

Rpt. 4.

## REPORT ON MACHINERY.

No. 1999

Received at London Office

SAT. 12 MAY. 1917

Date of writing Report 25 May 1917 When handed in at Local Office

Port of Kobe

No. in Survey held at Kobe  
Reg. Book.

Date, First Survey 14 Jan'y 1916 Last Survey 27 March 1917

on the Steel Twin Screw Steamer "Hakodate"

Number of Visits 50

Gross 9390

Net Not assigned

Master Williams Built at Kobe

By whom built Sh. Kawasaki Docking Co. Ltd.

When built 1917-3

Engines made at Kobe

By whom made Sh. Kawasaki Docking Co. Ltd.

when made 1917

Boilers made at Kobe

By whom made do

when made do

Registered Horse Power

Owners Furness, Withy &amp; Co. Ltd.

Port belonging to

Nom. Horse Power as per Section 28 658

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &amp;c.—Description of Engines Triple Expansion Two Sets No. of Cylinders Six No. of Cranks Six

Dia. of Cylinders 21: 35: 59 Length of Stroke 48 Revs. per minute 72 Dia. of Screw shaft 14 1/2 as per rule 11-83 as fitted 12

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight

in the propeller boss 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' 0"

Dia. of Tunnel shaft as per rule 11-83 as fitted 12 Dia. of Crank shaft journals as per rule 12-42 as fitted 12 9/16 Dia. of Crank pin 13 Size of Crank webs 8 x 24 Dia. of thrust shaft under

collars 12 9/16 Dia. of screw 16 1/2 Pitch of Screw 16 9/16 No. of Blades 4 State whether moveable Yes Total surface 84 Each Secus

No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four Sizes of Pumps Weir fed 10 1/2 8 24 Two No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Four 3 1/2 In well 3 1/2 Bel. pump 10 1/2 12 dup. hot. In Holds, &amp;c. Two 3 1/2 in each hold

No. of Bilge Injections 2 sizes 7 1/2 Connected to condenser, or to circulating pump Circ. Is a separate Donkey Suction fitted in Engine room &amp; 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 Forward bilge suction How are they protected Strong wood casing

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 upper grating of Eng. Rm.

BOILERS, &amp;c.—(Letter for record S) Manufacturers of Steel David Colville &amp; Sons. Carnegie Ste. Co. Leeds Forge.

Total Heating Surface of Boilers 9219 Is Forced Draft fitted Yes No. and Description of Boilers Four Single Ended

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 22-29 Sep. 1916 No. of Certificate LLOYD'S TEST 400 LBS

Can each boiler be worked separately Yes Area of fire grate in each boiler 60.5 No. and Description of Safety Valves to

each boiler Two direct Spring Area of each valve 11.04 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 16 3/4 Mean dia. of boilers 14 1/2 Length 12 0 Material of shell plates Steel

Thickness 1 5/16 Range of tensile strength 29-32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Double

long. seams Double Strap Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8 3/4 x 4 3/8 Top of plates or width of butt straps 19 5/8

Per centages of strength of longitudinal joint rivets 95.8 Working pressure of shell by rules 209 lbs Size of manhole in shell 16 x 12

Size of compensating ring 7 1/2 x flang 1 3/8 No. and Description of Furnaces in each boiler 3 Motor. Susp. Material Steel Outside diameter 48 1/4

Length of plain part top Thickness of plates crown 5/8 Description of longitudinal joint Welded No. of strengthening rings

Working pressure of furnace by the rules 208 Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 11/16 Top 11/16 Bottom 7/8

Pitch of stays to ditto: Sides 8 5/8 x 8 1/2 Back 9 x 8 1/2 Top 9 3/8 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 203 lbs

Material of stays Steel Area at smallest part 2.1 Area supported by each stay 9 3/8 x 8 1/2 Working pressure by rules 230 End plates in steam space:

Material Steel Thickness 1 5/16 Pitch of stays 19 3/4 x 20 1/2 How are stays secured Double nuts Working pressure by rules 201 lbs Material of stays Steel

Area at smallest part 10.1 Area supported by each stay 19 3/4 x 20 1/2 Working pressure by rules 260 lbs Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 13 1/2 at wide Working pressure of plate by rules 200 lbs

Diameter of tubes 3 1/4 Pitch of tubes 4 7/16 x 4 5/16 Material of tube plates Steel Thickness: Front 13/16 Back 13/16 Mean pitch of stays 8 3/4

Pitch across wide water spaces 13 3/4 Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 1/2 x 13 1/2 (2) Length as per rule 34 1/2 Distance apart 9 3/8 Number and pitch of stays in each 3 @ 8 1/2

Working pressure by rules 230 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 Schmidt Date of Approval of Plan Tested by Hydraulic Pressure to 600 lbs

Date of Test 18/10/16 24/10/16 10/12/16 22/12/16 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 3 Pressure to which each is adjusted 205 lbs Is Easing Gear fitted

W592101670n



IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 1 set packing rings & springs for all pistons.

