

## REPORT ON OIL ENGINE MACHINERY.

No. 22066

Received at London Office 24 OCT 1936

Date of writing Report 15-10-36 10 When handed in at Local Office 10 Port of Hamburg  
No. in Survey held at Kiel Date, First Survey 4/10/35 Last Survey 26/9/36 19  
Reg. Book. Number of Visits 48

Single  
on the Twin  
Triple  
Quadruple  
Screw vessel "Congorian"  
Built at Kiel By whom built Howaldtswerke A.G. Yard No. 740 When built 1936  
Engines made at Kiel By whom made Howaldtswerke A.G. Engine No. 7 When made 1936  
Donkey Boilers made at Kiel By whom made Howaldtswerke A.G. Boiler No. 1519 When made 1936  
Brake Horse Power 2250 Owners United Africa Co., Ltd. Port belonging to Liverpool  
Nom. Horse Power as per Rule 321 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended General 735/8 513/16

OIL ENGINES, &c.—Type of Engines Hookport with Supercharging. 6 H.M.H.S. 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 600 mm Length of stroke 1300 mm No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 760 mm Is there a bearing between each crank yes

Revolutions per minute 135 Flywheel dia. 2180 mm Weight 5 tons Means of ignition Diesel syst. Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 398 mm Crank pin dia. 410 mm Crank Webs Mid. length breadth 268 mm Thickness parallel to axis 240 mm  
as fitted 410 mm Mid. length thickness 240/255 mm shrunk Thickness around eye-hole 138 mm

Flywheel Shaft, diameter as per Rule 398 mm Intermediate Shafts, diameter as per Rule 272 mm Thrust Shaft, diameter at collars as per Rule 290 mm  
as fitted 410-360 mm as fitted 360 mm as fitted 360 mm

Tube Shaft, diameter as per Rule 305 mm Screw Shaft, diameter as per Rule 305 mm Is the tube shaft fitted with a continuous liner yes  
as fitted 305 mm as fitted 316 mm

Bronze Liners, thickness in way of bushes as per Rule 16 mm Thickness between bushes as per rule 12 mm Is the after end of the liner made watertight in the  
as fitted 18 mm as fitted 14 mm

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 yes

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 yes

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 no

Length of Bearing in Stern Bush next to and supporting propeller 1350 mm

Propeller, dia. 4040 mm Pitch 3330 mm No. of blades 4 Material Bronze whether Moveable solid Total Developed Surface 6 m<sup>2</sup> sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched no Means of lubrication  
manifolds

Thickness of cylinder liners 30 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water-cooled or lagged with  
non-conducting material yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes

Cooling Water Pumps, No. 1 main, 1 spare, 1 for each cylinder Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 2 Diameter 160 mm Stroke 200 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 1 of 160 mm x 70 tons 2 of 80 tons each How driven steam, duplex main driven

Ballast Pumps, No. and size 1 of 160 mm x 70 tons Lubricating Oil Pumps, including Spare Pump, No. and size 1 spare steam 170 mm x 30 tons  
1 of 160 mm x 70 tons

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces 3 x 80 mm, 1 direct 100 mm In each pump room: 1 of 70 mm

In Holds, &c. 1 of 2 x 70 mm, 1 of 2 x 70 mm, Fore peak 1 x 70 mm, Chain Locker 1 x 70 mm

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 direct 100 mm, 1 emergency 125 mm

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces  
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 platform 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 heating units How are they protected yes

What pipes pass through the deep tanks cargo lines & heating units Have they been tested as per Rule yes

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 mach. aft Is it fitted with a watertight door worked from yes

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes

Main Air Compressors, No. solid injection No. of stages 2 Diameters 35 x 10 mm Stroke 180 mm Driven by 165 steam engine

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 35 x 10 mm Stroke 180 mm Driven by 165 oil engine

Small Auxiliary Air Compressors, No. none No. of stages 2 Diameters 35 x 10 mm Stroke 180 mm Driven by 165 oil engine

Scavenging Air Pumps, No. 6, 1 for each cylinder Diameter 600 mm Stroke 1300 mm Driven by pistons, lower sides

Auxiliary Engines crank shafts, diameter as per Rule as fitted Steam engine 100 mm Aux. oil engine 110 mm

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes

Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces manholes & covers

Is there a drain arrangement fitted at the lowest part of each receiver yes

Starting Air Receivers, No. 1 Cubic capacity of each 150 Liters Ext. diameter 300 mm thickness 10 mm Certificate attached

Seamless, lap welded or riveted longitudinal joint seamless Material O.H. Steel Range of tensile strength 44-50 kg/cm<sup>2</sup> Working pressure by Rules 32.8 kg/cm<sup>2</sup>

