

# AUX GENERATORS

## REPORT ON STEAM TURBINE MACHINERY.

No. 82913  
25 JAN 1943

Rpt. 4a.

Date of writing Report 16 Oct 41 When handed in at Local Office 16 Oct 42 Port of Philadelphia Received at London Office.....

No. in Survey held at Essington Pa Date, First Survey 7 July Last Survey 8 July 1942

Reg. Book. on the 2 - 250 KW generating set for S/S GULF MARACAIBO (Number of Visits 2) Tons } Gross 9306 Net 8100

Built at Lehigh Pa By whom built Sum SPS & DD Co Yard No. 233 When built 1942

Engines made at Essington Pa By whom made Westinghouse E.M.C Engine No. 2A7725-1-2 When made "

Boilers made at Carthage By whom made Foster Wheeler Boiler No. " When made "

Shaft Horse Power at Full Power " Owners Gulf Oil Co Port belonging to Philadelphia

Nom. Horse Power as per Rule 900 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended Carrying Petroleum in bulk.

### STEAM TURBINE ENGINES, &c.—Description of Engines 2. 250 KW generating sets

No. of Turbines 1 Ahead 1 Direct coupled, single reduction geared } to generator propelling shafts. No. of primary pinions to each set of reduction gearing 1

direct coupled to { Alternating Current Generator 1 phase 3 periods per second } rated 250 Kilowatts 220 Volts at 1200 revolutions per minute;

for supplying power for driving Lighting 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	<u>1.468</u>	<u>21.70</u>	<u>1</u>									
2ND "	<u>1.803</u>	<u>26.17</u>	<u>1</u>									
3RD "	<u>1.875</u>	<u>26.15</u>	<u>1</u>									
4TH "	<u>1.581</u>	<u>27.04</u>	<u>1</u>									
5TH "	<u>1.013</u>	<u>27.25</u>	<u>1</u>									
6TH "	<u>1.817</u>	<u>28.32</u>	<u>1</u>									
7TH "												
8TH "												
9TH "												
10TH "												
11TH "												
12TH "												

Shaft Horse Power at each turbine { H.P. 449 } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 5015 } 1st reduction wheel 1200

{ I.P. " } { I.P. " } main shaft

{ L.P. " } { L.P. " }

Rotor Shaft diameter at journals { H.P. 2.495 } Pitch Circle Diameter { 1st pinion 5.253 } 1st reduction wheel { Width of Face { 1st reduction wheel " }

{ I.P. " } { 2nd pinion " } main wheel 21.957 } { main wheel 5 1/2 }

{ L.P. " }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 5.9375 } 1st reduction wheel { 1st 5.0216 }

{ 2nd pinion " } main wheel 5.9375 } { 2nd " }

Flexible Pinion Shafts, diameter { 1st " } Pinion Shafts, diameter at bearings { External 1st 3.115 } 2nd { diameter at bottom of pinion teeth { 1st 5.0216 }

{ 2nd " } { Internal 1st " } 2nd { 2nd " }

GEAR Wheel Shafts, diameter at bearings { 1st 3.990 } diameter at wheel shroud, { 1st 22.157 } Generator Shaft, diameter at bearings

{ main " } { main " } Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule " Thrust Shaft, diameter at collars as per rule "

as fitted " as fitted "

Tube Shaft, diameter as per rule " Screw Shaft, diameter as per rule " Is the { tube } shaft fitted with a continuous liner {

as fitted " as fitted " as fitted " }

Bronze 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 " as fitted " as fitted " 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 "

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.

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. " In Pump Room "

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 "

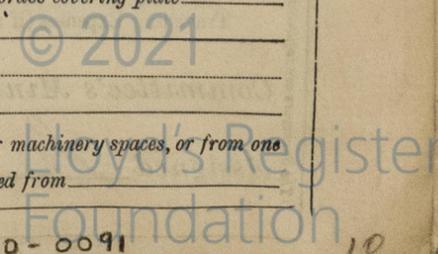
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel " Are the Blow Off Cocks fitted with a spigot and brass covering plate "

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? \_\_\_\_\_ 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? *Yes*

State the principal additional spare gear supplied \_\_\_\_\_

The foregoing is a correct description, *Westinghouse E. & M. Co. J. Brown* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *7 & 8 July 1942*  
{ During erection on board vessel - - - } *28 Sept 1942*  
Total No. of visits *3*

Dates of Examination of principal parts—Casings *8 July* Rotors *8 July* Blading *8 July* Gearing *8 July*

Wheel shaft *8 July* 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 \_\_\_\_\_

Rotor shaft, Material and tensile strength *OH Steel 102500 lbs* Identification Mark *798-1-2 WHP*

Flexible Pinion Shaft, Material and tensile strength \_\_\_\_\_ Identification Mark \_\_\_\_\_

Pinion shaft, Material and tensile strength *OH Steel 102000 lbs* Identification Mark *4015-1-2 WHP*

1st Reduction Wheel Shaft, Material and tensile strength *OH Steel 88000 lbs* Identification Mark *9784-1-2 WHP*

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 \_\_\_\_\_

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 *NO* If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above generators have been constructed under special survey & in accordance with the approved plans, the workmanship & materials are good. They have been satisfactorily installed on board the vessel & tried out under full power & found satisfactory.*

The amount of Entry Fee ...	£	:	:	When applied for,
Special <i>As agreed 100.00</i>				<i>12 Dec 42</i>
Donkey Boiler Fee ...	£	:	:	When received,
Travelling Expenses (if any) <i>3.00</i>				<i>19</i>

*W. P. Punham & S. S. Smith*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *NEW YORK DEC 16 1942*  
Assigned *See First Entry Report attached.*

