

# REPORT ON MACHINERY.

Received at London Office

FRI - 6 JUL 1917

Date of writing Report 28 May 1917 When handed in at Local Office Port of Kobe

To. in Survey held at Kobe Date, First Survey 6 April 1916 Last Survey 16 May 1917

Reg. Book. on the Steel Single Screw Steamer "Was Prince" (Number of Vents 56)

Master Ward Built at Kobe By whom built The Kawasaki Dry Dock Co Ltd When built 1914-5

Engines made at Kobe By whom made The Kawasaki Dry Dock Co Ltd when made 1917

Boilers made at Kobe By whom made do when made do

Registered Horse Power 440 Owners Messrs Furness Withy & Co Ltd Port belonging to do

Net Horse Power as per Section 28 440 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

No. of Cylinders 26 : 43 1/2 : 72 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft 15.4 Material of screw shaft Steel

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

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 5' 5 1/4"

Dia. of Tunnel shaft 13.48 Dia. of Crank shaft journals 14.15 Dia. of Crank pin 14 3/4 Size of Crank webs 9 1/2, 20 1/2 Dia. of thrust shaft under

collars 14 3/8 Dia. of screw 17" 6 Pitch of Screw 19" 0 mean No. of Blades 4 State whether moveable Yes Total surface 100 sq ft

No. of Feed pumps One Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes 1 wear feed pumps

No. of Bilge pumps Two Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Four Sizes of Pumps Bal hot dup 10-11-12 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2" one 3" (two wear feed 9 1/2" x 24" one 7 1/2" x 5" 6" in Holds, &c. Nos 1, 3 + 4 holds - two 3 1/2" each. 3" to tunnel well (small " 5 1/2" x 3 1/2" x 9" No 2 hold two 4"

No. of Bilge Injections 1 sizes 10" Connected to condenser, or to circulating pump Yes 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 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 Yes

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 in Eng. Room

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Beardmore & Co. Leeds Forge

Total Heating Surface of Boilers 4609 + 1132 for aux. blr Is Forced Draft fitted Yes No. and Description of Boilers 2 S.E. + 1 aux. S.E.

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 12 9 18 Dec 1916 No. of Certificate LLOYD'S TEST 400 LBS R 13-12-16 ALD

Can each boiler be worked separately Yes Area of fire grate in each boiler 60 1/2 No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 3 3/4 dia 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 29-30 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Doub. riv.

long. seams Doub. Riv. 8 ribs welded Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 8 3/4 + 4 3/8 Gap of plates or width of butt straps 1' 7 5/8

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

Size of compensating ring (1 1/2 + flange) x (1 5/16) No. and Description of Furnaces in each boiler Three Morrison Material Steel Outside diameter 48 1/4

Length of plain part 5 7/8 Thickness of plates 5 7/8 Description of longitudinal joint Weld No. of strengthening rings 0

Working pressure of furnace by the rules 208 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 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 lbs End plates in steam space:

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

Area at smallest part 10" Area supported by each stay 19 3/4 + 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 end Working pressure of plate by rules 200 lbs

Diameter of tubes 3 1/4 Pitch of tubes 4 7/16 + 4 5/16 Material of tube plates Steel Thickness: Front 13/16 Back 1 3/16 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 (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 Yes % of strength of joint 0

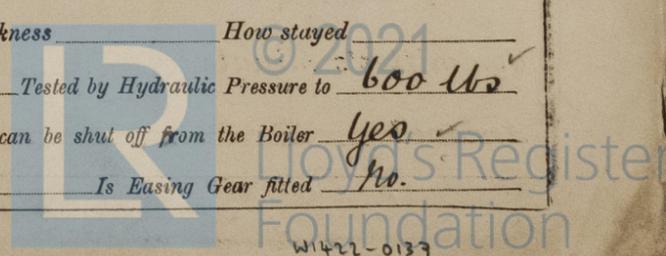
Diameter 0 Thickness of shell plates 0 Material 0 Description of longitudinal joint 0 Diam. of rivet holes 0

Pitch of rivets 0 Working pressure of shell by rules 0 Crown plates 0 Thickness 0 How stayed 0

SUPERHEATER. Type Schmidt Date of Approval of Plan 0 Tested by Hydraulic Pressure to 600 lbs

Date of Test 21 + 27 Feb 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 210 lbs Is Easing Gear fitted No



IS A DONKEY BOILER FITTED? *Ans. boiler ✓* If so, is a report now forwarded? *Yes ✓*

SPARE GEAR. State the articles supplied:— *Four main bearing bolts & nuts. ✓ Centrif. impeller & set feed pump valves & seats. ✓ Two crank pin " " ✓ Crankhd. & cr. pin bolts. ✓ Set bilge pump " " ✓ Two crosshead " " ✓ Air pump rod & nut. ✓ Set piston packing for all pistons. ✓ Set coupling " " ✓ 3 Safety valves for Condensers tubes. ✓ Set fuel ring bolts. ✓ Crank shaft one engine. ✓ Boiler tubes & fittings. ✓ Assorted bolts & nuts. ✓ Propeller shaft. ✓ Etc. etc. ✓ Iron various sizes. ✓ 4 Blades & 2 sets studs & nuts.*

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

Dates of Survey while building: During progress of work in shops -- *6.12.19 April. 9.13.15.16.29 May. 1.14.16.17.20.30 June. 7.28 July. 18 Aug. 9 Sep. 18 Oct. 3*  
 During erection on board vessel --- *12.18.19 Dec. 1916. 18.22.29 Jan. 6.9.13.19.23.28 Feb. 2.5.7.9.16.20.24.28 Mar*  
 Total No. of visits *2.9.12.18.20.21.23.24.28 Apr. = 56* *4.5.7.9.12.14.16 May 1917* Secretary *Yuseli to Steel Works for shafting.* Is the approved plan of main boiler forwarded herewith *Yes ✓*

Dates of Examination of principal parts—Cylinders *28/7/16* etc Slides *30/11/16* etc Covers *30/11/16* etc Pistons *17/4/16* etc Rods *18/8/16*  
 Connecting rods *18/8/16* etc Crank shaft *20/9/16* etc Thrust shaft *26/8/16* etc Tunnel shafts *26/8/16* etc Screw shaft *1/8/16* etc Propeller *2/4/17*  
 Stern tube *13/2/17* etc Steam pipes tested *18/4/17* Engine and boiler seatings *12/4/17* Engines holding down bolts *4/5/17*  
 Completion of pumping arrangements *7/5/17* Boilers fixed *28/4/17* Engines tried under steam *12/5/17*  
 Completion of fitting sea connections *21/4/17* Stern tube *9/4/17* Screw shaft and propeller *20/4/17*  
 Main boiler safety valves adjusted *7/5/17* Thickness of adjusting washers *Lock nuts*  
 Material of Crank shaft *Steel* Identification Mark on Do. *20.9.16* Material of Thrust shaft *Steel* Identification Mark on Do. *26.8.16*  
 Material of Tunnel shafts *Steel* Identification Marks on Do. *26.8.16* Material of Screw shafts *Steel* Identification Marks on Do. *1.8.16*  
 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 *"Argonne" "Capodi Monte" "Ward"*

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

*The machinery has been made & fitted under Special Survey, & the materials & workmanship have been found good & the Rules have been complied with. The shafting has been made under Survey at the Kobe Steel Works. On three double runs over a 3 mil. course a speed of 14.4 knots was attained. Some of the particulars of the engine performance are:—*

Initial pressures.			Vac.	Revs.	Hot	Feed	Cir	Sea	I.H.P.		
H.P.	Sp.	L.P.	"	p. min.	Wet.	Temp.	Dist.	Temp.	H.P.	I.P.	L.P.
200 lbs	80 lbs	13 lbs	28"	80 & 81.	95°	165°	100°	57°	953 to 966	1443-1452	1458 to 1512
586 "	614 "				6102.7	175.2	6106.2		Totals 3866 to 3930 I.H.P.		

*Satisfactory tests were made of feeding the boilers from the engine pumps & from Weir feed pumps & of circulating the condensing water with the ballast pump.*

*The machinery in my opinion renders the vessel eligible for the notation & L.M.S. with date May 1917.*

The amount of Entry Fee ... *Yes 30* : When applied for, *16 May 1917*  
 Special ... *Yes 594* :  
 Donkey Boiler Fee ... *Yes 50* :  
 Travelling Expenses (if any) £ : : When received, *17 May 1917*

*It is submitted that this vessel is eligible for THE RECORD & L.M.S.*  
*Arthur L. Jones F.D.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 10 JUL. 1917*

Assigned *+ Lmb 5.17*

MACHINERY CERTIFICATE WRITTEN.



The Surveyors are requested not to write on or below the space for Committee's Minute.