Starting Air Receivers, No. 2 Total cubic capacity 17.4 m<sup>3</sup> Internal diameter 1700 mm thickness 19 mm

Seamless, lap welded or riveted longitudinal joint yes Material O.H. Steel Range of tensile strength 44-50 kg/cm<sup>2</sup> Working pressure by Rules 32.8 kg/cm<sup>2</sup>



IS A DONKEY BOILER FITTED? *yes* ✓

If so, is a report now forwarded? *yes* ✓

PLANS. Are approved plans forwarded herewith for Shaping *22/3/35* *11/1/36*  
(If not, state date of approval)

Receivers *30/7/35*

Separate Tanks *none*

Donkey Boilers *26/3/35*

General Pumping Arrangements *26/9/35, 6/11/35, 26/11/35*

Oil Fuel Burning Arrangements *6/11/35, 12/3/36*

SPARE GEAR *As per Rules and a considerable amount of further parts, viz:-*

*1 piston with rod, 1 cylinder cover, 1 connecting rod, 5 exhaust valves, 1 oil cooler, 4 telescope pipes, 1 top and 1 bottom end brass, 1 main bearing, 4 fuel oil pump valves, 2 compl. fuel oil pumps, 1 cylinder liner, 40 piston rings, 2 fuel oil cams, 2 compl. sets of valve levers, 1 spare chain for camshaft drive. Pump and steam pistons and rods, piston and delivery valves for each type of pump.*

The foregoing is a correct description,

**HOWALDTSWERKE A.G.**

**KIEL**

Manufacturer.

Dates of Survey while building

During progress of work in shops -  
During erection on board vessel -  
Total No. of visits

*1935: Oct: 4, 15, 25 Nov: 19, 22, 26, Dec: 6, 13, 22 1936 Jan: 3, 7, 10, 14, 17, 24 Feb: 4, 7, 11, 14, 18, 21, 25 Mar: 6, 20, Apr: 2, 14, 17*  
*May: 12, 17, 29 June: 12, 16, 19, 23 July: 7, 14 Aug: 5, 11, 18, 24, 28*  
*Sept: 1, 15, 18, 25, 26*  
*48*

Dates of Examination of principal parts—Cylinders *12-5-36* Covers *28-4-36* Pistons *28-4-36* Rods *12-5-36* Connecting rods *7-2-36*

Crank shaft *17-1-36* Flywheel shaft *17-1-36* Thrust shaft *28-4-36* Intermediate shafts *28-4-36* Tube shaft *✓*

Screw shaft *28-4-36* Propeller *28-4-36* Stern tube *14-4-36* Engine seatings *5-8-36* Engines holding down bolts *1-9-36*

Completion of fitting sea connections *5-8-36* Completion of pumping arrangements *15-9-36* Engines tried under working conditions *26-9-36*

Crank shaft, Material *O.H. Steel* Identification Mark *16114 K.H. 31/12/35* Flywheel shaft, Material *O.H. Steel* Identification Mark *16114 K.H. 31/12/35*

Thrust shaft, Material *O.H. Steel* Identification Mark *A4 996 N.B. 20/5/36* Intermediate shafts, Material *O.H. Steel* Identification Marks *16257 K.H. 10/3/36*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *O.H. Steel* Identification Mark *11975/6 N.B. 1/2/36*

Is the flash point of the oil to be used over 150° F. *yes* ✓

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes* ✓

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *yes* ✓ If so, have the requirements of the Rules been complied with *yes* ✓

Is this machinery duplicate of a previous case *no* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*Material and workmanship of this machinery are of good quality and the outfit is ample. The materials used in the construction are made at works recognized by the Committee and have been tested by the Society's Surveyors in compliance with the requirements of the Rules. It has been constructed under special survey in accordance with the approved plans, the Secretary's Orders and otherwise in conformity with the Rules. During the trial trip the machinery has given satisfaction under full working and maneuvering conditions. In my opinion the machinery is eligible for notation in the Reg. Book of:*

*+LMC-9.36 (oil Eng) and TS (CL)*

The amount of Entry Fee *100.-* : When applied for, *10/10/36* 19  
Special ... £ *14 63.-* :  
Donkey Boiler Fee ... £ *3 44.-* : When received, *13-11-36* 19  
Travelling Expenses (if any) £ *2 85.-* : *18/11*

Committee's Minute *TUE. 22 DEC 1936 TUE. JAN 12 1937 TUE. JAN 15 1937*

Assigned *+LMC. 9.36 Subject S.B. 180th*

*OK by CL*

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

Lloyd's Register Foundation