

AUXILIARY

REPORT ON/STEAM TURBINE MACHINERY. No. 3643

pt. 4a.

Received at London Office

Date of writing Report July 8, 1941 When handed in at Local Office 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. 4355-4356 When built 1941
Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. 45937 When made 1940
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
direct coupled to Alternating Current Generator phases 3 periods per second Direct Current Generator 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.

Table with columns: TURBINE BLADING, H.P., I.P., L.P., ASTERN. Rows include 1st Expansion, 1st Wheel, 2nd Wheel, 3rd Wheel, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th. Columns include Height of Blades, Diameter at Tip, No. of Rows.

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. main shaft 1200 L.P.
Motor Shaft diameter at journals H.P. 3-1/2" Pitch Circle Diameter 1st pinion 5.4414" 1st reduction wheel Width of Face 1st reduction wheel main wheel 7-1/2" 2nd pinion main wheel 25.5585"
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 Shafts, diameter 1st Pinion Shafts, diameter at bearings SOLID 1st 4" 2nd diameter at bottom of pinion teeth 1st 5.0664" 2nd
Wheel Shafts, diameter at bearings 1st 4" diameter at wheel shroud, 1st 25.827" Generator Shaft, diameter at bearings 3-1/2" 2nd
Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule as fitted
Screw Shaft, diameter as per rule Is the tube screw shaft fitted with a continuous liner Bronze Liners, thickness in way of bushes as per rule 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 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 while building { During progress of work in shops -- } Feb. 7, June 11, 13, 20, July 16, 18, December 12, 14, 1940  
 { 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 ... £	:	:	
Donkey Boiler Fee ... £	:	:	
Travelling Expenses (if any) £	:	:	
			8-7 19 41
			When received.
			19

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

Committee's Minute NEW YORK DEC 30 1941

Assigned See BAL. RPT. 7585.

