

# REPORT ON OIL ENGINE MACHINERY.

No. 574

2-DEC 1955

Received at London Office

Date of writing Report 20th Sept. 55 When handed in at Local Office 19 Port of Augsburg, Moritzplatz 4

No. in Reg. Book. Survey held at Mannheim Date, First Survey 20th July, Last Survey 13th Sept. 1955 Number of Visits 4

Single on the Twin Triple Quadruple Screw vessel Tons Gross Net

Built at Bremen By whom built Messrs. Rolandwerft Tw. Sc Yard No. 857 When built Engines made at Mannheim By whom made Messrs. Motorenwerke Mannheim AG. Engine No. 2904/2 When made 1955

Donkey Boilers made at By whom made Boiler No. When made Port belonging to

Brake Horse Power Maximum Service 1000 Owners Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

M.N. as per Rule Trade for which vessel is intended

OIL ENGINES, &c. Type of Engines TRH 348 AU, supercharged 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 58 kg/cm<sup>2</sup> Diameter of cylinders 320 mm Length of stroke 480 mm No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 9.4 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 90 mm Is there a bearing between each crank YES Revolutions per minute Maximum Service 375

Flywheel dia. 1000 mm Weight 310 kgs. Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 100 kgm<sup>2</sup> Means of ignition dir. in. Kind of fuel used gas oil

Crank Shaft Solid forged Semi built All built dia. of journals as per Rule as fitted 220 mm Crank pin dia. 200 mm Crank webs Mid. length breadth 320 mm Mid. length thickness 100 mm 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 fitted at the after end of stern tube 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 Kind of damper, if fitted

Moment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) Is a governor or other arrangement fitted to prevent racing of the engine yes Means of hydraulic pneumatic

Method of reversing Engines forced Thickness of cylinder liners 20 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. and how driven 1 x 45 m<sup>3</sup>/h eff. Working F.W. 1 x 31 m<sup>3</sup>/h eff. S.W. Spare F.W. S.W. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. and capacity 1 x 31 m<sup>3</sup>/h eff. Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and capacity of each 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

Power Driven Lubricating Oil Pumps, including spare pump, No. and size Ballast Pumps, No. and capacity Branch Bilge Suctions In pump room

Are two independent means arranged for circulating water through the Oil Cooler In pump room

No. and size:—In machinery spaces In holds, &c.

Direct Bilge Suctions to the engine room bilges, No. and size Are the bilge suction pipes in holds and tunnel well fitted with strum-boxes

Are all the bilge suction pipes in holds and tunnel well fitted with strum-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 Have they been tested as per Rule

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. 1 No. of stages 2 diameters 160/65 mm stroke 100 mm driven by engine

What provision is made for first charging the air receivers Scavenging Air Pumps or Blowers, No. How driven Engine Nos. 93 532 93 533

Auxiliary Engines Have they been made under survey yes Makers' name Messrs. Süddeutsche Bremsen A.G. Position of each in engine room Augsburg Report No. 538 c Lloyd's Register Foundation

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**AIR RECEIVERS:**—Have they been made under survey yes State No. of report or certificate DSE 55: / 2398, 2401, 2400, 2  
 State full details of safety devices safety valve on each air receiver  
 Can the internal surfaces of the receivers be examined and cleaned yes Is a drain fitted at the lowest part of each receiver yes  
 Injection Air Receivers, No. - Cubic capacity of each - Internal diameter - thickness -  
 Seamless, welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure -  
 Starting Air Receivers, Nos. 5 for 2 engines Total cubic capacity 2.500 ltrs. Internal diameter 464 mm thickness 10 mm  
 see F.E. Report No. 573 b  
 Seamless, welded or riveted longitudinal joint fus. welded Material S.M. Steel Range of tensile strength 49.7 kg/mm<sup>2</sup> Working pressure 33 Atm.

**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 no; approved 9.6.55 Receivers - Separate fuel tanks -  
 (If not, state date of approval)  
 Donkey boilers - General pumping arrangements - Pumping arrangements in machinery space -  
 Oil fuel burning arrangements -

Have Torsional Vibration characteristics been approved yes yet Date and particulars of approval London letter to Hamburg, dd. 14. 5. 12. 5

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied yes State if for "short voyages" only -  
 State the principal additional spare gear supplied -

EINLAGE 593

MOTOREN-WERKE MANNHEIM A.-G.  
VORM. DENZ ABT. STAT. MASCHINENBAU

The foregoing is a correct description of the machinery. Manufacturer.

Dates of Survey while building: During progress of work in shops - 1955: July, 20th, 23rd, August 3rd, September 13th.  
 During erection on board vessel - -  
 Total No. of visits 4

Dates of examination of principal parts—Cylinders 22.7.55 Covers 22.7.55 Pistons - Rods - Connecting rods 26.5.55  
 Crank shaft 20.7.55 Flywheel shaft - Thrust shaft - Intermediate shafts - Tube shaft -  
 Screw shaft - Propeller - Stern tube - Engine seatings - Engine 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 LLOYD'S AUG 8057 Flywheel shaft, material - Identification mark -  
 Thrust shaft, material - Identification mark W.S.E. 20.7.55 Intermediate shafts, material - Identification marks -  
 Tube shaft, material - Identification mark - Screw shaft, material - Identification mark -

Identification marks on air receivers 50 - 7640 - 7641 - 7642 - 7644 - 7649 - 7647  
 W.L.D. TEST DSE  
 T.P. 53 ATM.  
 W.P. 33 ATM.  
 23.9.55 W.S. Messrs. Wilhelm Siebel of Freudenberg/S

Welded receivers, state Makers' Name -  
 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 -  
 Full description of fire extinguishing apparatus fitted in machinery spaces -  
 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 -  
 What is the special notation desired -  
 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, Speed restrictions, &c.)  
 This heavy oil main engine has been constructed under special survey in accordance with the requirements of the Rules and Regulations of this Society and otherwise with the approved plans. The material used in the construction is good and the workmanship was found to be satisfactory. The engine has been tested running on makers' test bed under full-, over-, and partial loads with satisfactory results. In my opinion the vessel for which this engine is intended will be eligible for the notation L.M.C. (with date) when the whole machinery has been satisfactorily fitted aboard the vessel and has been tried under full working conditions.

Survey  
 The amount of Entry Fee 1,000 BHP 1,050.-  
 Final insp. crankshaft 20.-  
 Special ... .. £ : :  
 Test bed trial 80.-  
 Donkey Boiler Fee xxxxxxx £ : :  
 Travelling Expenses (if any) £ : :  
 Total DM 1210.-

When applied for 19  
 When received 19

Committee's Minute  
 Assigned See Rpt. 4 c.

TUESDAY 10 JUL 1956

Engineer Surveyor to Lloyd's Register of Shipping.



Rpt. 4c.  
 Date of writ  
 No. in Reg. Book.  
 Built at  
 Owners  
 Oil Engine  
 Generators  
 No. of Set  
 Is Set into  
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Certificate (if required) to be sent to Committee's Minute.