

REPORT ON OIL ENGINE MACHINERY.

No. 967.

Received at London Office

20 JUN 1927

Date of writing Report 5th June 1927 When handed in at Local Office

Port of Bremen

No. in Survey held at Reg. Book.

Bremen

Date, First Survey 7th January 1927

Last Survey 3rd June 1927

Number of Visits 38

Single
on the ~~Tug~~ Screw vessels

"MITTELMEER"

Tons Gross 6370
Net 3658

Built at Bremen

By whom built

Deutscher Schiff- u. Maschinenbau A.G.
Werk A.G. Weser

Yard No. 863 When built 1926/27

Engines made at

By whom made

Engine No. 498 When made 1926/27

Donkey Boilers made at

By whom made

Boiler No. 464/65 When made 1926/27

Brake Horse Power 2100

Owners Bremer Oel-Transport G. m. b. H.

Port belonging to Bremen

Nom. Horse Power as per Rule 438

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

OIL ENGINES, &c.—Type of Engines

Weser. M. A. M. Oil Engine

2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 35 Kgr/cm²

No. of cylinders 6

Diameter of cylinders 700 mm

No. of cranks 6

Length of stroke 1400 mm

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 970 mm

Is there a bearing between each crank

Revolutions per minute 110

Flywheel dia. 2490 mm

Weight 4555 Kgr.

Means of ignition air injection

Kind of fuel used gas oil

Crank Shaft, dia. of journals

as per Rule 443 mm

as fitted 450 "

Crank pin dia. 450 mm

Crank Webs

Mid. length breadth 840 mm

Thickness parallel to axis 455 mm

Flywheel Shafts, diameter

as per Rule 450 mm

as fitted 450 "

Intermediate Shafts, diameter

as per Rule 336 mm

as fitted 336 "

Thrust Shaft, diameter at collars

as per Rule 353 mm

as fitted 410 "

Tube Shafts, diameter

as per Rule

Screw Shaft, diameter

as per Rule 366 mm

as fitted 366 "

Is the screw shaft fitted with a continuous liner

yes

Bronze Liners, thickness in way of bushes

as per Rule 19 mm

as fitted 22 "

Thickness between bushes

as per rule 14.25 mm

as fitted 17.5 "

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

Length of Bearing in Stern Bush next to and supporting propeller 1770 mm

Propeller, dia. 4400 mm

Pitch 3300 mm

No. of blades 4

Material bronze

whether Moveable

no

Total Developed Surface 6.72 sq. ft

Method of reversing Engines direct

Is a governor or other arrangement fitted to prevent racing of the engine when declutched

Means of lubrication

forced

Thickness of cylinder liners 53.5/40 mm

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

Cooling Water Pumps, No. 2

Flywheel each 105 cub. m./hour

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

yes

Bilge Pumps fitted to the Main Engines, No. 1

acting

Diameter 160 mm

Stroke 150 mm

Can one be overhauled while the other is at work

separate centrifugal

pumps connected to the Main Bilge Line

No. and Size

2 bilge pumps each 30 cub. m. per hour, 1 ballast pump 100 cub. m. per hour

How driven

by electric motor

Ballast Pumps, No. and size 1-100 cub. m. per hour

Lubricating Oil Pumps, including Spare Pump, No. and size 2 each with each 21 cub. m./hour

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 Engine and Boiler Room

1-90 mm dia.

3-70 mm dia.

in boiler room 1-70 mm dia.

in Holds, &c.

In each hold 1-300 mm dia.

1-150 mm dia.

in each summer tank 1-150 mm dia.

1 in after peak 100 mm dia.

1 for "100" "

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

1-150 mm dia.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

yes

Are the Bilge Suctions in the Machinery Space

d 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

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

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 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

yes

Main Air Compressors, No. one

No. of stages 3

Diameters 700/620/500 mm

Stroke 500 mm

Driven by main engine

Auxiliary Air Compressors, No. two

No. of stages 3

Diameters 270/240/56 mm

Stroke 180 "

Driven by electric motors

Small Auxiliary Air Compressors, No. one

No. of stages 2

Diameters 100/35 mm

Stroke 100 "

Driven by electric motor driven from steam driven generator

Scavenging Air Pumps, No. one

Diameter

Stroke

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule 142.5 mm

as fitted 155 "

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

yes

What means are provided for cleaning their inner surfaces

flanges

Can the internal surfaces of the receivers be examined

yes

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

yes

High Pressure Air Receivers, No. one

Cubic capacity of each 200 litres

Internal diameter 400 mm

thickness 25 mm

Seamless, lap welded or riveted longitudinal joint

lap welded

Material S. M. steel

Range of tensile strength 36-42 Kgr/mm²Working pressure by Rules 84 Kgr/cm²

Starting Air Receivers, No. 4

Total cubic capacity 800 litres

Internal diameter 300 mm

thickness 17.5 "

