

176

No. 14840

REPORT ON MACHINERY.

SAT 19 DEC 1896

Port of Glasgow

Received at London Office

No. in Survey held at Glasgow

Date, first Survey 17 May

Last Survey 14 Decemr 1896

Reg. Book.

(Number of Visits 60)

on the Twin S. S. Kangawa Maru

Tons } Gross 5823
Net 3404

Master John McKinnis Built at Glasgow

By whom built D & W Henderson

When built 1896

Engines made at Glasgow

By whom made D & W Henderson

when made 1896

Boilers made at Glasgow

By whom made D & W Henderson

when made 1896

Registered Horse Power

Owners Nippon Yusen Kaisha Port belonging to Tokio

Nom. Horse Power as per Section 28 550

Is Electric Light fitted Yes

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

Diameter of Cylinders 20" 33 1/2" 56" Length of Stroke 48 Revolutions per minute 75 Diameter of Screw shaft 11 1/4"
as per rule 10 1/8" as fitted 12 3/4"

Diameter of Tunnel shaft 12" Diameter of Crank shaft journals 12 1/2" Diameter of Crank pin 12 1/2" Size of Crank webs 8 1/4" x 23 3/4"
as fitted 12"

Diameter of screw 15' 0" Pitch of screw 18' 3" No. of blades 4 State whether moveable Yes Total surface 68 sq ft.

No. of Feed pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 4 duplex Sizes of Pumps 10" x 8" x 24" Weirs - 7" x 5" x 6" Carriers No. and size of Suctions connected to both Bilge and Donkey pumps
5 1/4" x 3 1/2" x 5", 11" x 12" x 10" Carriers

In Engine Room Three 3 1/2" In Holds, &c. Forward, sea 3 1/2"; aft
sea 3 1/2"

No. of bilge injections 2 sizes 6 3/4" Connected to condenser, or to circulating pump Cirp. Is a separate donkey suction fitted in Engine room & size 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 both Are they Valves or Cocks Yes

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 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 Yes

What pipes are carried through the bunkers forward bilge pipes How are they protected Cased in.

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 27. 11. 96 Is the screw shaft tunnel watertight apparently

Is it fitted with a watertight door Yes worked from upper deck.

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 9157 in 4 boilers Is forced draft fitted no

No. and Description of Boilers 2 Double Ended 2 Single Ended. See attached report Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs
Total Grate 3000 sq ft.

Date of test 18. 9. 96 Can each boiler be worked separately Yes Area of fire grate in each boiler 100 sq ft. No. and Description of safety valves to
each boiler two spring loaded 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 21" Mean diameter of boilers 159"

Length 17' 0" Material of shell plates Steel Thickness 23/16" Description of riveting: circum. seams lap 2 x 3 rivets long. seams Double Butt 5 Rivets

Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 7/8" Lap of plates or width of butt straps 21 3/4" x 1 7/16"

Per centages of strength of longitudinal joint
rivets 87.4 Working pressure of shell by rules 225 lbs Size of manhole in shell 12 x 6
plate 85.06 Total 18 furnaces

Size of compensating ring No. Keils No. and Description of Furnaces in each boiler 6 Morrison's Material Steel Outside diameter 41 1/2"

Length of plain part 7' 1" Thickness of plates 9/16" Description of longitudinal joint weld No. of strengthening rings Corrugated
over plates

Working pressure of furnace by the rules 213 lbs Combustion chamber plates: Material Steel Thickness: Sides 4 5/8" Back None Top 1 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9" Back None Top 8 x 9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202 lbs

Material of stays Steel Diameter at smallest part 1' 99 sq in Area supported by each stay 81 sq in Working pressure by rules 221 lbs End plates in steam space:
Section Thickness 1 7/16" Pitch of stays 16 x 17 1/4" How are stays secured Double nuts & doubling strips Working pressure by rules 214 lbs Material of stays Steel

Diameter at smallest part 7' 54 sq in Area supported by each stay 311 sq in Working pressure by rules 217 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate None Thickness — Greatest pitch of stays — Working pressure of plate by rules —

Diameter of tubes 3 1/4" Pitch of tubes 4 7/8 x 4 3/8 Material of tube plates Steel Thickness: Front 1" Back 25/32" Mean pitch of stays 10' 2"

Pitch across wide water spaces 14" Working pressures by rules approved Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 7" x 2 x 1 Length as per rule 36" Distance apart 9" Number and pitch of Stays in each 4 x 8"

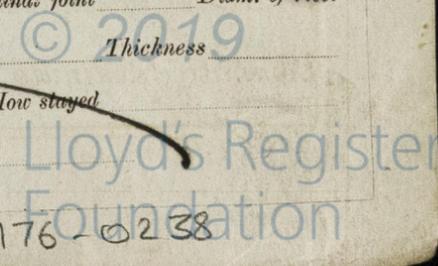
Working pressure by rules approved Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
separately

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

If not, state whether, and when, one will be sent? Also state when, one will be sent? Also state when, one will be sent?



GLS176-0238

4870 g/s
REPORT ON MACHINERY

DONKEY BOILER— Description *None*

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 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. _____

Plates _____

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:— *One third Crank, 2 tailshafts, 4 propeller blades & blades etc. 1 piston rod, 3 Valve rods, a set of main and connecting-rod brasses, 4 Guide shoes, 2 Eccentric rods & Straps 1 Set of Thrust shoes.*

The foregoing is a correct description,
David N. Henderson & Co. Manufacturers

Dates of Survey while building

During progress of work in shops -	1896 May 4, 12, 19, 26, 28 June 2, 3, 5, 8, 10, 12, 15, 14, 22, 24, 26, 29 July 2, 4, 8, 10, 14, 29, 31 August 4, 6, 11, 13,
During erection on board vessel -	18. 21, 31. Sept 1, 2, 8, 10, 14, 18, 23, 25, Oct 8, 9, 12, 12, 14, 19, 20, 21. Nov 1, 3, 6, 7, 11, 13, 16, 14, 18, 19, 23, 26,
Total No. of visits	66. 24. Dec 3, 4, 10, 12, 14.

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines & boilers have been built under the condition of special survey of good material & workmanship. They have been securely fitted on board & satisfactorily tested under steam. It is submitted that this vessel is eligible for the record + L.M.C. 12.96.*

C. W.

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 12.96

Blec. Light.
R.S.
19.12.96
R.S.
19/12/96.

The amount of Entry Fee.. £ 3 : " : " When applied for.
Special £ 14 : 10 : " 15/12/96
Donkey Boiler Fee £ " : " : " When received.
Travelling Expenses (if any) £ " : " : " 14/12/96

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

Committee's Minute
Assigned
+ L.M.C. 12.96
blec. light



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

WRITTEN
1UES 22 DEC 1896