

REPORT ON MACHINERY.

No. 1129.

Received at London Office

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Date of writing Report 24th May 1917 When handed in at Local Office 24th May 1917 Port of NAGASAKI.No. in Survey held at NAGASAKI.Date, First Survey 10th May 1916 Last Survey 23rd May 1917

Reg. Book.

(Number of Visits) 94Gross 3810Net 2343on the s.s. "Nagano Maru"Master E. Takahashi Built at Nagasaki By whom built Mitsubishi S. & B. Works When built 1917Engines made at Nagasaki By whom made Mitsubishi Dockyard & Engine Works when made 1917Boilers made at Nagasaki By whom made Do. when made 1917Registered Horse Power _____ Owners Nippon Yusen Kaisha Port belonging to TokioNom. Horse Power as per Section 28 342 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines

Triple Expansion

No. of Cylinders 3No. of Cranks 3Dia. of Cylinders 23" 38" & 64" Length of Stroke 48" Revs. per minute 88 Dia. of Screw shaft 14.5" Material of screw shaft SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube No liner fitted 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 1 3/8"Dia. of Tunnel shaft 12.49" Dia. of Crank shaft journals 13.116" Dia. of Crank pin 14" Size of Crank webs 8 3/4" x 19 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 moveable Yes Total surface 76 sq. ft.No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 22" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 22" Can one be overhauled while the other is at work YesNo. of Donkey Engines 3 Sizes of Pumps 2 duplex 8" x 10" x 8" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 3 @ 3 1/2" In Holds, &c. No. 1 Hold 2 @ 3 1/2" No. 2 Hold 2 @ 3 1/2"No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 4 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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 AboveAre 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 YesWhat pipes are carried through the bunkers Bilge pipes How are they protected High steel platesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesIs the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deckBOILERS, &c.—(Letter for record S) Manufacturers of Steel David Colville & Sons Ltd.Total Heating Surface of Boilers 4394 Is Forced Draft fitted Yes No. and Description of Boilers 2 single ended cylindricalWorking Pressure 200 lb. Tested by hydraulic pressure to 400 lb. Date of test 15th Feb. 1917 No. of Certificate 71Can each boiler be worked separately Yes Area of fire grate in each boiler 54' 31" sq. ft. No. and Description of Safety Valves toeach boiler 2 Spring loaded Area of each valve 9.62 sq. in. Pressure to which they are adjusted 205 lb. Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 16 1/16" Mean dia. of boilers 14' 0" Length 11' 6" Material of shell plates SteelThickness 1 5/16" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double laplong. seams 2 straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 7 1/2" & 4 3/4" Lap of plates or width of butt straps 20 1/2"Per centages of strength of longitudinal joint rivets 88.6 Working pressure of shell by rules 212 lb. Size of manhole in shell 16" x 12"Size of compensating ring 37" x 33" No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 3' 9 1/2"Length of plain part top 9" Thickness of plates bottom 9" Description of longitudinal joint Welded No. of strengthening rings 3Working pressure of furnace by the rules 217 lb. Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 1 1/16"Pitch of stays to ditto: Sides 8" x 11" Back 9" x 10 1/2" Top 7" x 11 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 212 lb.Material of stays Steel Area at smallest part 2.02 Area supported by each stay 83 sq. in. Working pressure by rules 215 lb. End plates in steam space:Material Steel Thickness 1 3/32" Pitch of stays 20" x 18" How are stays secured Double nut and washer Working pressure by rules 214 lb. Material of stays SteelArea at smallest part 7.67 Area supported by each stay 360 sq. in. Working pressure by rules 221 lb. Material of Front plates at bottom SteelThickness 3 1/2" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 3/4" Working pressure of plate by rules 211 lb.Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 3 1/2" Back 3 1/2" Mean pitch of stays 10"Pitch across wide water spaces 1' 1 1/2" Working pressures by rules 216 lb. Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 10 1/2" x 7 1/2" Length as per rule 31.9 Distance apart 7 1/2" x 11 1/2" Number and pitch of stays in each 30 7"Working pressure by rules 214 lb. Steam dome: description of joint to shell Yes % of strength of joint YesDiameter Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes YesPitch of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed YesSUPERHEATER. Type Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to YesDate of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler YesMaterial of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes

006369-006386-0286

IS A DONKEY BOILER FITTED?