1 propeller shaft & nut. 1/4 set journal ring bolts. 1/2 set feed valves & seats.  
2 Bolt & nuts for crosshead trusses. 1 set feed check valves & seats. 1/2 set bilge valves & seats.  
1 set coupling bolts & nuts. Centrif. fan & shaft. 2 Crank pin bolts & nuts & trusses.  
4 Main bearing bolts & nuts. 1/2 set air pump valves. Assorted bolts & nuts.  
1 Piston rod with nut for each side. Air pump rod. Iron, various sizes.  
1 Slide & rod complete each side. 4 Safety valve springs. Condenser tubes; boiler tubes.  
fire bars etc.

The foregoing is a correct description,  
Kawasaki Dockyard Co., Ltd.

For

Muroran

Manufacturer.

Secretary

Dates of Survey while building { During progress of work in shops -- 17 Jan. 5 Feb. 8 15 29 Mar. 19 Apr. 11 May 2 12 14 30 June 6 17 28 July 14 21 Aug. 1 5 22 29 Sep.  
During erection on board vessel -- 3 10 18 24 Oct. 13 24 27 Nov. 10 18 22 Dec. 19 16 13 18 20 22 24 29 Jan. 6 8 19 21 23 Feb.  
Total No. of visits } 3 7 10 12 13 16 20 26 27 March 1917 Is the approved plan of main boiler forwarded herewith Yes.  
50 " " " donkey " " " None

Dates of Examination of principal parts—Cylinders 19/4/16 etc Slides 2/6/16 etc Covers 2/6/16 etc Pistons 28/4/16 etc Rods 12/6/16 etc  
Connecting rods 17/7/16 etc Crank shaft 28/7/16 etc Thrust shaft 28/7/16 etc Tunnel shafts 5/9/16 etc Screw shaft 22/12/16 etc Propeller 22/12/16 etc  
Stern tubes 22/12/16 etc. Steam pipes tested 22/1/17 21/2/17 23/2/17 Engine and boiler seatings 31/1/17 etc Engines holding down bolts 19/2/17 etc  
Completion of pumping arrangements 3/3/17 Boilers fixed 19/2/17 Engines tried under steam 10/3/17  
Completion of fitting sea connections 6/2/17 Stern tube 18/1/17 Screw shaft and propeller 24/1/17  
Main boiler safety valves adjusted 10/3/17 Thickness of adjusting washers Lock nuts  
Material of Crank shaft Steel Identification Mark on Do. LLOYDS G.H. 518-525 Material of Thrust shaft Steel Identification Mark on Do. LLOYDS G.H. 553 2/2 547 7/3 4  
Material of Tunnel shafts Steel Identification Marks on Do. LLOYDS G.H. 547-564 Material of Screw shafts Steel Identification Marks on Do. LLOYDS G.H. 568 2/3 1 568 7/3 1 571 3/4 1  
Material of Steam Pipes Steel Test pressure 600 lbs

Is an installation fitted for burning oil fuel. No

Is the flash point of the oil to be used over 150°F. 1 space 571 3/4 1

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 "Harbin Maru" Kobe Rpt No 1601 (E. & B. only, not hull)

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

The machinery has been made & fitted under Special Survey in accordance with the Rules & the materials & workmanship have been found good. The shafting was made at the Imperial Steel Works, Muroran. A report upon the Electric Lighting is enclosed.

The machinery worked satisfactorily, on progressive & full speed trials. Some of the results of the trials are shown tabulated on the attached sheets. The engines & boilers were afterwards opened out & found in good condition.

The machinery in my opinion is eligible for the notation + LMC 3-17

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 3.17. FD

T.J.S.  
14.5.17

A.R.R.

Certificate (if required) to be sent to

The amount of Entry Fee ... Yen 30 : When applied for,  
Special ... Yen 793 : 17 Mar 1917  
Donkey Boiler Fee £ : :  
Travelling Expenses (if any) £ : : 17 Mar 1917

Arthur L. Jones

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 15 MAY 1917

Assigned

+ L.M.C. 3.17 J.B.

MACHINERY CERTIFICATE  
WRITTEN



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Lloyd's Register  
Foundation