

REPORT ON MACHINERY

No. 3069

Received at London Office

FRI. 18 MAR. 1921

Date of writing Report 30 Feb. 1921 When handed in at Local Office 19 Port of Kobe
 Date, First Survey 18th June 1920 Last Survey 18th Dec 1920
 Reg. Book. Kobe (Number of Visits) 1
 on the Steel Single Screw Steamer "MACASSAR MARU" Tons { Gross 3981.28
 Net 2493.81
 Master Kobe Built at Kobe By whom built Mitsubishi Zosen Kaisha When built 1920
 Engines made at Kobe By whom made Mitsubishi Zosen Kaisha Ltd. when made 1920
 Boilers made at do By whom made do when made 1920
 Registered Horse Power 342 Owners Nanyo Yusen Kaisha Ltd. Port belonging to Kobe
 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" + 38" + 64" Length of Stroke 48" Revs. per minute 80 Dia. of Screw shaft 14.497 Material of screw shaft Forged steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube without liner Is the after end of the liner made water tight
 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 ✓ If two
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5'-1 1/2" (white metal)
 Dia. of Tunnel shaft 12.495 as per rule 12.34 Dia. of Crank shaft journals 13.118 as per rule 13.2 Dia. of Crank pin 14" Size of Crank webs 25 1/2" x 2 1/2" Dia. of thrust shaft under
 collars 13 1/2" Dia. of screw 16'-6" Pitch of Screw 17'-3" No. of Blades 4 State whether moccable yes Total surface 76 sq. ft. approx.
 No. of Feed pumps Two Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes with independent feed pumps
 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 Three Sizes of Pumps 2 sets MUMFORD FEED 2 1/2" x 2 1/2" WARRINGTON 2 1/2" x 2 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room Three @ 3 1/2" In Holds, &c. No. 1 - two 3 1/2" No. 2 - two 3 1/2" No. 3 - two 3 1/2" No. 4 - two 3 1/2" Tunnel Well - one 2 1/2"
 No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump circ. p. 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 None
 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 ✓ 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 of Eng. Rm.

OILERS, &c.—(Letter for record S) Manufacturers of Steel North Bros. & Co. Ltd. (Plated) Leeds Forge (Super Rived) Yamato Steel Works
 Total Heating Surface of Boilers 4394 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers Two 5 to Scotch Boilers
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test ✓ No. of Certificate ✓
 Can each boiler be worked separately yes Area of fire grate in each boiler 54.3 sq. ft. No. and Description of Safety Valves to
 each boiler Two Spring Loaded Area of each valve 19.34 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 18" Mean dia. of boilers 14'-0" Length 11'-6" Material of shell plates steel
 Thickness 1 3/8" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double riveted
 long. seams Double with straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20 1/2"
 Percentages of strength of longitudinal joint 84.6% Working pressure of shell by rules 221 lbs. Size of manhole in shell 12 x 16 (door)
 Size of compensating ring 33 x 37 x 1 1/2" flange No. and Description of Furnaces in each boiler 3 Leeds Bull Material steel Outside diameter 33 1/4"
 Length of plain part ✓ Thickness of plates 9/16" Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 211 lbs. Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 1 1/8"
 Pitch of stays to ditto: Sides 7 1/2" x 11" Back 9" x 9 1/4" Top 7" x 11 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 214 lbs.
 Material of stays steel Area at smallest part 2.03 sq. in. Area supported by each stay 7 1/2" x 11" Working pressure by rules 221 lbs. End plates in steam space:
 Material steel Thickness 1 3/32" Pitch of stays 20" x 18" How are stays secured Dark nuts + small washers Working pressure by rules 214 lbs. Material of stays steel
 Area at smallest part 6.67 sq. in. Area supported by each stay 360 sq. in. Working pressure by rules 222 lbs. Material of Front plates at bottom steel
 Thickness 3/32" Material of Lower back plate steel Thickness 3/32" Greatest pitch of stays 16" x 11" Working pressure of plate by rules 223 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 3/32" Back 2 1/32" Mean pitch of stays 15 1/2" x 6.55 (mean)
 Pitch across wide water spaces 13 3/4" Working pressures by rules 203 lbs. Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 10 1/4" x 5 1/2" x 2 Length as per rule 2'-8" Distance apart 11 1/2" Number and pitch of stays in each 3 @ 7"
 Working pressure by rules 225 lbs. Steam dome: description of joint to shell None % 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 ✓