Seamless, lap welded or riveted longitudinal joint

lap welded

Material S. M. steel

Range of tensile strength 40-45 Kgr/mm²Working pressure by Rules 104.5 Kgr/cm²

IS A DONKEY BOILER FITTED? *yes*
HYDRAULIC TESTS:—

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

DESCRIPTION	DATE OF TEST	WORKING PRESSURE	TEST PRESSURE	STAMPED	REMARKS
ENGINE CYLINDERS <i>liners</i>	<i>1927</i> <i>3/12/25/1. 1/2. 7/2</i> <i>10/2.</i>	<i>35.</i>	<i>75.</i>	<i>LLOYD'S TEST</i> <i>No. 351.</i>	<i>75 atm. 3/1. 25/1. 1/2. 7/2. 10/2. 1927 Y.</i>
" " COVERS	<i>27/4</i>	<i>2</i>	<i>20</i>		<i>20 atm. 27/4/27. Y.N.</i>
" " JACKETS	<i>8/4</i>	<i>2</i>	<i>6</i>		<i>6 atm. 8/4/27. Y.N.</i>
" " PISTON WATER PASSAGES	<i>16/4</i>	<i>2</i>	<i>10</i>		<i>10 atm. 16/4. Y.N.</i>
MAIN COMPRESSORS—1st STAGE	<i>7/4. 20/4</i>	<i>air 3</i> <i>water 2</i>	<i>air 35</i> <i>water 6</i>		<i>20/4/27 Y.N.</i>
" 2nd "	<i>"</i>	<i>16</i> <i>2</i>	<i>35</i> <i>6</i>		<i>25/1/27 Y.N.</i>
" 3rd "	<i>23/1. 25/1</i>	<i>75</i> <i>2</i>	<i>150</i> <i>6</i>		<i>25/1/27 Y.N.</i>
AIR RECEIVERS—STARTING	<i>7/1. 18/2</i>	<i>75</i>	<i>150</i>		<i>150 atm. 7/1. 18/2. 1927 Y.N.</i>
" INJECTION	<i>17/3</i>	<i>75</i>	<i>150</i>		<i>150 atm. 17/3/27 Y.N.</i>
AIR PIPES	<i>30/4</i>	<i>80</i>	<i>240</i>		<i>Y.N.</i>
FUEL PIPES	<i>30/4</i>	<i>80</i>	<i>240</i>		<i>Y.N.</i>
FUEL PUMPS <i>from MAN Augsburg</i>	<i>14/10/26</i>	<i>75</i>	<i>150</i>		<i>150 atm. 14/10/26. P.N.</i>
SILENCER <i>from MAN Augsburg</i>	<i>31/1/27</i>	<i>2</i>	<i>6</i>		<i>6 atm. 31/1/27. Y.N.</i>
WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for Shafting *3/3/26* Receivers *25/7/26. 11/8/26* Separate Tanks *24/9/26.*
(If not, state date of approval)
Donkey Boilers *26/3/26. 21/5/26* General Pumping Arrangements *23/12/26* Oil Fuel Burning Arrangements *23/12/26.*

SPARE GEAR *As per Rules.*

Work: Act. Ges. "Weser"

Manufacturer.

Dates of Survey while building
During progress of work in shops—*1927: 7/1. 5/1. 23/1. 25/1. 31/1. 7/2. 10/2. 18/2. 28/2. 4/3. 7/3. 15/3. 17/3. 18/3. 22/3.*
During erection on board vessel—*25/3. 28/3. 4/4. 7/4. 8/4. 12/4. 13/4. 14/4. 16/4. 20/4. 27/4. 28/4. 29/4. 30/4. 2/5. 9/5. 11/5. 16/5. 19/5. 27/5. 29/5. 2/6. 3/6.*
Total No. of visits *38*

Dates of Examination of principal parts—Cylinders *25/1. 10/2/27* Covers *10/2. 27/4/27* Pistons *10/2. 16/4/27* Rods *2/3/27* Connecting rods *2/3/27*
Crank shaft *2/3. 15/3. 27* Flywheel shaft *✓* Thrust shaft *2/3/27* Intermediate shafts *2/3/27* Tube shaft *✓*
Screw shaft *2/3/27* Propeller *2/3. 4/4. 27* Stern tube *15/3. 4/4. 27* Engine seatings *4/3. 29/4. 27* Engines holding down bolts *2/3. 12/4. 27*
Completion of fitting sea connections *4/4/27* Completion of pumping arrangements *2/6/27* Engines tried under working conditions *3/6/27*
Crank shaft, Material *J. M. Steel* Identification Mark *LLOYD'S No. 1841/42/43* Flywheel shaft, Material *✓* Identification Mark *✓*
Thrust shaft, Material *J. M. Steel* Identification Mark *LLOYD'S No. 7047* Intermediate shafts, Material *J. M. Steel* Identification Marks *LLOYD'S No. 7043*
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *J. M. Steel* Identification Mark *LLOYD'S No. 7043*

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

Is this machinery duplicate of a previous case *yes*

If so, state name of vessel

"Biscaya" Bremen Report No. 948

General Remarks (State quality of workmanship, opinions as to class, &c.) *These Diesel Engines and their accessories have been constructed under Special Survey in accordance with the approved plans and instructions and in conformity with the Rules. The materials used in the construction and the workmanship are good. The main engine and the auxiliaries have been tried under working conditions and were found to work well.*

In my opinion these Diesel Engines and their accessories are eligible to be entered in the Register Book with the notation of + L.M.C. 6, 27. C.L.

The amount of Entry Fee ... £ 5 : 0 :
Special ... £ 90 : 14 :
Donkey Boiler Fee ... £ 5 : 5 :
Travelling Expenses (if any) £ 0 : 15 :
When applied for, *5/6 1927*
When received, *30/6 1927*

Committee's Minute

FRI. 24 JUN 1927

CERTIFICATE WRITTEN

Assigned

+ L.M.C. 6:27
Oil Engines

C.L.

2 water Tube D.B. 200 lb

J. M. L. HAM

Engineer Surveyor to Lloyd's Register of Shipping.



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