

REPORT ON MACHINERY.

No. 1565

Received at London Office

10 JAN 1927

Date of writing Report 2nd Dec. 1926 When handed in at Local Office 2nd Dec. 1926 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 1st July 1926. Last Survey 27th Nov. 1926
 Reg. Book. (Number of Vols. 37.)

on the Mitsubishi Engine No. 426: for Uraga Dock Hull No. 317. Tons { Gross _____ Net _____

Master _____ Built at Uraga. By whom built Uraga Dock Co., When built 1926.

Engines made at Nagasaki. By whom made Nagasaki Wks. Mitsubishi Zosen Kaisha when made 1926.

Boilers made at _____ By whom made _____ when made _____

Registered Horse Power 732. Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

Shaft Horse Power at Full Power 3800. Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

URBINE ENGINES, &c.—Description of Engines Single Screw Double Reduction. No. of Turbines 2 Ahead. 2 Astern.

Diameter of Rotor Shaft Journals, H.P. 6" L.P. 6½" Diameter of Pinion Shaft 1st 6". 2nd 6" inner, & 11½" outer.

Diameter of Journals 1st 6" 2nd 11½" Distance between Centres of Bearings 1st 2'-4½" 2nd 4'-0" Diameter of Pitch Circle 1st HP 7.70" LP 8.98" 2nd 17.6"

Diameter of Wheel Shaft 1st 1'-1½" 2nd 1'-7¼" Distance between Centres of Bearings 1st 2'-2" 2nd 4'-0½" Diameter of Pitch Circle of Wheel 1st 48.96" 2nd 89.80"

Width of Face 1st 16" + 3" Gap 2nd 31" + 3½" Gap. Diameter of Thrust Shaft under Collars 14" Diameter of Tunnel Shaft as per rule _____ as fitted _____

No. of Screw Shafts / Diameter of same as per rule _____ as fitted _____ Diameter of Propeller _____ Pitch of Propeller _____

No. of Blades / State whether Moveable / Total Surface / Mean _____ Diameter of Rotor Drum, H.P. 2'9¾" L.P. 3'4" Astern HP 2'8" LP 3'4"

Thickness at Bottom of Groove, H.P. / L.P. / Astern / Revs. per Minute at Full Power, Turbine HP 3378 LP 3242 Propeller 116.5

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	3/4"	2'-10 9/16"	1	2 3/16"	3'-6 1/4"	1	HIGH PRESSURE.		
2ND	23/32"	2'-10 1/2"	1	2 9/16"	3'-6 5/8"	1	1st 1 1/16"	2'-9 1/16"	1
3RD	7/8"	2'-10 11/16"	1	3 11/16"	3'-7 3/4"	1	2nd 2"	2'-10"	1
4TH	1 3/32"	2'-10 7/8"	1	4"	3'-8 1/16"	1	Cylar. 1 9/16"	2'-6 7/16"	1
5TH	1 7/16"	2'-11 1/4"	1	4 13/16"	3'-8 7/8"	1	LOW PRESSURE.		
6TH				5 1/2"	3'-9 9/16"	1	1st 2 3/16"	3'-6 3/16"	1
7TH							2nd 3 5/8"	3'-7 5/8"	1
8TH							Cylar. 2 7/8"	3'-1 1/8"	1

No. and size of Feed pumps

No. and size of Bilge pumps

No. and size of Bilge suction in Engine Room

In Holds, &c.

No. of Bilge Injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine Room & size _____

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

Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the Discharge Pipes above or below the deep water line _____

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel _____ Are the Blow Off Cocks fitted with a spigot and brass covering plate _____

What pipes are carried through the bunkers _____ How are they protected _____

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times _____

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges _____

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. and Description of Boilers _____

Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____

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

each boiler _____ Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____

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 _____

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

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

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

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 _____

Tested by Hydraulic Pressure to
SUPERHEATER. Type _____ Date of Approval of Plan _____
Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Date of Test _____ Is Easing Gear fitted _____
Diameter of Safety Valve _____ Pressure to which each is adjusted _____

