

REPORT ON MACHINERY.

No. 1303

Received at London Office MON. NOV. 15 1920

Date of writing Report 21st Sept. 1920 When handed in at Local Office 21st Sept. 1920 Port of Kagasaki
 No. in Survey held at Kagasaki Date, First Survey 14-10-19 Last Survey 6-9-1920
 Reg. Book. on the Twin S.S. Alabama (Number of Visits 92) Tons { Gross 9695
 Net 6069

Master J. Yamaguchi Built at Kagasaki By whom built Mitsubishi Iron Works When built 1920
 Engines made at Kagasaki By whom made Mitsubishi Iron Works when made 1920
 Boilers made at Kagasaki By whom made Mitsubishi Iron Works when made 1920
 Registered Horse Power Osaka Shosen Kaisha Port belonging to Osaka

m. Horse Power as per Section 28 993 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

GINES, &c.—Description of Engines Twin screw triple expansion No. of Cylinders 6 No. of Cranks 6
 a. of Cylinders 27" 44 1/2" 75" Length of Stroke 48 Revs. per minute 83 Dia. of Screw shaft as per rule 15 1/4" Material of screw shaft steel
 as fitted 15 1/4"

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
 the propeller boss yes If the liner is in more than one length are the joints burned no 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 no If two

ers are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 6'-0"

a. of Tunnel shaft as per rule 13.86" Dia. of Crank shaft journals as per rule 14.54" Dia. of Crank pin 15" Size of Crank webs 22 1/2" 9 1/2" Dia. of thrust shaft under
 as fitted 14" as fitted 14 3/4"

lars 1/4 3/4" Dia. of screw 17-9" Pitch of Screw 21'-0" No. of Blades 4 State whether moveable yes Total surface 786 sq ft each

a. of Feed pumps 4 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes

a. of Bilge pumps 4 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes

a. of Donkey Engines 6 Sizes of Pumps 1 1/2" 2" 3" 4" 5" 6" 8" 10" 12" 14" 16" 18" 20" 22" 24" 26" 28" 30" 32" 34" 36" 38" 40" 42" 44" 46" 48" 50" 52" 54" 56" 58" 60" 62" 64" 66" 68" 70" 72" 74" 76" 78" 80" 82" 84" 86" 88" 90" 92" 94" 96" 98" 100" No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 4 2 3 1/2" In Holds, &c. N. 1. 20 1/2" N. 2. 20 3/2" N. 3. 20 1/2" N. 4. 20 1/2" N. 5. 20 1/2" N. 6. 20 1/2" N. 7. 20 1/2" N. 8. 20 1/2" N. 9. 20 1/2" N. 10. 20 1/2"

a. of Bilge Injections 2 sizes 10 Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 6"

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

How are they protected Under Bottom Ceiling

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 Shell door

MANUFACTURERS, &c.—(Letter for record S.) Manufacturers of Steel Indvale Steel & Ordnance Co.

total Heating Surface of Boilers 3284.5 sq ft Is Forced Draft fitted yes No. and Description of Boilers 5 Single ended Cylindrical

Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 29-6-20 No. of Certificate 104

Can each boiler be worked separately yes Area of fire grate in each boiler 66.12 sq ft No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 9.62 sq ft 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 1/2" Mean dia. of boilers 15'-0" Length 12'-0" Material of shell plates Steel

Thickness 7/16" Range of tensile strength 286,000 lbs. Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 10 Rivet lap

g. seams R.D.S.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10'-5" Lap of plates or width of butt straps 22"

Percentages of strength of longitudinal joint rivets 91.4% Working pressure of shell by rules 217 lbs. Size of manhole in shell 16" x 12"

of compensating ring 36 1/2" x 22 1/2" x 1 1/8" No. and Description of Furnaces in each boiler 3 Morrison type Material Steel Outside diameter 4'-0 3/4"

Length of plain part top 3 1/2" Thickness of plates crown 3 1/2" Description of longitudinal joint Welded No. of strengthening rings 15

Working pressure of furnace by the rules 219 lbs. Combustion chamber plates Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1 1/8"

ch of stays to ditto: Sides 9 3/4" x 7 3/4" Back 9 3/4" x 8 1/2" Top 8 3/4" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 213 lbs.

