

REPORT ON MACHINERY.

No. 2755

Received at London Office

TUE. 22 FEB. 1921

Date of writing Report Dec 29 1920 When handed in at Local Office 19 Port of Yokohama.

No. in Survey held at Uraga. Date, First Survey May 28th Last Survey Dec 13 1920
Reg. Book. on the Steel Single Screw Steamer "LUSHAN-MARU" (Number of Visits 57)

Builder Uraga Built at Uraga By whom built Uraga Dock Co Ltd Tons { Gross 2549.6
Net 1518.45
When built 12-1920

Machinery made at Uraga By whom made Uraga Dock Co Ltd when made 1920
Machinery made at Do By whom made Do. when made 1920

Registered Horse Power _____ Owners Nishui Kaen Kabushiki Kaisha Port belonging to Tokyo
Horse Power as per Section 28 303 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Engines, &c.—Description of Engines Reciprocating, triple expansion Cnd. No. of Cylinders 3 No. of Cranks 3
Diameter of Cylinders 21" x 35" x 58" Length of Stroke 39" Revs. per minute 80-90 Dia. of Screw shaft 12 1/2" Material of screw shaft A.S. 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 Yes
Is 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 Yes

Are the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two Yes
Are the shafts fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 54"

Diameter of Tunnel shaft 11 3/4" as per rule 10.95 Dia. of Crank shaft journals 11.45 as per rule 11.45 Dia. of Crank pin 12" Size of Crank webs 22 x 7 5/8" Dia. of thrust shaft under 11 3/4" as fitted 11 as fitted 11.75

Dia. of screw 14 1/2" Pitch of Screw 16 1/2" No. of Blades 4 State whether moceable No Total surface 72 sq Feet Area
No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 21 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 21 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps GEN.S.P. 8 x 5 1/2 x 8" No. and size of Suctions connected to both Bilge and Donkey pumps 2 at 3"

Engine Room 3 at 3" and 1 at 3 1/2" direct connected to ball pump In Holds, &c. Nat. hold forward 2 at 3" Cross bunker forward 2 at 3"
1 3/2" in aft hold bilge well 1 at 2 1/2" in tunnel well. (2-3" Non return valves, operated from deck, fitted in hold)

No. of Bilge Injections 1 sizes 6 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 part on shell, part on kingston valves 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 above the deep water line only

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
Are the pipes carried through the bunkers Bilge pipe in Reserve Cross bunker How are they protected Cased in. & led thro' bracket

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes [lightning holes]
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 Upper deck level in E.R.
Manufacturers of Steel Carnegie, U.S.A. & Yawata, Steel Works Japan.

Heating Surface of Boilers 4370.4 sq Is Forced Draft fitted Yes No. and Description of Boilers Two Cylindrical, scotch type,
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 12-10-20. No. of Certificate 138.

Can each boiler be worked separately Yes Area of fire grate in each boiler 49.5 sq No. and Description of Safety Valves to 1
boiler 3" Swiv. Spring loaded Area of each valve 706 Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes

Least distance between boilers or uptakes and bunkers 18" Mean dia. of boilers 13'-6" Length 12'-0" Material of shell plates A.S. Steel
Thickness 1 5/16" Range of tensile strength 28/32 Tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R.L.A.P.

seams T.R.D.B. Strap Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 10" Lap of plates or width of butt straps 2 1/2"
Percentages of strength of longitudinal joint rivets 91.97% Working pressure of shell by rules 221 lbs Size of manhole in shell 16" x 12"

No. of compensating ring 3 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 40 1/2"
Thickness of plain part top 19" crown 19" Description of longitudinal joint Welded No. of strengthening rings 1

Working pressure of furnace by the rules 234.7 lbs Combustion chamber plates: Material A.S. Steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 3/16"
Pitch of stays to ditto: Sides 8 1/2" x 8" Back 9" x 8" Top 9 1/2" x 8" If stays are fitted with nuts or riveted heads Nuts fitted Working pressure by rules 212 lbs

Material of stays A.S. Steel Area at smallest part 1.79 Area supported by each stay 72 sq Working pressure by rules 224 lbs End plates in steam space: 1
Material A.S. Steel Thickness 1 5/16" Pitch of stays 20" x 19 3/4" How are stays secured D.Nuts & Washers Working pressure by rules 206 lbs Material of stays A.S. Steel

Area at smallest part 8.2958 sq Area supported by each stay 395 sq Working pressure by rules 218 lbs Material of Front plates at bottom A.S. Steel
Thickness 7/8" Material of Lower back plate A.S. Steel Thickness 7/8" Greatest pitch of stays 13 1/2" x 8" Working pressure of plate by rules 214.5

Diameter of tubes 3" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates A.S. Steel Thickness: Front 7/8" & 5/8" Dia. Back 3/4" Mean pitch of stays 9 7/16"
Pitch across wide water spaces 13 1/2" Working pressures by rules 277 lbs Girders to Chamber tops: Material A.S. Steel Depth and 10, 13, 16,

Thickness of girder at centre 9 1/2" x 10 1/4" x 1 3/8" Length as per rule 32 5/16" Distance apart 9 1/2" Number and pitch of stays in each 3 at 8"
Working pressure by rules 241.5 lbs Steam dome: description of joint to shell Yes % of strength of joint Yes

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 it is adjusted _____ Is Easing Gear fitted _____



Lloyd's Register
Foundation
W1265-0082

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 conn. rod bottom end bolts & nuts, 2 main bearing bolts & nuts; one set of top end brasses; one pair bottom end brasses; 6 coupling bolts & nuts; one set of feed & bilge pump valves; one set of main engine piston rings & springs; one H.P. & one L.P. valve spindle; one eccentric strap; two eccentric rods; one air pump rod; one ecc. pump impeller & shaft; one propeller shaft; one C.I. solid propeller; 6 joint ring bolts; 6 cyl. cover bolts; one set safety valve springs; 2 dog water tubes; 3 dog condenser tubes; one set cyl. escape valve springs; a quantity of assorted bolts & nuts; iron of various sizes and a quantity of hand tools

The foregoing is a correct description,

K. Ushioke Manufacturer.

Dates of Survey while building: During progress of work in shops - May 28, June 9, 11, 15, 25, 28, 29, July 5, 8, 9, 21, 26, Aug. 5, 6, 12, 16, 20, 23, 30, Sept. 2, 3, 8, 14, 16, 17, 20, 21, 22, 27, Oct. 4, 5, 6, 8, 11, 12, 15, 18, 20, 25, 27, 29, Nov. 2, 3, 9, 15, 17, 19, 22, 26, 29, Dec. 1, 3, 6, 7, 8, 10, 13. Total No. of visits 57. Is the approved plan of main boiler forwarded herewith? Retained for duplicate. " " " donkey " " "

Dates of Examination of principal parts: Cylinders 20-9-20, Slides 22-7-20, Covers 20-9-20, Pistons 20-9-20, Rods 4-10-20, Connecting rods 4-10-20, Crank shaft 7-10-20, Thrust shaft 7-10-20, Tunnel shafts 7-10-20, Screw shaft 27-9-20, Propeller 27-9-20, Stern tube 9-7-20, Steam pipes tested 3-11-20, Engine and boiler seatings 5-10-20, Engines holding down bolts 29-11-20, Completion of pumping arrangements 7-12-20, Boilers fixed 2-11-20, Engines tried under steam 8-12-20, Completion of fitting sea connections 5-10-20, Stern tube 4-10-20, Screw shaft and propeller 29-11-20, Main boiler safety valves adjusted 6-11-20, Thickness of adjusting washers Lock nuts fitted, Material of Crank shaft O.H. Steel, Identification Mark on Do. 7-10-20 O.B. Lloyd's No. 175, Material of Thrust shaft O.H. Steel, Identification Mark on Do. 7-10-20 O.B. Lloyd's No. 174, Material of Tunnel shafts O.H. Steel, Identification Marks on Do. 7-10-20 O.B. Lloyd's No. 175, Material of Screw shafts Steel, Identification Marks on Do. 7-11-5-20 O.B. Lloyd's No. 174, Material of Steam Pipes Solid drawn copper, Test pressure 400 lbs water test, 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 Machinery & Boilers of this vessel have been constructed under special survey, according to the Rules & approved plans. The materials have been tested found efficient & the workmanship is good. Crank, thrust, tunnel shafting & propeller shafts supplied by Nagasaki Steel Works. Machinery & Boilers have now been efficiently fitted on board & tested under steam with satisfactory results. This case is now respectfully submitted for the Committee's consideration and Record L.M.C. with date 12-20 in Register Books.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.20 F.D.

Recd. A.P.R. 23/2/21

The amount of Entry Fee ... £EN 30 = When applied for, Special ... £ 616 = 14-12-1920 Donkey Boiler Fee ... £ ✓ : When received, Travelling Expenses (if any) & SEE HULL REP. 12-12-1920

A.P. Buchanan, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 1 MAR. 1921

Assigned

+ L.M.C. 12.20

F.D.



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Certificate (if required) to be sent to the Registrar for Committee's Minute.

CERTIFICATE WRITTEN