

# REPORT ON MACHINERY.

Port of Kobe

Received at London Office MON. JUN. 28. 1915

No. in Survey held at Kobe

Date, first Survey 15 Jan'y 1914 Last Survey 12 May 1915

Reg. Book.

34 Dup on the Steel Twin Screw Steamer "Toyohashi Maru"

(Number of Visits 60)

Tons } Gross 7298.47  
Net 4557.84

Master T. Date

Built at Kobe

By whom built The Kawasaki Dockyard Co. Ltd.

When built 1915-5

Engines made at Kobe

By whom made The Kawasaki Dockyard Co. Ltd.

when made 1915-5

Boilers made at "

By whom made do

when made do

Registered Horse Power

Owners The Nippon Yusen K. Kaisha

Port belonging to Yokio

Nom. Horse Power as per Section 28 628

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion. Twin Screw No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 21" : 33 1/2" : 56" Length of Stroke 48" Revs. per minute 84 Dia. of Screw shaft as per rule 13.13 Material of 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 ✓ 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 Liner Solid If two

liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5'-1 1/2"

Dia. of Tunnel shaft as per rule 11.72 Dia. of Crank shaft journals as per rule 12.3 Dia. of Crank pin 12 3/4" Size of Crank webs 17 1/2" x 8 1/4" Dia. of thrust shaft under

collars 12 1/2" Dia. of screw 16" 0" Pitch of Screw 17.6 to 20.0" No. of Blades 4 State whether moveable Yes Total surface 78° Each propeller

No. of Feed pumps 1 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four Sizes of Pumps 9.6 x 9" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" & one 3 1/2" to tunnel In Holds, &c. Two 3 1/2" to each hold

No. of Bilge Injections 2 sizes 1 1/2" Connected to condenser, or to circulating pump Yes Is 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 Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger valves smaller cocks

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 Forward bilge suction How are they protected Strong wood casings

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 19/9/14 of Stern Tubes 10/9/14 Screw shaft and Propeller 16/9/14

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper platform in Eng. Rm

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Wm. Beardmore & Co. Colville & Co. Consett Iron Co.

Total Heating Surface of Boilers 9108 Is Forced Draft fitted Yes No. and Description of Boilers Four Sing. Inded.

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 6.9.13 Oct No. of Certificate 70.71.72.73

Can each boiler be worked separately Yes Area of fire grate in each boiler 55 No. and Description of Safety Valves to

each boiler Two Direct Spring Area of each valve 3 1/2" dia Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" SW & BK Mean dia. of boilers 14'-3" Length 11'-6" Material of shell plates Steel

Thickness 15/16 Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double

long. seams Double straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 1'-7 1/4"

Per centages of strength of longitudinal joint 84.28 Working pressure of shell by rules 202 lbs Size of manhole in shell 12" x 16"

Size of compensating ring 7 1/2" x 1 5/16" No. and Description of Furnaces in each boiler 3 Morrison tub Material Steel Outside diameter 45 5/8"

Length of plain part top Thickness of plates bottom Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 214 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/4" x 7 3/4" Back 8 1/2" x 9" Top 8 3/4" x 7 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 230 lbs End plates in steam space:

Material of stays Steel Diameter at smallest part 2.1" Area supported by each stay 76.5" Working pressure by rules 230 lbs Material of stays Steel

Material Steel Thickness 1 3/16" Pitch of stays 17 1/2" x 18 3/4" How are stays secured Double nuts Working pressure by rules 200 lbs Material of stays Steel

Diameter at smallest part 7.66 Area supported by each stay 18 3/4" x 17 1/2" Working pressure by rules 242 lbs Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 15" double Working pressure of plate by rules 200 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" x 4 7/16" Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 8 3/4"

Pitch across wide water spaces 13 3/4" Working pressures by rules 238 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 3/4" x 13 (two) Length as per rule 2'-6 9/16" Distance apart 8 3/4" Number and pitch of stays in each 3 @ 7 3/4"

Working pressure by rules 216 lbs Superheater or Steam chest; how connected to boiler ✓ 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

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description None  
 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 Say  
 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:— One set crank pin bolts & nuts. One set crosshead bolts & nuts. Two main bearing bolts & nuts. Set coupling bolts & nuts. Set of feed & bilge pump valves. Packing rings & springs for each piston. Assorted bolts & nuts. Iron various sizes. 1. Propeller shaft. 1/3 Crank shaft. 4 bronze propeller blades. Piston rod. 2 guide shoes. Air pump rod. Centrif. pump fan. Slide valve rod each size. Brasses etc

The foregoing is a correct description, W. J. Bennett Manufacturer.

Dates of Survey while building { During progress of work in shops - - } 15 Jan'y 1914 to Sep 22<sup>nd</sup> 1914  
 { During erection on board vessel - - } 3<sup>rd</sup> Oct 1914 to 19<sup>th</sup> May 1915  
 Total No. of visits 60

Is the approved plan of main boiler forwarded herewith Yes  
 " " " donkey " " " None

Dates of Examination of principal parts—Cylinders 2/11/14 9/12/14 etc Slides 30/11/14 14/4/15 etc Covers 1/12/14 10/2/15 etc Pistons 24/10/14 etc Rods 24/10/14 26/10/14 etc  
 Connecting rods 21/11/14 22/11/14 etc Crank shaft 14/1/15 etc Thrust shaft 10/9/14 etc Tunnel shafts 10/9/15 etc Screw shaft 26/10/14 etc Propeller 5/4/15 etc  
 Stern tube 3/8/14 3/9/14 etc Steam pipes tested 26/3/15 27/3/15 31/3/15 Engine and boiler seatings 6/11/15 etc Engines holding down bolts 26/3/15  
 Completion of pumping arrangements 5/4/15 Boilers fixed 26/3/15 Engines tried under steam 13/4/15 19/4/15  
 Main boiler safety valves adjusted 13/4/15 Thickness of adjusting washers For St. Bl. f 1 1/2 a 1 1/2 F.P.B. f 22 a 22 A.S.B. f 32 a 32 AP f 32 a 32  
 Material of Crank shaft Steel Identification Mark on Do. LLOYDS 3766 W.D.H. Material of Thrust shaft Steel Identification Mark on Do. LLOYDS 3766 W.D.H.  
 Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS 3766 W.D.H. Material of Screw shafts Steel Identification Marks on Do. LLOYDS 3766 W.D.H.  
 Material of Steam Pipes Steel Test pressure 600 lbs. per sq. in. ✓

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The machinery has been made & fitted under Special Survey & the requirements of the Society's Rules have been complied with. & the workmanship found good. A report on the Electric lighting is forwarded. The machinery in my opinion renders the vessel eligible for the Record + L.M.C.S.I.

It is submitted that this vessel is eligible for THE RECORD + L.M.C.S.I. F.D.

J.W.D.

28/6/15

A. L. Jones

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee... £ YEN 30.00 When applied for, \_\_\_\_\_  
 Special .. .. £ YEN 771.00 28. May 1915  
 Donkey Boiler Fee .. .. £ : : When received, \_\_\_\_\_  
 Travelling Expenses (if any) £ : : 28. May 1915

Committee's Minute TUE. JUN. 29. 1915

Assigned

L.M.C.S.I. 5.15

F.D.

MANUFACTURE CERTIFICATE



Lloyd's Register Foundation

Certificate (if required) to be sent to None

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