

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 23050

Date of writing Report 12th Feb 1939 When handed in at Local Office HAMBURG Port of HAMBURG Received at London Office FEB 16 1939

No. in Survey held at Augsburg and HAMBURG Date, First Survey 21st January 1938 Last Survey 31st January 1939

88222 on the Single Twin Triple Quadruple Screw vessel GERMANIA Number of Visits Augsburg 124 Hamburg 61 Tons Gross 9977 Net 5800

Built at HAMBURG By whom built Deutsche Werft A.G. Yard No. 216 When built 1939
Engines made at Augsburg By whom made Maschinenfabrik Augsburg-Nürnberg Engine No. 681430/440 When made 1939
Donkey Boilers made at HAMBURG By whom made Deutsche Werft A.G. Boiler No. 758 259 When made 1939
Brake Horse Power 2 x 2550 Owners The Texas Co (Norway) A/S Port belonging to Oslo
Nom. Horse Power as per Rule 1170 1167 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which vessel is intended Carrying Petroleum in bulk.

OIL ENGINES, &c.—Type of Engines 2 x 6 2 2 1/2 53/90 Heavy Oil Eng 2 or 4 stroke cycle 2 Single or double acting single
Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 520 mm Length of stroke 900 mm No. of cylinders 2 x 8 No. of cranks 2 x 8
Mean Indicated Pressure 5.5 kg/cm² Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 680 mm Is there a bearing between each crank yes
Revolutions per minute 166 Flywheel dia. 1932 mm Weight 980 kgs Means of ignition diesel syst. Kind of fuel used diesel oil
Crank Shaft, { Solid forged as per Rule 319 mm as fitted 350 mm Crank pin dia. 350 mm Crank Webs Mid. length breadth 520 mm Thickness parallel to axis shrunk Thickness around eye-hole shrunk
Flywheel Shaft, diameter as per Rule 255 mm as fitted 260 mm Thrust Shaft, diameter at collars as per Rule 268 mm as fitted 330 mm
Tube Shaft, diameter as per Rule 282 mm as fitted 282 mm Is the { tube screw } shaft fitted with a continuous liner { yes }
Bronze Liners, thickness in way of bushes as per Rule 16.2 mm as fitted 22.0 mm Thickness between bushes as per Rule 12.15 mm as fitted 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 no

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 no
If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 1500 mm
Propeller, dia. 3800 mm Pitch 2660 mm No. of blades 3 Material Brass whether Moveable no Total Developed Surface 4.413 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 40 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 no

Cooling Water Pumps, No. 4 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes Can one be overhauled while the other is at work yes
Bilge Pumps worked from the Main Engines, No. 2 Diameter 250 mm Stroke 200 mm 50 rev./min. Are they fitted with a float valve yes
Pumps connected to the Main Bilge Line { No. and Size 4, two Bilge pumps each 50 m³/h, 1 Bilge pump 50 m³/h, 1 Ballast pump 70 m³/h } How driven by main engine steam duplex pumps steam duplex pumps

Is the cooling water led to the bilges no If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements no
Ballast Pumps, No. and size 1 of 70 m³/h, Steam dupl. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3 of 1 steam dupl. pump 75 m³/h

Are two independent means arranged for circulating water through the Oil Coolers yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size 5 - one of 90 mm frame 25/26, one of 90 mm frame 28/30, two of 90 mm frame 25/26, two of 90 mm frame 47/49 in Pump Room In Holds, etc. forepeak pump room connected to ballast 50 m³/h = two of 90 mm frame 133/134, one of 60 mm frame 196/197

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3, Bilge 110 mm φ, Ballast 135 mm φ, Cooling w. pumps 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 yes 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 suction from collodam frame 53/54, 150 mm φ How are they protected strong steel tube, 4.5 mm thickness of wall
What pipes pass through the deep tanks cargo suction lines 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 machinery etc. 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 no
Main Air Compressors, No. two No. of stages two Diameters 100 x 250 mm Stroke 250 mm Driven by steam eng. 400 rev./min.
Auxiliary Air Compressors, No. two No. of stages two Diameters 100 x 250 mm Stroke 250 mm Driven by steam eng. 400 rev./min.
Small Auxiliary Air Compressors, No. two No. of stages two Diameters 100 x 250 mm Stroke 250 mm Driven by steam eng. 400 rev./min.
What provision is made for first Charging the Air Receivers Compressors driven by steam engines

Scavenging Air Pumps, No. rotary blowers rev./min 707 Diameter 707 Stroke Output 434 m³/h Driven by main engines
Auxiliary Engines crank shafts, diameter as per Rule for single cyl. steam engines driving starting air compressors & generators 100 mm as fitted 90 mm Makers' Standard types
Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith for start. air compr. Certificate attached

