

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY.

No. 3772

Received at London Office. 6 JAN 1943

Date of writing Report Oct. 13, 1942 When handed in at Local Office 19 Port of Boston, Massachusetts
 No. in Survey held at Lynn, Mass. Date, First Survey July 28, Last Survey September 11, 1942
 Reg. Book 5/5 "Raphael Semmes" (Number of Visits 6)
 on the Hull No. 4 Tons {Gross Net
 Built at Mobile, Ala. By whom built Gulf S.B. Co. Yard No. 4 When built 1942
 Engines made at Lynn, Mass. By whom made General Electric Co. Engine No. HP 49605 LP 49606 When made 1942
 Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
 Shaft Horse Power at Full Power 6000 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 Cross Compound Turbines and double reduction gears.

No. of Turbines Ahead 2 Direct coupled, No. of primary pinions to each set of reduction gearing 2
 Astern 1 single reduction geared to 1 propelling shafts. double reduction geared
 direct coupled to { Alternating Current Generator phase _____ periods per second _____ } rated _____ Kilowatts _____ Volts at _____ revolutions per minute;
 for 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 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 EXPANSION	.845"	29.460"	1				1.195"	35.178"	1	1.130"	37.718"	2
2ND "	.680"	17.898"	1				1.735"	36.058"	1	3.94"	41.252"	1
3RD "	.740"	18.018"	1				2.320"	37.028"	1			
4TH "	.820"	18.178"	1				3.170"	38.528"	1			
5TH "	.950"	18.438"	1				4.86"	40.97"	1			
6TH "	1.000"	18.538"	1				7.25"	44.488"	1			
7TH "	1.110"	18.758"	1				9.56"	48.073"	1			
8TH "	1.230"	18.998"	1									
9TH "	1.480"	19.498"	1									
10TH "	1.710"	19.958"	1									
11TH "	2.000"	20.538"	1									
12TH "												

Shaft Horse Power at each turbine { H.P. 3000 I.P. --- L.P. 3000 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 6072 I.P. --- L.P. 4048 } 1st reduction wheel { H.P. 882 L.P. 92 }
 Rotor Shaft diameter at journals { H.P. 4" gear end I.P. 3" front end L.P. 5" gear end } Pitch Circle Diameter { 1st pinion HP 8.4" LP 12.6" } 1st reduction wheel 57.8" Width of { 1st reduction wheel 17" } Face { main wheel 33.25" }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion LP 15" } 1st reduction wheel 14" { 2nd pinion 26-1/2" } main wheel 28-1/2"
 Flexible Pinion Shafts, diameter at bearings { 1st External HP 6" LP 6" } 2nd { 12" } diameter at bottom of pinion teeth { 1st HP 8.025" LP 12.225" } 2nd 14.188"
 Wheel Shafts, diameter at bearings { 1st 9" } diameter at wheel shroud, { 1st 9-3/8" } Generator Shaft, diameter at bearings _____ { main 21" } Propelling Motor Shaft, diameter at bearings _____
 Intermediate Shafts, diameter as per rule _____ as fitted _____ Thrust Shaft, diameter at collars as per rule _____ as fitted _____ Tube Shaft, diameter as per rule _____ as fitted _____
 Screw Shaft, diameter as per rule _____ as fitted _____ Is the { tube } screw { shaft fitted with a continuous liner } _____ Bronze Liners, thickness in way of bushes as per rule _____ as fitted _____
 Thickness between bushes as per rule _____ as fitted _____ 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 shaft _____ 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.
 If 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 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 _____
 What pipes pass through the bunkers _____ How are they protected _____
 What 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 _____

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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? If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:— **AS PER RULE**

The foregoing is a correct description,

L. E. Grube, General Electric Co. Manufacturer

Dates of Survey while building { During progress of work in shops - - } July 28, August 5, 19, 31, September 8, 11, 1942
 { During erection on board vessel - - - }
 Total No. of visits **Six**

Dates of Examination of principal parts—Casings July 28, Sept. 11 Rotors Aug. 5, Sept. 11, Blading Aug. 5, Sept. 11, Gearing Sept. 11, Aug. 5
 Wheel shaft Sept. 11, 1942 Thrust shaft Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

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** HP 117,500 LP 67,500 68,000 Identification Mark **795-796 8-9-42**
 120,000 68,000 65,000
 67,500 67,000

Flexible Pinion Shaft, Material and tensile strength **HS HP 97,000 LS HP 101,500** Identification Mark **787-788-789-790**
O.H. Steel HS LP 98,000 LS LP 104,000 Identification Mark **8-9-42**

Pinion shaft, Material and tensile strength Identification Mark

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

Wheel shaft, Material **O.H. Steel** Identification Mark **794 8-9-42** 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

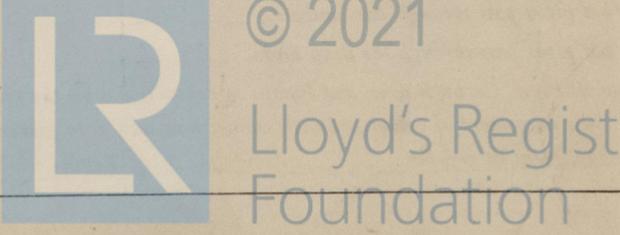
Is this machinery a duplicate of a previous case If so, state name of vessel

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 2/3 full power and found satisfactory. The unit has been forwarded to Gulf S.B. Co., Mobile, Alabama. 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	£	See mobile Rpt. No. 1942.	When applied for,
Special	£		19
Donkey Boiler Fee	£		When received,
Travelling Expenses (if any)	£		19

P. M. Harris
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **NEW YORK DEC 2 1942**
 Assigned *See first entry report*



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