

# REPORT ON STEAM TURBINE MACHINERY. No. 1373

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of writing Report... 19... When handed in at Local Office... 19... Port of **Cleveland, Ohio**  
 in Survey held at **Milwaukee, Wisconsin** Date, First Survey **June 28** Last Survey **August 2**, 19 **49**  
 eg. Book on the **Main Propulsion Reduction Gears for 28000 Ton Bulk Oil Carrier** Tons { Gross  
 Net  
 at **Baltimore, Maryland** By whom built **Bethlehem S/B. Co.** Yard No. **4471** When built  
 By whom made Engine No. When made  
 By whom made **Falk Corp.** Boiler No. **422500-5** When made **8.1949**  
 ft Horse Power at Full Power **12,500** Owners  
 m. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 de for which Vessel is intended

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

Ahead **Direct coupled,** } to **one** propelling shafts. No. of primary pinions to each set of reduction gearing **Two**  
 of Turbines Astern **double reduction geared**  
 at 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.

	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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Pinion { H.P. **4688** 1st reduction wheel **765**  
 I.P. **2625** main shaft **100**  
 L.P. **2625**  
 Shaft Horse Power at each turbine  
 H.P. **20.193** 1st reduction wheel **69.304** Width of Face { 1st reduction wheel **10.875"x2**  
 I.P. **38 3/8"** main wheel **42.500"**  
 L.P. **38 3/8"** 1st reduction wheel **13.4375"**  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion **30 1/4"** HP **10.928"**  
 2nd pinion **38 3/8"** main wheel **21.411"**  
 Flexible Pinion { 1st **17.975"** Pinion Shafts, diameter at bearings External **6.986"** 1st **17.975"** diameter at bottom of pinion teeth { 1st **19.813"**  
 2nd **22.477"** Integral gears { 1st **69.590"** Generator Shaft, diameter at bearings  
 2nd **168.311"** Propelling Motor Shaft, diameter at bearings  
 Wheel Shafts, diameter at bearings { 1st **17.975"** diameter at wheel shroud, { 1st **69.590"**  
 2nd **22.477"** main **168.311"**  
 Intermediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule **22.475"** Tube Shaft, diameter as per rule  
 as fitted Is the { tube } shaft fitted with a continuous liner { as fitted  
 as fitted Is the screw }  
 Thickness between bushes as per rule 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  
 as fitted If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a  
 by fusion through the whole thickness of the liner If two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland  
 plastic material insoluble in water and non-corrosive Length of Bearing in Stern Bush next to and supporting propeller.  
 other appliance fitted at the after end of the tube shaft State whether Moveable Total Developed Surface square feet.  
 Propeller, diameter Pitch No. of Blades Can the H.P. or I.P. Turbine exhaust direct to the  
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine  
 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  
 Lubricating Oil Pumps, including Spare Pump, No. and size  
 Last Pumps, No. and size Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 two independent means arranged for circulating water through the Oil Cooler  
 Pumps, No. and size:—In Engine and Boiler Room  
 Holds, &c.  
 in Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room  
 ges, 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  
 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  
 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  
 at pipes pass through the bunkers How are they protected  
 at pipes pass through the deep tanks 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  
 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  
 apartment 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..... Working Pressure.....  
Is Forced Draft fitted..... No. and Description of Boilers.....  
Is a Report on Main Boilers now forwarded?..... If so, is a report now forwarded?.....  
Is { a Donkey } Boiler fitted?..... Gears..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....  
Plans. Are approved plans forwarded herewith for ~~Shipping~~..... See Cleve. Report No. 1349  
(If not state date of approval).....  
Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....  
Spare Gear. State the articles supplied:..... As per Rule Requirements

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - - } June 28, July 14, 15, 27, 28 August 10, 26, 29, 1949 ( 8 visits construction )  
{ During erection on board vessel - - - }  
Total No. of visits.....  
Dates of Examination of principal parts—Casings..... Rotors..... Blading..... Gearing.....  
Wheel shaft June 28 1949 Thrust shaft July 14 1949 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.....  
Flexible Pinion Shaft, Material and tensile strength..... HP 100,000 psi Identification Mark Lloyds 7290  
Pinion shaft, Material and tensile strength O.R. Forge Steel { 1st Red. LP 101,000 psi Identification Mark Lloyds 7274  
{ 2nd Red. HP 105,500 psi Identification Mark Lloyds 7064  
{ 2nd Red. LP 104,500 psi Identification Mark Lloyds 7160  
1st Reduction Wheel Shaft, Material and tensile strength..... Integral with shaft L.R. 3824  
Wheel shaft, Material Forge Steel Identification Mark Lloyds 3824 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 S/B. Co. Hull 4470

General Remarks (State quality of workmanship, opinions as to class, &c.) This set of main propulsion, double reduction, double helical gears was constructed under Special Survey in accordance with approved plans and the Rules of this Society. The materials were tested by the Surveyors and the workmanship is of good quality throughout. On completion the unit was subjected to a series of running tests at the Manufacturer's Plant, including max. RPM and torque. The gearing was observed in a satisfactory manner under all conditions of loading both ahead and astern. The gear was subsequently disassembled, examined and all parts found in good condition. It is recommended that this gear unit become part of the machinery of a vessel classed with this Society subject to satisfactory installation and performance under actual working conditions to the Surveyors satisfaction.

The amount of Entry Fee ..... £ 350 00 : When applied for,  
Special ..... £ : : Nov. 14 1949  
Donkey Boiler Fee ..... £ : : When received,  
Travelling Expenses (if any) £ 175 00 : : 19

For D. A. Johnson.  
Acting Surveyor to Lloyd's Register  
R. S. Hørgensen.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAR 15 1950

Assigned See First Entry Report attached.



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