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# REPORT ON STEAM TURBINE MACHINERY. No. 1655

Received at London Office 29 JUN 1954

of writing Report February 25, 1954 When handed in at Local Office ..... 19 .... Port of Cleveland, Ohio

in Survey held at Milwaukee, Wis. Date, First Survey Jan. 14th Last Survey January 19th, 1954

g. Book (Number of Visits 3)

on the MAIN PROPULSION REDUCTION GEARS - Bulk Oil Carrier JOHN P.G. Tons { Gross - / Net -

t at Sparrows Point, Md. By whom built Bethlehem Steel Co. Yard No. 4522 When built 1954

ines made at - By whom made - Engine No. - When made -

Gears made at Milwaukee, Wis. By whom made Falk Corporation Gears 52400100-8 Boiler No. When made 1954

ft Horse Power at Full Power 13600 (15000 max) Owners Orion Shipping Co. Port belonging to -

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

de for which Vessel is intended -

## EAM TURBINE ENGINES, &c.— Description of Engines -

of Turbines Ahead - / Astern - ~~Direct coupled, single reduction geared~~ double reduction geared } to One propelling shafts. No. of primary pinions to each set of reduction gearing Two

t coupled to { Alternating Current Generator - phase - periods per second / Direct Current Generator } rated - Kilowatts - Volts at - revolutions per minute;

upplying power for driving - Propelling Motors, Type -

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

| RBINE ADING. | 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 | | | | | | | | | | | | |
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t 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 779 / main shaft 109

HP 11.308" / LP 20.193"

r Shaft diameter at journals { H.P. - / I.P. - / L.P. - } Pitch Circle Diameter { ~~HP~~ pinion ..... 1st reduction wheel 69.304" / 2nd pinion 23.308" / main wheel 166.554" } Width of Face { 1st reduction wheel 10.875" x2 / main wheel 20" x 2

nce between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 35.5"& 36" / 2nd pinion 38.75" } 1st reduction wheel 11.687" / main wheel 30.25"

ble Pinion ts, diameter { 1st - / 2nd - } Pinion Shafts, diameter at bearings ~~HP~~ HP { 1st 6.986" / 2nd 17.975" } ~~LP~~ LP { 1st 8.985" / 2nd 19.975" } diameter at bottom of pinion teeth { 1st 10.928" / 2nd 19.813"

el Shafts, diameter at bearings { 1st 17.975" / main 22.477" } INTEGRAL diameter at wheel shroud, { 1st 65.59" / main 166.95" } Generator Shaft, diameter at bearings -

Propelling Motor Shaft, diameter at bearings -

mediate Shafts, diameter as per rule - / as fitted - Thrust Shaft, diameter at collars as per rule - / as fitted 22.477" Tube Shaft, diameter as per rule - / as fitted -

r Shaft, diameter as per rule - / as fitted - Is the { tube / screw } shaft fittted with a continuous liner { - / - } Bronze Liners, thickness in way of bushes as per rule - / as fitted -

ness 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 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 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** er appliance fitted at the after end of the tube shaft - Length of Bearing in **Stern Bush** next to and supporting propeller -

eller, diameter - Pitch - No. of Blades - State whether Moveable - Total Developed Surface - square feet.

gle 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 nser - No. of Turbines fitted with astern wheels - **Feed Pumps** { No. and size - / How driven -

s connected to the **Main Bilge Line** { No. and size - / How driven -

t Pumps, No. and size - **Lubricating Oil Pumps**, including Spare Pump, No. and size -

o independent means arranged for circulating water through the **Oil Cooler** - **Suctions**, connected to both Main Bilge Pumps and Auxiliary Bilge No. and size:—In Engine and Boiler Room -

lds, &c. -

**Water Circulating Pump Direct Bilge Suctions**, No. and size - **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 -

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 -

**Sea Connections** fitted direct on the skin of the ship - Are they fitted with Valves or Cocks -

y 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 -

y 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 -

ipes pass through the bunkers - How are they protected -

ipes pass through the deep tanks - Have they been tested as per rule -

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times -

rangement 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 ment to another - Is the Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -

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*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** / **an Auxiliary** } **Boiler fitted?** - *If so, is a report now forwarded?* -

**Plans.** *Are approved plans forwarded herewith for* ~~Shafting~~ Gears 1-7-53 at N.Y. *Main Boilers* - *Auxiliary Boilers* - *Donkey Boilers* -
(*If not state date of approval*)

*Superheaters* - *General Pumping Arrangements* - *Oil Fuel Burning Arrangements* -

**Spare Gear.** *State the articles supplied:*— -

Copies of this Report have been sent to London, New York and Baltimore.

*The foregoing is a correct description,* *Manufacturer*

*Dates of Survey while building* { *During progress of work in shops* - - January 14, 18, 19th, 1954 / *During erection on board vessel* - - - / *Total No. of visits* 3 }

*Dates of Examination of principal parts—Casings* - *Rotors* - *Blading* - *Gearing* 19-1-

*Wheel shaft* 19-1-54 *Thrust shaft* 19-1-54 *Intermediate shafts* - *Tube shaft* - *Screw shaft* -

*Propeller* - *Stern tube* - *Engine and boiler seatings* - *Engine holding down bolts* -

*Completion of pumping arrangements* - *Boilers fixed* - *Engines tried under steam* -

*Main boiler saftey valves adjusted* - *Thickness of adjusting washers* -

*Rotor shaft, Material and tensile strength* - *Identification Mark* -

*Flexible Pinion Shaft, Material and tensile strength* - *Identification Mark* -

*Pinion shaft, Material and tensile strength* O.H. Forged Steel *Identification Mark* LLOYDS 565 / LLOYDS 457

*1st Reduction Wheel Shaft, Material and tensile strength* O.H. Forged Steel *Identification Mark* LLOYDS 600 / LLOYDS 603

*Wheel shaft, Material* OH Steel *Identification Mark* LLOYDS 5954 *Thrust shaft, Material* OH Steel *Identification Mark* LLOYDS

*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* -

*Is this machinery a duplicate of a previous case* Yes *If so, state name of vessel* Bethlehem Hulls 4517/19 ~~Cleveland Rpts. 1582/1658~~

*General Remarks* (*State quality of workmanship, opinions as to class, &c.* This set of main reduction gears have been bu under survey and to approved plans. The materials have been tested by the Surveyors and the workmanship is of good quality. The unit was run under load and found satisfactory. It was dismantled and all components visually examined and found in good order. It is therefore recommended that this gear unit be incorporated in the vessel's assignment of ✠LMC (with date subject to it being installed aboard and tested under working conditions, all to the entire satisfaction of the Society's Surveyors.

NOTE: Arranged fee to be charged on completion of vessel.

| | | | | |
|---|---|---|---|---|
| The amount of Entry Fee | .... £ | : | : | When applied for, - 19 |
| Special .... - | .... £ | : | : | |
| Donkey Boiler Fee | .... £ | : | : | When received, - 19 |
| Travelling Expenses (if any) | $85.00 | : | | |

*Engineer Surveyor to Lloyd's Register of Shipping.*

NEW YORK JUN 9 1954

*Committee's Minute*

*Assigned* See minute on first entry report attached

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

*Certificate (if required) to be sent to*

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