

## REPORT ON OIL ENGINE MACHINERY.

No. 25731  
JUN 26 1937

Received at London Office

Date of writing Report 23-6-1937 When handed in at Local Office

Port of Rotterdam

No. in Survey held at  
Reg. Book.

Alblasdam

Date, First Survey

1-4-37

Last Survey

10-6-1937

Number of Visits

Single motor  
on the Twin Screw vessel  
Triple  
Quadruple

"BOTHNIA"

Tons  
Gross  
Net

Built at Alblasdam By whom built N. J. Jan Smit Cn. Yard No. 521 When built 1937

Engines made at Cologne By whom made Humboldt-Deutz motor Engine No. 397172 When made 1937

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 400 Owners Port belonging to

Nom. Horse Power as per Rule 94 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

TL ENGINES, &amp;c.—Type of Engines Please see Dusseldorf Rep. 164 2 or 4 stroke cycle Single or double acting

Maximum pressure in cylinders Diameter of cylinders Length of stroke No. of cylinders No. of cranks

Mean Indicated Pressure

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

Revolutions per minute 300 Flywheel dia. Weight Means of ignition Compression Kind of fuel used diesel oil

Crank Shaft, dia. of journals as per Rule as fitted Crank pin dia. Crank Webs Mid. length breadth Mid. length thickness Thickness parallel to axis Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube screw 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

If so, state type Length of Bearing in Stern Bush next to and supporting propeller 600 mm

Propeller, dia. 1000 mm Pitch 1200 mm No. of blades 3 Material bronze whether Moveable solid Total Developed Surface 0.94 m<sup>2</sup> sq. feet

Method of reversing Engines by hand Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication

Larger Thickness of cylinder liners Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

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

Cooling Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Large Pumps worked from the Main Engines, No. one Diameter 100 mm Stroke 85 mm Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 2 1 a 60 l.p.h. 1 a 20 l.p.h. How driven electrically

If the cooling water led to the bilges overboard If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Last Pumps, No. and size one a 60 l.p.h. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 tooth wheel pump

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 a 2" 1 one a 3" In Pump Room

Folds, &amp;c. four wells 1 a 65 after well 1 a 65 fore peak 1 a 50

Dependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 a 3" 1 a 2"

All the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

From easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

All Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks valves

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

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

Pipes pass through the bunkers How are they protected

Pipes pass through the deep tanks Have they been tested as per Rule

All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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

Department to another Yes Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

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

Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. one No. of stages 2 Diameters 125-110 mm Stroke 75 mm Driven by aux engine

Two Auxiliary Air Compressors, No. one No. of stages 2 Diameters 45-110 mm Stroke 72 mm Driven by hand

Enging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Dusseldorf Rep. No. 160 No. one Position Port side engine room



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 and cleaned *Yes*

Is a drain 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 *✓*

Actual *✓*

Starting Air Receivers, No. *✓*

Total cubic capacity *✓*

Internal diameter *✓*

thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓*

Material *✓*

Range of tensile strength *✓*

Working pressure *✓*

by Rules *✓*

Actual *✓*

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 *10-2-37*  
(If not, state date of approval)

Receivers *✓*

Separate Fuel Tanks *13-4-37*

Donkey Boilers *✓*

General Pumping Arrangements *16-12-36*

*22-4-37*

Pumping Arrangements in Machinery Space *22-4-37*

Oil Fuel Burning Arrangements *20-4-37*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*

State the principal additional spare gear supplied

*one set of coupling bolts, one cylinder cover and piston complete, a number of piston rings, valves, springs, fuel pump, crank pin bearing bolts, nuts and bushes etc.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits *7*

*1-20-22/4*

*3-10-20/5*

*10/6-37*

Dates of Examination of principal parts—Cylinders *✓*

Covers *✓*

Pistons *✓*

Rods *✓*

Connecting rods *✓*

Crank shaft *✓*

Flywheel shaft *✓*

Thrust shaft *22-4-37*

Intermediate shafts *✓*

Tube shaft *✓*

Screw shaft *20-4-37*

Propeller *22-4-37*

Stern tube *22-4-37*

Engine seatings *3-5-37*

Engines holding down bolts *20-5-37*

Completion of fitting sea connections *2-5-37*

Completion of pumping arrangements *10-6-37*

Engines tried under working conditions *10-6-37*

Crank shaft, Material *✓*

Identification Mark *Lloyd's*

Flywheel shaft, Material *✓*

Identification Mark *Lloyd's*

Thrust shaft, Material *SM steel*

Identification Mark *3531.F.S.*

Intermediate shafts, Material *SM steel*

Identification Marks *HB 293*

Tube shaft, Material *✓*

Identification Mark *✓*

Screw shaft, Material *SM steel*

Identification Mark *HB 294*

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 *✓*

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 duplicate of a previous case *✓*

If so, state name of vessel

General Remarks

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

*The machinery has been made and fitted in accordance with approved plans. Society's Rules and Security letters. Main and auxiliary engines and centrifugal pumps have been tested under full working condition and found working and manoeuvring satisfactorily and in my opinion eligible for the record of 4 RMC. 6-37 oil engines.*

The amount of Entry Fee .. £ *Charged*

Special ... £ *on*

Donkey Boiler Fee ... £ *on*

Travelling Expenses (if any) £ *12.50*

When applied for, *25.6.1937*

When received, *3.8.1937*

Committee's Minute

*Assigned + RMC 6.37 oil eng.*

*P. H. Bounce*  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation