

REPORT ON STEAM TURBINE MACHINERY. No. 1563

pt. 4a.

Sept. 29 1952 When handed in at Local Office. Port of Cleveland, Ohio  
Date, First Survey, July 28th Last Survey Sept. 2nd 1952  
Survey held at Milwaukee, Wis. (Number of Visits 2)  
Main Propulsion Gears for Bulk Oil Carrier S.S. CHRYSSI.  
Quincy, Massachusetts By whom built Bethlehem Steel Corp. Yard No. 1630 When built 1952  
By whom made --- Engine No. --- When made ---  
Milwaukee, Wis. By whom made Falk Corporation Gear No. 426701-4 When made 1952  
Owners Orion Shipping Corp. Port belonging to ---  
Is Refrigerating Machinery fitted for cargo purposes --- Is Electric Light fitted ---

STEAM TURBINE ENGINES, &c.—Description of Engines. ---

Ahead --- Direct coupled } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 2  
Astern --- single reduction geared }  
double reduction geared }  
Alternating Current Generator --- phase --- periods per second --- rated --- Kilowatts --- Volts at --- revolutions per minute;  
Direct Current Generator ---  
Propelling Motors, Type ---  
Kilowatts --- Volts at --- revolutions per minute. Direct coupled, single or double reduction geared to --- propelling shafts.

MANUFACTURER	TURBINE	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.
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Pinion { H.P. 4688 1st reduction wheel 765  
I.P. --- main shaft 100  
L.P. 2625  
Revolutions per minute, at full power, of each Turbine Shaft  
Pitch Circle { 1st pinion 20.193" 1st reduction wheel 69.304" Width of { 1st reduction wheel 10.875" x 2  
Diameter { 2nd pinion 21.951" main wheel 167.911" Face { main wheel 42.5"  
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"  
Pinion Shafts, diameter at bearings { External-HP { 6.986" 1st 17.975" diameter at bottom of pinion teeth { 1st 10.928"  
Internal-LP { 8.985" 2nd 17.975" 2nd 19.813"  
Integral { 65.59" Generator Shaft, diameter at bearings ---  
Wheel Shafts, diameter at bearings { 1st 17.975" diameter at main wheel 168.311" Propelling Motor Shaft, diameter at bearings ---  
main 22.477"  
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 --- 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 ---  
Pitch --- No. of Blades --- State whether Moveable --- Total Developed Surface --- square feet.  
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 ---

connected to the Main Bilge Line { No. and size ---  
How driven ---  
Lubricating Oil Pumps, including Spare Pump, No. and size ---  
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 ---  
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 ---  
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 ---  
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 ---

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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 } 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 { During progress of } July 28th, Sept. 2nd, 1952  
of Survey { work in shops - - }  
while { During erection on }  
building { 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 4 ft 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 :  
TESTING MATERIALS ..... :  
Travelling Expenses (if any) £ 85.00 : When received,  
..... 19

Committee's Minute

Assigned See attached 1st Entry Report. N.Y.K. 53229



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