

REPORT ON MACHINERY. No. 2500.

REC'D NEW YORK

April 23 1917

Received at London Office

MAY 14 1917

Date of writing Report Apr. 14th 17 When handed in at Local Office

Port of SAN FRANCISCO,

No. in Survey held at San Francisco,

Date, First Survey Nov. 1st/16

Last Survey Apr. 7th 1917

Reg. Book.

91 on the Twin s/s "M A U I", No. 127 Union Iron Works Co.

(Number of Visits 26)

Tons { Gross 10261
Net 6368

Master P. Johnson 89-17 Built at San Francisco, By whom built Union Iron Works Co.

When built 1917

Engines made at Pittsburgh, Pa. By whom made Westinghouse Machine Co.

when made 1917

Boilers made at New Jersey, NJ By whom made Babcock & Wilcox Co.

when made 1916

Registered Horse Power

Owners. Matson Navigation Co.

Port belonging to San Francisco.

Shaft Horse Power at Full Power 10,000

Is Refrigerating Machinery fitted for cargo purposes yes

Is Electric Light fitted yes

TURBINE ENGINES, &c.—Description of Engines Westinghouse Geared Turbine

No. of Turbines two each

Diameter of Rotor Shaft Journals, H.P. - L.P. - Diameter of Pinion Shaft -
Diameter of Journals - Distance between Centres of Bearings - Diameter of Pitch Circle -
Diameter of Wheel Shaft - Distance between Centres of Bearings - Diameter of Pitch Circle of Wheel -
Width of Face - Diameter of Thrust Shaft under Collars - Diameter of Tunnel Shaft as per rule 14 1/8"
as fitted 15 1/4"
No. of Screw Shafts 2 ✓ Diameter of same as per rule 15.1
as fitted 16 1/4" ✓ Diameter of Propeller 15'9" ✓ Pitch of Propeller 17.2" ✓
No. of Blades 3 ✓ State whether Moveable yes ✓ Total Surface 70.5 sq. ft. ✓ Diameter of Rotor Drum, H.P. - L.P. - Astern -
Thickness at Bottom of Groove, H.P. - L.P. - Astern - Revs. per Minute at Full Power, Turbine - Propeller 125

PARTICULARS OF BLADING.

H.P.

L.P.

ASTERN.

	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND "									
3RD "									
4TH "									
5TH "									
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps 2-18 1/2" x 13 1/2" x 24" ✓

No. and size of Bilge pumps 2-Duplex 10"x6"x10", 12"x10"x12" ✓

No. and size of Bilge suction in Engine Room 3- 2 @ 3 1/2" 1 @ 5" ✓ In Boiler Room 5 @ 3 1/2" ✓

In Holds, &c. Fore Peak 1-3 1/2". No. 1 Hold, 2-3 1/2". No. 2 Hold 2-3 1/2" ✓

No. 3 Hold 2-3 1/2" No. 4 Hold 2-3 1/2" ✓

No. of Bilge Injections 2 ✓ sizes 12" ✓ Connected to circulating pump yes ✓ Is a separate Donkey Suction fitted in Engine Room & size yes 4" ✓

Are all the bilge suction pipes fitted with roses yes ✓ Are the roses in Engine room always accessible yes ✓

Are all connections with the sea direct on the skin of the ship yes ✓ Are they Valves or Cocks valves ✓

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 -

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 - Is it fitted with a watertight door - worked from -

BOILERS, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted no ✓ No. and Description of Boilers 8-B&W water tube ✓

Working Pressure 250 lbs. ✓ Tested by hydraulic pressure to 500 lbs. ✓ Date of test Feb. 19 & 20 ✓ No. of Certificate -

Can each boiler be worked separately yes ✓ Area of fire grate in each boiler - No. and Description of Safety Valves to

each boiler 2-3 1/2" ✓ Area of each valve 9.6 sq" ✓ Pressure to which they are adjusted 250 lbs. ✓ Are they fitted with easing gear yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork - Mean dia. of boilers - Length - Material of shell plates -

Thickness - Range of tensile strength - Are the shell plates welded or flanged - Descrip. of riveting: cir. seams -

long. seams - Diameter of rivet holes in long. seams - Pitch of rivets - Lap of plates or width of butt straps -

rivets - Per centages of strength of longitudinal joint Working pressure of shell by rules - Size of manhole in shell -

plates - Size of compensating ring - No. and Description of Furnaces in each Boiler - Material - Outside diameter -