Material of stays Steel Area at smallest part 2'0" x 2 5/8" Area supported by each stay 76.56 sq in Working pressure by rules 237 lbs. End plates in steam space:

Material Steel Thickness 1 3/2" Pitch of stays 8" x 19 1/2" How are stays secured Double nut washers Working pressure by rules 219 lbs. Material of stays Steel

Area at smallest part 7'6" x 7 1/2" Area supported by each stay 356 sq in Working pressure by rules 224 lbs. Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 15 1/4" x 9 1/2" Working pressure of plate by rules 227 lbs.

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

ch across wide water spaces 13 1/4" Working pressures by rules 206 lbs. Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 1/2" x 8 double Length as per rule 2'-11 5/8" Distance apart 8 3/4" Number and pitch of stays in each 3 c 8 1/2"

Working pressure by rules 248 Steam dome: description of joint to shell yes % of strength of joint yes

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

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

SUPERHEATER. Type Osakyo Date of Approval of Plan 18/5/15 Tested by Hydraulic Pressure to 1000 lbs.

Date of Test 21-7-20 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 206 lbs. Is Easing Gear fitted no

W676-0231

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—As per rule, and in addition, 1 crank shaft, 1 Propeller shaft, Propeller blades, 2 Valve spindles, 2 Excutives wds, 1 stem brace, 1 set each of top & bottom braces for one end, 13 fine ring bolts, 46 Cylinder cover studs, 63 Condenser tubes, 58 Boiler tubes, 1 set each of valves for main & aux. chest valves, 1 set air pump valves & guards, 1 set of valves for each auxiliary pump, 1 air pump wd, 1 set of packing rings & springs for each size of piston, 5 safety valve springs, 1 spindle for centrifugal pump, etc.

The foregoing is a correct description,
NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

GENERAL MANAGER

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1919 Oct 4 Dec 16.23. 1920 Jan 8.14.16.21 Feb 4.5.12.16.19.20.25.26 Mar 4.10.13.15.18.20.23.30.31.
During erection on board vessel - - 2.7.9.13.16.17.19.21.24.26.27.28.29.30 May 3.4.8.10.12.13.14.15.17.18.19.21.25.26.29.31 June 1.3.8.11.12.14.15.16.17.19.
Total No. of visits 92. Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 8-6-20 Slides 2-8-20 Covers 8-6-20 Pistons 2-8-20 Rods 3-6-20
Connecting rods 3-6-20 Crank shaft 26-5-20 Thrust shafts 26-5-20 Tunnel shafts 3-5-20.16-5-20 Screw shafts 16-6-20 Propeller 25-7-20
Stern tube 31-5-20 Steam pipes tested 22-8-20 Engine and boiler seatings 4-8-20 Engines holding down bolts 10-8-20
Completion of pumping arrangements 22-8-20 Boilers fixed 7-8-20 Engines tried under steam 25-8-20
Completion of fitting sea connections 4-8-20 Stern tube 4-8-20 Screw shaft and propeller 4-8-20
Main boiler safety valves adjusted 23-8-20 Thickness of adjusting washers Look nuts.
Material of Crank shaft Steel Identification Mark on Do. N° 175 A.S.W. Material of Thrust shaft Steel Identification Mark on Do. N° 175 A.S.W.
Material of Tunnel shafts Steel Identification Marks on Do. N° 175 A.S.W. Material of Screw shafts Steel Identification Marks on Do. N° 175 A.S.W.
Material of Steam Pipes Solid drawn 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. ✓

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 "Arizona Maru" Report N° 1

General Remarks (State quality of workmanship, opinions as to class, &c.) The Boilers have been fitted with

Osaki's Superheaters in accordance with the Society's requirements.

These Engines and Boilers have been constructed under special Survey in accordance with the Rules, and of good material and workmanship. They have been securely fastened on board, and have been satisfactorily tried under steam.

The Machinery of this Vessel is eligible, in my opinion, for the record of
LMC 9-20 in the Register Book.

Mean Speed on Trial 16.496 knots.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC. 9.20 FID

Rel.
23/11/20

APR 3

The amount of Entry Fee ... £ 30 00
Special ... £ 12 15 00
Donkey Boiler Fee ... £ : ✓ :
Travelling Expenses (if any) £ : ✓ : 13-9-1920

When applied for,

6-7-1920

When received,

13-9-1920

Committee's Minute

FRI. NOV. 26 1920

Assigned

+ LMC. 9.20

F.D.

CERTIFICATE WRITTEN.

Engineer Surveyor to Lloyd's Register of Shipping.

M. Boylan



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Lloyd's Register
Foundation