

REPORT ON MACHINERY.

2106 mto

Port of WEST HARTLEPOOL.

THUR, 24 JUN 1897

Received at London Office

No. in Survey held at WEST HARTLEPOOL.

Date, first Survey 12th Nov. 1896 Last Survey 30th April, 1897

Book. S.S. "Sai-Hoku"

Number of Visits 03 23rd June

on the S.S. "Sai-Hoku" Built at Middlesex By whom built Li Raylton Dixon & Co

Tons { Gross 3149.
Net 1834.

Registered at Hartlepool By whom made J. Richardson & Son L^{td} when made 1897

Engines made at do By whom made do when made 1897

Registered Horse Power 552 Owners Osaka Shosha Kabushiki Kaisha Port belonging to Osaka

Is Electric Light fitted Yes.

Engines, &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 13.2 Diameter of Crank shaft journals 14 1/4 Diameter of Crank pin 14 3/4 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 None 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 & 10.9 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Low 3 1/2", two 3" bilge injection 9 1/4" In Holds, &c. Main Hold One 3 1/2" dia.

Fore Hold. Two 3" dia. Aft Hold One 3 1/2" dia. Tunnel with One 3 1/2" dia.

No. of bilge injections 1 sizes 9 1/4 Connected to condenser, or to circulating pump ump a separate donkey suction fitted in Engine room & 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 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 launching the screw shaft tunnel watertight Apparently.

Is it fitted with a watertight door Yes. worked from Upper platform of Engine Room.

BOILERS, &c.— (Letter for record B.) Total Heating Surface of Boilers 10,000 Is forced draft fitted No

No. and Description of Boilers Two double & two single 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 107.4 double ended only

each boiler Two Spring Area of each valve 14.18 Pressure to which they are adjusted 185 lb Are they fitted with casing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean diameter of boilers 14.0"

Length 16.6 Material of shell plates Steel Thickness 1 3/8 Description of riveting: circum. seams Lap long. seams A.B. Tackle

Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint 88.02 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 3/8 No. and Description of Furnaces in each boiler 6 Morrison Material Steel Outside diameter 3.7

Length of plain part 6.0 Thickness of plates 9/16 Description of longitudinal joint Breasted No. of strengthening rings 2

Working pressure of furnace by the rules 205 Combustion chamber plates: Material Steel Thickness: Sides 3/8" Back 5/8" Top 5/8" Bottom 5/8"

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 Nuts Working pressure by rules 187

Material of stays Steel Diameter at smallest part 1 1/8" Area supported by each stay 720 Working pressure by rules 258 End plates in steam space:

Material Steel Thickness 1 3/8 Pitch of stays 18 x 14 How are stays secured Ang N^{ts} Working pressure by rules 240 Material of stays Steel

Diameter at smallest part 2 3/8 Area supported by each stay 3060 Working pressure by rules 191 Material of Front plates at bottom Steel

Thickness 1 3/8 Material of Lower back plate do Thickness do Greatest pitch of stays do Working pressure of plate by rules do

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 do 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 do Diameter do Length do Thickness of shell plates do Material do Description of longitudinal joint do Diam. of rivet holes do Pitch of rivets do Working pressure of shell by rules do Diameter of flue do Material of flue plates do Thickness do

If stiffened with rings do Distance between rings do Working pressure by rules do End plates: Thickness do How stayed do

Working pressure of end plates do Area of safety valves to superheater do Are they fitted with casing gear do

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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

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

trapes, 1 Set of pump link trapes, 1 Eccentric Strap, Air & circulating pump

rods & sockets, 24. 24. 24. Slide Spindles

1 Set of check valves, 50 condenser tubes

24 boiler tubes, pistons & Safety valve springs

The foregoing is a correct description, _____

For THOMAS RICHARDSON & SONS, LIMITED _____ Manufacturer.

Dates _____ 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.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery has been*

Specially Inspected during construction the material and

workmanship good & renders the vessel eligible in our

*opinion to have the Record **R.L.M.C. 6.97** in the Register*

Book of the Society.

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

R.L.
24. 6. 97

The amount of Entry Fee £ 3: _____
Special £ 47: 12: _____
Donkey Boiler Fee £ _____
Travelling Expenses (if any) £ _____

When applied for, *23. 6. 97*
not received
24. 6. 97
Richard Cross & Ridley Towell
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute _____
Assigned _____

THUR, 24 JUN 1897

MACHINERY CERTIFICATE WRITTEN

+ R.L.M.C. 6.97 Elec Light



Lloyd's Register Foundation

Certificate (if required) to be sent to _____
(The Surveys are required not to write on or below the space for Committee's Minute.)