

# EXHAUST REPORT ON STEAM TURBINE MACHINERY. No. 1594.

Received at London Office 13 JAN 1934

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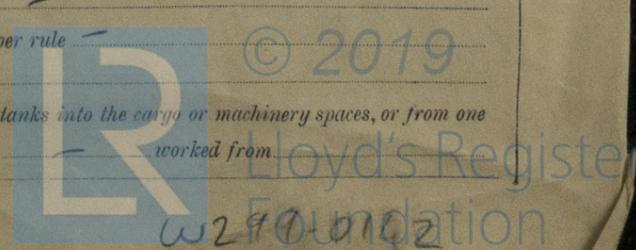
Date of writing Report 10<sup>th</sup> Jan 1934 When handed in at Local Office BREMEN Port of BREMEN  
 No. in Survey held at BREMEN Date, First Survey 3<sup>rd</sup> Novemb. 33 Last Survey 6<sup>th</sup> Jan. 1934  
 Reg. Book. 10905 on the STEEL SC. 4 MST. MEERKERK. (Number of Visits 10)  
 Gross Tons 7826  
 Net Tons 4871  
 Built at VEGESACK By whom built BREMER VULKAN Yard No.      When built 1916  
 Engines made at VEGESACK By whom made      Engine No.      When made 1916  
 Gearing made at BREMEN By whom made DESCHIMAG A.G. WESER Engine No. 3/8 When made 1934  
 Shaft Horse Power at Full Power 1450 Owners VEREENIGDE NEDERL. SCHEEPSV. MAATS. Port belonging to THE HAGUE  
 Nom. Horse Power as per Rule      Is Refrigerating Machinery fitted for cargo purposes      Is Electric Light fitted       
 Trade for which Vessel is intended     

## STEAM TURBINE ENGINES, &c.—Description of Engines EXHAUST STEAM TURBINE DOUBLE REDUCTION GEARING (WITHOUT TURBINE)

SYSTEM: BAUER-WACH.  
 No. of Turbines one Direct coupled, single reduction geared } to one propelling shafts. No. of primary pinions to each set of reduction gearing 1  
 Astern      double reduction geared }  
 Direct coupled to      Alternating Current Generator      phase      periods per second      rated      Kilowatts      Volts at      revolutions per minute;  
 supplying power for driving      Propelling Motors, Type       
 Direct coupled, single or double reduction geared to      propelling shafts.

TURBINE GEARING.	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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Shaft Horse Power at EXHAUST Turbine      H.P.      EXHAUST Turbine Shaft      H.P.      1st reduction wheel 416/403  
 I.P.      Revolutions per minute, at full power, of each Turbine Shaft      L.P.      main shaft 77  
 L.P. 1450  
 Pinion Shaft diameter at journals      H.P.      Pitch Circle 1st pinion 280.77 1st reduction wheel 1822.71 Width of 1st reduction wheel 340  
 I.P.      Diameter 2nd pinion 448.77 main wheel 2347.43 Face { main wheel 680  
 L.P.       
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 305/330 1st reduction wheel 1980/500  
 { 2nd pinion 487/487 main wheel 590/590  
 Pinion Shafts, diameter at bearings { External 1st 170/130 2nd 420 diameter at bottom of pinion teeth { 1st 269.77  
 { Internal 1st      2nd 355 { 2nd 432.27  
 Steel Shafts, diameter at bearings { 1st 300 diameter at wheel shroud, { 1st 1758 Generator Shaft, diameter at bearings       
 { main 550 { main 2255 Propelling Motor Shaft, diameter at bearings       
 Intermediate Shafts, diameter as per rule      Thrust Shaft, diameter at collars as per rule      Tube Shaft, diameter as per rule       
 as fitted      as fitted      as fitted       
 Propeller 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      { screw } {      as fitted       
 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      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  
 other appliance fitted at the after end of the tube shaft      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.  
 Single 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  
 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       
 two independent means arranged for circulating water through the Oil Cooler      Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 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  
 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  
 compartment to another      Is the Shaft Tunnel watertight      Is it fitted with a watertight door      worked from     



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  130/2.33 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:—

- 2 bearing halves for main shaft
- 2 " " " second " "
- 2 " " " prim. " "
- 2 " " " Turb. pinion "
- 10 thrust pads & bolts for main thrust bearing
- 18 " " " " main pinion thrust.
- 1 bolt each for turbine pinion coupling and 1" gear coupling

**Deutsche Schiff- und Maschinenbau  
Aktiengesellschaft**  
**Werk: Act. Ges. „Weser“**  
*Rotterdam 11/1. 33*

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  10

Dates of Examination of principal parts—Casings  11. 11. 33 Rotors  only 6. 1. 34 Gearing  3. 11. 33

Wheel shaft  4. 11. 33 <sup>2nd Pinion</sup> Thrust shaft  4. 11. 33 <sup>1st PINION</sup> Intermediate shaft  18. 12. 33 <sup>OIL COUPLING</sup> Tube shaft  1. 12. 33 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

<sup>1st</sup> Pinion shaft, Material and tensile strength  1% Nickel Steel 70-80 kg/mm<sup>2</sup> Identification Mark  LLOYD'S F.S. 1839 2.1

<sup>2nd</sup> Pinion shaft, Material and tensile strength  1% Nickel Steel 70-80 kg/mm<sup>2</sup> Identification Mark  ⚓ 92 66118 J

1st Reduction Wheel Shaft, Material and tensile strength  P.M. Steel 40-50 kg/mm<sup>2</sup> Identification Mark  ⚓ 92 3597 B

Wheel shaft, Material  P.M. Steel Identification Mark  ⚓ 92 66004 J <sup>2 1/2</sup> 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  If so, state name of vessel

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *This Machinery, consisting of complete bed plate gear casing, <sup>Propeller</sup> thrust bearing, gearing shafts & wheels, oil coupling, turbine pinion and all the appliances for an exhaust steam turbine arrangement, but without the turbine itself and the thrust shaft, have been examined in finished condition, also the turbine blading, and all parts found to be in a new and good condition, and as far as could be seen round and free from defects and the workmanship good. The material of the 1st pinion has been tested by the Surveyor of this Society other shafting by the Germanischer Lloyd and accepted as per Secretary's letter dated 9. 11. 33. All scantlings are in accordance with the appr. plan dated 13. 12. 33. This machinery has now been shipped to Messrs. Rotterdamse Droogdok Mij. of Rotterdam for installation of S/S Meerbusk.*

The amount of Entry Fee ... £ : :  
 Special ... £ 29 : 16 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ 1 : 4 :  
 When applied for, 11. 1. 1934  
 When received, 8/2/34

*A. Carstensen*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 18 MAY 1934**

Assigned *See Rot. Rpt 22873*



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