

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 Catalba (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

TEAM TURBINE ENGINES, &c.—Description of Engines One turbine connected to 300-K.W. Generator thru single reduction gears.
 No. of Turbines One single reduction geared to propelling shafts 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.
 at Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE	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 Wheel	.96"	25.5"	-25.96"-2									
2nd Wheel	1.03"	25.5"	-25.90"-2									
3rd "	1.374"	26.65"	-26.76"-2									
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Shaft Horse Power at each turbine { H.P. 5636 1st reduction wheel
 I.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
 I.P. Diameter { 2nd pinion main wheel 25.5585" Width of Face { 1st reduction wheel
 L.P. { 2nd pinion main wheel 6-3/4"
 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 { 25.827" Generator Shaft, diameter at bearings 3-1/2"
 { 2nd 4" { 2nd { main Propelling Motor Shaft, diameter at bearings
 Wheel Shafts, diameter at bearings { 1st 4" { 1st 25.827" { 1st 5.0664"
 { main Outside of gear { main { 2nd
 Intermediate Shafts, diameter { as per rule Thrust Shaft, diameter at collars { as per rule
 { as fitted { as fitted { as fitted
 Tube Shaft, diameter { as per rule Screw Shaft, diameter { as per rule Is the { tube { shaft fitted with a continuous liner {
 { as fitted { as fitted { as fitted
 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
 { as fitted { as fitted { as fitted
 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
 { 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
 { If so, state type { 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.
 { 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 { 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 Pump Room
 { Holds, &c. { Independent Power Pump Direct Suctions to the Engine Room
 { Main Water Circulating Pump Direct Bilge Suctions, 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 they fitted with Valves or Cocks
 { Are all Sea Connections fitted direct on the skin of the ship
 { Are the Overboard Discharges above or below the deep water line
 { Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates
 { Are the Blow Off Cocks fitted with a spigot and brass covering plate
 { Are they each fitted with a Discharge Valve always accessible on the plating of the vessel
 { How are they protected
 { That pipes pass through the bunkers
 { Have they been tested as per rule
 { That 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
 { 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?
{ an Auxiliary }

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

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. Golau

Nov. 23

Dates { During progress of }
of Survey { work in shops - - }
while { During erection on }
building { board vessel - - - }
Total No. of visits

July 8, 20, August 14, October 2, 22, 1940 and March 24, 1941

Seven

Dates of Examination of principal parts—Casings Mar. 24, 1941 Rotors Mar. 24, 1941 Blading Mar. 24, 1941 Gearing 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 fired

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,
Special ... £ \$ 75.00 : : 8-7 1941
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ 2.50 : : 19

Committee's Minute NEW YORK MAY 27 1942

Assigned See attached First Entry Kit.

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



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Foundation