

REPORT ON STEAM TURBINE MACHINERY. No. 8096

Rpt. 4a.

Date of writing Report 2 Aug 1941 When handed in at Local Office 5 Aug 1941 Port of Philadelphia
No. in Survey held at 10 March 1941 Date, First Survey 2 July 1941
Reg. Book. on the "Laddo."
Built at Sparrows Point Pa. By whom built Bethlehem SBC Co. Yard No. 4354 When built 1941
Engines made at Sparrows Point Pa. By whom made Westinghouse E & M Co. Engine No. 1302 When made
Boilers made at By whom made Boiler No. When made
Shaft Horse Power at Full Power 1700 Owners Socony Vacuum Oil Co. Port belonging to
Nom. Horse Power as per Rule 2144 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Ys
Trade for which Vessel is intended Carrying Petroleum in bulk

STEAM TURBINE ENGINES, &c.—Description of Engines

No. of Turbines Ahead Two Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing Two
direct coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;
for supplying power for driving Propelling Motors, Type
rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

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.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1st EXPANSION	1.125	23.12	1				1.275	30.14	5	1.405	30.65	1
2ND	2.25	24.76	1				3.47	31.00		2.82	32.07	1
3RD	1.145	16.28	6									
4TH	1.69	17.43					4.47	37.00	5	2.25	32.00	1
5TH	1.815	17.65	8					4.80		3.61	33.76	1
6TH												
7TH	3.06	20.18										
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine H.P. 1300 L.P. 6313
Revolutions per minute, at full power, of each Turbine Shaft L.P. 4803
Rotor Shaft diameter at journals H.P. 5 L.P. 6.44
Pitch Circle Diameter 1st pinion 13.86 2nd pinion 25.912
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 15.78 2nd pinion 31.4
Flexible Pinion Shafts, diameter 1st 5 2nd 5
Pinion Shafts, diameter at bearings External 1st 5 2nd 4 Internal 1st 10.278 2nd 14.10
Wheel Shafts, diameter at bearings 1st 16 2nd 20
Generator Shaft, diameter at bearings
Propelling Motor Shaft, diameter at bearings
Intermediate Shafts, diameter as per rule as fitted
Thrust Shaft, diameter at collars as per rule as fitted
Tube Shaft, diameter as per rule as fitted
Screw Shaft, diameter as per rule as fitted
Is the tube shaft fitted with a continuous liner
Bronze Liners, thickness in way of bushes as per rule as fitted
Thickness between bushes as per rule as fitted
Is the after end of the liner made watertight in the propeller boss
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
If 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
If two liners are fitted, is the shaft lapped or protected between the liners
Is an approved Oil Gland
Propeller, diameter Pitch No. of Blades State whether Movable Total Developed Surface square feet.
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine
Can the H.P. or L.P. Turbine exhaust direct to the Condenser
No. of Turbines fitted with astern wheels 1 Feed Pumps No. and size How driven
Pumps connected to the Main Bilge Line No. and size How driven
Ballast Pumps, No. and size
Lubricating Oil Pumps, including Spare Pump, No. and size
Are two independent means arranged for circulating water through the Oil Cooler
Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room
In Holds, &c.
Main Water Circulating Pump Direct Bilge Suctions, No. and size
Independent Power Pump Direct Suctions to the Engine Room
Bilges, No. and size
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
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
Are all Sea Connections fitted direct on the skin of the ship
Are they fitted with Valves or Cocks
Are they 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 line
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 covering plate
What pipes pass through the bunkers
How are they protected
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
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 spaces, or from one compartment to another
Is the Shaft Tunnel watertight
Is it fitted with a watertight door

BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers

Is Forced Draft fitted _____ No. and Description of Boilers _____ Working Pressure _____
 Is a Report on Main Boilers now forwarded? _____
 Is { a Donkey } Boiler fitted? _____ If so, is a report now forwarded? _____
 { an Auxiliary }
 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 _____
 Spare Gear. State the articles supplied:— *Under separate cover.*

The foregoing is a correct description.

Westinghouse & Co. by J. W. [Signature] Chief Inspector Manufacturer

Dates of Survey { During progress of work in shops - - } 10th 27 March 11 29 April 10 21 27 May 3 11 23 27 30 June 2nd July 1941.
 { During erection on board vessel - - - }
 Total No. of visits _____

Dates of Examination of principal parts—Casings *2 July* Rotors *2 July* Blading *2 July* Gearing *2 July*
 Wheel shaft *2 July* Thrust shaft _____ Intermediate shafts _____ Tube shaft _____ Screw shaft _____
 Propeller _____ Stern tube _____ Engine and boiler sealings _____ Engine holding down bolts _____
 Completion of pumping arrangements _____ Boilers fired _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
 Rotor shaft, Material and tensile strength *OH Steel* HP 87500 86500 93500 92500 Identification Mark *4215-4246 WHR*
 LP 87000 86000 91500 91670
 Flexible Pinion Shaft, Material and tensile strength _____ Identification Mark _____
 Pinion shaft, Material and tensile strength *CH Steel* LP 99500 HP 105000 Identification Mark *4208 WHT, 1405 JWB*
 1st Reduction Wheel Shaft, Material and tensile strength *OH Steel* HP 101000 LP 105000 Identification Mark *4213 WHR, 6724 HBC*
 Wheel shaft, Material *OH Steel* Identification Mark *6195 ON* Thrust shaft, Material _____ Identification Mark _____
 Intermediate shafts, Material _____ Identification Marks _____ 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 _____
 Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *Hull 4353*

General Remarks (State quality of workmanship, opinions as to class, &c.) *This machinery has been constructed under special survey, and in accordance with the approved plans, the workmanship & materials are good. The installation has been tested out under steam in the shop & found satisfactory. Unit has been shipped to Panama R. to be installed on the vessel. When the installation has been satisfactorily installed on board the vessel, tried out under full power & to the satisfaction of the Society's Surveyor it will be eligible in my opinion to receive the record of +LMC with date.*

The amount of Entry Fee ... \$ 30 : 00 :
 Special ... \$ 256 : 00 :
 Donkey Boiler Fee ... \$: :
 Travelling Expenses (if any) \$ 14 : 00 :
 When applied for, *7 Aug 1941*
 When received, _____

M. W. [Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *NEW YORK DEC 27 1941*

Assigned *See BAL. RPT. 7545*