

Report on Steam Turbine Machinery. No. 2711A

4a. Writing Report. 3rd Sept., 1958 When handed in at Local Office. 19 Port of YOKOHAMA
 Survey held at Yokohama & Tokyo Date, First Survey 19th March, 1957 Last Survey 9th August 1958
 Book (Number of Visits 176)
 on the Single Turbine Screw Vessel "RIYADH MARU" Tons (Gross 26034.19 (Net 16070.87)
 at Yokohama, Japan By whom built Nippon Kokan K.K., Tsurumi Shipyard Yard No. 742 3745 When built 8 - 1958
 nes made at Tokyo, Japan By whom made Ishikawajima Heavy Industries Co., Ltd. Engine No. IT-2262 When made 3 - 1958
 rs made at Yokohama, Japan By whom made Nippon Kokan K.K., Tsurumi Shipyard Boiler No. B-238 When made 8 - 1958
 Horse Power Maximum 17500 Service 15750 Owners Nippon Yusen Kaisha, Ltd. Port belonging to Tokyo
 Is per Rule 3450 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 for which Vessel is intended

1M TURBINE ENGINES, &c.—Description of Engines Multi-stage impulse turbine with double reduction gearing
 Turbines Ahead 2 Direct coupled, single reduction/gearing to Main propelling shafts. No. of primary pinions to each set of reduction gearing HP-1 LP-1
 Astern 1 double reduction gearing
 coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;
 applying power for driving Propelling Motors, Type Direct Current Generator
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

BINE	H. P.	I. P.	L. P.	ASTERN.
DING.	11		7 x 2	3
No. of rows				
No. of stages				
No. of rows in each stage				

Horse Power at each turbine H.P. 8660 I.P. 8840 L.P. 8840
 Shaft diameter at journals H.P. 140 mm I.P. 230 mm L.P. 230 mm
 Pitch Circle Diameter 1st pinion HP 301.37mm LP 348.19mm 2nd pinion HP 633.58mm LP 633.58mm
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 470 mm 2nd pinion 930 mm
 Pinion diameter 1st HP 200mm 2nd LP 229mm
 Pinion Shafts, diameter at bearings External 1st HP 180mm LP 180mm Internal 1st HP 420mm LP 420mm 2nd HP 290mm LP 290mm
 Shafts, diameter at bearings 1st HP 420mm LP 420mm 2nd HP 496.6mm LP 496.6mm
 Intermediate Shafts, diameter as per rule 540.0 mm as fitted 540.0 mm
 Main Shaft, diameter as per rule 602.31 mm as fitted 602.31 mm
 Liners, thickness in way of bushes as per rule 26.162mm as fitted 28.0 mm
 Thickness between bushes as per rule 19.634mm as fitted 28.0 mm
 Is the after end of the liner made watertight in the stern tube? Yes
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner? Yes
 Does the liner 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
 Are the liners fitted, is the shaft lapped or protected between the liners? Yes
 Is an approved Oil Gland or other appliance fitted at the after end of the tube? Yes
 Length of Bearing in Stern Bush next to and supporting propeller 2600mm
 Diameter of propeller 6800mm Pitch 5.130mm No. of Blades 5 State whether Moveable Solid Total Developed Surface 19,947 square feet
 Are arrangements made so that steam can be led direct to the L.P. Turbine? Yes Can the H.P. or I.P. Turbines exhaust direct to the sea? Yes
 No. of Turbines fitted with astern wheels 1 Feed Pumps (No. and size 3-110 m³/hr x 560m 2-25m³/hr x 140m
 Connected to the Main Bilge Line (No. and size (Bilge Pump) 1-200/100m³/hr x 30/70m 1-150m³/hr x 140m
 How driven Motor (Piston) Motor (Centrifugal) (Butterworth & Fire Pump) (Steam Turbine)
 Pumps, No. and size 1-150m³/hr x 140m 1-200m³/hr x 30m 1-30x25m Lubricating Oil Pumps, including Spare Pump, No. and size 2-150m³/hr x 3kg/cm²
 Independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions, No. and size: In Engine Main Pump Room 2-75mm In Pump Room Aux. 1-80mm
 Water Circulating Pump Direct Bilge Suctions, No. and size 1-160mm 1-100mm Direct Bilge Suctions to the Engine and/or Boiler Room
 Are all the Bilge Suction pipes in Holds and/or Tank/Wall fitted with strum-boxes? Yes
 Are the 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? Yes
 Are the Connections fitted direct on the skin of the ship? Yes Are they fitted with 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 Overboard Discharges above or below the deep water line? Yes
 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 plate? Yes
 What pipes pass through the bunkers? How are they protected? Have they been tested as per rule? Yes
 Are the pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times? Yes
 Are arrangements 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 from one compartment to another? Yes Is the Shaft Tunnel watertight? Is it fitted with a watertight door? worked from
 RS, &c.—Total Heating Surface of Boilers Conduction 700 x 2 = 1400 M² Radiation 42 x 2 = 84 M² Superheater 150 x 2 = 300 M²
 Draught fitted Yes No. and Description of Boilers of 2-drum type with water wall Working Pressure 700 lbs/in²
 Port on Main Boilers now forwarded? Yes

