

# REPORT ON MACHINERY.

No. 34573.

WED. NOV. - 4. 1914

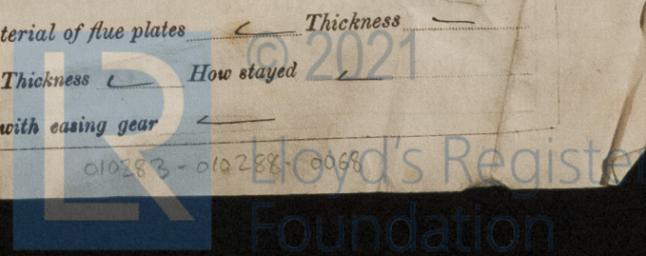
Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 3/3/14 Last Survey 24/10/1914  
 Reg. Book. J.S.S. "Yushima Maru" (Number of Visits 59)  
 on the J.S.S. "Yushima Maru" Tons } Gross 6712  
 Net 4314  
 Master E. Combes Built at Port Glasgow By whom built Russell & Co When built 1914  
 Engines made at Glasgow By whom made D. Rowan & Co (6/9/20.) when made 1914  
 Boilers made at Glasgow By whom made D. Rowan & Co (6/9/20.) when made 1914  
 Registered Horse Power \_\_\_\_\_ Owners Nippon Yusen Kabushiki Kaisha Port belonging to Tokio  
 Nom. Horse Power as per Section 28 619 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6  
 Dia. of Cylinders 20" 33 1/2" 36" Length of Stroke 48" Revs. per minute \_\_\_\_\_ Dia. of Screw shaft as per rule 12.55" Material of screw shaft Steel  
 as fitted 13.35"  
 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 Length 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 Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 4'-6"  
 Dia. of Tunnel shaft as per rule 11.42" Dia. of Crank shaft journals as per rule 12.2" Dia. of Crank pin 12 1/2" Size of Crank webs 8" Dia. of thrust shaft under  
 collars 12 1/2" Dia. of screw 16-6 Pitch of Screw 17'-6" No. of Blades 4 State whether moveable Yes Total surface 728 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 4 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 Sizes of Pumps 9x6x10, 8x5x8, 9x12 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room (4) 3 1/2" In Holds, &c. (2) in each hold 3 1/2", and (1) 2 1/2"  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room of 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 & Below  
 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 \_\_\_\_\_  
 What pipes are carried through the bunkers port 1 3/4" Bilge & Ballast 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 \_\_\_\_\_ of Stern Tube \_\_\_\_\_ Screw shaft and Propeller \_\_\_\_\_  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Amis Dunlop & Co Ltd & The Lancashire Steel Co Ltd  
 Total Heating Surface of Boilers 8892 Is Forced Draft fitted Yes No. and Description of Boilers 4 Single ended  
 Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 18/8/14 No. of Certificate 12843  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 54 1/4 sq ft No. and Description of Safety Valves to  
 each boiler 1 pair direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 205 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork About 2'-0" Mean dia. of boilers 14.3 Length 11.6 Material of shell plates Steel  
 Thickness 1 7/16" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams lap double  
 long. seams butt table Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 22"  
 Per centages of strength of longitudinal joint \_\_\_\_\_ rivets 23.5 Working pressure of shell by rules 227 Size of manhole in shell 16x12"  
 Size of compensating ring 2-8x3-0x17 1/2 No. and Description of Furnaces in each boiler 3 tube type Material Steel Outside diameter 3'-9 3/32"  
 Length of plain part \_\_\_\_\_ Thickness of plates \_\_\_\_\_ crown 7.36 Description of longitudinal joint welded No. of strengthening rings \_\_\_\_\_  
 Working pressure of furnace by the rules 207 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"  
 Pitch of stays to ditto: Sides 9 3/4" x 8 1/2" Back 9 1/2" x 9 1/2" Top 11 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 200 End plates in steam space:  
 Material of stays Steel Diameter at smallest part 2.07 Area supported by each stay 93.5 Working pressure by rules 200 Material of stays Steel  
 Material Steel Thickness 1 1/32" Pitch of stays 9 3/4" x 19 1/2" How are stays secured 2 nuts Working pressure by rules 200 Material of Front plates at bottom Steel  
 Diameter at smallest part 9.62 Area supported by each stay 410 Working pressure by rules 211 Material of Front plates at bottom Steel  
 Thickness 10" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13 1/4" Working pressure of plate by rules 200  
 Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 15/16" Back 13/16" Mean pitch of stays 10 1/16"  
 Pitch across wide water spaces 13 3/4" Working pressures by rules 202 & 217 Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9 3/4" x 1 1/2" double Length as per rule 32 1/2" Distance apart 17 1/2" Number and pitch of stays in each (3) 8 1/2"  
 Working pressure by rules 207 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  
 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 \_\_\_\_\_

castle 39  
 be given as  
 Water Capacity  
 Tons  
 63  
 1146  
 June 2  
 Sept 1  
 130



