REC'D NEW YORK AUG 27 1952

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REPORT ON STEAM TURBINE MACHINERY. No. 9853

Received at London Office

of writing Report 13th Aug., 1952 When handed in at Local Office 13th Aug., 1952. Port of PHILADELPHIA, PA.

in Survey held at Trenton, N. J., Date, First Survey 20th March, Last Survey 9th August, 19 52.

Reg. Book (Number of Visits seven)

on the S.S. CHRYSSI Tons {Gross / Net}

ilt at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1630 When built 1952

bines & Gears ~~gines~~ made at Trenton, N.J. By whom made De Laval Steam Turb. Co. Engine No. 650575/6 When made "

ilers made at By whom made Boiler No. When made

aft Horse Power at Full Power Owners Orion Shipping Co. Port belonging to

m. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes

ade for which Vessel is intended Carrying petroleum in bulk.

TEAM TURBINE ENGINES, &c.— Description of Engines 400 K.W. A.C. Turbo Generators (2 units per ship)

of Turbines Ahead one ~~Direct coupled~~ single reduction geared ~~double reduction geared~~ to one generator ~~propelling shaft~~. No. of primary pinions to each set of reduction gearing one.

ect coupled to { Alternating Current Generator 3 phase 60 periods per second ~~Direct Current Generator~~ } rated 400 Kilowatts 450 Volts at 1200 revolutions per minute;

supplying power for driving ~~Propelling Machinery~~ Ship's auxiliaries

~~Revolutions per minute Direct coupled single reduction geared to propelling shaft~~

URBINE ADING.	HXX HEIGHT OF BLADES.	HXX DIAMETER AT TIP.	HXX NO. OF ROWS.	IXPX HEIGHT OF BLADES.	IXPX DIAMETER AT TIP.	IXPX NO. OF ROWS.	XXPX HEIGHT OF BLADES.	XXPX DIAMETER AT TIP.	XXPX NO. OF ROWS.	XXSXPXXX HEIGHT OF BLADES.	XXSXPXXX DIAMETER AT TIP.	XXSXPXXX NO. OF ROWS.
ST EXPANSION 1st row	.550"	21.106										
" 2nd "	.890"	21.586										
ND "	.540"	23.126										
RD "	.840	23.736										
TH "	.540	23.126										
TH "	.840	23.736										
TH "	1.580	24.226										
TH "	2.450	24.866										
TH "												
TH "												
TH "												
TH "												
TH "												

ft Horse Power at each turbine { H.P. / I.P. / L.P. } Revolutions per minute, at full power, of each Turbine Shaft { ~~HP~~ / ~~IP~~ 5905 / ~~LP~~ } ~~HP~~ reduction wheel 1200 / ~~IP~~ / ~~LP~~

or Shaft diameter at journals { ~~HPX~~ / ~~IPX~~ 2.495 / ~~LPX~~ } Pitch Circle Diameter { ~~HP~~ pinion 5.811 ~~IP~~ reduction wheel 28.593 / ~~HP~~ / ~~IP~~ } Width of Face { ~~HP~~ reduction wheel 6-1/2" / ~~HP~~ / ~~IP~~ }

ance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 5-7/8" ~~IP~~ reduction wheel 6-3/16" / 2nd pinion ~~IP~~ }

cible Pinion ifts, diameter { 1st - / 2nd - } Pinion Shafts, diameter at bearings External ~~HP~~ 1st { 2-1/2" / } 2nd { / } diameter at bottom of pinion teeth { ~~HP~~ 5.573 / ~~IP~~ }

eel Shafts, diameter at bearings { ~~HP~~ 4.494" / ~~IP~~ } diameter at wheel shroud, { ~~HP~~ / ~~IP~~ } Generator Shaft, diameter at bearings 5.378

Propelling Motor Shaft, diameter at bearings

rmediate Shafts, diameter as per rule / as fitted Thrust Shaft, diameter at collars as per rule / as fitted Tube Shaft, diameter as per rule / as fitted

ew 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

kness 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

e 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

ic 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

ther appliance fitted at the after end of the tube shaft Length of Bearing in Stern Bush next to and supporting propeller

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

ingle 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

denser No. of Turbines fitted with astern wheels Feed Pumps { No. and size / How driven }

ps connected to the Main Bilge Line { No. and size / How driven }

ast 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

bs, No. and size:—In Engine and Boiler Room

Holds, &c.

n Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

s, 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

hey 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

hey 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

t pipes pass through the bunkers How are they protected

t pipes pass through the deep tanks Have they been tested as per rule

ll 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

artment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

: Boston Office

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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*..... *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:*—

As specified.

The foregoing is a correct description, De Laval Steam Turbine Co. H. C. Hauer, Vice President *Manufacturer*

Dates of Survey while building
- *During progress of work in shops* - - March 20, June 11, 19, 25, August 7, 8 and 9.
- *During erection on board vessel* - - -
- *Total No. of visits*

Dates of Examination of principal parts—Casings 11,19,25.6.52 *Rotors* 8,9.8.52 *Blading* 8 & 9.8.52 *Gearing* 8 & 9.

Wheel shaft..... *Thrust shaft*..... *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 O.H.Steel - 75,000 lbs. (Steel C1040) *Identification Mark* DC 415

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

Pinion shaft, Material and tensile strength O.H.Steel - 105,000 lbs. (Steel C.F.M.) *Identification Mark* KD 416 D.J.

1st Reduction Wheel Shaft, Material and tensile strength..... *Identification Mark*.....

Wheel shaft, Material O.H.Steel *Identification Mark* Lloyd's 2556/7 *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 No. *If so, state name of vessel* -

General Remarks (*State quality of workmanship, opinions as to class, &c.*) These turbo generators have been built under the Special Survey of the Society's Surveyors in accordance with approved plans, New York letters and otherwise in conformity with the Society's Rules.

The materials and workmanship are good and the tests required by the Rules have been carried out except when under special circumstances, American Bureau of Shipping material tests have been accepted. The turbines have been examined and tested under working conditions in the shop coupled to their respective generators which also have been built under Special Survey (1S & 2S- 46P308 J.M.G.), afterwards part opened out and found satisfactory.

These units will be forwarded to the Quincy Shipyard of the Bethlehem Steel Company for installation in their Hull 1630, and have been marked for identification as follows:-

Serial 650575
LLOYD'S
No.2796
7.8.52
D.J.A.

Serial 650576
LLOYD'S
No.2799
9.8.52
D.J.A.

The amount of Entry Fee	£	Inclusive fee to be charged later.	When applied for, MAR 26 1953
Special ~~£400.-~~ TESTING MATERIALS ~~£150.-~~	£		
Donkey Boiler Fee	£		When received, ... 19....
Travelling Expenses (if any)	£		

D. J. Ambrose
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAR 25 1953

Assigned See attached 1st Entry Rpt. NYK 53329

(*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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