

REC'D NEW YORK JUN 18 1953

Report on Steam Turbine Machinery. No. 1620

Rpt. 4a.

Received at London Office 11 SEP 1953

Date of writing Report June 17, 1953 When handed in at Local Office 19 Port of Cleveland, Ohio

No. in Survey held at Milwaukee, Wisconsin Date, First Survey March 12th Last Survey March 26th, 1953

Reg. Book S.S. ANDROS HILLS (Number of Visits 2)

on the MAIN PROPULSION GEAR FOR BULK OIL CARRIER Tons (Gross - Net -)

Built at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1632 When built -

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

Gears made at Milwaukee, Wis. By whom made Falk Corp. Gear 51400100-5

Boilers made at - By whom made - Boiler No. - When made 1953

Shaft Horse Power at Full Power 13600 Owners Orion Shipping Co. 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

No. of Turbines ^{head} - ^{Astern} - ~~Direct coupled~~ ~~single reduction geared~~ ~~double reduction geared~~ to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2

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

for supplying power for driving - Propelling Motors, Type -

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

TURBINE BLADING.

	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading { No. of rows	-	-	-	-
Reaction Blading { No. of stages	-	-	-	-
{ No. of rows in each stage	-	-	-	-

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 779 main shaft 109

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

Distance 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"

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

Wheel Shafts, diameter at bearings { 1st 17.975" main 22.477" } Integral diameter at ~~axles~~ ~~shafts~~ { 1st 65.59" main 166.95" } 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 22.477"

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 -

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 -

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 -

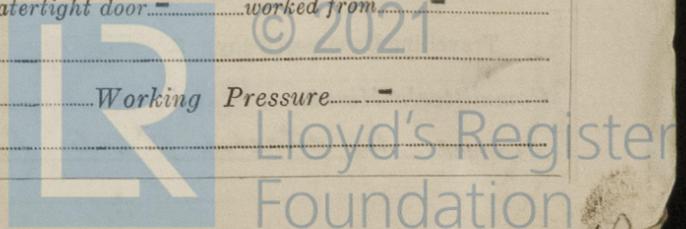
Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times -

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 - Working Pressure -

Is Forced Draft fitted - No. and Description of Boilers -

Is a Report on Main Boilers now forwarded? -



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 ^{Gears} ~~Superheaters~~ ^{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
 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 To Rule Requirements

State the principal additional spare gear supplied.

Copies of this report sent to London, New York and Quincy.

The foregoing is a correct description.

Dates of Survey while building
 During progress of work in shops - - March 12th and 26th, 1953
 During erection on board vessel - - -
 Total No. of visits Two (2)

Dates of Examination of principal parts—Casings Rotors Blading Gearing 3-26-53
 Wheel shaft 3-26-53 Thrust shaft 3-26-53 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
 Flexible Pinion Shaft, Material and tensile strength Identification Mark
 Pinion shaft, Material and tensile strength O.H. Forged Steel Identification Mark LLOYDS 560
 ; Chemical analysis LLOYDS 4142

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. Forged Steel Identification Mark LLOYDS 549
 Wheel shaft, Material O.H. Steel Identification Mark LLOYDS 553 Thrust shaft, Material O.H. Steel Identification Mark LLOYDS 552
 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 Quincy Hull 1630

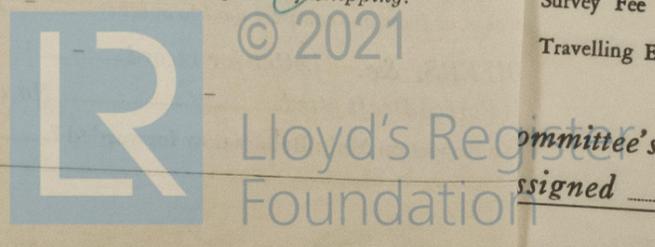
General Remarks. (State quality of workmanship, opinions as to class, &c.) This set of main propulsion, double reduction gears was built under survey and to approved plans, the materials having been tested by the Surveyors and the workmanship throughout found of good quality. On completion the unit was tested under load by the manufacturer. It was then completely dismantled and all components visually examined and found satisfactory. It is therefore recommended that this gear unit be incorporated in the vessel's record of *LMC (with date) subject to it being installed aboard and tested under working conditions, all to the satisfaction of the Society's Surveyors.

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

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

R. S. Haagenesen
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK Nov 26 1953
 Assigned see attached 1st entry Rpt.



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