

REPORT ON OIL ENGINE MACHINERY.

Date of writing Report 10 When handed in at Local Office 24. 8. 1936 Port of G DYNIA
 No. in Survey held at Elbing & Danzig Date, First Survey 4th June 1935 Last Survey 30th July 1936
 Reg. Book. 81450 on the Single Screw vessel "Paul Harnick" Number of Visits 45
 Tons 10443
 Gross 10443
 Net 5815
 Built at Danzig By whom built F. Schichau Gun & Mfg. Yard No. 1350 When built 1936
 Engines made at Elbing By whom made do - do - Engine No. 8852-3 When made 1936
 Donkey Boilers made at do - By whom made do - do - Boiler No. 3842 When made 1936
 Brake Horse Power 3450 Owners Deutsch-Amerikan. Petr.-Ges. Port belonging to Hamburg
 Nom. Horse Power as per Rule 942 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 Trade for which vessel is intended Ocean going 25 3/4 47 1/4

OIL ENGINES, &c.—Type of Engines Schichau-Pulger 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 50 kgs Diameter of cylinders 650 mm Length of stroke 1200 mm No. of cylinders 8 No. of cranks 8
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 840 mm Is there a bearing between each crank yes
 Revolutions per minute 114 Flywheel dia. 2200 mm Weight 9500 kgs Means of ignition Compress Kind of fuel used Diesel oil
 Crank Shaft, dia. of journals as per Rule 410 mm as fitted 460 Crank pin dia. 460 mm Crank Webs Mid. length breadth 880 mm Thickness parallel to axis shrink
 Flywheel Shaft, diameter as per Rule 410 as fitted 460 Intermediate Shafts, diameter as per Rule 325 mm as fitted 352 Thrust Shaft, diameter at collars as per Rule 341 mm as fitted 460
 Tube Shaft, diameter as per Rule — as fitted — Screw Shaft, diameter as per Rule 360 mm as fitted 398 Is the tube shaft fitted with a continuous liner yes
 Bronze Liners, thickness in way of bushes as per Rule 20 mm as fitted 23 Thickness between bushes as per rule 15 mm as fitted 18 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 no
 Length of Bearing in Stern Bush next to and supporting propeller 1790 mm
 Propeller, dia. 5000 mm Pitch 3940 mm No. of blades 4 Material Bronze whether Moveable — Total Developed Surface 8.64 sq. feet
 Method of reversing Engines Compr. 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 46-35 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. four 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. one Diameter 225 mm Stroke 200 mm Can one be overhauled while the other is at work —
 Pumps connected to the Main Bilge Line { No. and Size 1 of 60 cbm/h. 1 of 105 cbm/h. 1 of 225 x 200 mm
 How driven Steam eng. Steam eng. Connected
 Ballast Pumps, No. and size 2 of 470 2 of 100 cbm/h. Lubricating Oil Pumps, including Spare Pump, No. and size 2 connected to main motor. 2 ocean of 29 x 3.6 cbm/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 3 of 90 mm 3 of 60 mm
 In Holds, &c. Kofferdiamants: 1 of 90 mm 2 of 60
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 of 250 mm 1 of 125 mm dia.
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bozes yes Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-bozes, 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, with boxes 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 — Are the Blow Off Cocks fitted with a spigot and brass covering plate yes
 What pipes pass through the bunkers — How are they protected —
 What pipes pass through the deep tanks heating coils 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 — 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. none No. of stages — Diameters — Stroke — Driven by —
 Auxiliary Air Compressors, No. one No. of stages 2 Diameters 260 x 310 mm Stroke 200 mm Driven by Steam engine
 Small Auxiliary Air Compressors, No. one No. of stages 2 Diameters 170 x 65 Stroke 160 Driven by —
 Scavenging Air Pumps, No. one Diameter 1600 mm Stroke 640 mm Driven by Main motor
 Auxiliary Engines crank shafts, diameter as per Rule — as fitted — Steam engines

AIR RECEIVERS:—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 yes What means are provided for cleaning their inner surfaces mechanical
 Is there a drain arrangement fitted at the lowest part of each receiver yes, at each end
 High Pressure Air Receivers, No. none Cubic capacity of each — Internal diameter — thickness —
 Seamless, lap welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure by Rules —
 Starting Air Receivers, No. two Total cubic capacity 28000 cbm Internal diameter 1200 mm thickness 24 mm
 Seamless, lap welded or riveted longitudinal joint riveted Material Steel Range of tensile strength 41-44 kg Working pressure by Rules 28 kgs

IS A DONKEY BOILER FITTED? *yes* ✓ If so, is a report now forwarded? *yes* ✓
 PLANS. Are approved plans forwarded herewith for Shafting *yes* ✓ Receivers *yes* ✓ Separate Tanks
 Donkey Boilers *yes* ✓ General Pumping Arrangements *yes* ✓ Oil Fuel Burning Arrangements *yes* ✓

SPARE GEAR

All spare gear required in Section 9 of the Society's Rules for Heavy Oil Engines and their Auxiliaries have been supplied.

The foregoing is a correct description,

f. Schichau

Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1935 June 7, Aug. 8, 30, Sept. 6, 13, 20, 27, Oct. 3, 10, 24, 28, 31, Nov. 7, 12, 14, 19, 21, 26, 28, Dec. 3, 10, 12, 13, 14, 18, 27, 1936 Jan. 7, 10, 13, 14, 15, 16, 21, 23, 28, 30, 31, Feb. 7, 10, 13, 14, 1936 Feb. 21, 25, 28, Mar. 3, 6, 10, 13, 14, 20, 24, 26, Apr. 3, 7, 16, 17, 20, 21, 24, 29, 30, May 8, 14, 1936 May 22, 26, June 5, 12, 25, 25, 26, July 16, 28, 29, 30
 Total No. of visits *4/5*

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods
 Crank shaft 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 *28-30th Feb*
 Crank shaft, Material *Steel* Identification Mark Spare screw Flywheel shaft, Material *Steel* Identification Mark *No. 934 JCD. 8.5*
 Thrust shaft, Material *Steel* Identification Mark *No. 932 JCD. 24.4.26* Intermediate shafts, Material *Steel* Identification Marks *No. 933 JCD. 30*
 Tube shaft, Material Identification Mark Screw shaft, Material *Steel* Identification Mark *No. 931 JCD. 24*
 Is the flash point of the oil to be used over 150° F. *yes* ✓
 Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)
*These engines have been built under Special Survey in accordance with the Society's Rules, the approved plans and the Secretary's letters. Material and workmanship are of good quality.
 The machinery has been tested under full working and manoeuvring conditions during trials at Loppot roads and gave entire satisfaction.
 It is eligible in my opinion for the record of " + LMC - 7.36 " - Oil Engines.*

The amount of Entry Fee RM £ : 120.00 When applied for, by Hamburg office 19
 Special ... RM £ 2412.00
 Donkey Boiler Fee RM £ : 802.00 When received, 20/10 30/10 20/10
 Travelling Expenses (if any) RM £ : 69.00
 FRI. 4 SEP 1936

M. Scholze
 Engineer Surveyor to Lloyd's Register of Shipping.
 James C. Dykes
 Surveyor to Lloyd's Register of Shipping
 Lloyd's Register Foundation

Committee's Minute
 Assigned *+ LMC 7-36 oil Eng*
2 DB-1994
DB-form - 213th