Mach & Elelmer

AUXILIARY

Report on Steam Turbine Machinery.

No. 10076

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Date of writing Report 6th Jan., 1954 When handed in at Local Office 6th Jan, 54 Port of PHILADELPHIA, PA.

No. in Reg. Book Survey held at Essington, Pa. Date, First Survey 21st Dec., Last Survey 30th Dec., 1953 (Number of Visits four)

on the Generator turbines S.S. "JOHN P. G." Tons { Gross / Net

Built at Sparrows Point, Md. By whom built Beth.-Sparrows Pt. Shipyd. Yard No. 4522 When built

Turbines & Gears ~~Engines~~ made at Essington, Pa. By whom made Westinghouse Elec. Corp. Inc. Serial ~~Engine~~ No. 10A4462 5 & 6 When made 1953

Boilers made at By whom made Boiler No. When made

Shaft Horse Power at Full Power Owners Orion Shipping Co. Port belonging to

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

Grade for which Vessel is intended Carrying petroleum in bulk.

STEAM TURBINE ENGINES, &c.—Description of Engines 400 K.W. Geared Turbine Generator Sets (2 units per ship)

No. of Turbines ~~XXX~~ one ~~Double Double~~ single reduction geared ~~Double Double~~ to one generator ~~propelling shaft~~ No. of primary pinions to each set of reduction gearing one

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

for supplying power for driving ~~Propelling Motors, Type~~ Auxiliary machinery and lighting.

Manufactured 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.
Impulse Blading — No. of rows	8			
Reaction Blading — No. of stages				
Reaction Blading — No. of rows in each stage				

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

Motor Shaft diameter at journals { H.P. 2" / ~~XX~~ / ~~XXX~~ } **Pitch Circle Diameter** { 1st pinion 3.918 1st reduction wheel / ~~XXXXXX~~ main wheel 29.446 } **Width of Face** { 1st reduction wheel 10" / main wheel 10" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 6 13/16" ~~XXXXXXXXXX~~ / ~~XXXXXX~~ main wheel 6-13/16" }

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

Wheel Shafts, diameter at bearings { 1st 4" / main } diameter at wheel shroud, { 1st / main } **Generator Shaft**, diameter at bearings 4"

Intermediate Shafts, diameter as per rule / as fitted **Propelling Motor Shaft**, diameter at bearings

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 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 ft. 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. Turbines** 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 both to Main Bilge Pumps and Auxiliary Pumps, No. and size:—In Engine and Boiler Room In Pump Room Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size **Independent Power Pump Direct Suctions** to the Engine Room Pumps, 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

Are 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 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 facing 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

Has Report on Main Boilers now forwarded ?

New York

JS 5/7/54

008201-008210-0169

Is { a Donkey / an Auxiliary } Boiler fitted? ..... If so, is a report now forwarded? .....

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 .....

Geared turbines situated aft. { Have torsional vibration characteristics of system been approved ..... Date of approval .....

SPARE GEAR.

Has the spare gear required by the Rules been supplied .....

State the principal additional spare gear supplied .....

As specified

The foregoing is a correct description. J.A. Brown, Mgr. Quality Control

Westinghouse Electric Corporation ..... Manufacturer

Dates of Survey while building { During progress of work in shops - - } Dec.21, 22, 29 & 30, 1953. / { During erection on board vessel - - - } / Total No. of visits .....

Dates of Examination of principal parts—Casings 22 & 30th Dec., 1953 Rotors 22 & 30th Dec. 1953 Blading 22 & 30 Dec. 1953 Gearing 22 & 30 Dec. 1953

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 O.H.Steel 100,000 lbs. (Spec.5875) Identification Mark T.B. 27189, 2719

Flexible Pinion Shaft, Material and tensile strength ..... Identification Mark .....

Pinion shaft, Material and tensile strength O.H.Steel 100,000 lbs. (Spec.2877) Identification Mark T.B. 33409, 3087
C. .49, Mn. .80, P. .032, S. .012, Si. .29, Cr. .89, Ni. .63, Mo. .24 and .12
; Chemical analysis C. .47 .84 .018 .011 .24 .63

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment .....

1st Reduction Wheel Shaft, Material and tensile strength O.H.Steel 90,000 lbs. (Spec. 8126) Identification Mark T.B. 32876-2 &

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 Yes. If so, state name of vessel Sparrows Pt. Hull 4519 (Serials 10A4462-1 & 2)

General Remarks. (State quality of workmanship, opinions as to class, &c.) These turbo generators have been built under Special Survey, in accordance with approved plans, New York letters and otherwise in conformity with the Society's Rules.

The materials and workmanship are good and the tests required by the Rules have been carried out except when, under these special circumstances, American Bureau of Shipping material tests have been accepted.

The turbines have been examined and tested under working conditions in the shop coupled to their respective generators which also have been built under Special Survey (5S & 6S 47P706/7 J.M.G.), afterwards part opened out and found satisfactory.

These units will be forwarded to the Bethlehem-Sparrows Point Shipyard Inc., Sparrows Point, Md. for installation in their Hull 4522, and have been stamped for identification as follows:-

Serial 10A4462-5
LLOYD'S PHL.
No.8219
30.12.53
D.J.A.

Serial 10A4462-6
LLOYD'S PHL
No.8215
22.12.53
D.J.A.

Engineer Surveyors to Lloyd's Register of Shipping.

Certificate (if required) to be sent to .....

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

The amount of Entry Fee ... £ Inclusive fee to be charged later.
Special ... ... £ :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ : :

When applied for ..... 19 .....
When received ..... 19 .....

Committee's Minute NEW YORK JUN 9 1954

Assigned See minute on first entry Rpts attached