

REPORT ON STEAM TURBINE MACHINERY

Received at London Office - 2 MAY 1932

Date of writing Report 31-3-32 When handed in at Local Office Apr. 14th 1932. Port of Kobe
 No. in Survey held at Kobe Date, First Survey 11th Nov. 1931 Last Survey 28th March 1932
 Reg. Book. on the 1/2 (Nagasaki Yard No 503) (Number of Visits 19)
 Built at Nagasaki By whom built Mitsubishi Zosen Kaisha Ltd Yard No. 503 When built
 Engines made at do By whom made do Engine No. do When made
 Boilers made at do By whom made do Boiler No. do When made
 Shaft Horse Power at Full Power 1125 Owners Shikara Sangyo Kaisha Gohi Kaisha Port belonging to
 Nom. Horse Power as per Rule 102 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted YES.

TEAM TURBINE ENGINES, &c.—Description of Engines Mitsubishi Bauer Hoch Exp. Turb. No. of Turbines Ahead one
 Direct coupled, single or double reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing one, direct coupled to phase
 periods per second, Alternating Current Generator rated Kilowatts Volts at revolutions per minute; for supplying power for driving
 Propelling Motors. Propelling Motors, Type
 rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

ARTICULARS OF TURBINE BLADING.

	H. P.			I. 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. (AT INLET)	DIAMETER AT TIP. (AT EXIT)	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1 st EXPANSION							83.24	980.5	1			
2 nd							101.35	1016.64	1			
3 rd							119.84	1053.64	1			
4 th							138.52	1091.00	1			
5 th							157.4	1129.4	1			
6 th							177.42	1171.12	1			
7 th							199.57	1217.06	1			

Shaft Horse Power at each turbine 1125 Revolutions per minute, at full power, of each Turbine Shaft 3200
 1st reduction wheel abt. 453
 Pin shaft 78 Pitch Circle Diameter, 1st pinion 234.94 2nd pinion 407.35 1st reduction wheel 1726.05 main wheel 2209.35
 Width of Face, 1st reduction wheel 310 main wheel 640 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings,
 1st pinion 325 For 2nd pinion 470 1st reduction wheel 400 AFT. main wheel 580 Flexible Pinion Shafts, diameter 1st 2nd
 Pinion Shafts, diameter at bearings External 1st 159.78 2nd 38.0 diameter at bottom of teeth of pinion 1st 223.74 2nd 390.83
 Internal 1st 315
 Wheel Shafts, diameter at bearings, 1st 280 main 540 diameter at wheel shroud, 1st 1660 main 2115
 Generator Shafts, diameter at bearings
 Propelling Motor Shafts, diameter at bearings
 In Shafting, diameter of Tunnel Shafting as per rule 354 as fitted 365 diameter of Thrust Shafting as per rule 372 as fitted 425
 Diameter of Screw Shaft as per rule Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner
 Is the liner in more than one length are the joints burned If the liner does not fit tightly at the
 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
 lapped or protected between the liners Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently
 Length of Stern Bush Diameter of Propeller
 No. of Propeller No. of Blades State whether Moveable Total Surface square feet. If Single Screw, are
 arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser
 of Turbines fitted with astern wheels Total number of power driven Main and Auxiliary Pumps
 No. and size of Feed Pumps How driven No. and size of Pumps connected to the Main Bilge Line
 driven No. and size of Ballast Pumps No. and size of Lubricating Oil Pumps, including
 Pump Are two independent means arranged for circulating water through the Oil Cooler No. and size of suction
 led to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room and in Holds, &c.
 No. and size of Main Water Circulating Pump Bilge Suctions No. and size of Donkey Pump Direct Suctions
 Engine Room Bilges Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes
 Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges
 connections with the sea direct on the skin of the ship Are they Valves or Cocks
 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
 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
 pipes are carried through the bunkers How are they protected
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one
 compartment to another Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

ERS, &c.—(Letter for record) Total Heating Surface of Boilers Working Pressure
 ced Draft fitted No. and Description of Boilers



Is a Report on Main Boilers now forwarded?

If so, is a report now forwarded?

Is a Donkey Boiler fitted?

Plans. Are approved plans forwarded herewith for ^{EXHAUST TURBINE & GEAR} Shafting No. 8-10-31. Main Boilers Auxiliary Boilers Donkey Boilers
(If not state date of approval)

Spare Gear. State the articles supplied:—

(Spare gear to be checked at Nagasaki Works)

The foregoing is a correct description,
Kobe Shipyard & Engine Works, M.Z.K., LTD.,
Manufacturer.

Tokuzo Inase
Superintendent Engineer.

Dates of Survey while building: During progress of work in shops -- 1931 Nov 11. Dec. 4. 10. 12. 19. 1932 Jan. 19. 20. Feb. 1. 15. 17. 23. 29. March 2. 4. 7. 10. 23. 28.
During erection on board vessel -- 19
Total No. of visits

Dates of Examination of principal parts: Casings 2-3-32 Rotors 12-12-31 Blading 24-3-32 Gearing 10-3-32
Wheel shaft 10-3-32 Thrust shaft 24-3-32 Tunnel shafts ✓ Screw shaft ✓ Propeller ✓
Stern tube ✓ Engine and boiler seatings ✓ Engines holding down bolts ✓
Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam ✓

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓
Material and tensile strength of Rotor & shaft H.T. Steel 57.2 L 58.2 C Kg/mm² Identification Mark on Do. 24-3-32 H.D.B. LLOYDS N° 491 R
Material and tensile strength of Flexible Pinion Shaft 2ND Nickel Steel 65.3 L 63.7 C do Identification Mark on Do. 10-3-32 H.D.B. LLOYDS N° 493 R
Material and tensile strength of Pinion shaft Nickel Steel 65.3 L 65. C do Identification Mark on Do. 24-3-32 H.D.B. LLOYDS N° 487 R
Material and tensile strength of 1st Reduction Wheel Shaft S.M. Steel 44.9 do Identification Mark on Do. LLOYDS N° 571 LLOYDS
Material of Wheel shaft O.H. Steel Identification Mark on Do. 10-3-32 H.D.B. Material of Thrust shaft O.H. Steel Identification Mark on Do. 24-3-32
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts ✓ Identification Marks on Do. ✓
Material of Steam Pipes ✓ Test pressure ✓ Date of test ✓
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 the Rules for carrying and burning oil fuel been complied with ✓

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 machinery has been constructed under special survey in accordance with the Rules & approved plans, the materials have been tested, found efficient & the workmanship throughout is good. The turbine was tried on test bench at 3,200, 3,480 & 3,800 revs per min. This case is eligible, in my opinion, for the notation of Lloyd's & L.M.C. in Register Book when the machinery has been installed on board & tried under full load working conditions. This machinery has now been shipped to Nagasaki where it is intended to be fitted on board. Yard N° 503.

The amount of Entry Fee ... £ ✓ : ✓
Special 1/2 of £ 383 = ... £ EN. 307⁰⁰ : ✓
Donkey Boiler Fee ... £ ✓ : ✓
Travelling Expenses (if any) £ EN. 20⁰⁰ : ✓
When applied for, 2nd March 1932
When received, 19
TUE. 4 OCT 1932

Committee's Minute
Assigned
See Nap. 3E 1845
H.D. Buchanan,
Engineer Surveyor to Lloyd's Register of Shipping.

Handwritten note: forward 70. Dept from log

Vertical text: Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)

