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# Report on Steam Turbine Machinery.

No. 11157

4a.

Received at London Office  
 of writing Report 2nd Dec. 1959 When handed in at Local Office 2nd Dec. 1959 Port of PHILADELPHIA, PA.  
 Survey held at Trenton, New Jersey Date, First Survey 14 August, Last Survey 12th November 1959  
 (Number of Visits 16)  
 on the ~~Single~~ ~~Twin~~ ~~Triplex~~ ~~Quadruple~~ Screw Vessel's Main Double Reduction Geared Turbine Tons Gross  
 at Uddevalla, Sweden By whom built Sorviksvarvet Aktiebolag Yard No. 202 When built  
 es made at Trenton, New Jersey By whom made De Laval Steam Turb. Co. Engine No. 652030 When made 1959  
 s made at By whom made Boiler No. When made  
 Horse Power { Maximum 20,000 Owners California Transport Port belonging to  
 s per Rule { Service 4,000 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 for which Vessel is intended

## M TURBINE ENGINES, &c.—Description of Engines Cross Compound Double Reduction Geared Turbines

Ahead 2 Direct coupled  
 Turbines Astern 1 single reduction geared (to one propelling shafts. No. of primary pinions to each set of reduction gearing 2  
 double reduction geared)  
 coupled to { Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute  
 Direct Current Generator  
 playing power for driving Propelling Motors Type  
 Kilowatts Volts at revolutions per minute Direct coupled, single or double reduction geared to one propelling shafts

INE	H. P.	I. P.	L. P.	ASTERN.
ING.				
No. of rows	11		8	3
No. of stages				
No. of rows in each stage				

orse Power at each turbine { H.P. 11000 ✓ L.P. 11000 ✓  
 { L.P. 11000 ✓  
 shaft diameter at journals { H.P. 5.988" Pitch Circle 1st pinion 17.283" 1st reduction wheel 173.653" Width of 1st reduction wheel 23-1/2"  
 { I.P. 7.985" Diameter 2nd pinion 23.63" main wheel 176.621" Face { main wheel 44-1/2"  
 { L.P. 7.985"  
 between centres of pinion and wheel faces and the centre of the adjocent bearings { 1st pinion 17-1/4" 1st reduction wheel 17-1/4"  
 { 2nd pinion 30-3/4" main wheel 35-1/4" & 36-1/4"  
 Pinion { H.P. 7.45" 1st 11.987" 2nd 23.832"  
 diameter { L.P. 11.528" 1st 11.987" 2nd 23.832"  
 shafts, diameter at bearings { 1st 11.987" 2nd 23.832"  
 { main 23.976" diameter at wheel shroud, { main 170.75" Propelling Motor Shaft, diameter at bearings  
 liate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule  
 as fitted 24"  
 ft, diameter as per rule Screw Shaft, diameter as per rule Is the { tube } shaft fitted with a continuous liner {  
 as fitted { screw }  
 iners, thickness in way of bushes as per rule Thickness between bushes as per rule Is the after end of the liner made watertight in the  
 as fitted as fitted  
 boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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  
 rs 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  
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller  
 diameter Pitch No. of Blades State whether Moveable Total Developed Surface square feet.  
 crew, 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

No. of Turbines fitted with astern wheels Feed Pumps { No. and size  
 How driven  
 nected to the Main Bilge Line { No. and size  
 How driven  
 mps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size  
 ependent means arranged for circulating water through the Oil Cooler Branch Bilge Suctions, No. and size:—In Engine  
 Rooms In Pump Room  
 or Circulating Pump Direct Bilge Suctions, No. and size Direct Bilge Suctions to the Engine and/or Boiler Room  
 nd size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes  
 e 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  
 Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks  
 d 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  
 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  
 te What pipes pass through the bunkers How are they protected  
 pass through the deep tanks Have they been tested as per rule  
 , Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times  
 ement 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  
 n one compartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

## &c.—Total Heating Surface of Boilers

ight fitted No. and Description of Boilers Working Pressure

Main Boilers now forwarded?

PLEASE RETURN THIS REPORT WITH YOUR FIRST ENTRY.

011671-011677-0094



Is a Donkey Boiler fitted? ☐   
 Is the donkey boiler intended to be used for domestic purposes only ☐   
 Plans. Are approved plans forwarded herewith for Shafting ☐   
 Superheaters ☐   
 Geared turbines situated aft. ☐   
 Have torsional vibration characteristics of system been approved ☐   
 If so, is a report now forwarded? ☐   
 Main Boilers ☐   
 Auxiliary Boilers ☐   
 Donkey Boilers ☐   
 Oil Fuel Burning Arrangements ☐   
 Date of approval ☐   
 General Pumping Arrangements ☐   
 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. ☐

Dates of Survey while building ☐   
 During progress of work in shops ☐   
 During erection on board vessel ☐   
 Total No. of visits ☐   
 Dates of Examination of principal parts ☐   
 Casings ☐   
 Rotors ☐   
 Blading ☐   
 Gearing ☐   
 Wheel shaft ☐   
 Thrust shaft ☐   
 Intermediate shafts ☐   
 Tube 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 ☐   
 Rotor shaft, Material and tensile strength ☐   
 Flexible Pinion Shaft, Material and tensile strength ☐   
 Pinion shaft, Material and tensile strength ☐   
 Chemical analysis ☐   
 If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment ☐   
 1st Reduction Wheel Shaft, Material and tensile strength ☐   
 Wheel shaft, Material ☐   
 Identification Mark ☐   
 Intermediate shafts, Material ☐   
 Identification Marks ☐   
 Screw shaft, Material ☐   
 Identification Marks ☐   
 Steam Pipes, Material ☐   
 Test pressure ☐

Date of test ☐   
 Is the flash point of the oil to be used over 150°F. ☐   
 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 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 ☐   
 Reduction Gearing ☐   
 If so, state name of vessel ☐

General Remarks. (State quality of workmanship, opinions as to class, &c.) ☐   
 under Special Survey in accordance with the approved plans. New York letters and otherwise ☐   
 conformity with the Society's Rules. ☐   
 The materials and workmanship are good. ☐   
 The turbines and gears have been tested in the shop, afterwards opened out and examined ☐   
 with the exception of the H.P. 1st reduction pinion extension shaft hub and coupling sleeve ☐   
 will be replaced, found in order. ☐   
 This double reduction geared turbine is suitable, in our opinion, for acceptance in a ☐   
 intended to be classed with this Society when a new high pressure 1st reduction pinion ☐   
 shaft hub and coupling sleeve have been supplied and the gears proven on sea trials as re ☐   
 the Rules. ☐

The bedplate has been stamped:- ☐   
 Serial 652030 ☐   
 LLOYDS PHL ☐   
 6947 ☐   
 DJA ☐   
 The amount of Entry Fee ☐   
 Special ☐   
 Donkey Boiler Fee ☐   
 Travelling Expenses (if any) ☐

When applied for ☐   
 2 Dec. 19 59 ☐   
 When received ☐   
 19 ☐   
 NEW YORK ☐   
 DEC 23 1959 ☐

The Committee's Minute ☐   
 Assigned ☐   
 Assigned ☐

Assigned ☐   
 Assigned ☐