

Report on Steam Turbine Machinery.

No. 28896

4a.

Received at London Office

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of writing Report 2-12-1953 When handed in at Local Office 10-12-1953 Port of ANTWERP
 in Survey held at SERAING & ANTWERP Date, First Survey 12-5-1952 Last Survey 14-11-1953
 Book (Number of Visits 96)
 89 on the S/S "MARITIME TRADER" Tons (Gross 13080 Net 7623)
 It at Hoboken By whom built D.A. John Cockrell Yard No. 707 When built 1953
 Engines made at Deuring By whom made do. Engine No. 6382/3/4 When made 1953
 Boilers made at do. By whom made do. Boiler No. ✓ When made 1953
 Shaft Horse Power at Full Power 7300 Owners Maritime Transportation Co. 29 Port belonging to Memaria
 m. Horse Power as per Rule 1600 MW Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Made for which Vessel is intended unrestricted

STEAM TURBINE ENGINES, &c.—Description of Engines Parsons marine double reduction geared steam turbines

of Turbines Ahead three Direct coupled, single reduction geared to one propelling shafts. No. of primary pinions to each set of reduction gearing three
 Astern two double reduction geared
 Direct coupled to Alternating Current Generator — phase — periods per second — rated — Kilowatts — Volts at — revolutions per minute;
 supplying power for driving Propelling Motors, Type —
 Direct Current Generator
 ed — Kilowatts — Volts at — revolutions per minute. Direct coupled, single or double reduction geared to — propelling shafts.

TURBINE	H. P.	I. P.	L. P.	ASTERN.
LOADING.				
alse				
ing				
No. of rows				
No. of stages	<u>four</u>	<u>five</u>	<u>eleven</u>	
No. of rows in each stage	<u>seven</u>	<u>1st 2nd 3rd 4th 5th 6th 7th</u>	<u>one</u>	

Shaft Horse Power at each turbine H.P. 2420 I.P. 2420 L.P. 2460 Revolutions per minute, at full power, of each Turbine Shaft H.P. 4850 I.P. 4850 L.P. 2800
 1st reduction wheel 720 main shaft 100 max. 103

for Shaft diameter at journals H.P. 122 I.P. 122 L.P. 150 1st pinion 1st reduction wheel 2nd pinion main wheel Width of Face 1st reduction wheel main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearing 6718 1st pinion 1st reduction wheel 2nd pinion main wheel

Pinion Shafts, diameter 1st 2nd External 1st 2nd Internal 1st 2nd diameter at bottom of pinion teeth 1st 2nd

Generator Shaft, diameter at bearings 1st 2nd Propelling Motor Shaft, diameter at bearings 1st 2nd

Intermediate Shafts, diameter as per rule 440 as fitted 440 Thrust Shaft, diameter at collars as per rule 488 as fitted 488

Screw Shaft, diameter as per rule 480 as fitted 480 Is the tube shaft fitted with a continuous liner yes

Onze Liners, thickness in way of bushes as per rule 15.5 Thickness between bushes as per rule 20 Is the after end of the liner made watertight in the propeller boss yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner yes 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 yes

two 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 yes

Length of Bearing in Stern Bush next to and supporting propeller 3040 Propeller, diameter 6100 Pitch 4915 No. of Blades four State whether Moveable no Total Developed Surface 11,005 square feet

Single Screw, 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 condenser yes

No. of Turbines fitted with astern wheels two Feed Pumps No. and size two main 100 T/h. one 160 T/h. one 80 T/h.

How driven steam Lubricating Oil Pumps, including Spare Pump, No. and size two 66 m³/h. (each)

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected both to Main Bilge Pumps and Auxiliary

Bilge Pumps, No. and size:—In Engine and Boiler Room 100 m³/h. x 1 50 m³/h. x 2 70 m³/h. x 1 80 m³/h. x 2 In Pump Room 70 m³/h. x 1

Hold, Chain locker 50 m³/h. x 1 Indy cargo hold 70 m³/h. x 2 In main pump room 100 m³/h. x 2

Main Water Circulating Pump Direct Bilge Suctions, No. and size 400 m³/h. x 1 Independent Power Pump Direct Suctions to the Engine Room

Agas, No. and size 100 m³/h. x 1 150 m³/h. x 1 Are all the Bilge Suction pipes in Holds and Tunnel Well 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 all Sea 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

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

overing plate yes What pipes pass through the bunkers offshore suction How are they protected extra heavy steel pipe

What pipes pass through the deep tanks — Have they been tested as per rule —

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

Is the 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

ices, or from one compartment to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door — worked from —

Boilers, &c.—(Letter for record —) Total Heating Surface of Boilers 16542 sq. ft.