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 \_\_\_\_\_ 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 top end bolts & nuts, 2 bottom end bolts & nuts, 1 set of coupling bolts & nuts, 2 main bearing bolts & nuts, feed and bilge pump valves, iron bolts & nuts assorted, 1 propeller shaft complete & 3/8" crank shaft.

The foregoing is a correct description,

for David Rowan, Manufacturer.

Dates of Survey while building: During progress of work in shops - 1914 Mar 3, 10, 31 Apr 22, 23 May 14, 18 June 1, 9, 11, 16, 17, 18, 19, 23, 25, 27, 29 July 1, 6, 9, 10, 12, 15, 25 Aug 3, 7, 10, 12, 19, 25, 31

During erection on board vessel - Sept 2, 7, 8, 10, 11, 15, 14, 31, 22, 23, 25, 20 Oct 2, 7, 8, 9, 13, 14, 15, 16, 17, 19, 23, 22, 24

Total No. of visits 59

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

Dates of Examination of principal parts—Cylinders 10/7/14 Slides 25/6/14 Covers 25/6/14 Pistons 25/6/14 Rods 25/6/14

Connecting rods 25/6/14 Crank shaft 1/7/14 Thrust shaft 12/8/14 Tunnel shafts 7/9/14 Screw shaft 9/7/14 Propeller 25/8/14

Stern tube 25/8/14 Steam pipes tested 2/10/14 Engine and boiler seatings \_\_\_\_\_ Engines holding down bolts 13/10/14

Completion of pumping arrangements 22/10/14 Boilers fixed 1/10/14 Engines tried under steam 24/10/14

Main boiler safety valves adjusted 22/10/14 Thickness of adjusting washers *Pat steel Pat steel Pat steel Pat steel*

Material of Crank shaft *steel* Identification Mark on Do. *61920 22m x 1/17/14* Material of Thrust shaft *steel* Identification Mark on Do. *2587864 22m x 12/17/14*

Material of Tunnel shafts *steel* Identification Marks on Do. *713652 22m x 7/9/14* Material of Screw shafts *steel* Identification Marks on Do. *3666/7 22m x 9/7/14*

Material of Steam Pipes *lap welded iron 1 1/2" steel* Test pressure *600 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. These engines and boilers have been built under special survey, the materials and workmanship are of good description, they have been well fitted on board and tried under steam.

This machinery is now in my opinion eligible to have notification of **+ L.M.C. 10. 14.** in the Register Book

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 10. 14. F.D.

*J.W.D.* 4/11/14 *G.P.R.*

*A.M. Keane*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ 3 : 0 : \_\_\_\_\_ When applied for, \_\_\_\_\_

Special .. £ 50 : 19 : \_\_\_\_\_ When received, \_\_\_\_\_

Donkey Boiler Fee .. £ : : \_\_\_\_\_

Travelling Expenses (if any) £ : : \_\_\_\_\_

Committee's Minute GLASGOW

2 - NOV. 1914

FRI. NOV. 20. 1914

Assigned + L.M.C. 10. 14.

*F.D.*

PROVISIONAL CERTIFICATE WRITTEN



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Lloyd's Register Foundation

Certificate (if required) to be sent to GLASGOW

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

Date of writing  
No. in Series  
Reg. Book.  
1218. on  
Master &  
Engines ma  
Boilers ma  
Registered  
Nom. Horse  
ENGINE  
Dia. of Cyl  
Is the screw  
in the prop  
between the  
liners are f  
Dia. of Tunn  
collars  
No. of Feed  
No. of Bilge  
No. of Donk  
In Engine  
No. of Bilge  
Are all the b  
Are all conn  
Are they fixe  
Are they each  
What pipes  
Are all Pip  
Are the Bilg  
Dates of ex  
Is the Screw  
BOILERS  
Total Heat  
Working P  
Can each bo  
each boiler  
Smallest dist  
Thickness  
long. seams  
Per centages  
Size of comp  
Length of pl  
Working pres  
Pitch of stay  
Material of  
Material  
Diameter at  
Thickness  
Diameter of  
Pitch across  
thickness of  
Working pr  
separately  
holes  
If stiffened w  
Working pr