

8 1/2"

Number and pitch of Stays in each

Three 8 1/4"

Working pressure by rules

187

Superheater or Steam chest; how connected to boiler

None

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

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

Lloyd's Register



REPORT ON MACHINERY

DONKEY BOILER— Description *no donkey boilers fitted.*

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. in S  
No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can \_\_\_\_\_ Reg. Book.  
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 of \_\_\_\_\_  
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: *2 Main bearing bolts & nuts, 2 top end bolts & nuts, 2 bottom end bolts & nuts, 1 set of shaft coupling bolts & nuts, 3rd fast crank & one propeller shaft, 1 pair of bottom end bushes, 1 pair of crosshead shoes, 1 set of pump link shoes, 1 Eccentric strap, Air & circulating pump rods & bushes, 24. P. & L. P. Slide Spindles, 1 set of check valves, 50 condenser tubes, 24 boiler tubes, piston & safety valve springs*  
The foregoing is a correct description,  
For THOMAS RICHARDSON & SONS, LIMITED Manufacturer.

Dates { During progress of work in shops - - - - -  
Of Survey while building { During erection on board vessel - - - - -  
Total No. of visits *65*

Director. { 1896. - Nov. 12. 16. 17. 18. 19. 23. 24. 25. 26. 28. Dec. 3. 7. 8. 10. 17. 21. 25. 29. 30.  
1897. - Jan. 5. 8. 9. 11. 16. 21. 25. 26. 27. 30. Feb. 1. 3. 4. 6. 8. 11. 12. 17. 18. 19. 23. 24. 25.  
March 1. 2. 3. 4. 5. 8. 9. 12. 15. 17. 19. 23. 25. 27. 30. April 6. 7. 8. 9. 15. 26. 28. 30.  
Mar. 26. May 19. 24. 26. June 3. 5. 11. 14. 15. 23.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery has been specially surveyed during construction the material and workmanship good & renders the vessel eligible in our opinion to have the Record **L.M.C. 6.97** in the Register Book of the Society.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.97. Elec Light

*R.S.*  
24. 6. 97

The amount of Entry Fee £ *3* :  
Special £ *47* : *12* :  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : :  
Committee's Minute  
Assigned

When applied for, *23. 6. 97*  
*Richard Harris & Ridley Towell*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

THUR, 24 JUN 1897

MACHINERY CERTIFICATE

WRITTEN

+ L.M.C. 6.97 Elec. Light



Lloyd's Register Foundation

Certificate (if required) to be sent to

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