Forced Draft fitted yes No. and Description of Boilers two Babcock & Wilcox Working Pressure 500 lb. sq. in.

Is a Report on Main Boilers now forwarded? yes header type

010200-010207-0034

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 ☒ 9-51 Main Boiler ☒ 1-52 Auxiliary Boilers ☒ Donkey Boilers ☒
(If not, state date of approval)
Superheaters ☒ 1-52 General Pumping Arrangements ☒ 5-3-52 Oil Fuel Burning Arrangements ☒ 5-3-52
Geared turbines situated aft. Have torsional vibration characteristics of system been approved ☒ Date of approval 19-9-51

SPARE GEAR.

Has the spare gear required by the Rules been supplied? ☒
State the principal additional spare gear supplied.

The foregoing is a correct description.

Dates of Survey while building
During progress of work in shops -- 1952 May 20, June 6, 20, 27, July 14, 11, Sept 2, 9, Oct 3, 12, Nov 7, 4, 12, 14, 18, 21, 22, Dec 2, 9, 12, 16, 23, 30, Jan 6, 1, 23, 27, 30, Feb 17, 24, 27, April 20, March 6, 10, 13, 21, 26, 27, 31, April 1, 3, 14, 17, 21, May 5, 8, 12, 19, 20, 22, 27, June 2, 5, 9, 16, 19, 26, 1953 Dec 9, 16, 19, 29, Feb 2, 9, 11, March 16, 19, June 23, Sept 1, 7, 9, 10, 17, Oct 2, 5, 7, 20, 27, 29, Nov 3, 7, 10, 14, 17, Aug 12.
Total No. of visits 96

Dates of Examination of principal parts—Casings 26-3-53 Rotors 6-3-53 Blading 4-53 Gearing 24-11-53
14-4-53 26-3-53 5-53 7-53

Wheel shaft Thrust shaft 19-5-53 Intermediate shafts 8-5-53 Tube shaft Screw shaft 23-1-53

Propeller 17-3-53 Stern tube 11-52 Engine and boiler seatings 7-51 8-53 Engine holding down bolts 7-51

Completion of fitting sea connections 5/53 Completion of pumping arrangements 8-10-53 Boilers fixed 9-53 Engines tried under steam 11-53

Main boiler safety valves adjusted 9-11-53 Thickness of adjusting washers

Rotor shaft, Material and tensile strength 4.4/65 kg/mm² S.M. steel Identification Mark 24-11-53

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

; Chemical analysis No 6718

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 Identification Mark

Wheel shaft, Material Identification Mark Thrust shaft, Material S.M. steel Identification Mark 24-11-53

Intermediate shafts, Material S.M. steel Identification Mark 24-11-53 Tube shaft, Material Identification Marks

Screw shaft, Material S.M. steel Identification Mark 24-11-53 Steam Pipes, Material S.M. steel Test pressure 6.5/53

Date of test 6-53 / 7-53 / 8-53 / 9-53 / 10-53 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 MARITIME LEADER

General Remarks. (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been constructed and installed under the special survey of the Society's Surveyors in accordance with the approved plans, the Rules and the Secretary's letters. The materials and workmanship are found satisfactory and sea trials were witnessed and the machinery is eligible, in my opinion, for the records of + LMC 11.53; 8.5 & T.S.C. subject to the main findings.

The turbine flexible couplings being examined by the end of 5.54.

NOTE: During the sea trials no fear hammer or rough running of the gears was noticed at any speed and it is recommended that no barred speed range be imposed.

For examination of main gears see Eng. Certs. 18 Jan. 52 and 9 June 1953.

On completion of the sea trials the turbine flexible couplings were opened and examined and the teeth were found somewhat pitted. At the Committee's request all the turbine couplings were renewed. This decision was motivated because the

of the spare couplings now fitted, are of nickel steel and it is expected that this will give better results. It is recommended that the turbine couplings be examined by the end of 5.54, the same being, in my opinion, sufficient.

The amount of Entry Fee ... £ ... When applied for.

Special ... £ 67.120/- 24-12-19 53

Donkey Boiler Fee ... £ 19.540/- When received.

Travelling Expenses (if any) £ ... 5-12-19 53

Committee's Minute

Assigned + LMC 11.53 Subject.

2 WTB 500 lb. (Spt. 470 ch)

CL.



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