

REPORT ON MACHINERY.

No. 3225

Date of writing Report July 6th 1921 When handed in at Local Office 29/6/21 19 21 Port of Kobe. Received at London Office MON 12 SEP 1921

No. in Survey held at Oh. Harima. Date, First Survey Nov. 24th 1920 Last Survey June 7th 1921

Reg. Book. on the Steel Single Screw "TACHIBANA MARU" (Number of Visits 71)

Master Tanno Built at Oh. Harima By whom built Kobe Steel Works Tons { Gross 6543.43 Net 4605.22

Engines made at Kobe Steel Works By whom made Kobe Steel Works when made 1921-6

Boilers made at Oh. Harima By whom made Kobe Steel Works when made 1921-6

Registered Horse Power 560 Owners Seikoku Kaisha Port belonging to Kobe Tokayama

Nom. Horse Power as per Section 28 560 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion surface Condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27", 45", 75" Length of Stroke 51" Revs. per minute 70-80 Dia. of Screw shaft 15.496" Material of screw shaft O.H. 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 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'-8 1/4"

Dia. of Tunnel shaft 14.88" Dia. of Crank shaft journals 15" Dia. of Crank pin 15 1/4" Size of Crank webs 28x22" Dia. of thrust shaft under collars 15" Dia. of screw 18'-3" Pitch of Screw 19'-9" No. of Blades 4 State whether moveable Yes Total surface 96.8 sq ft

No. of Feed pumps 2 Diameter of ditto 5" Stroke 25 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 25 1/2" Can one be overhauled while the other is at work "

No. of Donkey Engines 3 Sizes of Pumps 2-10x8x24, 1-12x8x24, 1-7x5x9 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two-3 1/2" dia. In Bilge Room Two-3 1/2" dia. In Holds, &c. 2-3 1/2" dia in forward hold. 1-3 1/2" Bilge

Suction in forward pump room. 2-3 1/2" Bilge suction in aft pump room.

No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2" dia.

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 Yes 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 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 Yes

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 Mach. Aft Is it fitted with a watertight door Yes worked from Yes

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Carnegie & Illinois Steel Co. Furnaces by Continental Iron Works

Total Heating Surface of Boilers 7956 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 Scotch Marine type

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 4/3/21 & 11/9/21 No. of Certificate HP 200-1058, R.H. 04/12/21 04/13/21

Can each boiler be worked separately Yes Area of fire grate in each boiler 64 sq ft No. and Description of Safety Valves to each boiler 4" Lewis Spring loaded Area of each valve 25.1328 sq in Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 30" Inside diam. of boilers 15'-6" Length 11'-9" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams O.R. Lap.

Longitudinal seams T.R. D.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/8" Lap of plates or width of butt straps 22 1/4"

Percentages of strength of longitudinal joint 90-97% Working pressure of shell by rules 211.6 lbs Size of manhole in shell 16x12"

of compensating ring 35 1/4x31 1/4x1 1/8" No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 49 3/4"

Length of plain part 9' Thickness of plates 1 1/8" Description of longitudinal joint Welded No. of strengthening rings Yes

Working pressure of furnace by the rules 227 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 23/32" Top 1 1/8" Bottom 7/8"

No. of stays to ditto: Sides 9 1/2x8 1/4" Back 9x9 1/4" Top 9x8 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202 lbs

Material of stays Steel Area at smallest part 210 Area supported by each stay 88 sq in Working pressure by rules 214 lbs End plates in steam space: Material Steel Thickness 1 3/32" Pitch of stays 21 1/4x16 1/2" How are stays secured D.Nuts & Washers Working pressure by rules 214 lbs Material of stays Steel

Area at smallest part 8.26 sq in Area supported by each stay 361.9 sq in Working pressure by rules 238 lbs Material of Front plates at bottom Steel

Thickness 1 1/2" Material of Lower back plate Steel Thickness 1 1/8" Greatest pitch of stays 16'-11" Working pressure of plate by rules 208 lbs

Diameter of tubes 3" Pitch of tubes 4 1/2x4 1/2" Material of tube plates Steel Thickness: Front 1 1/32" Back 3/8" Mean pitch of stays 10 5/8"

Chamber across wide water spaces 14" Working pressures by rules 361 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2x1 1/2" Length as per rule 34 13/32" Distance apart 9" Number and pitch of stays in each 3@8 1/4"

Working pressure by rules 217 lbs Steam dome: description of joint to shell Yes % of strength of joint -

