

REPORT ON MACHINERY.

No. 3595

Received at London Office

Date of writing Report **5th JUNE 1922** When handed in at Local Office

Port of **KOBE**

No. in Survey held at **KOBE**
Reg. Book.

Date, First Survey **FEB 5, 1920** Last Survey **JUNE 2nd 1922**

on the **STEEL SINGLE SCREW STEAMER "BELFAST MARU"**

(Number of Visits **127**)
Gross **6586**.
Net **4038**.
When built **1922**

Master Built at **KOBE**

By whom built **Kawasaki Dockyard Co. Ltd.**

Engines made at **KOBE**

By whom made **Kawasaki Dockyard Co. Ltd.**

when made **1922**

Boilers made at **"**

By whom made **" " " "**

when made **1922**

Registered Horse Power **578**

Owners **" " " "**

Port belonging to **KOBE**

Nom. Horse Power as per Section 28 **578**

Is Refrigerating Machinery fitted for cargo purposes **No.**

Is Electric Light fitted **Yes.**

ENGINES, &c.—Description of Engines **Triple Expansion**

No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **28 + 46 1/2 + 78"** Length of Stroke **54"** Revs. per minute **70** normal
Dia. of Screw shaft as per rule **16.65** Material of screw shaft **35**
as fitted **17**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **Without liners** 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 **Yes** If two

liners are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush **71"**

Dia. of Tunnel shaft as per rule **14.8** Dia. of Crank shaft journals as per rule **15.56** Dia. of Crank pin **16** Size of Crank webs **29x10** Dia. of thrust shaft under

collars **15 3/4** Dia. of screw **18-0** Pitch of Screw **21-6"** No. of Blades **4** State whether moceable **Yes** Total surface **120** ft. expanded.

No. of Feed pumps **One** Diameter of ditto **5 1/4"** Stroke **27"** Can one be overhauled while the other is at work **Yes—with Weir Pumps.**

No. of Bilge pumps **Two** Diameter of ditto **5 1/4"** Stroke **27"** Can one be overhauled while the other is at work **Yes.**

No. of Donkey Engines **Four** Sizes of Pumps: BALL PUMP 10x11x12 dup GEN. SERV. 7 1/2x5x6 WEIR'S FEED. 10 1/2x8x24 TWO OIL TRANSF. 10x7x10 dup. A.F. STONEMALD TWO 7x5x12 SINGLES. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room—**Three 3 1/2** In Eng. Rm. Well—**One 3 1/2** In Coffin Dam aft of No. 3 Tank—**One 3 1/2** In Tunnel Well—**one 3 1/2**

No. of Bilge Injections **one** sizes **12 3/4"** 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 **21' below**

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 **Bilge Suctions** How are they protected **Wood covering.**

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 Dk platform of L. Room.**

BOILERS, &c.—(Letter for record **S.**) Manufacturers of Steel **(Jumases) J. Brown & Amer. Spiral Pipe Co.**

Total Heating Surface of Boilers **7800** Is Forced Draft fitted **Yes.** No. and Description of Boilers **Three Single Lined Scotch.**

Working Pressure **200.** Tested by hydraulic pressure to **350** Date of test **15-3-22, 24-3-22** No. of Certificate **LL07DS TEST WT 850 LBS**

Can each boiler be worked separately **Yes** Area of fire grate in each boiler **63.25 SQ. FT.** No. and Description of Safety Valves to

each boiler **Two Spring Loaded** Area of each valve **11"** Pressure to which they are adjusted **205** Are they fitted with easing gear **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **2'3"** Mean dia. of boilers **15-7 3/8"** Length **12-0** Material of shell plates **STEEL**

Thickness **1 3/8 + 1 1/2"** Range of tensile strength **28-32** TONS Are the shell plates welded or flanged **No.** Descrip. of riveting: cir. seams **Ends dble**

long. seams **DBLE BUTT STRAPS** Diameter of rivet holes in long. seams **1 1/32"** Pitch of rivets **9 3/4 & 4 7/8"** Width of butt straps **21 3/8"**

