

Report on Steam Turbine Machinery. No. 1691

/GENERATOR 30 NOV 1953

Writing Report 19..... When handed in at Local Office 17. NOV. 1953 Port of Kobe Received at London Office.....
 Survey held at Kobe, Aioi, Japan Date, First Survey 23-12-52 Last Survey 22-8-1953
 (Number of Visits 39)
 on the Steel Single Screws "DAIKYO - MARU" Tons (Gross 13,221.20 Net 9,553.47)
 Aioi, Japan By whom built Harima Shipbuilding & Engineering Co., Ltd. Yard No. 479 When built Aug. 1953
 made at Kobe, Japan By whom made Mitsubishi Heavy Ind., Reorganized Ltd., Kobe Engine No. 1163 When made 8mo. 1953.
 made at Aioi, Japan By whom made S.Y. & Eng. Wks. Harima Shipbuilding & Engineering Co., Ltd. Boiler No. 1164 When made Aug. 1953
 Horse Power at Full Power 600x2 Owners Daikyo Oil Co., Ltd., Port belonging to Yokkaichi
 Horse Power as per Rule 120x2 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 for which Vessel is intended Ocean Going (Carrying Petroleum in Bulk)

M TURBINE ENGINES, &c.—Description of Engines All Impulse, Single Reduction gear turbine
each Generator
 Turbines 2 sets Direct coupled, single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing.....
 double reduction geared }
 coupled to Alternating Current Generator, 3 phase, 60 periods per second rated 500 K.V.A. 450 Volts at 1200 revolutions per minute;
~~Direct Current Generator~~
 applying power for driving Propelling Motors, Type.....
Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

BINE DING.	H. P.	I. P.	L. P.	ASTERN.
No. of rows.....	<u>Curtis low Rateau 4 rows</u>			
No. of stages.....				
No. of rows in each stage.....				

Horse Power at each turbine 600 Revolutions per minute, at full power, of each Turbine Shaft 754.8 reduction wheel 1200
 Shaft diameter at journals 60mm Pitch Circle Diameter 896.65mm 1st reduction wheel Pinion shaft 142.55mm Face 1st reduction wheel 200mm
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 210mm reduction wheel 200mm
 { 2nd pinion 200mm reduction wheel 200mm

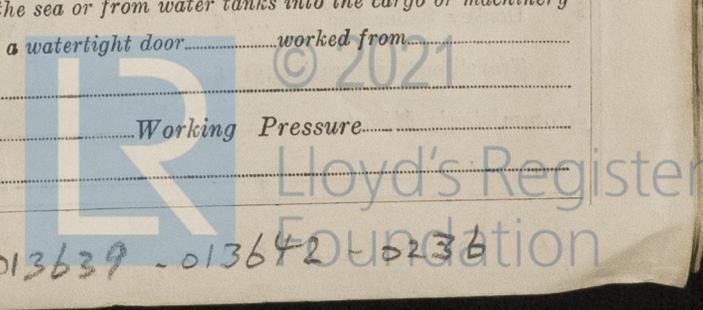
Pinion Shafts, diameter at bearings 70mm Internal 1st 60mm diameter at bottom of pinion teeth 132.93mm
 Generator Shaft, diameter at bearings 120mm/100mm
 Propelling Motor Shaft, diameter at bearings 830mm
 Thrust Shaft, diameter at collars as per rule
 Screw Shaft, diameter as per rule as fitted Is the { tube } shaft fitted with a continuous liner {
 { screw }

Thickness between bushes as per rule as fitted Is the after end of the liner made watertight in the
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner.....
 Is an approved Oil Gland or other appliance fitted at the after end of the tube
 Length of Bearing in Stern Bush next to and supporting propeller.....
 State whether Moveable..... Total Developed Surface.....square feet.

