

pt. 4a.

AUXILIARY

REC'D NEW YORK

DEC 20 1941

# REPORT ON/STEAM TURBINE MACHINERY. No. 3643

Received at London Office

Date of writing Report July 8, 1941 When handed in at Local Office 19 Port of Boston, Massachusetts  
 No. in Survey held at Lynn, Mass. Date, First Survey Feb. 7, 1940 Last Survey Dec. 14, 1940  
 Reg. Book. CABDO (Number of Volls 6)  
 on the Hulls Nos. 4353, 4354, 4355, and 4356  
 Built at Sparrows Point, Md. By whom built Bethlehem Steel Company Yard No. 4353-4354 Gross Tons 4353-4354  
 Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. 45937 When built 1941  
 Boilers made at  By whom made  Boiler No.  When made   
 Shaft Horse Power at Full Power  Owners  Port belonging to   
 Nom. Horse Power as per Rule  Is Refrigerating Machinery fitted for cargo purposes  Is Electric Light fitted Yes  
 Trade for which Vessel is intended

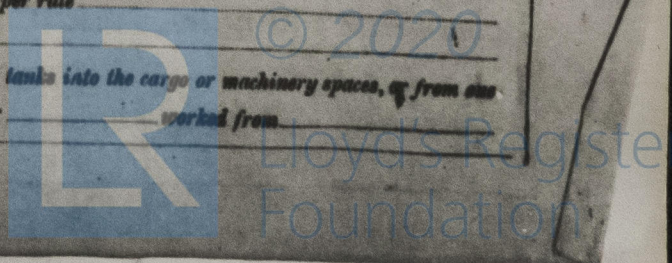
STEAM TURBINE ENGINES, &c.—Description of Engines One turbine connected to 300-K.W. Generator thru single reduction gears.

No. of Turbines One Direct coupled, single reduction geared to Generators propelling shafts. No. of primary pinions to each set of reduction gearing One  
double reduction geared  
 direct coupled to Alternating Current Generator phases periods per second rated 300 Kilowatts 240 Volts at 1200 revolutions per minute;  
 for supplying power for driving Propelling Motors, Type Auxiliary Machinery and Electric lighting.  
 rated  Kilowatts  Volts at  revolutions per minute. Direct coupled, single or double reduction geared to  propelling shafts.

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	1.96"	25.5"	25.96"	2							
2nd Wheel	1.504"	1.03"	25.5"	25.90"	2						
3rd "	1.324"	2.37"	26.65"	26.76"	2						
4th "											
5th "											
6th "											
7th "											
8th "											
9th "											
10th "											
11th "											
12th "											

Shaft Horse Power at each turbine H.P. 5636 1st reduction wheel  
I.P. Revolutions per minute, at full power, of each Turbine Shaft I.P.  
L.P. main shaft 1200  
L.P.  
 Motor Shaft diameter at journals H.P. 3-1/2" Pitch Circle 1st pinion 5.4414" 1st reduction wheel Width of 1st reduction wheel  
I.P. Diameter 2nd pinion main wheel 25.5585" Face main wheel 7-1/2"  
L.P.  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 6-5/8" & 7-5/8" 1st reduction wheel  
2nd pinion main wheel 6-3/4"  
 Flexible Pinion 1st Pinion Shafts, diameter at bearings SOLID 1st 4" 2nd diameter at bottom of pinion teeth 1st 5.0664"  
 Shafts, diameter 2nd Outside of gear main Generator Shaft, diameter at bearings 3-1/2"  
 Wheel Shafts, diameter at bearings 1st 4" diameter at wheel shroud, 1st 25.827" Propelling Motor Shaft, diameter at bearings  
main  
 Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule  
as fitted as fitted as fitted  
 Screw Shaft, diameter as per rule Is the tube shaft fitted with a continuous liner Bronze Liners, thickness in way of bushes as per rule  
as fitted screw as fitted  
 Thickness between bushes as per rule 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  
as fitted  
 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  
or other appliance fitted at the after end of the tube shaft Length of Bearing in Stern Bush next to and supporting propeller  
 Propeller, diameter Pitch No. of Blades State whether Moveable 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 I.P. Turbine exhaust direct to the

Condenser No. of Turbines fitted with astern wheels 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 stowhold 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:— Two gear and two pinion bearings, one thrust bearing, fourteen coupling bolts, six turbine casing bolts, one turbine bearing.

PER SHIP

The foregoing is a correct description,

General Elec. Co. per J. T. Polan Manufacturer

Dates of Survey { During progress of work in shops -- Feb. 7, June 11, 13, 20, July 16, 18, December 12, 14, 1940  
while building { During erection on board vessel --  
Total No. of visits Eight

Dates of Examination of principal parts—Casings Dec. 14, 1940 Rotors Dec. 14, 1940 Blading Dec. 14, 1940 Gearing Dec. 14, 1940

Wheel shaft Dec. 14, 1940 Thrust shaft Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings 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 O.H. Steel 93,500 lbs. per sq. in. Identification Mark 367 14-12-40 T.B.

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength O.H. Steel 103,250 lbs. per sq. in. Identification Mark 367 14-12-40 T.B.

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material O.H. Steel Identification Mark 367 14-12-40 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 130°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 If so, state name of vessel

**General Remarks** (State quality of workmanship, opinions as to class, &c. The geared turbine electric generator has been built under Special Survey, tested under steam at full load and the oil governors adjusted to trip at 1340 RPM. The quality of workmanship and materials is good. The units have been forwarded to Bethlehem Steel Company, Sparrows Point, Md.

The amount of Entry Fee	£	:	When applied for,
Special	£	75.00	8-7 19.41
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	2.50	19

Thomas Barrie  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 30 1941

Assigned See BAL. RPT. 7585.



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