Per centages of strength of longitudinal joint plate **100** Working pressure of shell by rules **202.** Size of manhole in shell **16 x 12**

Size of compensating ring **33x37x1 7/16** No. and Description of Furnaces in each boiler **3 MORISON'S SUSPENSION** Material **Steel** Outside diameter **50 1/4**

Length of plain part top **11"** Thickness of plates crown **1 1/16"** Description of longitudinal joint **welded** No. of strengthening rings **1**

Working pressure of furnace by the rules **216** Combustion chamber plates: Material **Steel** Thickness: Sides **1 1/16** Back **1 1/16** Top **1 1/16** Bottom **7/8"**

Pitch of stays to ditto: Sides **8 7/8 x 8 1/2** Back **9 1/4 x 8 1/4** Top **8 7/8 x 8 1/2** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **208.**

Material of stays **Steel** Area at smallest part **2.10** Area supported by each stay **78.13** Working pressure by rules **242** End plates in steam space:

Material **Steel** Thickness **1 1/16"** Pitch of stays **17 x 15 1/4** How are stays secured **dble nuts & washers** Working pressure by rules **205** Material of stays **Steel**

Area at smallest part **6.33** Area supported by each stay **260.8** Working pressure by rules **252** Material of Front plates at bottom **Steel**

Thickness **1 3/16** Material of Lower back plate **Steel** Thickness **3/4 with dble 5/8** Greatest pitch of stays **9 1/4 x 8 1/4** Working pressure of plate by rules **309**

Diameter of tubes **9 3/4** Pitch of tubes **4 1/2 x 4 5/16** Material of tube plates **Steel** Thickness: Front **13/16 with dble 5/8** Back **13/16** Mean pitch of stays **9 x 8 5/8.**

Pitch across wide water spaces **13 3/4** Working pressures by rules **240** Girders to Chamber tops: Material **Stl.** Depth and

thickness of girder at centre **Two 10 1/4 x 13 1/16** Length as per rule **35 1/8** Distance apart **8 1/2** Number and pitch of stays in each **Three @ 8 1/2"** 8 7/8

Working pressure by rules **232** Steam dome: description of joint to shell **NONE.** % of strength of joint **✓**

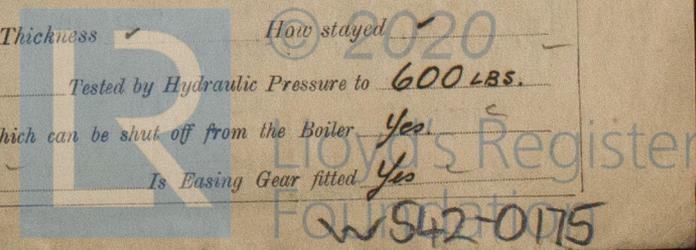
Diameter **✓** Thickness of shell plates **✓** Material **✓** Description of longitudinal joint **✓** Diam. of rivet holes **✓**

Pitch of rivets **✓** Working pressure of shell by rules **✓** Crown plates **✓** Thickness **✓** How stayed **✓**

SUPERHEATER. Type **Schmidt.** Date of Approval of Plan **✓** Tested by Hydraulic Pressure to **600 LBS.**

Date of Test **7-9-21** **24-9-21** **1-10-21** 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 **210 lbs.** Is Easing Gear fitted **Yes**



FQW 542-0075

IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

- 1 Set Packing rings for all Pistons & Piston Valves
- 15 Studs & Nuts for Junk Rings
- 1 pair Lee Rods.
- 1 Propeller Shaft with Nut.
- 2 Bolts & nuts for Conn. Rod t. & ends
- 9 Shaft Coupling Bolts & nuts.
- 4 Main Brg Bolts & nuts
- 1 Slide Valve Rod of each Side
- 1 Set Feed Check Valves & Seats
- 1 Centrif Pump Impeller Shaft
- 1 Set Crosshd. & Crank-pin Brasses
- 1 Air Pump Rod & Nut
- 1 Set A.P. Head Valve
- 3 Safety Valve Spring
- 1 Set Feed & Bilge Pump Valves & Seats
- Cond. tubes & ferrules bolts & nuts
- Oil burning sprayer
- Superheater tubes

The foregoing is a correct description,

Kawasaki Dockyard Co. Ltd.