Length of plain part top - Thickness of plates crown - Description of longitudinal joint - No. of strengthening rings -

bottom - Working pressure of furnace by the rules - Combustion chamber plates: Material - Thickness: Sides - Back - Top - Bottom -

Pitch of stays to ditto: Sides - Back - Top - If stays are fitted with nuts or riveted heads - Working pressure by rules -

Material of stays - Diameter at smallest part - Area supported by each stay - Working pressure by rules - End plates in steam space

Material - Thickness - Pitch of stays - How are stays secured - Working pressure by rules - Material of stays -

Diameter at smallest part - Area supported by each stay - Working pressure by rules - Material of Front plates at bottom -

Thickness - Material of Lower back plate - Thickness - Greatest pitch of stays - Working pressure of plate by rules -

Diameter of tubes - Pitch of tubes - Material of tube plates - Thickness: Front - Back - Mean pitch of stays -

Pitch across wide water spaces Working pressures by rules - Girders to Chamber tops: Material - Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter

Thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets

Working pressure of shell by rules Crown plates: Thickness How stayed

SUPERHEATER. Type B&W Date of Approval of Plan 3.3.16 & 17.3.16 Tested by Hydraulic Pressure to 500 lbs.

Date of Test Feb. 19th & 20th Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes

Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 260 lbs. Is Lasing Gear fitted no

IS A DONKEY BOILER FITTED? no. If so, is a report now forwarded? -

SPARE GEAR. State the articles supplied:— 1-set of main coupling bolts. 1-set of Feed & Bilge pump valves.

1-set of air pump valves. 300 condenser ferrules. 150 condenser tubes. 2-propeller blades.

The foregoing is a correct description,

UNION IRON WORKS COMPANY,

By,

Geo. J. Ames
Engineer-in-Chief.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- July 5th, Nov. 1-25-28-Dec. 20 Feb. 12-13 Mar. 21-23.
During erection on board vessel --- Nov. 25 Dec. 9-23 Jan 3-18-31 Feb. 1-16-19-20-28 Mar 1-5-7-10-30 Apr. 1-2-7.
Total No. of visits twenty-six (26) Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Casings - Rotors - Blading - Gearing -

Rotor shaft - Thrust shaft - Tunnel shafts - Screw shafts Nov 28 Dec 20 Propellers Dec 23.

Stern tubes Nov. 1 Steam pipes tested Nov 25 Mar 25 Engine and boiler seatings Feb. 1 Engines holding down bolts Apr. 2

Completion of pumping arrangements Apr. 2 Boilers fixed Jan 3 Engines tried under steam Apr 2

Main boiler safety valves adjusted Apr. 2 Thickness of adjusting washers Locknuts.

Material and tensile strength of Rotor shaft - Identification Mark on Do. -

Material and tensile strength of Pinion shaft - Identification Mark on Do. -

Material of Wheel shaft - Identification Mark on Do. LLOYDS No. 73 Material of Thrust shaft - Identification Mark on Do. -

Material of Tunnel shafts steel Identification Marks on Do. RB 1-17 Material of Screw shafts steel Identification Marks on Do. RB 12-16

Material of Steam Pipes steel Test pressure 750 lbs.

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 a duplicate of a previous case no If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c. This vessel is fitted with the Westinghouse)

Geared Turbine. The Machinery and Boilers were constructed under special survey of materials tested to rule requirements and workmanship found sound throughout. The Machinery and boilers were installed under special survey, and, on completion thoroughly tested under working conditions and found satisfactory. In the opinion of the undersigned the Machinery is eligible to be classed in the Registered

Book with records of *LMC 4-17 Fitted for Oil Fuel 4-17. F.P. above 150°F., Electric Light.

Ref. Mchy. Wireless.

4 Steam Turbines geared to 2 Screw Shafts

It is submitted that this vessel is eligible for THE RECORD. + LMC 4. 17.

Fitted for oil fuel, 4. 17. F.P. above 150°F.

The amount of Entry Fee ... \$ 15.00

Special SFO a/c ... £ 281.50

Donkey Boiler Fee NY a/c £ 158.50

Travelling Expenses (if any) \$ 725.

When applied for,

Apr. 16 1917

When received,

13/5/17

J. Blackett
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

New York APR 26 1917

Assigned

+ Lmb 4.17 Fitted for oil fuel 4.17 F.P. above 150°F. Elec Light



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