

REPORT ON STEAM TURBINE MACHINERY. No. 9239

t. 4a.

Received at London Office **18 AUG 1949**

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

No. in Survey held at Essington, Pa. Date, First Survey 13th March, 1949 Last Survey 14th March, 1949

Reg. Book. - on the - (Number of Visits two)

Tons } Gross -
 Net -

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 Ele c. Co. Turbine No. 5A-7847 Ser. 2 When made 1949

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

Generator No. 1S 37P504

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 -

Trade for which Vessel is intended -

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

No. of Turbines Ahead one ~~Direct coupled~~ 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;

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

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

TURBINE LOADING.	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.
T EXPANSION	43" - .500"	15.167"	1									
Manufactured	7.58" - .840"	15.579"	1									
D "	.558"	17.020"	1									
H "	.853"	17.610"	1									
H "	1.483"	18.810"	1									
H "	.787"	17.478"	1									
H "	1.483"	18.370"	1									
H "	2.825"	19.994"	1									
H "												
H "												
H "												
H "												

Shaft Horse Power at each turbine { H.P. - }
 { I.P. - } **Revolutions per minute, at full power, of each Turbine Shaft** { H.P. 9018 } 1st reduction wheel -
 { L.P. - } { I.P. - } main shaft 1200
 { L.P. - }

Propeller Shaft diameter at journals { H.P. 2" }
 { I.P. - } **Pitch Circle** { 1st pinion 3.918" } 1st reduction wheel - **Width of** { 1st reduction wheel 10"
 { L.P. - } **Diameter** { 2nd pinion - } main wheel 29.446" **Face** { 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"

Pinion Shafts, diameter at bearings { 1st 2 3/4" } External 2 3/4" } 2nd { - } diameter at bottom of pinion teeth { 1st 3.7078"
 { 2nd - } Internal - } { 2nd - }

Steel Shafts, diameter at bearings { 1st - } diameter at wheel shroud, { 1st - } **Generator Shaft, diameter at bearings** 4"
 { main 2" } { 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 -

Propeller 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 - }

Propeller 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 -

Propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -
 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 -

Oil Tank No. of Turbines fitted with astern wheels - **Feed Pumps** { No. and size -
 { How driven -

Compass Pumps connected to the **Main Bilge Line** { No. and size -
 { How driven -

Waste Water 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 -

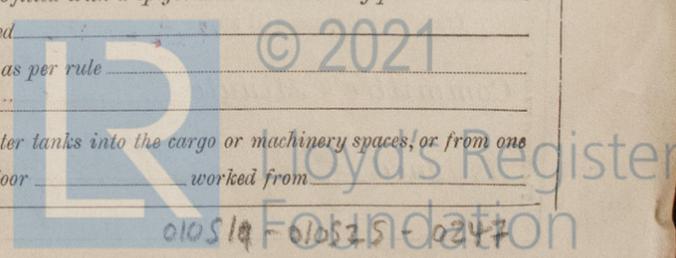
Holds, &c. - **Independent Power Pump Direct Suctions to the Engine Room** -
 No. and size - Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes -

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 tilting 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 -

Do the pipes pass through the bunks - How are they protected -
 Do the 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 -
 department 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

Has the spare gear required by the Rules been supplied As per Rule. SPARE GEAR.

State the principal additional spare gear supplied

The foregoing is a correct description,

WESTINGHOUSE ELECTRIC CORP.

A. W. Stophel

Manufactured

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 115,500 lbs. O.H. Steel Identification Mark 80220

Pinion Gear Material and tensile strength 105,000 lbs. O.H. Steel Identification Mark 77562

Pinion Gear Material and tensile strength Brinell 179 - 183 O.H. Steel Identification Mark 77551

1st Reduction Wheel Shaft, Material and tensile strength 81,000 lbs. O.H. Steel Identification Mark 79237

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 tri

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, 6403, S.S. 14/3/49.

The amount of Entry Fee ... £ : : When applied for,

Special ... £ : : 19

Donkey Boiler Fee ... £ : : When received,

Travelling Expenses (if any) £ : : 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See First Entry Report BAL 8911 attached

NEW YORK JUL 27 1949



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