

REPORT ON STEAM TURBINE MACHINERY. No. 3647

Received at London Office 23 JUN 1942

Date of writing Report July 8, 1941 When handed in at Local Office 10 Port of Boston, Massachusetts

No. in Survey held at Lynn, Mass. Date, First Survey July 8, 1940 Last Survey March 24, 1941

Reg. Book. on the Hulls Nos. 4353, 4354, 4355 and 4356 9/5 'Catawba' (Number of Visits 7)

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 Company Engine No. 45941 When made 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 Generators No. of primary pinions to each set of reduction gearing One

Direct coupled to 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, H.P., I.P., L.P., ASTERN. Rows include: LADING, 1st Wheel, 2nd Wheel, 3rd Wheel, etc. with sub-columns for Height of Blades, Diameter at Tip, No. of Rows.

Shaft Horse Power at each turbine H.P. 5636 1st reduction wheel I.P. 1200 main shaft 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 7-1/2"

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 4" Pinion Shafts, diameter at bearings SOLID 1st 2nd diameter at bottom of pinion teeth 1st 5.0664" 2nd

Wheel Shafts, diameter at bearings 1st 4" diameter at Outside of gear 1st 25.827" Generator Shaft, diameter at bearings 3-1/2" Propelling Motor Shaft, diameter at bearings

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

Tube Shaft, diameter as per rule 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 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 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 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. Can the H.P. or L.P. Turbine exhaust direct to the condenser

Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine 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 Lubricating Oil Pumps, including Spare Pump, No. and size

Ballast Pumps, No. and size Are there 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 Pump Room

Water 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 How are they protected Have they been tested as per rule

What pipes pass through the bunkers What pipes pass through the deep tanks 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 worked from

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

Is Forced Draft fitted No. and Description of Boilers

Is a Report on Main Boilers now forwarded? If so, is a report now forwarded?

Is a Donkey Boiler fitted? 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

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied State the principal additional spare gear 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, Gen. Electric Co per J. T. Golaw Nov. 23

Dates of Survey while building July 8, 20, August 14, October 2, 22, 1940 and March 24, 1941

Dates of Examination of principal parts Casings Mar. 24, 1941 Rotors Mar. 24, 1941 Blading Mar. 24, 1941 Gearings Mar. 24, 1941

Wheel shaft Mar. 24, 1941 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 Rotor shaft, Material and tensile strength O.H. Steel 95,500 lbs. per sq. in. Identification Mark 378 24-3-41

Flexible Pinion Shaft, Material and tensile strength Pinion shaft, Material and tensile strength O.H. Steel 105,000 lbs. per sq. in. Identification Mark 378 24-3-41

1st Reduction Wheel Shaft, Material and tensile strength Wheel shaft, Material O.H. Steel Identification Mark 378 24-3-41 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

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.) 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, 8-7 1941

Special ... £ \$ 75.00 : : When received, 19

Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ 2.50

Committee's Minute NEW YORK MAY 27 1942 Assigned See attached first Entry Kit.

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

