

Received at London Office

Date of writing Report 13. 7 1908 When handed in at Local Office 14. 7 1908 Port of Nagasaki AUG 1908
No. in Survey held at Nagasaki Date, First Survey 22. 2. 1907 Last Survey 13. 7 1908.
Reg. Book. 37 on the Stead Twin Screw "Kamo Maru" (Number of Visits 166)
Master F. L. Sommer Built at Nagasaki By whom built Mitsui Bishi S. & E. Works When built 1908
Engines made at Nagasaki By whom made Mitsui Bishi S. & E. Works when made 1908
Boilers made at Nagasaki By whom made Mitsui Bishi S. & E. Works when made 1908
Registered Horse Power 973 Owners Nippon Yusen Kaisha Port belonging to Tokio.
Nom. Horse Power as per Section 28 973 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple Expansion, 2 sets No. of Cylinders Six No. of Cranks Six
Dia. of Cylinders 25", 41 1/2", 69" Length of Stroke 48" Revs. per minute 80 Dia. of Screw shaft 14.25" Material of Lockfast Iron.
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 Yes 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
If two liners are fitted, is the shaft lapped or protected between the liners
Length of stern bush 6'-0"
Dia. of Tunnel shaft as per rule 13.18 as fitted 13.5 Dia. of Crank shaft journals as per rule 13.84 as fitted 14.25 Dia. of Crank pin 14.75 Size of Crank webs 22 x 9 1/2 Dia. of thrust shaft under
collars 14.25 Dia. of screw 16-6" Pitch of Screw 18-9" No. of Blades 4 State whether moveable Yes Total surface 86.33 sq. ft.
No. of Feed pumps 4 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 4 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Donkey Engines Six Sizes of Pumps 10 x 13 1/2 x 10 1/2 Ballant No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 @ 3 1/2" in Boiler Room 2 @ 3 1/2" In Holds, &c. 2 @ 3 1/2" in each hold.
One 3" in each tunnel and one 3" in tunnel well.
No. of Bilge Injections 2 sizes 1 1/2" Connected to condenser, or to circulating pump C. P. Is a separate Donkey Suction fitted in Engine room & size 8 + 4 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 valves + 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 Bilge, exhaust, + soil How are they protected Slung 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 11. 5. 08 of Stern Tube 10. 5. 08 Screw shaft and Propeller 12. 5. 08
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper deck.
BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Colvilles, Steel Co. of Scotland. Beardmore's
Lanarkshire Steel Co.; Leeds Forge; Shelling S. & C. E.
Total Heating Surface of Boilers 14276 Is Forced Draft fitted Yes No. and Description of Boilers Six Scotch. S. E.
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 25. 11. 07 No. of Certificate 27.
Can each boiler be worked separately Yes Area of fire grate in each boiler 56.35 sq. ft. No. and Description of Safety Valves to
each boiler 2 @ 3 1/2" direct spring Area of each valve 9.62 sq. in 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 16" Mean dia. of boilers 14-3" Length 11-6" Material of shell plates Steel
Thickness 1 3/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R lap.
long. seams 3 R, 2 straps Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10-5" Lap of plates or width of butt straps 22"
Per centages of strength of longitudinal joint rivets 89.1% plate 85.1% Working pressure of shell by rules 234 lbs Size of manhole in shell 16" x 12"
Size of compensating ring 36 x 31 x 1 3/32 No. and Description of Furnaces in each boiler 3. LF. BULB. Material Steel Outside diameter 41 3/4"
Length of plain part top bottom Thickness of plates crown 5" bottom 8" Description of longitudinal joint Welded No. of strengthening rings NONE
Working pressure of furnace by the rules 241 Combustion chamber plates: Material Steel Thickness: Sides 11" Back 11" Top 16" Bottom 16"
Pitch of stays to ditto: Sides 10 1/2 x 7" Back 8 3/4 x 8 1/2" Top 9 x 8 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 218
Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 74.3 sq. in Working pressure by rules 245 End plates in steam space:
Material Steel Thickness 1 3/32 Pitch of stays 19 1/4 x 16 1/4 How are stays secured 2 x 6 x 6 Working pressure by rules 219 Material of stays Steel
Diameter at smallest part 3 1/8" Area supported by each stay 318 sq. in Working pressure by rules 250 Material of Front plates at bottom Steel
Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 12 x 10 Working pressure of plate by rules 250
Diameter of tubes 3 Ex Pitch of tubes 4 8 x 4 8 Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 8 1/2"
Pitch across wide water spaces 1 1/2 Working pressures by rules 250 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 10 x 1 1/4 Length as per rule 30" Distance apart 8 1/4" Number and pitch of stays in each 2 @ 9"
Working pressure by rules 300 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

