

REPORT ON STEAM TURBINE MACHINERY. 30 DEC 1936.

Received at London Office

4a.

Date of writing Report 22nd Dec. 1936 When handed in at Local Office 19 Port of BREMEN
 in Survey held at WESERMÜNDE - BREMEN Date, First Survey 25th June 36 Last Survey 8th Dec 1936
 Leg. Book. 529 on the STEEL SC. TRAWLER - NORTHERN ISLES (Number of Visits 14)
 Tons } Gross 655
 Net 243
 Built at WESERMÜNDE By whom built DESCHIMAG, WERK: SEEBECK Yard No. 569 When built 1936
 Engines made at BREMEN By whom made DESCHIMAG, WERK: A.G. WESER Engine No. DT. 846 When made 1936
 Boilers made at WESERMÜNDE By whom made DESCHIMAG, WERK: SEEBECK Boiler No. 774 When made 1936
 Shaft Horse Power at Full Power 313 Owners MAC LINE LTD. Port belonging to LONDON
 Nom. Horse Power as per Rule 167 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Trade for which Vessel is intended FISHING

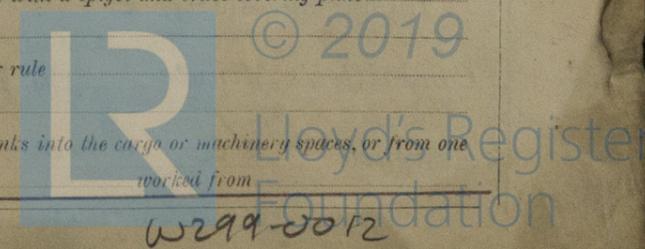
STEAM TURBINE ENGINES, &c. — Description of Engines L.P. TURBINE, DOUBLE REDUCTION GEARED, WITH HYDRAULIC COUPLING

No. of Turbines 1 Ahead 1 Direct coupled, single reduction geared } to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 1
 Astern 0 double reduction geared }
 Coupled to 1 Alternating Current Generator 1 phase 0 periods per second } rated 0 Kilowatts 0 Volts at 0 revolutions per minute;
 Direct Current Generator }
 For supplying power for driving 0 Propelling Motors, Type 0
 Rated 0 Kilowatts 0 Volts at 0 revolutions per minute. Direct coupled, single or double reduction geared to 0 propelling shafts.

| TURBINE STAGING. | 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. |
| 1ST EXPANSION | | | | | | | 35 1/2 | 470 1/2 | 1 | | | |
| 2ND " | | | | | | | 49 | 498 | 1 | | | |
| 3RD " | | | | | | | 63 | 526 | 1 | | | |
| 4TH " | | | | | | | 77 | 554 | 1 | | | |
| 5TH " | | | | | | | 94 | 588 | 1 | | | |
| 6TH " | | | | | | | 112 | 624 | 1 | | | |
| 7TH " | | | | | | | | | | | | |
| 8TH " | | | | | | | | | | | | |
| 9TH " | | | | | | | | | | | | |
| 10TH " | | | | | | | | | | | | |
| 11TH " | | | | | | | | | | | | |
| 12TH " | | | | | | | | | | | | |

Shaft Horse Power at each turbine { H.P. 0
 I.P. 0
 L.P. 313 }
 Revolutions per minute, at full power, of each Turbine Shaft { H.P. 0
 I.P. 0
 L.P. 6066 }
 Rotor Shaft diameter at journals { H.P. 0
 I.P. 0
 L.P. 100 1/2 } Pitch Circle Diameter { 1st pinion 124.28 1/2 1st reduction wheel 1077.1 1/2 Width of Face { 1st reduction wheel 110 1/2
 2nd pinion 202.52 main wheel 1178.32 1/2 } main wheel 340 1/2 }
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 112 1/2 1st reduction wheel 0
 2nd pinion 268 x 585 1/2 main wheel 380 1/2 450 1/2 }
 Flexible Pinion Shafts, diameter { 1st 0
 2nd 0 } Pinion Shafts, diameter at bearings { External 1st 100 1/2 2nd 180 x 210 1/2 diameter at bottom of pinion teeth { 1st 114.57 1/2
 Internal 1st 0 2nd 0 } 2nd 192.82 1/2 }
 Wheel Shafts, diameter at bearings { 1st 210 1/2 diameter at wheel shroud, { 1st 0
 main 220 1/2 } main 0 } Generator Shaft, diameter at bearings 0
 Propelling Motor Shaft, diameter at bearings 0
 Intermediate Shafts, diameter { as per rule 0
 as fitted 0 } Thrust Shaft, diameter at collars { as per rule 217 1/2
 as fitted 220 1/2 }

Tube Shaft, diameter { as per rule 0
 as fitted 0 } Screw Shaft, diameter { as per rule 0
 as fitted 0 } Is the { tube } shaft fitted with a continuous liner { screw }
 Bronze Liners, thickness in way of bushes { as per rule 0
 as fitted 0 } Thickness between bushes { as per rule 0
 as fitted 0 } Is the after end of the liner made watertight in the propeller boss 0
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner 0
 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 0
 If two liners are fitted, is the shaft lapped or protected between the liners 0 Is an approved Oil Gland or other appliance fitted at the after end of the tube 0
 shaft 0 If so, state type 0 Length of Bearing in Stern Bush next to and supporting propeller 0
 Propeller, diameter 0 Pitch 0 No. of Blades 0 State whether Moveable 0 Total Developed Surface 0 square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine 0 Can the H.P. or I.P. Turbine exhaust direct to the condenser 0
 Condenser { No. of Turbines fitted with astern wheels 0 } Feed Pumps { No. and size 0
 How driven 0 }
 Pumps connected to the Main Bilge Line { No. and size 0
 How driven 0 }
 Ballast Pumps, No. and size 0 Lubricating Oil Pumps, including Spare Pump, No. and size 0
 Are two independent means arranged for circulating water through the Oil Cooler 0 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 0
 In Holds, &c. 0 In Pump Room 0
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 0 Independent Power Pump Direct Suctions to the Engine Room 0
 Bilges, No. and size 0 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 0
 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 0
 Are all Sea Connections fitted direct on the skin of the ship 0 Are they fitted with Valves or Cocks 0
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 0 Are the Overboard Discharges above or below the deep water line 0
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel 0 Are the Blow Off Cocks fitted with a spigot and brass covering plate 0
 What pipes pass through the bunkers 0 How are they protected 0
 What pipes pass through the deep tanks 0 Have they been tested as per rule 0
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times 0
 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 0 Is the Shaft Tunnel watertight 0 Is it fitted with a watertight door 0



W299-0012

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?

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

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

One complete set of forward and turbine bearing brans. 1 spring for quick closing governor
 " " " " " 2nd pinion " " " 1 " " main steering & oil pressure valve
 10 pairs a bolt for turbine thrust 8 pipes for oil cooler
 8 " " " 2nd pinion thrust 3 glasses for turbinometer
 12 " " " Main thrust bearing 1 set of washers for quick closing regulator
 2 bushes for hydraulic clutch

**Deutsche Schiff- und Maschinenbau
Aktiengesellschaft
Werk: Act. Ges. „Weser“**

Bremen. 7.12.1936 J. K. K. Manufacturer.

The foregoing is a correct description,

1936
 Dates of Survey while building: During progress of work in shops -- June 25, 29, July 28, Aug. 4, 11, 12, 20, 24, 27, Sept. 14.
 During erection on board vessel --- Nov. 17, 20, 26, Dec. 8.
 Total No. of visits 14

Dates of Examination of principal parts—Casings 25/6 = 14.9.36 Rotors 29/6 = 14.9.36 Blading 28/7 = 14.9.36 Gearing 28/7 = 14.9.36

Wheel shaft 25/6 = 14.9.36 Thrust shaft _____ Intermediate shafts _____ Tube shaft _____ Screw shaft _____

Propeller _____ Stern tube _____ Engine and boiler seatings _____ Engine holding down bolts 26.11.36

Completion of fitting sea connections Completion of pumping arrangements Boilers fixed Engines tried under steam 8.12.36

Main boiler safety valves adjusted Thickness of adjusting washers _____

Rotor shaft, Material and tensile strength P.M. Steel 57 kg/mm² Identification Mark LLOYD'S 4. 608 G.B. 14.9.36

Flexible Pinion Shaft, Material and tensile strength _____ Identification Mark _____

2nd Pinion shaft, Material and tensile strength Pilsen Mangan Steel 72.4 kg/mm² Identification Mark LLOYD'S 4. 12158 MB. 2.6.36

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

Wheel shaft, Material P.M. Steel Identification Mark LLOYD'S 4. 607 G.B. 14.9.36 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

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 If so, state name of vessel NORTHERN PRIDE

General Remarks (State quality of workmanship, opinions as to class, &c.) This L.P. Turbine & Gear with hydraulic clutch are built under Special Survey in accordance with the approved plans, the Secretary's letters, and in conformity with the requirements of the Rules. Materials and workmanship are of good quality.

During the vessel's trial trip all parts have been tried under full working and manoeuvring conditions and found satisfactory in all respects.

| | | | | |
|------------------------------|---|---|---|-------------------|
| The amount of Entry Fee | £ | : | : | When applied for, |
| Special | £ | : | : | 19 |
| Donkey Boiler Fee | £ | : | : | When received, |
| Travelling Expenses (if any) | £ | : | : | 19 |

J. H. B. Falk A. Carstensen
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. JAN 8 1937

Assigned See Bmn 1861



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