

REPORT ON MACHINERY.

Received at London Office JUL 4 1922

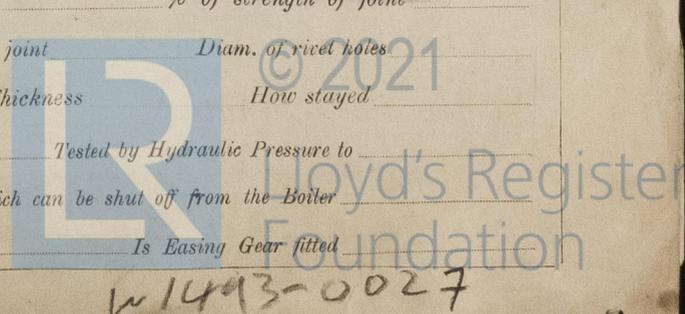
Date of writing Report 24th July 1921 When handed in at Local Office 19 Port of Kobe
 No. in Survey held at Osaka Date, First Survey 21st July 1919 Last Survey 8th July 1921
 Reg. Book. on the Steel Single Screw Steamer "BANDAI MARU" (Number of Visits 40)
 Master Osaka Built at Osaka By whom built Nitta Shipbuilding Yard When built 1921
 Engines made at Osaka By whom made Fujimura Machine Works when made 1921
 Boilers made at Osaka By whom made Sappa Iron Works when made 1921
 Registered Horse Power 348 Owners Nitta Kisen Kabushiki Kaisha Port belonging to Kobe
 Nom. Horse Power as per Section 28 348 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3
 Dia. of Cylinders 23 1/2 : 37 1/2 : 65 Length of Stroke 48 Revs. per minute 60 Dia. of Screw shaft 13.91 Material of Steel
 as fitted 15 1/2 screw shaft
 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 5'-3"
 Dia. of Tunnel shaft 12.376 as per rule 12.995 Dia. of Crank shaft journals 12.995 as per rule 13.8 Dia. of Crank pin 13 1/8 Size of Crank webs 8 1/2 x 24 1/2 Dia. of thrust shaft under
 collars 13 1/8 Dia. of screw 17'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable yes Total surface 90.8
 No. of Feed pumps Two Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 4 Sizes of Pumps Belled - 10 x 13 x 13 x 1 duplex and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three @ 3 1/2 General Service - 7 1/2 x 5 1/2 x 7 1/2 x 1 duplex
Yamamoto Fed P - 11 1/2 x 8 x 18 x 2 In Holds, &c. No 1, 2, 3 and 4 Two @ 3 1/2
 Tunnel Well one 3 1/2, Tunnel Forward one 3 1/2
 No. of Bilge Injections 7 sizes 7" Connected to condenser, or to circulating pump Cir. pp 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 ✓
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Baths
 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 none How are they protected ✓
 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
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform in Engine Room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel The Carnegie Steel Co. Thos. Piggott & Co.
 Total Heating Surface of Boilers 5650.8 Is Forced Draft fitted no No. and Description of Boilers Three Single Ended
 Working Pressure 190 lbs. Tested by hydraulic pressure to 380 lbs. Date of test 7.10.13-5-21 No. of Certificate 75.21.10.5.21.13.5.21
 Can each boiler be worked separately yes Area of fire grate in each boiler 46.4 No. and Description of Safety Valves to
 each boiler Two spring loaded Area of each valve 5.94 sq" Pressure to which they are adjusted 195 lbs. Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork About 6'-0" Mean dia. of boilers 12'-10" Length 12'-0" Material of shell plates Steel
 Thickness 1 1/4" Range of tensile strength 2726 31 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Dble riveted
 long. seams Dble riveted Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8" x 4" Lap of plates or width of butt straps 19 x 1 1/2 (in)
Dble B. Straps
 Percentages of strength of longitudinal joint 99.6 Working pressure of shell by rules 208 lbs. Size of manhole in shell 12" x 16"
 Size of compensating ring 2'-7" x 2'-11" x 1 1/4" No. and Description of Furnaces in each boiler 3 Morrison's Plain Material Steel Outside diameter 3'-2"
 Length of plain part 2'-7" Thickness of plates 5/8" Description of longitudinal joint Welded No. of strengthening rings 1 Adamson ring
 Working pressure of furnace by the rules 211 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 x 7 1/4" Back 9 x 6 3/4" Top 8 1/2 x 7 1/4" stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202 lbs.
 Material of stays Steel Area at smallest part 2.10" Area supported by each stay 65.25 sq" Working pressure by rules 289 lbs. End plates in steam space:
 Material Steel Thickness 1" Pitch of stays 16" x 18" How are stays secured brackets + D nuts Working pressure by rules 194 lbs. Material of stays Steel
 Area at smallest part 6.33 sq" Area supported by each stay 288 sq" Working pressure by rules 228 lbs. Material of Front plates at bottom Steel
 Thickness 13/16" Material of Lower back plate Steel Thickness 18/16" Greatest pitch of stays 16" x 10" Working pressure of plate by rules 312 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 10"
 Pitch across wide water spaces 13" Working pressures by rules 268 lbs. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10" x 1 1/4" Length as per rule 28 9/16" Distance apart 8 1/2" Number and pitch of stays in each 3, 4"
 Working pressure by rules 254 lbs. Steam dome: description of joint to shell ✓ % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type ✓ Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓
 Date of Test ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler ✓
 Diameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is Easing Gear fitted ✓

