

REPORT ON MACHINERY.

No. 2049

Received at London Office

Date of writing Report 13 Aug 1917 When handed in at Local Office 19 Port of Robe
 No. in Survey held at Robe Date, First Survey 9th June 1916 Last Survey 8th August 1917
 Reg. Book. on the Steel Twin Screw Steamer "War Sailor" (Number of Voids)
 Master Pinckham Built at Robe By whom built Kawasaki Dockyard Co. Ltd. Tons { Gross 7522
 Net 4591
 When built 1914
 Engines made at Robe By whom made Kawasaki Dockyard Co. Ltd. when made 1917
 Boilers made at Robe By whom made Do. when made do
 Registered Horse Power Owners Furness, Withy & Co. Ltd. Port belonging to
 Nom. Horse Power as per Section 28 659 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Engines, &c.—Description of Engines Two sets. Triple Expansion No. of Cylinders Six No. of Cranks Six
 Dia. of Cylinders 21" 35" 59" Length of Stroke 48" Revs. per minute 85 Dia. of Screw shaft as per rule 13.79 Material of Steel
as fitted 14 1/2 screw shaft
 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 Dia. of Crank shaft journals as per rule 12.42 Dia. of Crank pin 13" Size of Crank webs 8' 17" at pin
as fitted 12 as fitted 12 9/16 Dia. of thrust shaft under
 collars 12 9/16 Dia. of screw 16' 0" Pitch of Screw 17' 0" No. of Blades 4 State whether moveable Yes Total surface 78' 2" each prop.
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes (on each engine)
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes (do)
 No. of Donkey Engines Three Sizes of Pumps Worthington 10 1/2" x 8" 21 dup. No. and size of Suctions connected to both Bilge and Donkey pumps
Worthington 10 1/2" x 8" 21 dup. In Engine Room Three 3 1/2" On 3 1/2" tun. well Balston & Dry. 10 1/2" x 12" 12 dup. In Holds, &c. Two 3 1/2" in each hold.
Two 3 1/2" in H. room. One 3" in each tunnel.
 No. of Bilge Injections 2 sizes 7 1/2" Connected to condenser, or to circulating pump ✓ 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 Now
 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 casings
 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 platform in E. Rm

OILERS, &c.—(Letter for record S.) Manufacturers of Steel David Colville & Co. Carnegie Steel Works. 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 22nd + 26th Dec '16 No. of Certificate LLOYDS TEST
HYD. 400 LBS
10th + 17th Jan '17
 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 12" Mean dia. of boilers 14' 6" 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 riv.
 long. seams Double riv. 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" x 1 1/4"
 straps
 Per centages of strength of longitudinal joint 96.0 Working pressure of shell by rules 202 lbs Size of manhole in shell 12' x 16"
 plate 84.3
 Size of compensating ring (4 1/2" + flange) x 1 3/8" No. and Description of Furnaces in each boiler Three "Morison" Material Steel Outside diameter 48 1/4"
 length of plain part top bottom Thickness of plates 5/8" Description of longitudinal joint Weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 222 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 11/16" Top 11/16" Bottom 7/8"
 Pitch of stays to ditto: Sides 9' 8 1/2" Back 9' 8 1/2" Top 9' 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 2.15 Area supported by each stay 9 3/8" x 8 1/2" Working pressure by rules 238 lbs End plates in steam space:
 Material Steel Thickness 1 5/16" Pitch of stays 20 1/2" x 19 3/4" How are stays secured Double nuts Working pressure by rules 200 lbs Material of stays Steel
 Area at smallest part 10.1 Area supported by each stay 20 1/2" x 19 3/4" Working pressure by rules 249 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" low 3/4" down 5/8" 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"
 Tech across wide water spaces 13 3/4" down 5/8" Working pressures by rules 200 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 1/2" x 13 (two) 16 x 5.2 3/8" Solid Length as per rule 34 1/2" Distance apart 9 3/8" x 6 3/8" Number and pitch of stays in each Three @ 8 1/2"
 Working pressure by rules 226 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 2019
 SUPERHEATER. Type Schmidt Date of Approval of Plan 25th + 30th April 1917 Tested by Hydraulic Pressure to 600 lbs
 Date of Test 2nd + 4th May 1917 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 No.

