

Large with report.

Rpt. 4a.

# Report on Steam Turbine Machinery.

No. 52976.

Date of writing Report Jan. 6th 1954. When handed in at Local Office 19 Port of NEW YORK. Received at London Office 29 JUN 1954  
 No. in Survey held at Quincy, Massachusetts. Date, First Survey October 2nd. Last Survey December 29th 1953.  
 Reg. Book Hull 4522. JOHN P.G. (Number of Visits cont:)  
 on the Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 4522 When built 1953  
 Engines made at Quincy, Mass. By whom made Bethlehem Steel Co. Engine No. CS7048 When made 1953  
 Boilers made at Quincy, Mass. By whom made Bethlehem Steel Co. Boiler No. CS7048 When made 1953  
 Shaft Horse Power at Full Power 15,000 Owners John P.G. Port belonging to John P.G.  
 Nom. Horse Power as per Rule 3,000 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 Trade for which Vessel is intended Tanker

**STEAM TURBINE ENGINES, &c.**—Description of Engines Cross compound geared turbines.  
 No. of Turbines two Direct coupled, one single reduction geared } to one propelling shafts. No. of primary pinions to each set of reduction gearing two  
one double reduction geared }  
 direct coupled to Alternating Current Generator. phase three periods per second } rated 15,000 Kilowatts. Volts at 11,000 revolutions per minute;  
 for supplying power for driving Propelling Motors, Type Direct Current Generator }  
 rated 3,000 Kilowatts. Volts at 11,000 revolutions per minute. Direct coupled, single or double reduction geared to one propelling shafts.

| TURBINE BLADING.                            | H. P. | I. P.      | L. P.      | ASTERN.                   |
|---------------------------------------------|-------|------------|------------|---------------------------|
| Impulse Blading { No. of rows <u>2.</u>     |       | <u>nil</u> | <u>0</u>   | <u>Two stages.</u>        |
|                                             |       |            |            | <u>1st stage - 3 rows</u> |
|                                             |       |            |            | <u>2nd stage - 2 rows</u> |
| Reaction Blading { No. of stages <u>22.</u> |       | <u>nil</u> | <u>21.</u> | <u>0</u>                  |
|                                             |       |            |            | <u>0</u>                  |
| No. of rows in each stage <u>1.</u>         |       | <u>nil</u> | <u>1.</u>  | <u>0</u>                  |

Shaft Horse Power at each turbine { H.P. 6150 }  
 { I.P. --- }  
 { L.P. 7450 }  
 Revolutions per minute, at full power, of each Turbine Shaft { H.P. 4773 }  
 { I.P. --- }  
 { L.P. 2673 }  
 1st reduction wheel 800  
 main shaft 169

Rotor Shaft diameter at journals { H.P. 5" }  
 { I.P. --- }  
 { L.P. 9" }  
 Pitch Circle Diameter { 1st pinion --- }  
 { 2nd pinion --- }  
 1st reduction wheel ---  
 main wheel ---  
 Width of Face { 1st reduction wheel --- }  
 { main wheel --- }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion --- }  
 { 2nd pinion --- }  
 1st reduction wheel ---  
 main wheel ---

Flexible Pinion Shafts, diameter at bearings { 1st --- }  
 { 2nd --- }  
 External diameter at bottom of pinion teeth { 1st --- }  
 Internal diameter at bottom of pinion teeth { 2nd --- }

Wheel Shafts, diameter at bearings { 1st --- }  
 { main --- }  
 diameter at wheel shroud, { 1st --- }  
 { main --- }  
 Generator Shaft, diameter at bearings ---  
 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 ---  
 Screw Shaft, diameter as per rule ---  
 as fitted ---  
 Is the { tube } shaft fitted with a continuous liner { --- }  
 { screw }

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 ---  
 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. 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 ---

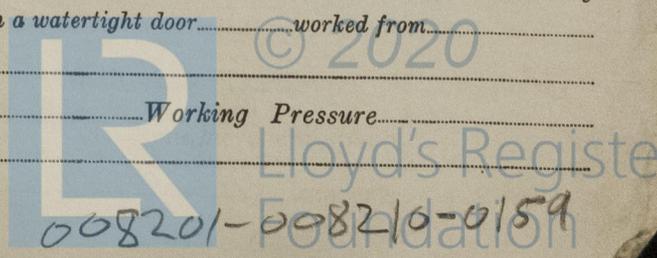
Are two independent means arranged for circulating water through the Oil Cooler --- Suctions, connected both to Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room --- In Pump Room ---  
 In Holds, &c. ---

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? ---

NOTE.—The words which do not apply should be deleted. If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



Is  a Donkey Boiler fitted?  If so, is a report now forwarded?  4a.  
 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  of service in g. Bo  
 (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. \_\_\_\_\_

The foregoing is a correct description.

*M. J. Sullivan*

Dates of Survey while building  During progress of work in shops - -  continuous during October 2nd 1953 to December 29th 1953.  
 During erection on board vessel - -

Total No. of visits

Dates of Examination of principal parts—Casings Oct. 2nd. 1953 Rotors Oct. 2nd. Blading Nov. 30th 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 H.P. O.H. steel 90,000 lbs. elong; 21% reduction 45% Heat No. 260556  
L.P. O.H. steel 75,000 lbs elong; 22% red; 40% Identification Mark No. 29066

Flexible Pinion Shaft, Material and tensile strength  Identification Mark

Pinion shaft, Material and tensile strength  Identification Mark

Chemical analysis

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  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  Yes.  No. If so, state name of vessel S/S "Andros Island"

**General Remarks.** (State quality of workmanship, opinions as to class, &c.) These main propulsion H.P. & L.P. turb  
have been built under special survey in accordance with approved plans, the workmanship  
materials are good, the hydraulic tests satisfactory. On completion, the turbines were  
in shop at 15% over their designed speed.

In my opinion, this machinery is suitable to be fitted in vessel classed with this Soci  
and on completion be assigned the notation  $\oplus$  L.M.C. with date.

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 See Statement :  When applied for

Special ... :  19

Donkey Boiler Fee ... :  When received

Travelling Expenses (if any) :  19

NEW YORK JUN 9 1954

Assigned See minute on first entry lft. attached

*W. J. Whess*

Engineer Surveyor to Lloyd's Register of Shipping



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