No. of Turbines fitted with astern wheels..... Feed Pumps { No. and size.....
 { How driven.....
 Lubricating Oil Pumps, including Spare Pump, No. and size.....
 Suctions, connected both to Main Bilge Pumps and Auxiliary In Pump Room.....

Independent Power Pump Direct Suctions to the Engine Room
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes.....
 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.....
 Are they fitted with Valves or Cocks.....
 all Sea Connections fitted direct on the skin of the ship..... Are the Overboard Discharges above or below the deep water
 they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates..... Are the Blow Off Cocks fitted with a spigot and brass
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel..... How are they protected.....
 Have they been tested as per rule.....

WELLS, &c.—(Letter for record.....) Total Heating Surface of Boilers..... Working Pressure.....
 Forced Draft fitted..... No. and Description of Boilers.....
 Report on Main Boilers now forwarded?.....



013639 - 013642 - 0236

Is a Donkey an Auxiliary Boiler fitted? If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only?

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers
(If not, state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements
Geared turbines situated aft. Have torsional vibration characteristics of system been approved? Date of approval

SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes

- State the principal additional spare gear supplied:
- 1 - Complete steam strainer
 - 1 - Set of oil strainer
 - 1 - Spiral gear for speed governor
 - 1 - Spiral gear for tachometer
 - 1 - Set of gear wheel and bearing for lubricating oil pump
 - 1/20 - Total no. of condenser tubes.
 - 1/20 - total no. of oil cooler tubes.

The foregoing is a correct description. *S. Kasuga* *S. Murakami*
THE HARIMA SHIPBUILDING AND ENGINEERING COMPANY, LTD. Director & General Manager

Dates of Survey while building	During progress of work in shops - -	1952. Dec. 16, 13, 26, 27, 29, 1953. Jan. 6, 8, 13, 16, 20, 22, 27, 30, Feb. 4, 5, 6, 10, 12, 20, Mar., 5, 10, 19, 26, 28, 31 Apr., 4, 14, 21, May, 6, 23, 26 June, 15, 16
	During erection on board vessel - - -	1953, Aug., 4, 11, 19, 22,
	Total No. of visits	39

Dates of Examination of principal parts—Casings Rotors Blading Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft
Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam
Main boiler safety valves adjusted Thickness of adjusting washers
Rotor shaft, Material and tensile strength. Special steel forging, 53.9-59.1 T/in² Identification Mark. F5468 LR No. KW-F-1731
Flexible Pinion Shaft, Material and tensile strength. Identification Mark. No. MKF519-7
Pinion shaft, Material and tensile strength. Special steel forging 47.7-49.0 T/in² Identification Mark. FR7F
; Chemical analysis C 0.33 Si 0.35 Mn 0.50 P 0.016 S 0.007 3.45

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment. 4-3-53
Reduction Wheel Shaft, Material and tensile strength. Steel forging 35.4-37.6 T/in² Identification Mark. No. MKF519-5
Wheel shaft, Material. Steel forging Identification Mark. FR1F Thrust shaft, Material. Identification Mark. FR4F
Intermediate shafts, Material. Identification Marks. FR2F Tube shaft, Material. Identification Marks.

Screw shaft, Material. Identification Marks. Steam Pipes, Material. 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 the use of oil as fuel been complied with.
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.
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.) These turbines have been constructed under the supervision of the Society's Surveyors in accordance with the Rules, Approved Plans, and the Society's letters.
The materials were found sound and free from defects and the workmanship is good.
The turbines were examined under steam in full working condition during shop and comprehensive sea trial and found satisfactory.

The Surveyors are requested not to sign on or below the space for Committee's Minute.
Certificate (if required) to be sent to *M. J. ...*

The amount of Entry Fee ... **¥ 12,000** When applied for **17 NOV 1953**
Kobe Shipyard Special :
Donkey Boiler Fee ... £ : : When received.
Travelling Expenses (if any) £ **FRIDAY 15 JAN 1954**

S. Burns
Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute
Assigned *See Rpt 4a*