

Form 4a.

# REPORT ON STEAM TURBINE MACHINERY. No. 9288

Received at London Office 18 AUG 1949

Date of writing Report 11th May, 1949 When handed in at Local Office 11th May, 1949 Port of PHILADELPHIA, PA.

No. in Survey held at Essington, Pa. Date, First Survey 13th March, Last Survey 14th March, 1949 (Number of Visits two)

Built at Sparrows Pt., Md. By whom built Beth. Steel Co. (Ship. Div.) Yard No. 4467 When built 1949

Engines made at Essington, Pa. By whom made Westinghouse Elec. Co. Engine No. 5A-7487 Ser. 1 When made 1949

Boilers made at - By whom made - Gear No. 5A-7488 Boiler No. - When made 1949

Shaft Horse Power at Full Power - Owners Gulf Oil Corp. Port belonging to -

Nom. Horse Power as per Rule - Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

## STEAM TURBINE ENGINES, &c.—Description of Engines Geared Turbine Generating Set.

No. of Turbines Ahead one ~~Double Reduction~~ single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing -

Direct coupled to Alternating Current Generator 3 phase 60 periods per second } rated 400 Kilowatts 440 Volts at 1200 revolutions per minute;

or supplying power for driving Propelling Motors, &c. Auxiliary Machinery & Lighting.

400 Kilowatts Volts at - revolutions per minute. Direct coupled, single or double reduction geared to - propelling shafts.

TURBINE STAGE	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	43" - .500"	15.167"	1									
"	758" - .840"	15.579"	1									
"	.558"	17.020"	1									
"	.853"	17.610"	1									
"	1.483"	18.810"	1									
"	.787"	17.478"	1									
"	1.483"	18.370"	1									
"	2.825"	19.994"	1									

Shaft Horse Power at each turbine { H.P. 9018 1st reduction wheel - I.P. main shaft 1200 L.P. -

Motor Shaft diameter at journals { H.P. 2" Pitch Circle Diameter { 1st pinion 3.918" 1st reduction wheel Width of Face { 1st reduction wheel 10" 2nd pinion main wheel 29.446" main wheel 10"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 6 13/16" 1st reduction wheel 2nd pinion main wheel 6 13/16"

Flexible Pinion Shafts, diameter { 1st Pinion Shafts, diameter at bearings External 2 5/8" 2nd diameter at bottom of pinion teeth { 1st 3.7078" 2nd

Wheel Shafts, diameter at bearings { 1st - Generator Shaft, diameter at bearings 4" main 2" diameter at wheel shroud, { main - Propelling Motor Shaft, diameter at bearings -

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

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

Flange 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 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 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 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 Fast 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

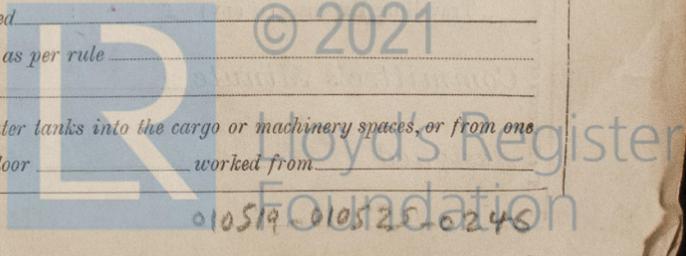
Holds, &c. in Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

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

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



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? \_\_\_\_\_ If so, is a report now forwarded? \_\_\_\_\_

Is { a Donkey } Boiler fitted? \_\_\_\_\_  
 { an Auxiliary }

Is the donkey boiler intended to be used for domestic purposes only \_\_\_\_\_

Plans. Are approved plans forwarded herewith for Shafing \_\_\_\_\_ Main Boilers \_\_\_\_\_ Auxiliary Boilers \_\_\_\_\_ Donkey Boilers \_\_\_\_\_  
 (If not state date of approval)

Superheaters \_\_\_\_\_ General Pumping Arrangements \_\_\_\_\_ Oil Fuel Burning Arrangements \_\_\_\_\_

Has the spare gear required by the Rules been supplied \_\_\_\_\_ **SPARE GEAR.**  
 as per Rule.

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

The foregoing is a correct description, \_\_\_\_\_ WESTINGHOUSE ELECTRIC CORP. *A.W. Staphel* Manufacture \_\_\_\_\_

Dates of Survey while building { During progress of work in shops -- } 13th and 14th March, 1949  
 { During erection on board vessel --- }  
 Total No. of visits \_\_\_\_\_

Dates of Examination of principal parts—Casings \_\_\_\_\_ Rotors \_\_\_\_\_ Blading \_\_\_\_\_ Gearing \_\_\_\_\_  
 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 \_\_\_\_\_

Rotor shaft, Material and tensile strength 108,000 lbs. O.H. Steel Identification Mark 80239  
 Gear \_\_\_\_\_ Identification Mark 77562  
~~Pinion shaft, Material and tensile strength~~ 105,000 lbs. O.H. Steel Identification Mark 77554  
~~Pinion shaft, Material and tensile strength~~ Brinell 174 - 187 O.H. steel Identification Mark 79237

1st Reduction Wheel Shaft, Material and tensile strength 81,000 " Identification Mark \_\_\_\_\_

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 \_\_\_\_\_ If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, &c.) The geared turbine electric generator has been built under Special Survey, in accordance with the approved plans. The workmanship and material are good throughout. Attached find test reports of the various forgings. The machinery was tested under steam at various loads and found efficient. The overspeed and low pressure oil were tested out and found in order. This unit has been forwarded to the Bethlehem Steel Company Shipbuilding Division, Sparrows Point, Maryland. For identification purposes, the turbine was LLOYD'S, 6402, S.S. 14/3/49.

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

*[Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

Assigned *See First Entry Report BAL. 8911 attached*

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

NEW YORK JUL 2 1949

