

Report on Steam Turbine Machinery.

/GENERATOR

1000

No. FE-1405

Received at London Office

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28 MAY 1953

Writing Report 19... When handed in at Local Office...
 Survey held at Kobe, Japan. Date, First Survey (7-5-52) Last Survey (23-12-1952)
 on the S.S. "Leonidas" (Number of Visits 21 33) 23-5-1953
 Shimizu, Japan By whom built Nippon Steel Tube Co., Ltd. Yard No. 151 When built May, 1953
 made at Kobe, Japan By whom made Mitsubishi Heavy Ind. Engine No. 1132 When made Dec., 1952
 shaft made at 750 By whom made Reorganized Ltd., Kobe Shipyard & Engine Works Boiler No. 1133 When made May, 1953
 Horse Power at Full Power 600 x 2 Owners Miramonte Compania Naviera S.A. Port belonging to Monrovia Liberia
 Horse Power as per Rule... Is Refrigerating Machinery fitted for cargo purposes... Is Electric Light fitted
 for which Vessel is intended...

STEAM TURBINE ENGINES, &c.—Description of Engines. All Impulse, Single reduction geared turbines

Turbines 2 sets Direct coupled, single reduction geared to each generator propelling shafts. No. of primary pinions to each set of reduction gearing 1
 coupled to Alternating Current Generator 3 phase 60 periods per second rated 500 K.V.A. 230 Volts at 1200 revolutions per minute;
 Direct Current Generator
 driving power for driving Propelling Motors, Type...
 Main Kilowatts... Volts at... revolutions per minute. Direct coupled, single or double reduction geared to... propelling shafts.

	H.P.	I.P.	L.P.	ASTERN.
No. of rows	Curtis 1 row Rateau 4 rows			
No. of stages				
No. of rows in each stage				

Horse Power at each turbine H.P. 600 ✓
 I.P. Revolutions per minute, at full power, of each Turbine Shaft I.P. 7548 ✓
 L.P. 1200 ✓

Shaft diameter at journals H.P. 60 ✓ Pitch Circle Diameter 1st pinion 1st reduction wheel 896.65
 I.P. 2nd pinion pinion shaft 142.55 Width of Face 1st reduction wheel 200
 L.P. 2nd pinion wheel 200

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings
 1st pinion 1st reduction wheel 200
 2nd pinion wheel 200

Pinion diameter 1st Pinion Shafts, diameter at bearings External 1st 70 ✓ 2nd diameter at bottom of pinion teeth 1st 132.93
 2nd 150/130 ✓
 Shafts, diameter at bearings 1st 100 ✓ 1st Generator Shaft, diameter at bearings
 2nd 110 ✓ wheel 830 Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule... Thrust Shaft, diameter at collars as per rule...
 as fitted... Screw Shaft, diameter as per rule... Is the tube screw shaft fitted with a continuous liner {
 as fitted... }

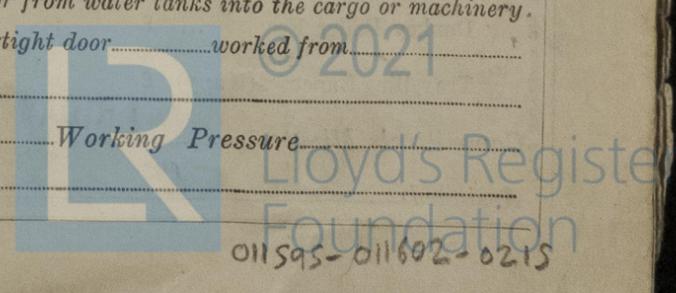
Liners, thickness in way of bushes as per rule... Thickness between bushes as per rule... Is the after end of the liner made watertight in the
 as fitted... If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner...
 does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive...
 liners are fitted, is the shaft lapped or protected between the liners... Is an approved Oil Gland or other appliance fitted at the after end of the tube
 If so, state type... Length of Bearing in Stern Bush next to and supporting propeller...

er, diameter... Pitch... No. of Blades... State whether Moveable... Total Developed Surface... square feet.
 e Screw, are arrangements made so that steam can be led direct to the L.P. Turbine... Can the H.P. or I.P. Turbines exhaust direct to the
 No. of Turbines fitted with astern wheels... Feed Pumps { No. and size... How driven... }

connected to the Main Bilge Line { No. and size... How driven... }
 Pumps, No. and size... Lubricating Oil Pumps, including Spare Pump, No. and size...
 independent means arranged for circulating water through the Oil Cooler... Suctions, connected both to Main Bilge Pumps and Auxiliary
 mps, No. and size:—In Engine and Boiler Room... In Pump Room...