No. ✓

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— as per Rule, and in addition one H.P. valve spindle, one L.P. valve spindle, 2 eccentric rods, one set each of H.P. I.P. & L.P. packing rings, one set each of top & bottom brasses for connecting rod, 13 junk ring bolts, one set of air pump valves, one impeller & spindle for circulating pump, 45 condenser tubes & 134 ferrules, 3 cylinder escape valves & springs, and 2 safety valve springs. ✓

The foregoing is a correct description,

MITSUBISHI DOCK & ENGINE WORKS.

General Manager Manufacturer.

Dates of Survey while building
During progress of work in shops -- 1916 May 10, 24, Sept. 30, Oct. 14, 24, 25, Nov. 4, 11, 13, 14, 15, 16, 21, 22, 23, 27, 30, Dec. 4, 5, 6, 7.
During erection on board vessel --- 1917 Jan. 6, 10, 16, 18, 19, 20, 22, 23, 25, 31, Feb. 3, 5, 6, 8, 9, 13, 14, 15, 17, 19, 20, 22, 23, 24, 27, 28, March 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 15, 16, 19, 21, 22, 23, 26, 27, 28, 29, 30, April 2, 9, 14, 16, 17, 18, 21, 23, 25, 28, May 3, 4, 5, 9, 12, 16, 23.
Total No. of visits 94

Is the approved plan of main boiler forwarded herewith Yes. ✓

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 8.3.17 Slides 5.3.17 Covers 8.3.17 Pistons 7.3.17 Rods 19.3.17

Connecting rods 5.3.17 Crank shaft 19.2.17 Thrust shaft 29.3.17 Tunnel shafts 28.3.17 Screw shaft 19.2.17 Propeller 7.3.17

Stern tube 14.4.17 Steam pipes tested 5.5.17 Engine and boiler seatings 4.5.17 Engines holding down bolts 5.3.17

Completion of pumping arrangements 9.5.17 Boilers fixed 28.4.17 Engines tried under steam 12.5.17

Completion of fitting sea connections 25.4.17 Stern tube 23.4.17 Screw shaft and propeller 23.4.17

Main boiler safety valves adjusted 9.5.17 Thickness of adjusting washers No washers, brass joint nuts

Material of Crank shaft Steel Identification Mark on Do. 134 A.S.W. Material of Thrust shaft Steel Identification Mark on Do. 134 A.S.W.

Material of Tunnel shafts Steel Identification Marks on Do. 134 A.S.W. Material of Screw shafts Steel Identification Marks on Do. 134 A.S.W.

Material of Steam Pipes Steel ✓ Test pressure 600 lb. ✓

Is an installation fitted for burning oil fuel ✓ 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 "Akita Maru" & "Yamagata Maru" ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

These Engines and Boilers have been constructed under Special Survey, in accordance with the Rules, and of good materials and workmanship. They have been securely fitted on board, and have been satisfactorily tried under steam. The machinery of this vessel is eligible, in my opinion, for the record of LMC 5.17 in the Register Book.

Mean speed of 6 Runs on Trial when $\frac{1}{3}$ Loaded = 14.318 Knots.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 5.17. F.D.

The amount of Entry Fee £ 3 : 0 : 0 When applied for, 24th May 1917
Special £ 53 : 13 : 0
Donkey Boiler Fee £ : : :
Travelling Expenses (if any) £ : : : 25th May 1917

A. D. Williamson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI.-6 JUL. 1917

Assigned

+ LMC 5.17

F. D.

MACHINERY DEPARTMENT
WRITTEN



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Foundation