

REPORT ON STEAM TURBINE MACHINERY. No. 1563

Port of Cleveland, Ohio
 Date, First Survey, July 28th Last Survey Sept. 2nd 1952
 Survey held at Milwaukee, Wis.
 Reg. Book --- on the Main Propulsion Gears for Bulk Oil Carrier S.S. CHRYSSI.
 Built at Quincy, Massachusetts By whom built Bethlehem Steel Corp. Yard No. 1630 When built 1952
 Engines made at --- By whom made --- Engine No. --- When made ---
 Gears made at Milwaukee, Wis. By whom made Falk Corporation Gear No. 426701-4 When made 1952
 Shaft Horse Power at Full Power --- Owners Orion Shipping 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. ---
 No. of Turbines --- Ahead --- Direct coupled } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2
single reduction geared
double reduction geared
 Direct coupled to { Alternating Current Generator --- phase --- periods per second } rated --- Kilowatts --- Volts at --- revolutions per minute;
 Direct Current Generator
 supplying power for driving --- Propelling Motors, Type ---
--- Kilowatts --- Volts at --- revolutions per minute. Direct coupled, single or double reduction geared to --- propelling shafts.

Manufacturer	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.
1st EXPANSION												
2ND												
3RD												
4TH												
5TH												
6TH												
7TH												
8TH												
9TH												
10TH												

Shaft Horse Power at each turbine { H.P. --- Pinion { H.P. 4688 1st reduction wheel 765
 I.P. --- I.P. --- main shaft 100
 L.P. --- L.P. 2625
 Propeller Shaft diameter at journals { H.P. --- Pitch Circle { 1st pinion 20.193" 1st reduction wheel 69.304" Width of { 1st reduction wheel 10.875" x 2
 I.P. --- Diameter { 2nd pinion 21.951" main wheel 167.911" Face { main wheel 42.5"
 L.P. ---

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 35.5" ; 36.6" 1st reduction wheel 13.437"
 2nd pinion 38.75" main wheel 30.25"
 Movable Pinion { 1st --- Pinion Shafts, diameter at bearings { External-HP { 6.986" 1st 17.975" { 1st 10.928"
 2nd --- Internal-LP { 8.985" 2nd 17.975" diameter at bottom of pinion teeth { 2nd 19.813"
 Wheel Shafts, diameter at bearings { 1st 17.975" Integral { 65.59" Generator Shaft, diameter at bearings ---
 main 22.477" diameter at --- main 168.311" Propelling Motor Shaft, diameter at bearings ---
 Intermediate Shafts, diameter as per rule --- Thrust Shaft, diameter at collars as per rule --- Tube Shaft, diameter as per rule ---
 as fitted --- as fitted 22.475" as fitted ---

New Shaft, diameter as per rule --- Is the { tube } shaft fitted with a continuous liner { --- } Bronze Liners, thickness in way of bushes as per rule ---
 as fitted --- 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
 appliance fitted at the after end of the tube shaft --- 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
 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 ---
 Bilge 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 ---
 Holds, &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 ---
 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 ---
 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 ---
 How are they protected ---
 How are they protected ---
 Have they been tested as per rule ---
 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 ---

with
 four
 lined
 rail

28-6153

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 }
 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.....
 Spare Gear. State the articles supplied:..... To Rule Requirements

Copies of this report sent to London, New York and Quincy
 Approved Plans: Gears July 16th, Aug. 3rd, 1948 at New York
 See New York letters dated October 19th, and 29th, 1952 to Falk Corp.

Note: Manufacturers inspection report regarding blemishes on the main gear is attached to this report.

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - - } July 28th, Sept. 2nd, 1952
 { During erection on board vessel - - }
 Total No. of visits 2
 Dates of Examination of principal parts—Casings..... Rotors..... Blading..... Gearing 9-2-52
 Wheel shaft 9-2-52 Thrust shaft 9-2-52 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 safety valves adjusted..... Thickness of adjusting washers.....
 Rotor shaft, Material and tensile strength..... Identification Mark H.P.Lloyds 4ft Horse Pow
 1st Pinion Shaft, Material and tensile strength O.H. Forged Steel Identification Mark L.P.Lloyds 42
 2nd Pinion shaft, Material and tensile strength O.H. Forged Steel Identification Mark H.P.Lloyds 52
 1st Reduction Wheel Shaft, Material and tensile strength..... Identification Mark L.P.Lloyds 52
 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.....
 Is this machinery a duplicate of a previous case Yes If so, state name of vessel Bethlehem Hull 1627

General Remarks (State quality of workmanship, opinions as to class, &c. This set of main propulsion double reduction gear was built under Survey and to approved plans, the materials being tested by the Surveyors and workmanship found of good quality. On completion the unit was tested by the manufacturer under It was then completely dismantled and all components surface examined and found satisfactory. (S remarks re main gear on attached Rpt. 10) It is therefore recommended that this gear unit be incorporated in the vessels record of *LMC (with date) subject to it being installed aboard and tested under working conditions to the Surveyors entire satisfaction.

(Arranged fee to be charged on vessels completion).

The amount of Entry Fee	£	-----	:	When applied for,
Special	£	270.00	:	MAR. 26. 1953
Donkey Boiler Fee	£	150.00	:	When received,
TESTING MATERIALS	£	85.00	:	19
Travelling Expenses (if any)	£	85.00	:	

Law H. Dean *R. S. Manager*
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **NEW YORK MAR 25 1953**
 Assigned See attached 1st Entry Report. N.Y.K. 53229



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