Material Yes Thickness of shell plates - Material Yes Description of longitudinal joint Yes Diam. of rivet holes -

Material of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed Yes

SUPERHEATER. Type Foster Date of Approval of Plan 1920 Tested by Hydraulic Pressure to 600 lbs

Date of Test 9th Feb 1921 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 2" Pressure to which each is adjusted 215 lbs Is Easing Gear fitted No

008168-008176-0136

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

4 Connecting rod top and bolt nuts, 2 conn: rod bottom and bolt & nuts, 2 main bearing bolts, 1 set coupling bolt nuts, 1 set of feed & bilge pump valves, 1 set of piston rings & springs, 1 pair connecting rod brasses, 1 set top and brasses; 1 set link brasses, 1 set valve spindles & 2 eccentric ^{shafts} rods, 1 set safety valve & 1 set relief valve springs, 3rd condenser & 2 dgm Boiler tubes, a considerable quantity of spare gear for aux: machinery, hand tools, iron of various size & bolt nuts of various size

The foregoing is a correct description,

Manufacturer.

H. Mikarous

1920
Dates of Survey { During progress of work in shops -- Mar. 12, 13; Apr. 9, 14, 21, 23, 24, 27, 30; May 3, 5, 7, 10, 12, 15, 17, 21, 24, 28; June 4, 6, 7, 12, 17, 23, 25, 29; July 3, 19
while building { During erection on board vessel -- July 12, 15, 17, 20, 22, 29, 31; Aug. 3, 7, 8, 11, 12, 18, 19, 26; Sept. 1, 4, 7, 8; Nov. 15; Dec. 15, 22, 24; 1921 Jan. 6, 11, 17, 21, 24, 26, 29, 30
Total No. of visits { 71

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 23/6/20 Slides 25/6/20 Covers 25/6/20 Pistons 29/6/20 Rods 7/9/20
Connecting rods 7/9/20 Crank shaft 29/6/20 Thrust shaft 19/8/20 Tunnel shafts ✓ Screw shaft 1/9/20 Propeller 1/9/20
Stern tube 7/9/20 Steam pipes tested 22/4/21 Engine and boiler seatings 1/4/21 Engines holding down bolts 1/4/21
Completion of pumping arrangements 20/5/21 Boilers fixed 22/4/21 Engines tried under steam 20/5/21
Completion of fitting sea connections 4/4/21 Stern tube 4/4/21 Screw shaft and propeller 4/4/21
Main boiler safety valves adjusted 4/5/21 Thickness of adjusting washers Lock nuts fitted
Material of Crank shaft Steel Identification Mark on Do. LLOYDS 29/6/20 R.B. R Material of Thrust shaft Steel Identification Mark on Do. LLOYDS 1/9/20 R.B. R
Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Steel Identification Marks on Do. LLOYDS 1/9/20 R.B. R
Material of Steam Pipes Steel Test pressure 600th
Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes
Have the requirements of Section 49 of the Rules been complied with Yes
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 are as stated in this report, the materials have been tested, found efficient, & the workmanship is good. They have now been efficiently fitted on board & tested under steam with satisfactory results. This case is respectfully submitted for the committee consideration & eligible in my opinion to have record of + L.M.C. 6-21 & notation fitted for oil fuel F.P. above 150° F. in Register Book.
Boilers & machinery have been constructed under special survey according to Rules and approved plans.

NOTE! This vessel left before completion of fuel oil installation & workmen were placed on board to finish work before vessel arrived at Darin. Darin Surveyor notified by letter of 10th June 1921 stating what remained to be done

Unfinished work to be done returning run to Darin:— (1) Extension rods for operating fuel oil sections in (2) Extension rod to F.O. transfer pump steam (3) Stm smothering pipe to R.R. tank top (4) Heating coil drain inspection to be rearranged (5) Valve alk & drip trap where necessary

The amount of Entry Fee ... Yen 60.
Special ... £ 1545.
ELECTRIC LIGHT INSTN SURVEY FEE 195.
Travelling Expenses (if any) £ 200.
When applied for, June 9th 1921
When received, 27.7.19

H.D. Buchanan.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 27 SEP. 1921

Assigned

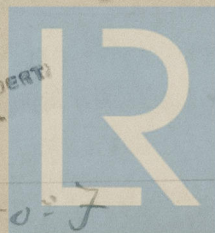
+ L.M.C. 6-21
F.D.C.L.

Fitted for oil fuel 6-21 F.P. above 150°F

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINERY CERT
WRITTEN



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