UPERHEATER. Type None 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 ✓

IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

- 2 Connecting rod top end bolts + nuts.
- 2 Connecting rod bottom end bolts + nuts.
- 2 main bearing bolts.
- 1 Set of coupling bolts.
- 1 Set of Feed + Bilge pump valves
- 1 Set of Piston springs.

- Quantity of assorted bolts.
- Iron of various sizes.
- Air pump rod.
- 2 pair Eccentric rods.
- Three Valve spindles H.P. I.P. L.P.
- 2 Safety valves, springs etc.

The foregoing is a correct description
Mototoru Harauishi.

KOBE WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

Manufacturer.

1920
 Dates of Survey while building: During progress of work in shops - June 18; July 22, 23; Aug. 16, 18, 23, 25, 28, 30; Sept. 6, 8, 10, 13, 19, 16, 17, 18, 20, 21, 25, 27; Oct. 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30; Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30; Dec. 7, 13, 18.
 During erection on board vessel - - -
 Total No. of visits 52

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

Dates of Examination of principal parts—Cylinders 4-10-20 Slides 5-11-20 Covers 11-10-20 Pistons 5-11-20 Rods 13-11-20
 Connecting rods 2-10-20 Crank shaft 9-10-20 Thrust shaft 5-10-20 Tunnel shafts 2-10-20 Screw shaft 7-10-20 Propeller 29-10-20
 Stern tube 11-10-20 Steam pipes tested 7-12-20 Engine and boiler seatings 4-11-20 Engines holding down bolts 30-11-20
 Completion of pumping arrangements 7-12-20 Boilers fixed 30-11-20 Engines tried under steam 16-12-20 overhaul 18-12-20
 Completion of fitting sea connections 4-11-20 Stern tube 18-11-20 Screw shaft and propeller 22-11-20
 Main boiler safety valves adjusted 13-12-20 Thickness of adjusting washers **Lock nuts**
 Material of Crank shaft **Steel** Identification Mark on Do. **LLOYDS 5-10-20 A.W.R.** Material of Thrust shaft **Steel** Identification Mark on Do. **LLOYDS 5-10-20 A.W.R.**
 Material of Tunnel shafts **Steel** Identification Marks on Do. **LLOYDS 5-10-20 A.W.R.** Material of Screw shafts **Steel** Identification Marks on Do. **LLOYDS 7-10-20 A.W.R.**
 Material of Steam Pipes **Copper** Test pressure **400lb.**
 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 **yes** If so, state name of vessel **5/8 "SAMARANG MARU" (Kobe Rpt 289)**
5/8 "YORO MARU" (Kobe Rpt 301)
 General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery has been made under special survey in accordance with the requirements of the Rules and the materials + workmanship have been found good.
 The forgings for shafting etc. were made and tested at Mitsubishi Dkyd
 The machinery is eligible in my opinion to the record of **L.M.C 12-20**

+ L.M.C. 12.20 F.I

Recd. 29/3/21 [Signature]

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

The amount of Entry Fee ... **YEN 30⁰⁰** : When applied for, **13th Jan 1921.**
 Special ... **£ 650⁰⁰** :
 Donkey Boiler Fee ... **£** :
 Travelling Expenses (if any) **£** : **7th Feb 1921.**

Alexander Watt.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **WED. 30 MAR. 1921**
Assigned **+ L.M.C 12.20 7D**

MACHINERY DEPT
WRITTEN

