

REPORT ON STEAM TURBINE MACHINERY. No. 3715

Received at London Office 20 JUL 1942

4a. Date of writing Report Mar. 23, 1942 When handed in at Local Office Port of Boston, Massachusetts
 Date, First Survey Nov. 5, 1941 Last Survey Feb. 17, 1942
 in Survey held at Lynn, Mass. (Number of Visits 7)
 on the Hull No. 4358 - 5/5 "Colina" Tons Gross Net
 built at Sparrows Point, Md. By whom built Bethlehem Steel Co. Yard No. 4358 When built 1942
 engines made at Lynn, Mass. By whom made General Electric Co. Engine No. HP 45796 LP 45797 When made 1942
 boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 shaft Horse Power at Full Power 12,000 Owners _____ Port belonging to _____
 nominal Horse Power as per Rule _____ Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted Yes
 made for which Vessel is intended _____

STEAM TURBINE ENGINES, &c.—Description of Engines Cross Compound Turbines and double reduction gears.

Number of Turbines Two Ahead Two Direct coupled, One Astern One single reduction geared } to ONE propelling shafts. No. of primary pinions to each set of reduction gearing Two double reduction geared }
 connected to { Alternating Current Generator phase _____ periods per second } rated _____ Kilowatts _____ Volts at _____ revolutions per minute;
 supplying power for driving _____ Propelling Motors, Type _____
 rated _____ Kilowatts _____ Volts at _____ revolutions per minute. Direct coupled, single or double reduction geared to _____ propelling shafts.

TURBINE LOADING.	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	0.75"	29.35"	1				2.08"	45.14"	1	0.91"	50.458"	1
"	0.79"	25.54"	1				2.64"	45.83"	1	4.635"	50.738"	2
"	0.92"	25.80"	1				3.54"	47.328"	1		54.422"	1
"	0.97"	25.90"	1				4.16"	48.348"	1			
"	1.14"	26.24"	1				5.30"	49.988"	1			
"	1.395"	26.608"	1				7.40"	52.40"	1			
"	1.14"	26.24"	1				9.32"	54.63"	1			
"	1.34"	26.64"	1				11.38"	57.213"	1			
"	1.68"	27.32"	1									
"	2.24"	28.44"	1									

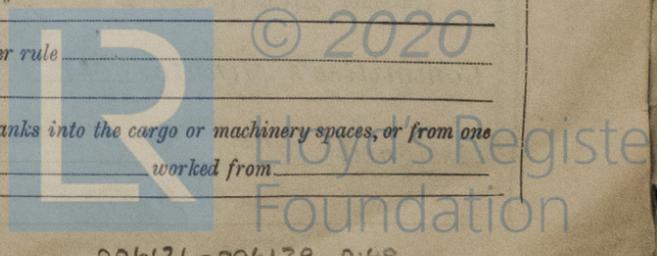
shaft Horse Power at each turbine { H.P. 6,000 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 5978 } 1st reduction wheel 727
 { L.P. 6,000 } { HP 10,600 } HP 87,200 } main shaft 105
 { I.P. 6,000 } { LP 14,200 } LP 66,600 }
 Propeller Shaft diameter at journals { H.P. 4.00" Both ends } 1st pinion LP 14,200 } reduction wheel HP 66,600 } Width of { 1st reduction wheel 22.5"
 { I.P. 6.50" Gear end } 2nd pinion 21,000 } main wheel 145.33" } Face { main wheel 47.5"
 { L.P. 8.00" Exh. end } { 1st pinion HP & LP 16-7/8" } 1st reduction wheel HP & LP 17"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion HP 8,000 } 2nd pinion 2'-10-1/4" } main wheel 2'-10-1/2" } HP 10.087"
 { LP 8,000 } { 1st } 14.000" } { 2nd } 10-1/2" } { LP } 13.819"
 Flexible Pinion Shafts, diameter { 1st } None } Pinion Shafts, diameter at bearings { External 1st } Solid } 2nd } 10-1/2" } diameter at bottom of pinion teeth { 1st } HP } 20.353"
 { 2nd } None } { Internal 1st } 11-3/8" } Generator Shaft, diameter at bearings { 2nd } LP }
 Steel Shafts, diameter at bearings { 1st } LP 11,000 } diameter at wheel shroud, { 1st } 26-3/4" } Propelling Motor Shaft, diameter at bearings { 2nd } HP }
 Intermediate Shafts, diameter as per rule HP 6,000 } Thrust Shaft, diameter at collars as per rule _____ as fitted 11.749"
 as fitted _____ } Screw Shaft, diameter as per rule _____ as fitted _____ } Is the { tube } shaft fitted with a continuous liner { _____
 as fitted _____ } { screw } _____ }

Conze 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 _____ } 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 Yes Can the H.P. Turbine exhaust direct to the

Condenser Yes No. of Turbines fitted with astern wheels 1 Feed Pumps { No. and size _____ }
 { How driven _____ }
 Pumps connected to the Main Bilge Line { No. and size _____ }
 { How driven _____ }
 Bilge Pumps, No. and size _____ Lubricating Oil Pumps, including Spare Pump, No. and size _____
 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 Bilge Suctions, No. and size _____ Independent Power Pump Direct Suctions to the Engine Room
 No. and size _____ Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes _____
 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 _____
 all Sea Connections fitted direct on the skin of the ship _____ Are they fitted with Valves or Cocks _____
 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 _____
 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 _____
 at pipes pass through the bunkers _____ How are they protected _____
 at pipes pass through the deep tanks _____ Have they been tested as per rule _____
 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?

Is a Donkey Boiler fitted? 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 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 Please see attached list.

The foregoing is a correct description,

R. E. Grube Gen. Elect. Co.

Dates of Survey while building During progress of work in shops -- Nov. 5, 6, Dec. 1, 1941 Jan. 26, Feb. 4, 5, 17, 1942 During erection on board vessel --- 7 visits Dec. 1, 1941 Feb. 5, 1942 Feb. 5, 1942 Feb. 1942

Dates of Examination of principal parts - Casings Rotors Blading Gearing Nov. 5, 1941 Nov. 5, 1941 Nov. 5, 1941 Nov. 5, 1941

Wheel shaft 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 513 5-11-41 514 5-11-41

Rotors shaft, Material and tensile strength OH Steel HP 116,600 LP 105,000 106,500 104,000 Identification Mark

Flexible Pinion Shaft, Material and tensile strength Identification Mark 505 5-11-41 506 5-11-41

Pinion shaft, Material and tensile strength OH Steel HS HP 109,500 HS LP 106,000 Identification Mark 507 5-11-41 508 5-11-41

1st Reduction Wheel Shaft, Material and tensile strength OH Steel LS HP 108,000 LS LP 100,500 Identification Mark

Wheel shaft, Material OH Steel Identification Mark 511 5-11-41 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.) This machinery has been constructed under Special Survey in accordance with the approved plans.

The workmanship and materials are good. The installation has been tried out in the shop under 1/3 full power and found satisfactory.

The unit has been forwarded to Bethlehem Steel Company, Sparrows Point, Md.

When the installation has been satisfactorily installed aboard the vessel and to the satisfaction of the Surveyor, it will, in my opinion, be eligible to receive the record of LMC with date.

The amount of Entry Fee ... £ : : When applied for, 31-3 19 42

Special ... £ \$ 265.00 : : When received, 19

Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ 5.00 : :

Committee's Minute NEW YORK JUL 1 1942

Assigned See first Entry Report.

Thomas Savie Engineer Surveyor to Lloyd's Register of Shipping



Certificate (if required) to be sent to... Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)