

REPORT ON OIL ENGINE MACHINERY.

No. 2095.
JAN 30 1939

Received at London Office

Date of writing Report 18th Jan. 1939 When handed in at Local Office 23. 1. 1939. Port of Bremen.
No. in Survey held a Reg. Book. *Braysburg* Date, First Survey 21st Jan. 1938 Last Survey 20th Jan. 1939.
Number of Visits 73

on the *Single* } Screw vessel
Twin }
Triple }
Quadruple } **BRITANNIA.** Tons { Gross
Net

Built at *Hamburg* By whom built *Messrs. Deutsche Werft A.G.* Yard No. *217* When built *1938/39*
Engines made at *Braysburg* By whom made *Messrs. M. F. N.* Engine No. *181450/460* When made *1938/39*
Donkey Boilers made at By whom made Boiler No. When made
Brake Horse Power *2 x 2550* Owners *Messrs. Texas Oil Comp.* Port belonging to
Nom. Horse Power as per Rule *2 x 385* Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which vessel is intended

II ENGINES, &c. Type of Engines *2 x 98 in 52/40* 2 or 4 stroke cycle *2* Single or double acting *single*
Maximum pressure in cylinders *45 atm* 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*

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. *1930 mm* Weight *980 kg* Means of ignition *dis. ign.* Kind of fuel used

Crank Shaft, { Solid forged
Semi built dia. of journals as per Rule
All built as fitted *350 mm* Crank pin dia. *350 mm* Crank Webs Mid. length breadth *520 mm* Thickness parallel to axis
Mid. length thickness *160 mm* 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 shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines *direct. by comp. air* 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 *lagged* 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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

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

Pumps connected to the Main Bilge Line { No. and Size
How driven

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

Ballast Pumps, No. and size *Main engine* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *one each engine 90 in³/hr, no. 415*

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks 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

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 Is the Shaft Tunnel watertight 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. No. of stages Diameters Stroke Driven by

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

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

What provision is made for first Charging the Air Receivers

scavenging Air Pumps, No. *one each engine, rotary type, meter no. 707* Driven by *main engine*

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. Position
Have the Auxiliary Engines been constructed under special survey Is a report sent herewith



AIR RECEIVERS:—Have they been made under survey State No. of Report or Certificate

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

Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver

Injection 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? 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 Receivers Separate Fuel Tanks

(If not, state date of approval) *17th March, 1939*

Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

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 cyl. liners, 6 starting - and 6 safety valves, 2 connecting rods.*

Hamburg First Entry
Report No. *23094*
Vessel's name *Britannia*

The foregoing is a correct description,
Maschinenfabrik Augsburg-Nürnberg A.G.
W. Dr. Schmidt Manufacturer.

Dates of Survey while building

During progress of work in shops--	1938. Jan. 21, 26, 28. March 30, 31. April 6, 9, 30. Aug. 5, 8, 9, 20. Sept. 12, 13, 23. Oct. 4, 5, 19, 20.
During erection on board vessel--	27, 28, 29, 30, 31. 1939. Jan. 2, 3, 4, 5, 6, 7, 9, 10. M. 12, 13, 14, 16, 17, 18, 19, 20.
Total No. of visits	73

Dates of Examination of principal parts—Cylinders *6/22, 12, 38*. Covers *9/27, 12, 38*. Pistons *22, 11, 16, 12, 38*. Rods Connecting rods *main shaft*

Crank shaft *25/30, 11, 38*. Flywheel shaft Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, Material *S. M. steel* Identification Mark *440475. No 14142 M.B. 31-10-38.*

Thrust shaft, Material Identification Mark Flywheel shaft, Material Identification Mark

Tube shaft, Material Identification Mark Intermediate shafts, Material Identification Marks

Identification Marks on Air Receivers Screw shaft, Material Identification Mark

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

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 *J. H. Yard No 181, 216.*

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

These heavy oil main engines have been constructed under special survey in accordance with the Soc. Rules and Regulations, as well as with the approved plans, the Secretary's letters, and instructions thereto. The material used in the construction is good, and the workmanship satisfactory. These engines have not been tested on the makers' test bed. In our opinion the vessel for which these engines are intended will be eligible for the notation of + L. M. C. (with date) when the whole machinery has been satisfactorily fitted on board, and tried under full working conditions.

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

The amount of Entry Fee	<i>4/5</i> £m. 96.00	When applied for,	
Special	<i>4/5</i> £ 2068.00	When received,	<i>27. 1. 1939.</i>
Donkey Boiler Fee	£ - - -		
Travelling Expenses (if any)	<i>7/11</i> £ 76.00		<i>9. 3. 1939.</i>

W. Schneider *W. Petersen*
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI 31 MAR 1939**

Assigned *See PE machy spl.*

