

REPORT ON OIL ENGINE MACHINERY.

No. 24115

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Date of writing Report 28th June 1939, When handed in at Local Office 19 Port of **HAMBURG**

No. in Survey held at **Angsburg and HAMBURG** Date, First Survey 2nd May 1938 Last Survey 20th June 1939

Reg. Book. 88230 on the **GALLIA** *Single* Screw vessel Tons { Gross 9974 Net 5798

built at **HAMBURG** By whom built *Deutsche Werft A.G.* Yard No. 227 When built 1939

Engines made at **HAMBURG** By whom made *Maschinenfabrik Augsburg-Nürnberg* Engine No. 681560/570 When made 1939

Monkey Boilers made at **HAMBURG** By whom made *Deutsche Werft A.G.* Boiler No. 803804/871, 872 When made 1939

Indicated Brake Horse Power 2 x 2550 Owners *The Texas Co. (Norway) A/S.* Port belonging to *Oslo*

Net Horse Power as per Rule 1170 1166 Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

Trade for which vessel is intended *Carrying Petroleum in bulk.*

ENGINES, &c. Type of Engines *Heavy oil Engines* Maker's type *2x982m 52/90* 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 system* Kind of fuel used *diesel oil*

Crank Shaft, *Solid forged* dia. of journals *as per Rule 319 mm* Crank pin dia. *350 mm* Crank Webs *Mid. length breadth 520 mm* Thickness parallel to axis *-*

Intermediate Shafts, diameter *as per Rule 255 mm* Thrust Shaft, diameter at collars *as per Rule 268 mm*

Tube Shaft, diameter *as per Rule -* Screw Shaft, diameter *as per Rule 282 mm* Is the *screw* shaft fitted with a continuous liner *yes*

Bronze Liners, thickness in way of bushes *as per Rule 16.2 mm* Thickness between bushes *as per Rule 12.15 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 *-* If so, state type *-* 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 *Bronze* 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 de-clutched *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* 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 *-*

Boiling Water Pumps, No. *4* *3 rotary pumps driven by steam eng.* 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 *350 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 *4* *two bilge pumps each 50 m³/h, one 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 *-*

Fast Pumps, No. and size *1 of 70 m³/h, steam duplex* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *3* *one on each main eng. 90 m³/h, one steam duplex p. 75 m³/h*

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* *one of 90 mm φ frame 9/10, two of 90 mm φ frame 25/26, two of 90 mm φ frame 47/49 In Pump Room* *three of 90 mm φ*

Holds, &c. connected to ballast pumps in forepeak pump room *50 m³/h* two of 90 mm φ for cargo hold frame 183/184, one of 60 mm φ for pump room frame 196/197

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *3* *bilge 110 mm φ, ballast 125 mm φ, circ. cooling water 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

commonly accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *yes*

Sea Connections fitted direct on the skin of the ship *upper fitted on chests welded to skin of vessel lower on margin plate* Are they fitted with Valves or Cocks *yes*

Are they fitted 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*

How are they protected *strong steel tube, 4.5 mm thickness of wall*

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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

department to another *yes* Is the Shaft Tunnel watertight *machinery aft* Is it fitted with a watertight door *no* worked from *no*

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

Auxiliary Air Compressors, No. *two* No. of stages *two* Diameters *105 x 270 mm* Stroke *220 mm* Driven by *steam eng / 400 rev/min*

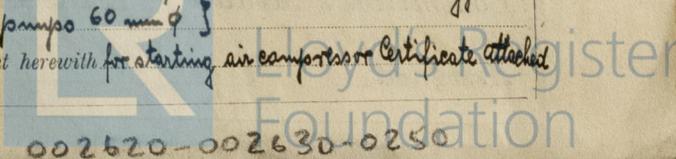
Small Auxiliary Air Compressors, No. *-* No. of stages *-* Diameters *-* Stroke *-* Driven by *-*

Is that provision is made for first Charging the Air Receivers *Compressors driven by steam engines*

Scavenging Air Pumps, No. *two rotary blowers, n=707* Diameter output *434 m³/h* Stroke *-* Driven by *main engines*

Auxiliary Engines crank shafts, diameter *as per Rule for single-cyl. steam engines driving starting air comp. & generators 90 mm φ* Makers' Standard types *yes*

Have the Auxiliary Engines been constructed under special survey *yes* Is a report sent herewith for starting air compressors Certificate attached *yes*



002620-002630-0250

AIR RECEIVERS:—Have they been made under survey... *yes* State No. of Report or Certificate *Certificates of material*
 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*
WHISTLE
Injection Air Receivers, No. *1* Cubic capacity of each *0.8 m³* Internal diameter *700 mm* thickness *8 mm*
 Seamless, lap welded or riveted longitudinal joint *riveted* Material *S-M-Steel* Range of tensile strength *41-47 kg/cm²* Working pressure *8 kg/cm²*
 by Rules *8 kg/cm²*
 Actual *8 kg/cm²*
Starting Air Receivers, No. *three* Total cubic capacity *each 10 m³* Internal diameter *1750 mm* thickness *24.5 mm*
 Seamless, lap welded or riveted longitudinal joint *riveted* Material *S-M-Steel* Range of tensile strength *ends 41-47* Working pressure *35 kg/cm²*
 by Rules *35 kg/cm²*
 Actual *35 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... *no* *Thrust shaft 20.4.1939.*
PLANS. Are approved plans forwarded herewith for Shafting *28.8.36 - 8.10.36* Receivers *27.6.36 - 29.8.36* Separate Fuel Tanks *4.12.36*
 (If not, state date of approval)
 Donkey Boilers *14.5.36 - 3.9.36* General Pumping Arrangements *26.11.36 - 13.12.38* 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 cyl. covers, 2 upper & 2 lower cylinder liners, 6 starting/safety valves, 2 bronze propellers marked: LLOYDS No. 874 H.K. 21.2.39, LLOYDS No. 197 AH. 13.2.39, 2 propeller shafts marked: LLOYDS 2056 H.K. 14.3.39, LLOYDS 2059 H.K. 14.3.39.*

The foregoing is a correct description,

**DEUTSCHE WERFT
 AKTIENGESELLSCHAFT**

Manufacturer.

Please see Augsburg Report dated 26th April 1939.
 Dates of Survey while building { During progress of work in shops - - *1938 Dec. 17, 20, 1939 Jan. 3, 16, 18, Feb. 7, 11, 15, 22, March 17, 20, 21, 22, 25, 28, 31, April, 1, 5, 11, 13, 14, 15, 18, 19, 21, 26, 27, 28, 29, 30, 31, May 3, 5, 10, 12, 16.*
 { During erection on board vessel - - *1939, March 27, April 4, 12, 17, 21, 24, 25, May 2, 8, 10, 15, 19, 22, 26, 31, June 1, 5, 7, 9, 12, 15, 17, 20.*
 Total No. of visits *56*

Dates of Examination of principal parts—Cylinders *Please* Covers *see* Pistons *Augsburg* Rods *Report* Connecting rods *dated 26.4.39.*
 Crank shaft *13+14. 4.39.* Flywheel shaft *13+14. 4.39.* Thrust shaft *29.4.39.* Intermediate shafts *18+15. 4.39* Tube shaft *-*
 Screw shaft *13+14. 4.39.* Propeller *13+14. 4.39.* Stern tube *5+11. 4.39.* Engine seatings *21.4.39.* Engines holding down bolts *31.5.39.*
 Completion of fitting sea connections *17.4.39.* Completion of pumping arrangements *31.5.39.* Engines tried under working conditions *12+20 6.39.*
 Crank shaft, Material *S-M-Steel* Identification Mark *LLOYDS No. 13449. 15.12.38* Flywheel shaft, Material *-* Identification Mark *-*
 Thrust shaft, Material *S-M-Steel* Identification Mark *LLOYDS 2057+2058. H.K. 14.3.39* Intermediate shafts, Material *S-M-Steel* Identification Marks *LLOYDS 1906+1907 V.S.*
 Tube shaft, Material *S-M-Steel* Identification Mark *LLOYDS 2055 H.K. 14.3.39* Screw shaft, Material *S-M-Steel* Identification Mark *LLOYDS 1905 V.S. 10.3.39*

Identification Marks on Air Receivers *for air whistle: No. 1260 LLOYDS TEST 16 ATM. W.P. 8 ATM. H.R. 3.5.39. for starting air: No. 2327 + 2328 LLOYDS TEST 39 ATM. W.P. 25 ATM. P.K. 27.4.39.*

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 *NUOVA GRANADA, GERMANIA, BRITANNIA.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The two main 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 trips 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 Books: **LMC 6.39 Oil Eng TS (CL).***

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

The amount of Entry Fee *1/5 £ R.T.C. : 24-* When applied for, *22.6.19.39.*
 Special ... *1/5 £ " : 517-*
 Donkey Boiler Fee ... *3 " : 905-* When received, *8.7.19.39.*
 3 STARTING AIR RECEIVERS ... *210-*
 Travelling Expenses (if any) £ ... *64-*

Committee's Minute *FRID 24 JUL 1939*

Assigned *+ LMC 6.39 LDB 171 CL*

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