W1189-0115

AIR RECEIVERS:—Have they been made under survey yes State No. of Report or Certificate Certificates of material attached
 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, by manhole Is a drain fitted at the lowest part of each receiver yes
 Air Wistle Injection Air Receivers, No. 1 Cubic capacity of each 0.5 m³ Internal diameter 700 mm thickness 8 mm
 Seamless, lap welded or riveted longitudinal joint riveted Material S-TC-Steel Range of tensile strength 41-47 kg/mm² Working pressure by Rules 8 kg/cm²
 Actual 8 kg/cm²
 Starting Air Receivers, No. two Total cubic capacity each 10 m³/h. Internal diameter 1750 mm thickness 24.5 mm
 Seamless, lap welded or riveted longitudinal joint riveted Material S-TC-Steel Range of tensile strength shell 44/50 kg/mm² Working pressure by Rules 25 kg/cm²
 Actual 25 kg/cm²

IS A DONKEY BOILER FITTED? yes If so, is a report now forwarded? yes
 Is the donkey boiler intended to be used for domestic purposes only -
PLANS. Are approved plans forwarded herewith for Shafting 35.8.36, 8.10.36, Receivers 27.6.36, 29.8.35 Separate Fuel Tanks 4.12.36, 16.12.36
 (If not, state date of approval)
 Donkey Boilers 14.5.36, 3.9.36 General Pumping Arrangements 26.11.36, 13.12.36 Pumping Arrangements in Machinery Space 30.9.38
 Oil Fuel Burning Arrangements 8.3.37

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes
 State the principal additional spare gear supplied 2 pistons, 2 cylinder covers, 2 upper & 2 lower cylinder liners, 6 starting valves, 6 safety valves, 2 bronze propellers, 2 propeller shafts, marked: LLOYD'S 159 H.S., 25.1.38
LLOYD'S 1819 L.S., 27.1.38.

The foregoing is a correct description,
 DEUTSCHE HERFT
 AKTIENGESELLSCHAFT
 Manufacturer.

Please see Augsburg Report dated 23rd Dec. 1938.
 Dates of Survey while building
 During progress of work in shops-- 1938 August 22, Sept. 4, 15, 20, 27, 21, 22, 23, 29, Oct. 1, 8, 12, 15, 20, 21, 22, 26, 29, Nov. 1, 7, 10, 12, 17, 19, 21, 24, 25
 During erection on board vessel-- Dec. 2, 7, 9, 12, 14, 16, 21, 28, 30
1938 Nov. 15, 18, 22, 23, Dec. 3, 6, 8, 10, 13, 15, 17, 20, 27, 29, 1939 Jan. 4, 7, 11, 13, 16, 18, 20, 23, 24, 26, 27
 Total No. of visits 61

Dates of Examination of principal parts—Cylinders Please - Covers all Pistons Augsbg - Report Connecting rods dated 23.12.38
 Crank shaft - Flywheel shaft - Thrust shaft 21.11.38 Intermediate shafts 21.11.38 Tube shaft -
 Screw shaft 31.11, 21.12, 25.1.39, 28.2.39 Propeller - Stern tube 21.11.38 Engine seatings 23.11.38 Engines holding down bolts 11.1.39
 Completion of fitting sea connections 9.12.38 Completion of pumping arrangements 18.1.39 Engines tried under working conditions 24.26 & 31.1.39
 Crank shaft, Material S-TC-Steel Identification Mark PORT: LLOYD'S 1382 H.S. 25.1.38 Flywheel shaft, Material - Identification Mark -
 Thrust shaft, Material S-TC-Steel Identification Mark STARBD. 161 H.S. 25.1.38 Intermediate shafts, Material S-TC-Steel Identification Mark LLOYD'S 1822 L.S. 27.1.38
 Tube shaft, Material S-TC-Steel Identification Mark LLOYD'S 1818 L.S. 27.1.38 Screw shaft, Material S-TC-Steel Identification Mark STARBD. 1820 L.S. 27.1.38
 Identification Marks on Air Receivers: for air wistle: Boiler No. 825 for starting air: Boiler No. 760/761.
No. 1090 LLOYD'S TEST 16 KG/CM² W.P. 8 KG/CM² H.R. 22.10.38.
No. 1100/1101 LLOYD'S TEST 555 LBS W.P. 355 LBS H.R. 29.10.38.

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 yes If so, state name of vessel NUEVA GRANADA, Hamburg Rep. 22304.

General Remarks (State quality of workmanship, opinions as to class, &c.) The two main heavy oil engines have been built at Augsburg under Special Survey of the Society's Surveyors.

Material and workmanship of this machinery are of good quality and the outfit is ample.
It has been fitted under Special Survey at Hamburg in accordance with the approved plans, the Secretary's letters and otherwise in conformity with the requirements of the Rules.
During the trial trip the machinery has given satisfaction under full working and manoeuvring conditions.

The machinery is eligible in my opinion to be classed with notation in the Register Book of
LMC 1.39. Oil Eng. TS (CL).

The amount of Entry Fee 1/5 £ RMC : 24- When applied for, 10.2.1939
 Special ... 1/5 £ RMC : 517-
 Donkey Boiler Fee ... £ RMC : 705- When received, 24.3.1939
 3 AIR RECEIVERS " " 210-
 Travelling Expenses (if any) £ " : 64-

Jb. Rohrs
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 24 FEB 1939
 Assigned + LMC 1.39 2 DB 171 lb Oil Eng
2 DB (WT) 171 lb CL



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.