Secretary

Manufacturer.

1920
 Dates of Survey while building
 During progress of work in shops - FEB. 5, 12, 17, 27; MAR. 26, 30; APR. 6, 29, 30; MAY 4, 6, 10, 13, 15, 29, 31; JUNE 1, 2, 5, 7, 14, 15, 23, 25; JULY 2, 8, 9, 14, 16, 26
 During erection on board vessel - - - JAN. 12, 15, 19, 21, 22; FEB. 2, 21, 28; MAR. 23; APR. 9, 10, 12, 14, 20; MAY 3, 4, 10, 12, 16; JUNE 9, 11, 18, 22, 23; JULY 1, 6; AUG. 12
 Total No. of visits 127.
 Is the approved plan of main boiler forwarded herewith YES

Dates of Examination of principal parts—Cylinders 12+18-11-21 Slides 30-3-22 Covers 5-11-21 Pistons 22-1-21 Rods 30-3-22
 Connecting rods 13-12-21 Crank shaft 5-11-21 Thrust shaft 5-11-21 Tunnel shafts 10-5-21 Screw shaft 11-6-21 Propeller 10-12-21
 Stern tube 16-11-21 Steam pipes tested 28-4-21 Engine and boiler seatings 2-2-22 Engines holding down bolts 5-5-22
 Completion of pumping arrangements 15-5-22 Boilers fixed 5-5-22 Engines tried under steam 16-5-22 + 1-6-22 OVERHAUL 18-5-22 + 2-6-22
 Completion of fitting sea connections 12-7-22 Stern tube 23-12-21 Screw shaft and propeller 12-1-22

Main boiler safety valves adjusted 5-5-22 Thickness of adjusting washers Locknuts.
 Material of Crank shaft F. Steel Identification Mark on Do. LLOYDS 5-11-21 AW R
 Material of Thrust shaft F. Steel Identification Mark on Do. LLOYDS 5-11-21 AW R
 Material of Tunnel shafts F. Steel Identification Marks on Do. LLOYDS 10-5-21 AW R
 Material of Screw shafts F. Steel Identification Marks on Do. LLOYDS 11-6-21 AW R
 Material of Steam Pipes Steel. Test pressure 600 lbs. \bar{D}

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 FUJI MARU 3143, BALTIMORE MARU 3165, WALES MARU 3383.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Machinery has been made and fitted under Special Survey in accordance with the requirements of the Rules & the materials and workmanship are good. The machinery worked satisfactorily on trial.

The machinery of this vessel is eligible, it is submitted for the notation + L.M.C. (5.22) and "Fitted for oil fuel 5.22 (F.P. above 150°); Blue Prints of "Boiler" & "Oil Fuel Pumping & Piping Arrangement" are sent herewith.

It is submitted that this vessel is eligible for THE RECORD. F.L.M.C. - 6.22. F.D. O.G.
 Fitted for oil fuel, 6.22, F.P. above 150° F.

The amount of Entry Fee ... Yen 60.-
 Special ... £ 1560.-
 ELECTRIC LIGHT INST. SURVEY. Donkey Boiler Fee ... £ 240.-
 Travelling Expenses (if any) £ : :
 When applied for, May 28th 1922
 When received, June 1st 1922.
 A Watt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned
 FRI. JUL 14 1922
 + L.M.C. 6.22 F.D., O.G.
 Fitted for oil fuel 6.22 F.P. above 150° F.

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

