

# REPORT ON OIL ENGINE MACHINERY.

No. 19852

Received at London Office 24 APR 1931

Date of writing Report 12-4-31 19 When handed in at Local Office

Port of HAMBURG

No. in Survey held at Hamburg Reg. Book.

Date, First Survey 3-7-30 Last Survey 31-3-31 19

Number of Visits 15

on the Single Screw vessel **NORDEN**  
Triple  
Quadruple

(Oil Eng.)

Tons { Gross 8440  
Net 5286.59

Built at Hamburg By whom built Deutsche Werft A.G. Yard No. 144 When built 1931  
 Engines made at Augsburg By whom made Maschf. Augsburg-Nürnberg A.G. Engine No. 330 440 When made 1931  
 Donkey Boilers made at Hamburg By whom made Deutsche Werft A.G. Boiler No. 429/30 When made 1931  
 Brake Horse Power 3100 Owners Skibs A/S Norden, H. Kuhnle Port belonging to Bergen  
 Nom. Horse Power as per Rule 1125 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Trade for which vessel is intended Tanker Trade 2378 357/16

OIL ENGINES, &c.—Type of Engines 1 M.A.N. Type D6 Zu 60/90 2 or 4 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 45 kg/cm<sup>2</sup> Diameter of cylinders 600 mm Length of stroke 900 mm No. of cylinders 6 No. of cranks 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 885 mm Is there a bearing between each crank yes

Revolutions per minute 110 Flywheel dia. 2100 mm Weight 2350 mm Means of ignition Diesel prime Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 405 mm Crank pin dia. 419.6 mm Crank Webs Mid. length breadth 560 mm Thickness parallel to axis shrunk

Flywheel Shaft, diameter as per Rule 405 mm Intermediate Shafts, diameter as per Rule 315 mm Thrust Shaft, diameter at collars as per Rule 381 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 353 mm Is the lubrication shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule 18.6 mm Thickness between bushes as per rule 16- mm 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 ✓

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 no Length of Bearing in Stern Bush next to and supporting propeller 1600 mm

Propeller, dia. 4750 mm Pitch 3700 mm No. of blades 4 Material Bronze whether Moveable solid Total Developed Surface 6.716 sq. feet

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication

forced Thickness of cylinder liners 42.5 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 siphoned back to the engine ✓

Spares: Ballast general service pumps. push 10.60 m<sup>3</sup> Cooling Water Pumps, No. 1 (chain driven) Sea H. 200 m<sup>3</sup> 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. none Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size Mach. Space: Bilge pp. 120 m<sup>3</sup>, Bilge & San. pp. 60 m<sup>3</sup> fore ship: fore peak pp. 35 m<sup>3</sup> How driven steam steam

Bilge Pumps, No. and size 5 x 90 mm φ, 1 x 125 mm φ, Boiler room: 2 x 25 mm φ, Coffered, from 1 x 100.5 mm φ, aft 1 x 50 mm φ Lubricating Oil Pumps, including Spare Pump, No. and size rotary pump 38 m<sup>3</sup>

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 5 x 90 mm φ, 1 x 125 mm φ, Boiler room: 2 x 25 mm φ, Coffered, from 1 x 100.5 mm φ, aft 1 x 50 mm φ

In Holds, &c. In each cargo hold, suction line of 80 mm φ, Forepeak 1 x 88.5 mm φ, from cargo hold 2 x 88.5 mm φ

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 x 125 mm φ

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 coils, cargo lines How are they protected ✓

What pipes pass through the deck tanks heating coils 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 ✓

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

Main Air Compressors, No. solid injection No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 310-225 mm Stroke 240 mm Driven by steam driven

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 185-50 mm Stroke 100 mm Driven by Aux. Diesel eng.