10177-006

IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

One crank shaft

One propeller shaft

One piston rod with nut each size

Slide valve rod each size

Air pump rod.

Two crosshead bolts & nuts

Two crank pin bolts & nuts

Two main bearing bolts & nuts

Set coupling bolts & nuts.

Set feed & bilge pump valves

Set packing rings & springs all pistons.

Assorted iron & bolts & nuts.

Pair crank pin-brasses

1/4 set junk ring bolts.

4 safety valve springs

Condenser tubes

Boiler tubes

Fire bars. Etc. etc.

The foregoing is a correct description,

KAWASAKI DOCKYARD COMPANY, LTD

J. Harajima

Manufacturer.

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - - -

Total No. of visits

9th June 1916 to June 191723rd June 1917 to 8th Aug 1917

Continuous attendance

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " " " " "

None

Dates of Examination of principal parts—Cylinders 12/6/16 etc Slides 14/6/16 etc Covers 12/8/16 etc Pistons 22/11/16 etc Rods 12/4/17 etc

Connecting rods 12/4/17 etc Crank shaft 29/1/17 etc Thrust shafts 29/1/17 etc Tunnel shafts 28/2/17 etc Screw shafts 14/5/17 etc Propellers 15/5/17 etc

Stern tube 28/5/17 etc Steam pipes tested 14th, 18th, 22nd June 1917 Engine and boiler seatings 11/6/17 etc Engines holding down bolts 2nd July 1917

Completion of pumping arrangements 11th July 1917 Boilers fixed 3rd July 1917 Engines tried under steam 16th & 18th July 1917

Completion of fitting sea connections 18th June 1917 Stern tubes 11th June 1917 Screw shafts and propellers 18th June 1917

Main boiler safety valves adjusted 13th July 1917 Thickness of adjusting washers Lock nuts: intervals S.F. { A 9/16" P.F. { A 3/8" S.A. { A 1/4" P.A. { A 5/8"

Material of Crank shafts Steel Identification Mark on Do. R nos. 299 & 304 Z.S. Material of Thrust shafts Steel Identification Mark on Do. R nos. 270 & 271 Z.S.

Material of Tunnel shafts Steel Identification Marks on Do. R nos. 239 & 251 Z.S. Material of Screw shafts Steel Identification Marks on Do. R nos. 241 & 242 Z.S.

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.

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 "War Soldier" Kobe Rpt. No. 2045

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery has been made & fitted under Special Survey in accordance with the requirements of the Rules & the materials & workmanship have been found good.

The shafting has been made at the Imperial Steel Works at Masoran.

The machinery worked satisfactorily, on trial. Speed on three double runs over 3 mile course, 15 1/4 knots mean Revs per min. 96 1/2. I.H.P. 6200. Steam H.P. 200 lbs.

I.P. 81. L.P. 16 1/2 Vac. 26" Impulse valves open to I.P. & L.P. cyls to get maximum power. Draught of vessel 9' 9" fwd. 15' 11" aft.

Particulars of the performance on both progressive & full speed trials are given on the blue print sheets sent herewith.

On the full speed trials there was some passage of sea water into the port stern tube. The vessel was afterwards placed in dry dock, the oil retaining glands on both shafts examined, (that on the port shaft had been too tightly packed), overhauled & improved phosphor bronze coil springs substituted for the former ones.

The machinery is in my opinion eligible for the notation + L.M.C. 8.17.

Arthur L. Jones

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... Yen 30 : When applied for, 23rd July 1917

Special ... Yen 795 : When received, 24th July 1917

Donkey Boiler Fee ... £ : Travelling Expenses (if any) £

Committee's Minute

Assigned

FRI. 28 SEP. 1917

+ L.M.C. 8.17

24th July 1917

24th July 1917

24th July 1917

24th July 1917

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