

pt. 4a. **REPORT ON AUXILIARY STEAM TURBINE MACHINERY.** No. 4248

Received at London Office **22 SEP 1949**

of writing Report. **25 January 1949** When handed in at Local Office. **19** Port of **Boston, Massachusetts**
 in Survey held at **Fitchburg, Mass.** Date, First Survey **30 November** Last Survey **1 December 1948**
 Reg. Book on the **RAS AL ARPE** (Number of Visits **2**) Tons {Gross Net

built at **Chester, Pa.** By whom built **Sun Shipbuilding & Dry Dock Co.** Yard No. **Turb. Engine No. 71562** When built **1948**
 Engines made at **Fitchburg, Mass.** By whom made **General Electric Co.** Gear No. **86342** When made
 Silers made at By whom made **Generator No. 6806204**
 Shaft Horse Power at Full Power **Owners Gulf Oil Corporation** Port belonging to
 Nom. Horse Power as per Rule **Is Refrigerating Machinery fitted for cargo purposes.** **Is Electric Light fitted**
 Made for which Vessel is intended

STEAM TURBINE ENGINES, &C.—Description of Engines **Geared Turbine Generator Set**

of Turbines **Ahead One** ~~Direct coupled~~ **single reduction geared** to propelling shafts. No. of primary pinions to each set of reduction gearing
~~Direct coupled~~ **Astern** ~~Direct coupled~~ **single reduction geared**
 Alternating Current Generator **3** phase **60** periods per second } rated **400** Kilowatts **440** Volts at **1200** revolutions per minute;
 Direct Current Generator }
 supplying power for driving ~~Propeller~~ **Auxiliary Machinery and Lighting**
 Kilowatts Volts at revolutions per minute. **Direct coupled, single or double reduction geared to propelling shafts.**

TURBINE LADING.	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	.440"	19.342"	1									
2ND "	.695"	17.597"	1									
3RD "	1.110"	17.614"	1									
4TH "	1.040"	18.372"	1									
5TH "	1.420"	19.102"	1									
6TH "	2.200"	20.230"	1									
7TH "												
8TH "												
9TH "												
10TH "												

30-11 **ft Horse Power at each turbine** { H.P. **10,059** 1st reduction wheel
 I.P. **Revolutions per minute, at full power, of each Turbine Shaft** I.P. **1200** main shaft
 L.P.

30-11 **or Shaft diameter at journals** { H.P. **2.50"** Pitch Circle Diameter { 1st pinion **3.4"** 1st reduction wheel
 I.P. { 2nd pinion **main wheel 28.5"** Width of Face { 1st reduction wheel **8-1/4"**
 L.P. { main wheel **8-1/4"**

30-11 **ance between centres of pinion and wheel faces and the centre of the adjacent bearings** { 1st pinion **6"** 1st reduction wheel
 { 2nd pinion **main wheel 6"**

Pinion Shafts, diameter at bearings { 1st **3"** External
 { 2nd **diameter at bottom of pinion teeth** { 1st **3.1686"**
 { 2nd

Generator Shaft, diameter at bearings **3"**
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

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**

Space 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

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 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

ber 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.

Angle 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
enser No. of Turbines fitted with astern wheels Feed Pumps { No. and size
 { How driven

ps connected to the Main Bilge Line { No. and size
 { How driven
st Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

vo independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
s, No. and size:—In Engine and Boiler Room

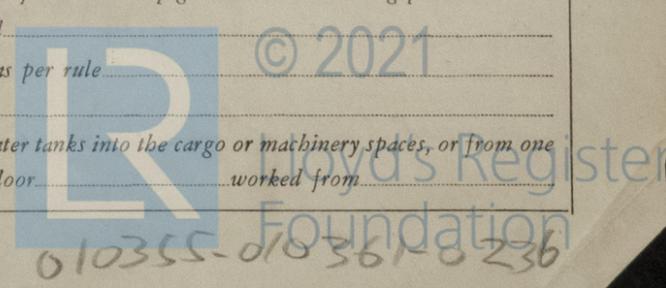
olds, &c. Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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
l Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

ey 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
ey 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

pipes pass through the bunkers How are they protected
pipes pass through the deep tanks Have they been tested as per rule

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
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
artment 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?..... If so, is a report now forwarded?.....
{ an Auxiliary }

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. State the articles supplied:— One set of bearing linings for all bearings, one set of bearing bolts
and casing bolts

The foregoing is a correct description,

C. E. James *Geo. Co.* Manufacturer

Dates of Survey while building { During progress of work in shops - - } November 30, December 1, 1948
{ During erection on board vessel - - }
Total No. of visits. Two

Dates of Examination of principal parts—Casings November 30, 1948 Rotors November 30, 1948 Blading November 30, 1948 Gearing November 30, 1948

Wheel shaft..... 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-110,100 lbs. Identification Mark LR 200 30-11-48 T. B.

~~Pinion shaft~~ shaft, Material and tensile strength..... Identification Mark.....

Pinion shaft, Material and tensile strength O. H. Steel-99,750 lbs. Identification Mark LR 200 30-11-48 T. B.

1st Reduction Wheel Shaft, Material and tensile strength O. H. Steel-86,500 lbs. Identification Mark LR 200 30-11-48 T. B.

Wheel shaft, Material..... Identification Mark..... 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. The geared turbine electric generator has been tested under Special Survey in accordance with approved plans. The forgings and castings were tested by A. B. S. Surveyors and for particulars of test, please refer to attached list. The Machinery was tested under steam at various loads and found efficient and the overspeed governor was adjusted to trip at 1340 R.P.M. The unit has been forwarded to the Sun Shipbuilding & Dry Dock Co., Chester, Pa. For identification purposes, the Turbine was marked: LR 200 30-11-48 T. B.

Arranged fee to be charged by Philadelphia Surveyors on completion

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£ \$ 6.00		:	:	19

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

Committee's Minute

NEW YORK AUG 31 1949

Assigned *See First Entry Report attached*



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Foundation

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