

# REPORT ON MACHINERY.

SEP 17 1901

Port of Glasgow.

Received at London Office

19

No. in Survey held at Glasgow Date, first Survey 23 Oct 00 Last Survey 7 Sept 01.

Range Reg. Book.

(Number of Visits 52)

Pitch of rive on the Seren Steamer Kumano Maru. Tons } Gross

Stays to do. Master Built at Glasgow By whom built Fairfield Shipbldg Engs 674 When built 1901

Engines made at Glasgow By whom made Fairfield Shipbldg Engs 674 when made 1901

Boilers made at Glasgow By whom made Fairfield Shipbldg Engs 674 when made 1901.

Registered Horse Power Owners Nippon Yusen Kaisha Port belonging to Tokio.

Nom. Horse Power as per Section 28 488. Is Refrigerating Machinery fitted Yes Is Electric Light fitted Yes.

## ENGINES, &c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders Length of Stroke Revs. per minute Dia. of Screw shaft as per rule as fitted Lgth. of stern bush

Dia. of Tunnel shaft as per rule as fitted Dia. of Crank shaft journals as per rule as fitted Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under

collars Dia. 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 ✓ Is forced draft fitted no.

No. and Description of Boilers 2: Cylind. hull: Single ended. Working Pressure 185 lbs Tested by hydraulic pressure to 370 lbs.

Date of test 6/14/01. Can each boiler be worked separately Yes. Area of fire grate in each boiler 68 sq. ft. No. and Description of safety valves to

each boiler 2: Direct Spring Area of each valve 4.67" Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork About 7" Mean dia. of boilers 15.6" Length 10.6" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 27-32 tons Are they welded or flanged no. Descrip. of riveting: cir. seams Lap Riveted long. seams Double Butt Straps.

Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10" Top of plates width of butt straps 20"

Per centages of strength of longitudinal joint rivets 84 Working pressure of shell by rules 212 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring Flanged Ring. No. and Description of Furnaces in each boiler 3: Monson's. Material Steel Outside diameter 50 1/2"

Length of plain part top 4.0" Thickness of plates crown 5/8" Description of longitudinal joint weld. No. of strengthening rings partial.

Working pressure of furnace by the rules 200 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 3/4" x 3/4" Back 3/4" x 3/4" Top 8" x 3/4" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 184 lbs.

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 62 1/2 sq. in. Working pressure by rules 185 lbs. End plates in steam space:

Material Steel Thickness 1 1/2" Pitch of stays 15" x 15" How are stays secured Double nuts. Working pressure by rules 252 lbs. Material of stays Steel

Diameter at smallest part 2 3/8" Area supported by each stay 225 sq. in. Working pressure by rules 213 lbs. Material of Front plates at bottom Steel

Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 12" Working pressure of plate by rules 200 lbs.

Diameter of tubes 3/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2" Working pressures by rules 223 lbs. 238 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/4" x 1 1/2" Length as per rule 30" Distance apart 8" Number and pitch of Stays in each 3: 3 1/2"

Working pressure by rules 192 lbs. Superheater or Steam chest; no. 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

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

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**DONKEY BOILER**— No. \_\_\_\_\_ Description \_\_\_\_\_

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 boiler \_\_\_\_\_

enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of te \_\_\_\_\_

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 \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Plates \_\_\_\_\_

Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Descripti \_\_\_\_\_

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 FAIRFIELD SHIPBUILDING AND  
ENGINEERING CO., LIMITED.

The foregoing is a correct description,

*[Signature]*  
Manufacturer.

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - -

Total No. of visits

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

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

See other sheet.

Material of screw shaft \_\_\_\_\_ Is the screw shaft fitted with a continuous liner the whole length of the stern tube \_\_\_\_\_

Is the after end of the liner made water tight in the propeller boss \_\_\_\_\_ If the liner is in more than one length are the joints burned \_\_\_\_\_

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 non-corrosive \_\_\_\_\_ If two liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_

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

The amount of Entry Fee. . . . . £	:	:	When applied for,
Special . . . . . £	:	:	19
Donkey Boiler Fee . . . . . £	:	:	When received,
Travelling Expenses (if any) £	:	:	19

*[Signature]*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Glasgow, 16 SEP. 1901

Assigned See accompanying report

Port \_\_\_\_\_

No. of Reg. B \_\_\_\_\_

Owner \_\_\_\_\_

Yard \_\_\_\_\_

DESCR \_\_\_\_\_

Capacity \_\_\_\_\_

Where \_\_\_\_\_

Positi \_\_\_\_\_

Positi \_\_\_\_\_

If cut \_\_\_\_\_

If ves \_\_\_\_\_

Are th \_\_\_\_\_

RCUITS. \_\_\_\_\_

Saloon. \_\_\_\_\_

Stateroom \_\_\_\_\_

Midships \_\_\_\_\_

Port. \_\_\_\_\_

Midships \_\_\_\_\_

Starboard \_\_\_\_\_

Poop. \_\_\_\_\_

Forecastl \_\_\_\_\_

Tweendeck \_\_\_\_\_

Cargo Clus \_\_\_\_\_

Cargo Clus \_\_\_\_\_

Engine Room. \_\_\_\_\_

1 Venti \_\_\_\_\_

2 Venti \_\_\_\_\_

2 Venti \_\_\_\_\_

1 Venti \_\_\_\_\_

2 Venti \_\_\_\_\_

Are a \_\_\_\_\_

Are t \_\_\_\_\_

How \_\_\_\_\_

dir \_\_\_\_\_