Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 22128

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Date of writing Report 1-12-36 19 When handed in at Local Office 19 Port of Hamburg

No. in Reg. Book. Survey held at Kiel Date, First Survey 10-1-36 Last Survey 1-12-36 19 Number of Visits 70

on the ~~Single~~ Twin ~~Triple~~ ~~Quadruple~~ Screw vessel "Don Esteban" (Oil Engs) Tons Gross 1616 Net 900

Built at Kiel By whom built Fried. Krupp Germaniawerft A.G. Yard No. 560 When built 1936

Engines made at Kiel By whom made Fried. Krupp Germaniawerft A.G. Engine No. 5362 When made 1936

Donkey Boilers made at none By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 3500 Owners Hijos de J. de la Rama y. Cia. Port belonging to Bilbao.

Nom. Horse Power as per Rule 447 ✓ Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes.

Trade for which vessel is intended Passengers & Cargo

OIL ENGINES, &c.—Type of Engines Krupp's type 42/55 c v (Supercharged) 2 or 4 stroke cycle 4 Single or double acting sgl.

Maximum pressure in cylinders 50 kg/cm² M.I.P. = 9.4 kg/cm² Diameter of cylinders 430 m/m ✓ Length of stroke 550 m/m No. of cylinders 16 ✓ No. of cranks 16 ✓

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 575 m/m ✓ Is there a bearing between each crank yes ✓

Revolutions per minute 330 ✓ Flywheel dia. 1500 m/m Weight 3000 kgs (appr. 2300) Means of ignition Diesel syst. Kind of fuel used Gas Oil

Crank Shaft, dia. of journals as per Rule 238 m/m as fitted 270 m/m ✓ Crank pin dia. 270 m/m ✓ Crank Webs Mid. length breadth 425 m/m Mid. length thickness 138 m/m ✓ shrunk Thickness parallel to axis solid ✓ Thickness around eyehole ✓

Flywheel Shaft, diameter as per Rule 238 m/m as fitted 270 m/m ✓ **Intermediate Shafts,** diameter as per Rule 183.5 m/m as fitted 185 m/m ✓ **Thrust Shaft,** diameter at collars as per Rule 193 m/m as fitted 220 m/m ✓

Tube Shaft, diameter as per Rule 197.5/193 m/m as fitted 214/205 m/m **Screw Shaft,** diameter as per Rule 205 m/m as fitted 246/214 m/m ✓ Is the { tube / screw } shaft fitted with a continuous liner { no / no } ✓

Bronze Liners, thickness in way of bushes as per Rule 13.75 m/m as fitted 14.- m/m ✓ Thickness between bushes as per rule ✓ as fitted ✓ Is the after end of the liner made watertight in the propeller boss oil gland ✓ 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 yes, rubber Is an approved **Oil Gland** or other appliance fitted at the after end of the tube shaft yes If so, state type Krupp Germaniawerft, as approved 19.6.36. ✓ Length of Bearing in **Stern Bush** next to and supporting propeller Bracket 830 m/m

Propeller, dia. 2150 m/m ✓ Pitch 2150 m/m No. of blades 3 Material Bronze whether Moveable solid Total Developed Surface 1.8 m² 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 32.5 m/m 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 ✓

Cooling Water Pumps, No. 1 to each motor 1 spare Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes ✓

What special arrangements are made for dealing with cooling water if discharged into bilges ✓

Bilge Pumps worked from the **Main Engines,** No. none Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work —

Pumps connected to the **Main Bilge Line** { No. and Size 2 of 50 m³/h centr. self-priming / How driven electr. } 1 spare cog wheel 70 m³/h

Ballast Pumps, No. and size 1 of 140 m³/h self-priming **Power Driven Lubricating Oil Pumps,** including Spare Pump, No. and size 1 cog wheel to each motor of 63 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 × 70 m/m ϕ, tunnel: 2 × 80 m/m ϕ ✓ In Pump Room none

In Holds, &c. No. 1: 1 of 70 m/m ϕ, No. 2: 2 of 70 m/m ϕ, No. 3: 3 of 70 m/m ϕ draining to tunnel. Chain Locker: 1 × 40 m/m ϕ (hand pump) ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 × 140 m/m ϕ, 1 × 100 m/m 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, as far as practicable ✓