If not, state whether, and when, one will be sent?
Is a Report also sent on the Hull of the Ship?
Im. 7. 7. 7.

VERTICAL DONKEY BOILER— Manufacturers of Steel NOT ANY.

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	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— As per rule and in addition; two propeller shafts, two right and two left hand bronze propeller blades; 24 slides with nuts for propeller blades; one length crank shaft interchangeable. Two stern bushes complete. One piston Rod, one slide valve Rod &c.

The foregoing is a correct description,
S. Maruya, General Manager
Yokohama Kisen Kaisha Ltd., Nagasaki Manufacturer.

Dates of Survey while building	During progress of work in shops - -	Continuous from 22 nd Feb 1907 to 24 th Dec 1907. 91 VISITS.
	During erection on board vessel - -	Continuous from 24 th Dec 1907 to 13 th July 1908. 75 VISITS.
	Total No. of visits	166 Visits

Is the approved plan of main boiler forwarded herewith *yes.* ✓
 " " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 7. 10. 07 Slides 11. 11. 07 Covers 11. 11. 07 Pistons 6. 12. 07 Rods 4. 6. 07
 Connecting rods 20. 8. 07 Crank shaft 4. 07 Thrust shaft 4. 07 Tunnel shafts 4. 07 Screw shaft 5. 11. 07 Propellers 11. 07
 Stern tube 7. 11. 07 Steam pipes tested 16. 3. 08 Engine and boiler seatings 23. 10. 07 Engines holding down bolts 15. 3. 08
 Completion of pumping arrangements 13. 4. 08 Boilers fixed 25. 4. 08 Engines tried under steam 10. 13. 16 June 08.
 Main boiler safety valves adjusted 3. 6. 08 Thickness of adjusting washers *No washers, brass jamb nuts.*
 Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS N° 27* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYDS N° 27*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *" " AGH. 4-07* Material of Screw shafts *LOCKFAST IRON* Identification Marks on Do. *LLOYDS. 207. 208 12. 4. 07 A.T.T.*
 Material of Steam Pipes *Wrought iron lap weld + Copper.* Test pressure *600 + 400* Respectively

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines and Boilers*)
 have been constructed under Special Survey, and in accordance with the Rules. They are of good materials and workmanship, and are securely and satisfactorily fitted on board.
 They have been seen working well under a full head of steam, and are now eligible in my opinion for notation *L.M.C. 6.08.* in Register Book.
 Mean Speed on Trials, light ship 16.4 Knots.
 This vessel was launched, 24. 12. 07.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7.08.

Electric light. F.D.

The amount of Entry Fee .. £3.0.0 :	When applied for,
Special £103.0.0 :	10. 7. 1908
Donkey Boiler Fee £ :	When received,
Travelling Expenses (if any) £ :	11. 7. 1908

J.W.D. 8/8/08. *A.C. Heron*
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUES. 11 AUG 1907* *A.C.H.*

Assigned *Thome 7.08*

MACHINERY CERTIFICATE WRITTEN 13/8/08



Nagasaki

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