W 1493-0027



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 4 Connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearing bolts, 9 coupling bolts, 1 set of feed and bilge pump valves, 1 set of piston packing rings, 1 set of springs for L.P. piston, 1 pair of connecting ^{rod} brasses, 1 pair of crosshead brasses, 1 eccentric straps complete, 1 air pump rod, 1 circulating pump impeller and shaft, 1 valve spindle for H.P., M.P. and L.P., 1 set of eccentric rods, 1 set of check valves, 8 junkring bolts, 4 dozen condenser tubes & 143 screw glands, 3 safety valve springs, 12 gauge glasses, 1 Expander and 12 tube stayers, Assorted bolts and nuts, Iron of various sizes.

The foregoing is a correct description,

G. D. Fujimura S. Sappo Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1919 July 21, Aug 21, Oct 23, Nov 27, Dec 19, 1920 April 15, May 29, June 10, 22, July 29, Aug 11, During erection on board vessel -- 1921 Jan 20, Feb 4, 28, Mar 16, 24, May 3, 4, 7, 10, 13, 16, 18, 21, June 5, 17, 21, 23, 29, July 2, 4, 8. Total No. of visits 40. Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders ²¹⁻⁸⁻¹⁹ 16-5-21 Slides 16-5-21 Covers 16-5-21 Pistons 3-5-21 Rods 3-5-21 Connecting rods 3-5-21 Crank shaft 4-5-21 Thrust shaft 4-5-21 Tunnel shafts 4-5-21 Screw shaft 3-5-21 Propeller 3-5-21 Stern tube 3-5-21 Steam pipes tested 17-6-21 Engine and boiler seatings 4-5-21 Engines holding down bolts 5-6-21 Completion of pumping arrangements 29-6-21 Boilers fixed 23-6-21 Engines tried under steam 2-7-21 Completion of fitting sea connections 21-5-21 Stern tube 21-5-21 Screw shaft and propeller 21-5-21 Main boiler safety valves adjusted 2-7-21 Thickness of adjusting washers *Lock nuts* Material of Crank shaft *Steel* Identification Mark on Do. *F.L. 3, 4, 7, 26, 31* Material of Thrust shaft *Steel* Identification Mark on Do. *F.S. 1, 2, 3, 4, 7, 26, 31* Material of Tunnel shafts *Steel* Identification Marks on Do. *F.S. 1, 2, 3, 4, 7, 26, 31* Material of Screw shafts *Steel* Identification Marks on Do. *F.S. 1, 2, 3, 4, 7, 26, 31* Material of Steam Pipes *Solid drawn Copper* Test pressure *380 lbs.* Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with Is this machinery duplicate of a previous case *No* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) The crank, thrust and tunnel shafting was forged at Kobe Steel Works, except one tunnel shaft, which was forged at Nippon Steel Works, Muroran and turned and finished at Fujimura Machine Works, Osaka.

The Machinery has been made and fitted under Special Survey in accordance with the requirements of the Rules and the materials and workmanship have been found good. The Machinery of this vessel is eligible in our opinion for the notation **LMC 7-21**.

It is submitted that this vessel is eligible for THE RECORD. **LMC - 7.21. C.L.**

Note 48" length of stroke (84" girth in R.B.)

The machinery was partly surveyed by Mr Lawson. *A.L. Jones*

The amount of Entry Fee ... £/Yen 50.00 When applied for, July 15 1921 Special ... £/Yen 1208.00 When received, Oct 8 1921 *Electric Light* ... £ 180. Travelling Expenses (if any) £ 140

Y. Jo Assistant. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Assigned *+ L.M.C. 7.21 C.L.*



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