

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY. No. 3669

Date of writing Report Sept. 25, 1941 When handed in at Local Office Sept. 25, 1941 Port of Boston, Massachusetts
No. in Survey held at Lynn, Mass. Date, First Survey Dec. 16, 1940 Last Survey March 27, 1941
Reg. Book. SINCLAIR OPALINE (Number of Volls 4)
on the Hull No. 1488-9-90-91 Rubylene Gross 90-91 Tons Net 1941
Built at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1488-9- When built 1941
Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. 48054 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 200 KW Generator thru single reduction gears.
No. of Turbines One each Direct coupled Generators single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing One
direct coupled to Alternating Current Generator phase periods per second rated 200 Kilowatts 240 Volls at 1200 revolutions per minute;
for supplying power for driving _____ Propelling Motors, Type Auxiliary Machinery and Electric lighting
rated _____ Kilowatts _____ Volls at _____ revolutions per minute. Direct coupled, single or double reduction geared to _____ propelling shafts.

TURBINE BLADING.	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 Impulse	500	960	25.5	25.96-2								
2nd "	504	1.025	25.56	26.18-2								
3rd "	873	1.045	25.9	26.6-2								
4th "												
5th "												
6th "												
7th "												
8th "												
9th "												
10th "												
11th "												
12th "												

Shaft Horse Power at each turbine { H.P. _____ I.P. _____ L.P. _____ }
Revolutions per minute, at full power, of each Turbine Shaft { H.P. _____ I.P. _____ L.P. _____ }
Rotor Shaft diameter at journals { H.P. _____ I.P. _____ L.P. _____ }
Pitch Circle Diameter { 1st pinion 4.6" 1st reduction wheel _____ 2nd pinion _____ main wheel 21.7" }
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 5-1/2" & 5-1/2" 1st reduction wheel _____ 2nd pinion _____ main wheel 5-1/2" & 5-1/2" }
Flexible Pinion Shafts, diameter { 1st _____ 2nd _____ }
Pinion Shafts, diameter at bearings { 1st 2.5" 2nd _____ }
Wheel Shafts, diameter at bearings { 1st 2.5" 2nd _____ }
Generator Shaft, diameter at bearings 3"
Propelling Motor Shaft, diameter at bearings _____
Intermediate Shafts, diameter _____
Thrust Shaft, diameter at collars _____
Tube Shaft, diameter _____
Screw Shaft, diameter _____
Is the { tube _____ screw _____ } shaft fitted with a continuous liner { _____ }
Bronze Liners, thickness in way of bushes _____
Thickness between bushes _____
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 _____
Length of Bearing in Stern Bush next to and supporting propeller _____
Propeller, diameter _____ Pitch _____ No. of Blades _____
Is the propeller 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 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 _____
Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge _____
Are two independent means arranged for circulating water through the Oil Cooler _____
Pumps, No. and size:—In Engine and Boiler Room _____
In 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 _____
Bilges, No. and size _____
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 sized sufficiently high on the ship's side to be seen without lifting the stowhold 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 _____
What pipes pass through the bunkers _____
Have they been tested as per rule _____
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 it fitted with a watertight door _____

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4
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 } Boller fitted? If so, is a report now forwarded?
{ an Auxiliary }

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
(If not state date of approval)

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

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

PER SHIP

The foregoing is a correct description,

General Electric Co. J. T. Nolan Manufacturer.

Dates of Survey while building { During progress of work in shops -- Dec. 12, 1940 Jan. 15, March 24, 27, 1941
During erection on board vessel ---
Total No. of visits 4 visits

Dates of Examination of principal parts—Casings Mar. 27, 1941 Rotors Mar. 27, 1941 Blading Mar. 27, 1941 Gearing Mar. 27, 1941

Wheel shaft Mar. 27, 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 102,000 lbs. per sq. in. Identification Mark 382 27-3-41

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength O.H. Steel 107,000 lbs. per sq. in. Identification Mark 382 27-3-41

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

Wheel shaft, Material O.H. Steel Identification Mark 382 27-3-41 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, Fore River Yard, Quincy, Mass.

The amount of Entry Fee ... £ : : When applied for,
Special ... £ \$ 75.00 : : 24-10 1941
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ 2.50 : : 19

Committee's Minute

Assigned See N.Y.K. RPT. 41921

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



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