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REPORT ON STEAM TURBINE MACHINERY. No. 3664

Received at London Office

2 JUN 1942

Date of writing Report Sept. 25 41 When handed in at Local Office 10 Port of Boston, Massachusetts
 Date, First Survey April 14, 1941 Last Survey June 7, 1941
 Reg. Book. Hull No. 1492-3 "Sheldon Clark" (Number of Visits 4)
 on the Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1492-3 When built 1941
 Engines made at General Electric Co. Engine No. 48061 When made 1941
 Boilers made at 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
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines One turbine connected to 250 KW Generator thru single reduction gears.

No. of Turbines one each single reduction geared to Generators propelling shafts No. of primary pinions to each set of reduction gearing One
 Direct coupled to Alternating Current Generator phase periods per second rated 250 Kilowatts 240 Volts at 1200 revolutions per minute;
 supplying power for driving Propelling Motors, Type Auxiliary Machinery and Electric lighting
 led 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.
EXPANSION	.500 .960	25.5 25.96-2									
D	.504 1.025	25.56 26.18-2									
D	.873 1.045	25.9 26.6-2									
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Shaft Horse Power at each turbine { H.P. 3616 5-660 1st reduction wheel
 I.P. Revolutions per minute, at full power, of each Turbine Shaft
 L.P. main shaft 1200
 Motor Shaft diameter at journals { H.P. 3" Pitch Circle { 1st pinion 4.6" 1st reduction wheel
 I.P. 21.7" main wheel
 L.P. 21.7" main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 5-1" & 5-1" 1st reduction wheel
 2nd pinion 5-1" & 5-1" main wheel

Flexible Pinion { 1st 2-1" x 3-1" 1st reduction wheel
 Shafts, diameter { 2nd 2-1" x 3-1" main wheel

Wheel Shafts, diameter at bearings { 1st 2.5" 2.70 Rule 20 1st reduction wheel
 main 2.5" outside of gear 2nd 2.5" main wheel

Intermediate Shafts, diameter { as per rule 2.5" Generator Shaft, diameter at bearings 3"
 as fitted 2.5" Propelling Motor Shaft, diameter at bearings

Tube Shaft, diameter { as per rule 2.5" Thrust Shaft, diameter at collars 3"
 as fitted 2.5"

Bronze Liners, thickness in way of bushes { as per rule 2.5" Is the after end of the liner made watertight in the
 as fitted 2.5"

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

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 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 Pump 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

That pipes pass through the bunkers How are they protected

That 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 worked from

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?
{ an Auxiliary }

If so, is a report now forwarded?

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 (2) L.S. Bearings (2) Pinion Bearings (2) Thrust Bearings

(8) H.S. Couplings Bolts (8) Drake Locknuts for H.S. Coupling Bolts (5) 3/4" Bolts for Hor. Cas

Joint (2) 3/4" bolts for Hor. Casing Joint.

PER SHIP

The foregoing is a correct description,

General Electric Co / J. Holan

Manufactured

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

April 14 May 23, June 3, 7, 1941

4 visits

Dates of Examination of principal parts—Casings June 7, 1941 Rotors June 7, 1941 Blading June 7, 1941 Gearing June 7, 1941

Wheel shaft June 7, 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 100,000 lbs. per sq. in. Identification Mark 431 7-6-41

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength O.H. Steel 108,000 lbs. per sq. in. Identification Mark 431 7-6-41

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

Wheel shaft, Material O.H. Steel Identification Mark 431 7-6-41 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, Fore River Yard, Quincy, Mass.

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £	\$ 75.00	:	23-10-41
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	2.50	:	19

Committee's Minute NEW YORK APR 8 1942

Assigned N.Y.K. RPT. NO. 42277

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



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Foundation