&c...
 ater Circulating Pump Direct Bilge Suctions, No. and size... Independent Power Pump Direct Suctions to the Engine Room
 o. and size... Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes...
 ilge 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...
 ea Connections fitted direct on the skin of the ship... Are they fitted with Valves or Cocks...
 fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates... Are the Overboard Discharges above or below the deep water
 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
 plate... What pipes pass through the bunkers... How are they protected...
 es pass through the deep tanks... Have they been tested as per rule...
 pes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times...
 ngement 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.
 ping from one compartment to another... Is the Shaft Tunnel watertight... Is it fitted with a watertight door... worked from...

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



Is a Donkey Boiler fitted? 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 Gland packing.
1 - Complete set of turbine & reduction gear bearings	1 - Set of Gear wheel & bearing for lubricating oil pump.
1 - Set of thrust pad.	1 - Set of gear coupling bolts.
1 - set of oil strainer.	1 - Set of flexible coupling bolts rubbers.
1 - Spiral gear for speed governor.	5% of total No. of bolts & nuts for flange of turbine & gear casing.
1 - Spiral gear for tachometer.	10 - Oil cooler tubes.
1 - Set of Spring of each size.	

The foregoing is a correct description.

S. Murakami
Director & General Manager

Dates of Survey while building

During progress of work in shops -	1952: May-7, 27, Aug.-2, 7, 14, 20, 28, Sept.-6, 10, Oct.-11, 27 Nov.-8, 13, 18, 26, 8, 22, 23
During erection on board vessel -	(1952: May-7, 27, Aug. 2, 7, 14, 19, 20 Sept.-9, 13, 18, 25 Oct.-21, 30 Nov.-8, 13, 20, 18, 6, 8, 22, 23)
Total No. of visits	(21) 33

During election on board
1953: - Jan. 14, 17, 31. Feb. 5, 21. March 8, 17, 25. April 5, 13, 14.

Dates of Examination of principal parts—Casings (20-11-52) Rotors (8-11-52) Blading (8-12-52) Gearing (8-11-52)

Wheel shaft (8-11-52) 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 1.7 T/in^2 ($1.52.3 \text{ T/in}^2$) SS-F603(SS)

Rotor shaft, Material and tensile strength Special forging steel 53.9 " (52.5 T/in^2) Identification Mark YK 8-11-52

Flexible Pinion Shaft, Material and tensile strength Identification Mark MK-F439-8

Pinion shaft, Material and tensile strength Ni Steel 47 T/sq.in. (51.5 T/sq.in.) Identification Mark MK 8-11-52

Chemical analysis: C 0.34 Si 0.22 Mn 0.55 P 0.018 S 0.010 Ni 3.30

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment

Reduction Wheel Shaft, Material and tensile strength Forging steel 36.4 T/sq.in. (35.0 T/sq.in.) Identification Mark MK F480-6

Wheel shaft, Material Forging steel Identification Mark YK 8-11-52 Thrust shaft, Material Identification Mark (MK-F451-6)

Intermediate shafts, Material Identification Marks YK 8-11-52 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 Turbine have been constructed under the supervision of the Society's Surveyors in accordance with the Rules, Approved Plans, and the Secretary's letters.

The materials were found sound and free from defects and the workmanship is good.

The Turbines were examined under steam in full load working conditions with satisfactory results.

The machinery has been satisfactorily installed in the vessel in accordance with the Rules. Tested under working condition and found satisfactory.

It is submitted that the machinery of this vessel is eligible to be with this Society with the notation of + LMC 5. 5-3

The amount of Entry Fee ... £ 72,000 : When applied for. 28. MAY 1953

Special ... £ : : When received.

Donkey Boiler Fee ... £ : : When received.

Travelling Expenses (if any) £ : : 19

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

FRIDAY 24 JUL 1953
Assigned *Su F.E. maly. rpt.*

The Surveyors are requested to write on or below the space for Committee's Minute.