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

- SPARE GEAR. State the articles supplied:—
- 1 set HP Turbine Rotor Shaft Bearing Brasses.
 - 1 set LP " " " " " "
 - 1 set Connecting Shaft Bearing Brasses.
 - 1 set 1st Pinion Shaft Bearing Brasses.
 - 2 sets 1st Gear Wheel Shaft Bearing Brasses.
 - 1 set 2nd Pinion Shaft Bearing Brasses.
 - 1 set 2nd Gear Wheel Shaft Bearing Brasses.
 - 2 sets HP Turbine Adjusting Block Liners.
 - 2 sets LP " " " " " "
 - 2 sets of Pads for Two Faces of Adjusting Block of HP Turbine.
 - 2 sets of Pads for Two Faces of Adjusting Block of LP Turbine.
 - 1 Spring for Relief valve for HPT Ahead Steam Chest.
 - 1 " " " " " " " " " " " "

- 1 Spring for Relief valve for Gland Steam Receiver
- 1/20 Total Number of Bolts & Nuts for Each Turbine Casing Joint.
- 1/20 Total Number of Bolts & Nuts for Each Gear Casing Joint.
- 2 Bolts & Nuts for Each size of Rotor Bearings.
- 2 " " " " " " of Pinion Bearings.
- 2 " " " " " " of G.W. Bearings.
- 1 Sight Glass for Kerosene Injector.
- 1 Sights Glasses for Lubrication Oil Flow Indicator
- 1 set of Felt Packing for HP Turbine Fore & Aft Bearing.
- 1 set of Felt Packing for LP Turbine Fore & Aft Bearing.
- 1 set of Pads for One Face of Main Thrust Block.
- 1 quantity of assorted bolts, studs & nuts.

The foregoing is a correct description.

Manufacturer.

1926. July 1.2.3.6.12.20.23. Aug. 2.3.10.15. Sep. 15.24.27.28.29.30. Oct. 1.2.5.11. 15.26. Nov. 1.2.4.6.9.10.12.13.17.22.26.27. 37.

Dates of Examination of principal parts—Casings 15-9-26 to 26-11-26 Rotors 24-9-26 to 26-11-26 Blading 24-9-26 to 26-11-26 Gearing 2-7-26 to 27-11-26
Rotor shaft 24-9-26 to 26-11-26 Thrust shaft 23-7-26 to 27-11-26 Tunnel shafts _____ Screw shaft _____ Propeller _____
Stern tube _____ Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____
Completion of pumping arrangements _____ Boilers fired _____ Engines tried under steam in Shop. 22-11-26.
Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
Material and tensile strength of Rotor shaft S.M.I.Stl: as per certificates attached. Identification Mark on Do. No.231 R.C.2-11-26
Material and tensile strength of Pinion shaft S.M.I.Stl: as per certificates attached. Identification Mark on Do. No.231 R.C.26-10-2
1st & 2nd Material of Wheel shaft S.M.I.Stl. Identification Mark on Do. No.231. Material of Thrust shaft S.M.I.Stl. Identification Mark on Do. No.231. R.C.27-11-26.
Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.
Material of Steam Pipes _____ Test pressure _____
Is an installation fitted for burning oil fuel _____ 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 a duplicate of a previous case Yes If so, state name of vessel Engine No.425.

General Remarks (State quality of workmanship, opinions as to class, &c. These Turbines & Gearing have been built under Special Survey in accordance with the approved plans and of tested material. These Turbines & Gearing were tested on the test bed in Mitsubishi Shop at full revolutions under "no load" condition and found to run satisfactorily. These Turbines & Gearing are intended for Messrs. Uraga Dock No.317, and are eligible in my opinion for the notation of LMC when fitted on board. Approved plans of Thrust shaft & Shafting for Double Red.Gearing are forwarded under separate cover

The amount of Entry Fee ... £ ¥ 60:00 : When applied for, 29. 11. 19 26
Special 2/5 fee. ... £ ¥ 650:00 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When received, 11-3-27

K. Crawford.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned