

pt. 4a.

REPORT ON STEAM TURBINE MACHINERY. No. 1780.

Received at London 26 MAR 1936

Date of writing Report 23. 3. 1936 When handed in at Local Office 10 Port of BREMEN & RUGSBURG

No. in Survey held at HEIDENHEIM & BREMEN Date, First Survey 25. 9. 35 Last Survey 7. 3. 1936

Reg. Book. 7976 on the STEEL S.S. ETHIOPIAN (Number of Visits 14)

Built at WESERMÜNDE By whom built DEUTSCHE SCHIFF- & MASCHINENBAU AG. Yard No. 896 Tons Gross 5424 Net 3203

Engines made at HEIDENHEIM & BREMEN By whom made J.M. VOITH & DESCHIMAG-AG WESER Engine No. DT 482 When made 1936

Boilers made at WESERMÜNDE By whom made DESCHIMAG. WERK: SEEBECK Boiler No. 1673/74 When made 1936

Shaft Horse Power of Full Power 468 Owners UNITED AFRICA COMPANY LTD. Port belonging to LIVERPOOL

Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which Vessel is intended OPEN SEA SERVICE

STEAM TURBINE ENGINES, &c.—Description of Engines EXHAUST STEAM TURBINE DOUBLE REDUCTION GEARED

No. of Turbines Ahead 1 Direct coupled, single reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 1

direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;

for supplying power for driving Propelling Motors, Type

rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE BLADING.

1ST EXPANSION

2ND

3RD

4TH

5TH

6TH

7TH

8TH

9TH

10TH

11TH

12TH

Shaft Horse Power at each turbine H.P. 468

Revolutions per minute, at full power, of each Turbine Shaft H.P. 475 I.P. 63 L.P. 5210

Rotor Shaft diameter at journals H.P. 100.2 I.P. 100.2 L.P. 100.2

Pitch Circle Diameter 1st pinion 119.67 2nd pinion 255.455 1st reduction wheel 131.798 main wheel 1843.42

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 198.2 2nd pinion 390.2 1st reduction wheel 273 2nd reduction wheel 445

Flexible Pinion Shafts, diameter 1st 100.2 2nd 100.2

Pinion Shafts, diameter at bearings External 1st 100.2 2nd 230.2 Internal 1st 100.2 2nd 230.2

Wheel Shafts, diameter at bearings 1st 230.2 2nd 420.2

Intermediate Shafts, diameter as per rule 304.2 as fitted 310.2

Thrust Shaft, diameter at collars as per rule 320.2 as fitted 320.2

Tube Shaft, diameter as per rule as fitted

Screw Shaft, diameter as per rule as fitted

Is the tube 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 L.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

Ballast Pumps, No. and size

Lubricating Oil Pumps, including Spare Pump, No. and size

Are 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

In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size

Independent Power Pump Direct Suctions to the Engine 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

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002543-002549-0199

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 ^{EXHAUST STEAM TURBINE}Shafting 2.4.35, 25.4.35 Main Boilers

Auxiliary Boilers

Donkey Boilers

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 for Exhaust Turbine & Gear

10 thrust pads & bolts for turbine thrust bearing; 2 1/2 bearing frames for turbine bearing frame
2 1/2 bearing frames for turbine bearing off; 2 springs for quick closing device
1 spring for safety governor; 1 coupling bolt for thrust shaft; 1 coupling bolt for turbine pinion
10 thrust pads & bolts for propeller thrust bearing; 10 thrust pads & bolts for main pinion thrust
bearing; a number of special tools etc.

Bremen, den 23. März 1936

DEUTSCHE SCHIFF- u. MASCHINENBAU
AKTIENGESELLSCHAFT

J. W. Maumann.

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
1935 Bremen	25.9, 2.10, 17.10,	15.10, 23.10, 30.10, 21.11, 20.12.35, 7.1.36	14
Augusting	17.1.36, 21.1.36	28.1.36 14.2.36, 7.3.36.	

Dates of Examination of principal parts—Casings 20.12.35 Rotors 17.10.35 Blading 17.10.35 Gearing 23.10.35

Wheel shaft 23.10.35 Thrust shaft 21.11 Intermediate shafts — Tube shaft — Screw shaft —

Propeller — Stern tube — Engine and boiler seatings — Engine holding down bolts 28.1.36

Completion of fitting sea connections — Completion of pumping arrangements — Boilers fired — Engines tried under steam 7.3.36

Main boiler safety valves adjusted — Thickness of adjusting washers.

Rotor shaft, Material and tensile strength P.M. Zugst. Stue 53.5 kg/cm²

Pinion shaft, Material and tensile strength P.M. Zugst. Stue 74.5 —

Pinion shaft, Material and tensile strength P.M. Zugst. Stue 74.5 —

1st Reduction Wheel Shaft, Material and tensile strength

Wheel shaft, Material P.M. Stue Identification Mark LLOYD'S 3.L. 9729 1.6.35

CONICAL COUPLING Identification Mark V.S. Thrust shaft, Material P.M. Stue Identification Mark LLOYD'S 3.L. 9723 27.5.35

Intermediate shafts, Material P.M. Stue Identification Marks V.S. 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 yes If so, state name of vessel NIGERIAN

General Remarks (State quality of workmanship, opinions as to class, &c.) This L.P. turbine & gear with hydraulic coupling are built: the complete turbine rotor & rotor blading at Messrs. Deutsche Schiff- & Maschinenbau A.G. Werk A.G. Wuppertal, Bremen and all the other parts of Messrs. F.M. Voith of Heidenheim. It has been built under special survey in accordance with the approved plans, the Secretary's letters & otherwise in conformity with the requirements of the Rules. Materials and workmanship are of good quality. During the recent trial trip all parts have been tried under full working and maneuvering condition and found satisfactory in all respects.

The amount of Entry Fee ... £ : When applied for,

Special ... RM 234. — 11.2.1936

Donkey Boiler Fee ... £ : When received,

Travelling Expenses (if any) RM 110. — 30.3.1936

Committee's Minute

Assigned

See Bmn '76 Rpt. 1780



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