

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

COMBINED WITH EXHAUST STEAM TURBINE

Received at London Office

-4 MAY 1936

Date of writing Report 29. 4. 1936 When handed in at Local Office 19 Port of BREMEN  
 No. in Survey held at Reg. Book. WESERMÜNDE Date, First Survey 25<sup>th</sup> June 35 Last Survey 22<sup>nd</sup> April 1936  
 38932 on the STEEL SINGLE SC. STEAMER LEONIAN (Number of Visits 45) Gross 5424 Tons Net 3202  
 Built at WESERMÜNDE By whom built DEUTSCHE SCHIFF UND MASCHINENBAU A.G. WERK: SEEBECK Yard No. 898 When built 1936  
 Engines made at WESERMÜNDE By whom made DESCHIMAG, WERK: SEEBECK Engine No. 1411 When made 1936  
 Boilers made at WESERMÜNDE By whom made DESCHIMAG, WERK: SEEBECK Boiler No. 1677/78 When made 1936  
 Registered Horse Power Owners UNITED AFRICA COMPANY LTD. Port belonging to LIVERPOOL  
 Nom. Horse Power as per Rule 350 ✓ Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Trade for which Vessel is intended OPEN SEA SERVICE

**ENGINES, &c.**—Description of Engines TRIPLE EXPANSION, WITH EXHAUST TURBINE SYSTEM BAUERWACH Revs. per minute 63  
 Dia. of Cylinders 550/900/1450 ✓ Length of Stroke 1000 ✓ No. of Cylinders 3 ✓ No. of Cranks 3 ✓  
 Crank shaft, dia. of journals as per Rule 304 ✓ as fitted 305 ✓ Crank pin dia. 310 ✓ Crank webs Mid. length breadth ✓ Mid. length thickness ✓ shrunk Thickness parallel to axis 200 ✓ Thickness around eye-hole 140 ✓  
 Intermediate Shafts, diameter as per Rule 304 ✓ as fitted 310 ✓ Thrust shaft, diameter at collars as per Rule 320 ✓ as fitted 320 ✓  
 Tube Shafts, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule 344 ✓ as fitted 344 ✓ Is the tube screw shaft fitted with a continuous liner? yes ✓  
 Bronze Liners, thickness in way of bushes as per Rule 18 ✓ as fitted 23 ✓ Thickness between bushes as per Rule 13.5 ✓ as fitted 17.5 ✓ Is the after end of the liner made watertight in the propeller boss? yes ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner one length ✓  
 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? fit tightly ✓  
 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? ✓ Length of Bearing in Stern Bush next to and supporting propeller 1640 ✓  
 Propeller, dia. 5500 ✓ Pitch 5640 No. of Blades 4 Material bronz whether Movable no Total Developed Surface 1012 sq. feet  
 Feed Pumps worked from the Main Engines, No. none Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓  
 Bilge Pumps worked from the Main Engines, No. 2 ✓ Diameter 120 ✓ Stroke 550 ✓ Can one be overhauled while the other is at work ✓  
 Feed Pumps { No. and size 2 duplex 220 x 160 x 450 ✓ Pumps connected to the { No. and size 1 duplex 300 x 270 x 400 ✓  
 { How driven by steam ✓ Main Bilge Line { How driven by steam ✓  
 Ballast Pumps, No. and size 1 duplex 200 x 270 x 400 ✓ Lubricating Oil Pumps, including Spare Pump, No. and size 2 duplex 180 x 180 x 250 ✓  
 Are two independent means arranged for circulating water through the Oil Cooler? yes ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 4 of 3" dia ✓ in tunnel 1 of 3" dia ✓  
 In Pump Room ✓ In Holds, &c. No. 1, 2 of 3", No. 2, 2 of 3 1/2", No. 3, 2 of 3" ✓  
 No. 4, 2 of 3", No. 5, 2 of 3" ✓  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 of 8" ✓ Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 of 5" ✓  
 Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes? yes ✓  
 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? yes ✓  
 Are all Sea Connections fitted direct on the skin of the ship? yes ✓ Are they fitted with Valves or Cocks? valves & cocks ✓  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates? yes ✓ Are the Overboard Discharges above or below the deep water line? above ✓  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel? yes ✓ Are the Blow Off Cocks fitted with a spigot and brass covering plate? yes ✓  
 What Pipes pass through the bunkers? none ✓ How are they protected? ✓  
 What pipes pass through the deep tanks? none ✓ 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? yes ✓  
 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? yes ✓ Is the Shaft Tunnel watertight? yes ✓ Is it fitted with a watertight door? yes ✓ worked from top of Engine Room