Is **a Donkey** **Boiler fitted?** Yes, One (1) Low Pressure Steam Generator. If so, is a report now forwarded? Yes
Is the **auxiliary** **generator** intended to be used for domestic purposes only? No
Plans. Are approved plans forwarded herewith for Shafting 1-5-57 Main Boilers 26-11-57 Auxiliary Boilers - L.P. Steam Generator 26-11-57
(If not, state date of approval) 14-11-57 12-3-57, 14-3-57
Superheaters 1-5-57 General Pumping Arrangements 28-2-57 19-2-58 Oil Fuel Burning Arrangements 19-11-57
Geared turbines situated aft. Have torsional vibration characteristics of system been approved? Yes Date of approval 23-1-58

SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes
State the principal additional spare gear supplied.
Bolts & Nuts for turbine casing and reduction gear casing
Packing rings for turbine
One (1) cast iron screw propeller

The foregoing is a correct description.

Dates of Survey while building
During progress of work in shops - - - - -
During erection on board vessel - - - - -
Total No. of visits - - - - -

Dates of Examination of principal parts
Casings - - - - -
Rotors - - - - -
Blading - - - - -
Gearing - - - - -
1st HP 10-12-57
Wheel shaft LP 21-11-57
Thrust shaft 30-11-57
Intermediate shafts 9-5-58
Tube shaft -
Screw shaft 2-4-58
Propeller 9-5-58
Stern tube -
Engine and boiler seatings 14-5-58
Engine holding down bolts -
Completion of fitting sea connections 16-5-58
Completion of pumping arrangements 22-7-58
Boilers fixed 14-7-58
Engines tried under steam 2-

Main boiler safety valves adjusted
Thickness of adjusting washers.
Rotor shaft, Material and tensile strength HP NiMoV Steel LT 75.5 LB 72.0 R73.2 kg/mm2 Identification Mark HP No. Y-1026
Flexible Pinion Shaft, Material and tensile strength HP NiMoV Steel LT 76.5 LB 72.8 kg/mm2 Identification Mark HP No. Y-1025
Pinion shaft, Material and tensile strength HP NiMoV Steel LT 75.3 LB 78.2 kg/mm2 Identification Mark HP No. Y-1028
1st LP NiMoV Steel LT 85.5 LB 84.8 T 85.0
2nd LP NiMoV Steel LT 80.0 LB 78.8 T 80.8
Chemical analysis 1st LP 0.4 0.31 0.60 0.015 0.012 1.71 0.82 0.29 2nd 0.32 0.29 0.70 0.02 0.027 1.65 0.87 0.27

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment.
1st Reduction Wheel Shaft, Material and tensile strength HP O.H. Steel A4.5 B44.5 kg/mm2 Identification Mark HP No. Y-1013
Wheel shaft, Material O.H. Steel Identification Mark Y-10132 Thrust shaft, Material O.H. Steel Identification Mark No. Y-10131
Intermediate shafts, Material O.H. Steel Identification Marks Y-12182 Tube shaft, Material Cr. Mo. Steel for Superheated lines Identification Marks No. Y-10130
Screw shaft, Material O.H. Steel Identification Marks KF 2596 Steam Pipes, Material O.H. Steel Test pressure 90 kg/cm2
Date of test 28-5-58, 2, 4, 6, 9, 25 & 30-6-58, 4, 7 & 9-7-58 Is an installation fitted for burning oil fuel? Yes

Is the flash point of the oil to be used over 150°F? Yes Have the requirements of the Rules for the use of oil as fuel been complied with?
Full description of Fire Extinguishing Apparatus fitted in machinery spaces: 8-Hydrants & Hoses; Steam Smothering; Portable Foam Ext.; 6-Sand Boxes; 1-6.5kg CO2; Diesel Eng. Driven Emerg. Fire P.
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? If so, have the requirements of the Rules been complied with?
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with? No
Is this machinery a duplicate of a previous case? If so, state name of vessel.

General Remarks. (State quality of workmanship, opinions as to class, &c.)
This Steam Turbine Machinery has been constructed under the Supervision of the Society's Surveyors in accordance with the Rules, approved plans and Secretary's letters.
The Quality of workmanship and materials found to be satisfactory.
The Machinery has been satisfactorily installed in the vessel in accordance with the Rules, tested under condition and found satisfactory.
It is submitted that the Machinery of this vessel is eligible to be classed with this Society with the notation of LMC 8,58 and TSCL 8,58, "Fitted for Oil Fuel 8,58 F.P. above 150°F."

CONSTRUCTION £403.00
The amount of Entry Fee ... £389.00
INSTALLATION ...
Special ...
AIR RECEIVER, ETC. ...
Donkey Boiler Fee ...
Travelling Expenses (if any) £150.00
18th JUNE 1958, ISHIKAWA JIMA H.I. Co.
SEP 22 1958
When received
TUESDAY 11 NOV 1958

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping

Lloyd's Register Foundation