Scavenging Air Pumps, No. 1 tandem Diameter 1880 mm Stroke 700 mm Driven by extension of main crank shaft

Auxiliary Engines crank shafts, diameter as per Rule steam engine: 60 mm φ Diesel engine: 65 mm φ

IR 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 & floors

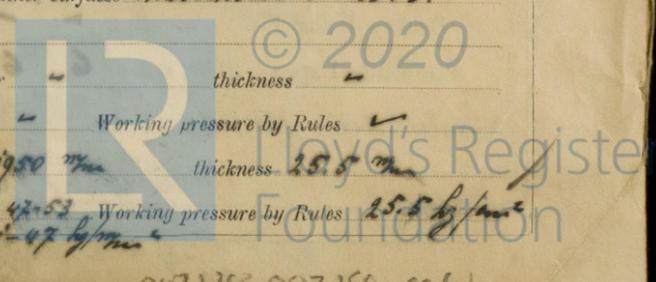
Is there a drain arrangement fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓

Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓

Starting Air Receivers, No. 2 Total cubic capacity 22- m<sup>3</sup> Internal diameter 1950 mm thickness 25.5 mm

Seamless, lap welded or riveted longitudinal joint yes Material 0.14 steel Range of tensile strength shell: 42-53 End plates: 41-47 kg/cm<sup>2</sup> Working pressure by Rules 25.5 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 Shafting *10-10-30*  
(If not, state date of approval)

Receivers *29-4-30*

Separate Tanks *17-2-30*

Donkey Boilers *16-4-30, 8-1-31, 24-12-30* General Pumping Arrangements *2-7-30*

Oil Fuel Burning Arrangements *7-2-30*

SPARE GEAR *As per Rules.*

The foregoing is a correct description.

**DEUTSCHE WERFT**  
**AKTIENGESELLSCHAFT**

Manufacturer.

Dates of Survey while building  
During progress of work in shops - *At Augsburg 48. March: 5, 16, 19, 24, 26, 31*  
During erection on board vessel - *1930: July 3, Aug. 6, 14, Sept. - Nov. 7, 28. Dec. 19, 30, 1931: Jan. 14, 19, 26, 28, 30. Febr. 6, 12, 16, 18, 23, 25, 26*  
Total No. of visits *48 + 25*

Dates of Examination of principal parts - Cylinders *5/3/31* Covers *5/3/31* Pistons *5/3/31* Rods *5/3/31* Connecting rods *5/3/31*

Crank shaft *5/3/31* Flywheel shaft *5/3/31* Thrust shaft *14/1/31* Intermediate shafts *14/1/31* Tube shaft *✓*

Screw shaft *14/1/31* Propeller *30/1/31* Stern tube *28/11/31* Engine seatings *30/1/31* Engines holding down bolts *23/2/31*

Completion of fitting sea connections *30/1/31* Completion of pumping arrangements *16/3/31* Engines tried under working conditions *26/3/31*

Crank shaft, Material *O.H. Steel* Identification Mark *F.S. 985/6 x 15/9/30* Flywheel shaft, Material *O.H. Steel* Identification Mark *F.K. 8194 30/10/30*

Thrust shaft, Material *O.H. Steel* Identification Mark *F.K. 2203 2/11/30* Intermediate shafts, Material *O.H. Steel* Identification Marks *2204 F.K. 2193 2/11/30*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *O.H. Steel* Identification Mark *F.K. 2204 7/11/30*

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  *tanker* 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 Oil Engine 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 tested in accordance with the Rules. The machinery has been built under Special Survey in accordance with the approved plans, the Secretary's letters and instructions thereto and otherwise in conformity with the Society's requirements. It has given full satisfaction under working and manoeuvring conditions during a 20 hours trial trip and is eligible in my opinion for notification of LMC-3, 31, Oil Engines, Tail shaft (Cl), Mach. aft.*

*The approved plans will be transmitted after completion of the Vard's No 143.*

The amount of Entry Fee *1/5* £ *1:40* When applied for,  
Special ... *1/5* £ *25:19 8* *20.4.1931*  
Donkey Boiler Fee ... £ *7: -* When received,  
Travelling Expenses (if any) £ *6: 6 6* *21.5.1931*

Committee's Minute

Assigned *+ L.M.C. 3.31*

*Oil Eng. C.L. 3128.170 lb.  
128.1 (found. Starbd) 180 lb.*

*J. H. Knitzsch*  
Engineer Surveyor to Lloyd's Register of Shipping.



Certificate (if required) to be sent to Hamburg - Office.



This Certificate... While the Co... at neither the Co... tificate issued by... gment, default,