**MAIN BOILERS, &c.**—(Letter for record 5 ✓) Total Heating Surface of Boilers 416 m<sup>2</sup> = 4476 sq. ft. ✓  
 Is Forced Draft fitted? yes ✓ No. and Description of Boilers 2 multitub. Boilers ✓ Working Pressure 220 lbs ✓  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes ✓  
 IS A DONKEY BOILER FITTED? no ✓ 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 Piping Arrangements

## SPARE GEAR.

Has the spare gear required by the Rules been supplied? yes ✓  
 State the principal additional spare gear supplied: Circulating Pump: 1 piston with rod, 1 slide valve spindle with rod and eccentric strap, 1 impeller wheel shaft; Air & Condensate Pump: 1 set of valves, 1 steam and 1 pump piston rod.  
 Steam Feed Pumps: 1 set of motion and delivery valves, 1 steam & 1 pump piston rod.  
 Ballast Pump: 1 set of motion & delivery valves; Donkey Pump: 1 set of motion and delivery valves, 1 steam & 1 pump piston rod; Lubricating Oil Pumps: 1 set of motion & delivery valves.

The foregoing is a correct description,

Manufacturer.

Deutsche Schiff- und Maschinenbau Aktiengesellschaft

Karl Hoefer

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Lloyd's Register Foundation

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During progress of work in shops - - -  
June 25, Sept. 10, 11, 17, 20, 24, 30, Oct. 7, 11, 16, 17, 21, 22, 24, Nov. 1, 2, 12, 13, 19, 27, Dec. 3, 6, 10, 17, 21, 30, Jan. 3, 7, 14, 17, 21, 28, 31.  
Feb. 7, 14, 21.

1936  
During erection on board vessel - - -  
Dec. 28, March 3, 6, 12, 17, 20, 27, 31, April 6, 15, 17, 22.

Total No. of visits 45

Dates of Examination of principal parts—Cylinders 19.11.35 3.12.35 21.12. Slides 28.1.36 Covers 19.11.35 3/12. 21/12.35  
Pistons 28.1.36 Piston Rods 28.1.36 Connecting rods 6.12.35  
Crank shaft 8.11.35 Thrust shaft 19.6.35 in coupling Intermediate shafts 31.1.36  
Tube shaft Screw shaft 31.1.36 Propeller 7.2.36  
Stern tube 24.1.36 Engine and boiler seatings 21.2.36 Engines holding down bolts 6.3.36.  
Completion of fitting sea connections 7.2.36 & 14.2.36  
Completion of pumping arrangements 15.4.36 Boilers fixed 6.4.36 Engines tried under steam  
Main boiler safety valves adjusted 15.4.36 Thickness of adjusting washers Port B. Port valve 37.12 Start valve 39.22 Supply. 25.5.2  
Crank shaft material P.M. Steel Identification Mark LLOYD'S MB 11257-90.10.7.35 Thrust shaft material P.M. Steel Identification Mark LLOYD'S E.A.1. 19.6.35  
Intermediate shafts, material P.M. Steel Identification Marks LLOYD'S F.S. 2579.7.9.35 INTERM. LLOYD'S J.B. 4787.4.16.35  
Screw shaft, material P.M. Steel Identification Mark LLOYD'S 3.8 4790.15.8.35 AC 31.1.36 shafts material P.M. Steel Identification Mark LLOYD'S J.B. 4801.2.22.8.35  
Is an installation fitted for burning oil fuel no 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 <sup>blank for</sup> 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 no Ice Strengthening  
Is this machinery duplicate of a previous case yes If so, state name of vessel NIGERIAN & ETHIOPIAN

General Remarks (State quality of workmanship, opinions as to class, &c. This Machinery has been built under Special Survey in accordance with the approved plans, the Purchaser's letter, and in conformity with the requirements of the Rules. The materials used in the construction are made at works recognized by the Committee and tested by the Soc. Surveyors. Materials & workmanship are of good quality. On the recent trial trip of 14 hours duration all the machinery has been tested under full working and maneuvering conditions, with and without Exhaust-Steam Turbine, and found in all parts in order.  
This Machinery is eligible in my opinion to be classed in the Soc. Reg. Book with record of \* LMC 4.36. and notation of Tail Shaft (CL); Boiler pressure 220 lbs.

Certificate to be sent to General Office

The amount of Entry Fee ... RM 100.- : When applied for,  
Special ... \$ 1550.- : 29.4. 1936  
Donkey Boiler Fee ... \$ : When received,  
Travelling Expenses (if any) \$ 290.- : 20.5. 1936

Committee's Minute FRI. 15 MAY 1936  
Assigned + Lmb. H.36  
JD., CL.

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