

Report on Steam Turbine Machinery.

No. 11143
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PHILADELPHIA, PA.

of writing Report 4 Nov. 19 59 When handed in at Local Office 4th Nov. 19 59 Port of PHILADELPHIA, PA.
in Survey held at Trenton, New Jersey Date, First Survey 27th May, Last Survey 27th October, 19 59
Book (Number of Visits Nine)

on the ~~Single~~ ~~Twin~~ ~~Triplex~~ ~~Quadruplex~~ Screw Vessel's Generator Turbines for Hull 202 Tons Gross
at Uddevalla, Sweden By whom built Uddevala Sorviksvarvet Aktiebolag Yard No. 202 When built
Turbines & Gears made at Trenton, N.J. By whom made De Laval Steam Turb. Co. Engine No. 52033/4 When made 1959
Boilers made at By whom made Boiler No. When made
aft Horse Power Maximum Owners California Transport Corporation Port belonging to
N. as per Rule Service Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes
made for which Vessel is intended

TEAM TURBINE ENGINES, &c.—Description of Engines 750 K.W. A.C. Turbo Generators (2 Units per Ship)
No. of Turbines ~~Two~~ One ~~Direct coupled,~~ generator ~~single reduction geared to one~~ ~~propelling shafts.~~ No. of primary pinions to each set of reduction gearing one
Direct coupled to Alternating Current Generator 3 phase 60 periods per second rated 750 Kilowatts 450 Volts at 1200 revolutions per minute;
for supplying power for driving Propelling Motors, Type Auxiliary Power & Lighting.
rated Kilowatts Volts at revolutions per minute Direct coupled, single or double reduction geared to propelling shafts.

TURBINE	H. P.	I. P.	L. P.	ASTERN.
Impulse Blading				
Reaction Blading				
No. of rows	8			
No. of stages				
No. of rows in each stage				

Shaft Horse Power at each turbine H.P. I.P. L.P. Revolutions per minute, at full power, of each Turbine Shaft H.P. I.P. L.P. 1st reduction wheel main shaft 1200

Rotor Shaft diameter at journals H.P. 2.495" Pitch Circle Diameter 1st pinion 4.889" 1st reduction wheel main wheel 37.817" Width of Face 1st reduction wheel main wheel 10" 2nd pinion main wheel 7-1/16" 1st reduction wheel main wheel 7-3/8"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 7-1/16" main wheel 7-3/8" 1st reduction wheel 1st 2.995" diameter at bottom of pinion teeth 1st 4.651" 2nd

Flexible Pinion Shafts, diameter at bearings 1st 2.995" 2nd diameter at bottom of pinion teeth 1st 4.651" 2nd
Wheel Shafts, diameter at bearings 1st diameter at wheel shroud, 1st Generator Shaft, diameter at bearings 4-3/4" main 4.494" main 37.975" Propelling Motor Shaft, diameter at bearings

Intermediate 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 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. 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.
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 Lubricating Oil Pumps, including Spare Pump, No. and size Branch Bilge Suctions, No. and size:—In Engine In Pump Room

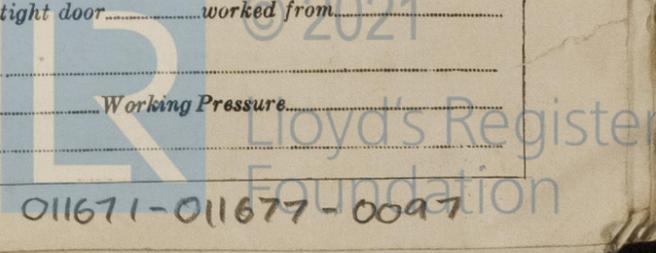
Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Oil Cooler Main Water Circulating Pump Direct Bilge Suctions, No. and size Direct Bilge Suctions to the Engine and/or Boiler Room Bilges, No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well 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.—Total Heating Surface of Boilers Is Forced Draught 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?

Is the donkey boiler intended to be used for domestic purposes only.....

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.....

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.....

State the principal additional spare gear supplied.....

The foregoing is a correct description.

H. G. Bauer, Executive Vice President
DE LAVAL STEAM TURBINE COMPANY Manufacturer

Dates of Survey while building: During progress of work in shops - - May 27, June 18, 22, August 7, 12, 14, October 12, 26 and 27, 1959.
During erection on board vessel - -
Total No. of visits.....

Dates of Examination of principal parts—Casings 7.8.59 18.6.59
12.8.59 Rotors 27.10.59 Blading 27.10.59 Gearing 27.10.59

Wheel shaft..... Thrust shaft..... 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 Stl. "LG" 109000 psi min. Identification Mark GJL15HX1
Flexible Pinion Shaft, Material and tensile strength..... Identification Mark.....
Pinion shaft, Material and tensile strength Stl. "LA" 113000 psi Identification Mark KD416DM
; Chemical analysis C.49 Mang.77 Phos.018 Sul.020 sil.32

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment 22.4.58

1st Reduction Wheel Shaft, Material and tensile strength Stl. "DA" 88500 psi Identification Mark KD421BLX1

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.....

Full description of Fire Extinguishing Apparatus fitted in machinery spaces.....

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..... No..... If so, state name of vessel.....

General Remarks. (State quality of workmanship, opinions as to class, etc.) These generator turbines have been built under the Special Survey of the Society's surveyors in accordance with the approved plans, New York letters and otherwise in conformity with the Rules.

The materials and workmanship are good.
The turbines have been examined and tested under working conditions in the shop coupled to their respective 750 K.W. alternators (stamped LL. NYK. 1992,1993), afterwards fully opened out and found satisfactory.

These turbines will be forwarded to Sorviksvarvet Aktiebolag, Uddevalla, Sweden for installation in Hull 202 and have been stamped for identification:-

Serial 652033	Serial 652034
LLOYDS PHL	LLOYDS PHL
8950	8951
27.10.59	27.10.59
DJA	DJA

The amount of Entry Fee ... \$ 514.00	When applied for
Special ... £ :	4 Nov. 19 59
Donkey Boiler Fee ... £ :	When received
Travelling Expenses (if any) £ 49.50	19

A. Archibald for E. J. P. Wray & seq.
Engineer Surveyor to Lloyd's Register of Shipping.

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

Committee's Minute..... **NEW YORK NOV 25 1959**
Assigned..... **Transmit to London**

