

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY.

No. 3772

Received at London Office.

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 on the Hull No. 4 5/5 "Raphael Semmes" (Number of Visits 6)
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, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
Astern 1 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 }
Rotor Shaft diameter at journals { H.P. 4" I.P. 5" L.P. 6" }
Pitch Circle Diameter { H.P. 8.4" I.P. 12.6" L.P. 14.88" }
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 15" 2nd pinion 26-1/2" }
Flexible Pinion Shafts, diameter at bearings { 1st 9" 2nd 21" }
Pinion Shafts, diameter at bearings { External 1st 6" 2nd 12" Internal 1st 6" 2nd 12" }
Wheel Shafts, diameter at bearings { 1st 9" 2nd 21" }
Generator Shaft, diameter at bearings { 1st 9-3/8" 2nd 23-3/4" }
Propelling Motor Shaft, diameter at bearings { 1st 9-3/8" 2nd 23-3/4" }
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

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?

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. 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 - - }
{ During erection on board vessel - - - }
Total No. of visits

July 28, August 5, 19, 31, September 8, 11, 1942

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,

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 120,000

67,500 68,000

Identification Mark

795-796 8-9-42

Flexible Pinion Shaft, Material and tensile strength

HS HP 97,000

LS HP 101,500

Identification Mark

787-788-789-790

Pinion shaft, Material and tensile strength

O.H. Steel

HS LP 98,000

LS LP 104,000

Identification Mark

8-9-42

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

When applied for,

Special

£ Rpt. No. 1942

19

Donkey Boiler Fee

£

When received,

Travelling Expenses (if any)

£

19

Committee's Minute

NEW YORK DEC 2 1942

Assigned

See first entry report

Engine Surveyor to Lloyd's Register of Shipping.



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