Are all **Sea Connections** fitted direct on the skin of the ship yes ✓ 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 yes ✓ Are the Blow Off Cocks fitted with a spigot and brass covering plate none

What pipes pass through the bunkers none ✓ How are they protected ✓

What pipes pass through the deep tanks none ✓ 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 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 yes ✓ Is it fitted with a watertight door yes ✓ worked from eng. room above water line ✓

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. solid injection No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. 2 ✓ No. of stages 2 × 2 ✓ Diameters 200/80 m/m Stroke 160 m/m Driven by Aux. Oil engines ✓

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 140/50 m/m Stroke 160 m/m Driven by Emerg. oil engine can be started by hand ✓

Scavenging Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule 134 m/m as fitted 145 m/m ✓ No.:— 2 Position — Eng. Room forward. ✓

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 and cleaned yes ✓ Is a drain fitted at the lowest part of each receiver yes ✓

High Pressure Air Receivers, No. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness by Rules ✓ Actual ✓

Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure ✓

Starting Air Receivers, No. 3 Total cubic capacity 3000 Liters ✓ Internal diameter 595 m/m ✓ thickness 27.5 m/m ✓ by Rules Düsseldorf office Certificate attached. ✓

~~Seamless~~, lap welded ~~or riveted longitudinal joint~~ yes Material O.H. Steel Range of tensile strength 41–47 kg/m² Working pressure Actual 65 kg/m² ✓

0700-AIM

IS A DONKEY BOILER FITTED? No ✓ If so, is a report now forwarded? ✓

Is the donkey boiler intended to be used for domestic purposes only no ✓

PLANS. Are approved plans forwarded herewith for Shafting 16.10.35, 4.2.36, 12.4.35 22.6.36 Receivers Düsseldorf Office. Separate Tanks 16.5.36
(If not, state date of approval)

Donkey Boilers ✓ General Pumping Arrangements 13.2.36. Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes ✓

State the principal additional spare gear supplied

1 set of thrust block pads. 1 screw shaft with coupling. 2 propellers. 1 impeller for ballast, fire and sanitary pumps. 8 sets of working parts of fuel oil injection pumps. 8 fuel oil pressure pipes. 1 set of piston sealing link gear joints. 1 cylinder liner.

The foregoing is a correct description,

FRIED. KRUPP GERMANIAWERFT Aktiengesellschaft

Manufacturer.

Dates of Survey while building

During progress of work in shops— 1936 Jan: 10, 21, 24, 31 Feb: 4, 7, 18, 28 Mar: 3, 6, 11, 17, 20, 24, 25, 27 Apr: 14, 17, 21, 24, 28 May: 5, 8, 12, 15, 18, 22, 27, 29 Jun: 9, 12, 16, 19, 23, 30

During erection on board vessel— Jul: 7, 10, 14, 17, 23, 31 Aug: 6, 11, 14 Jun: (30), Jul: (7) Aug: 18, 21, 22, 24, 25 Sep: 1, 3, 16, 18, 22, 29 Oct: 2, 6, 13, 20, 27 Nov: 3, 6, 10, 13, 20, 25, 27 Dec: 1

Total No. of visits 70

Dates of Examination of principal parts—Cylinders 20.3.36 15.5.36 27.3.36 Covers 17.3.36 17.4.36 Pistons 5.5.36 9.6.36 Rods ✓ Connecting rods 14.4.36

Crank shaft 24.3.36 15.5.36 Flywheel shaft 28.4.36 15.5.36 Thrust shaft 28.4.36 15.5.36 Intermediate shafts ~~15.5.36~~ 25.9.36 Tube shaft 22.3.36

Screw shaft 22.8.36 Propellers 29.9.36 20.11.36 Stern tube 23.6.36 Engine seatings 17.7.36 Engines holding down bolts 8.9.36

Completion of fitting sea connections 17.7.36 Completion of pumping arrangements 13.10.36 Engines tried under working conditions 27.11.36

Crank shaft, Material O.H. Steel Identification Mark LLOYD'S 12002-3 M.B. 28.3.36 A1991-2 M.B. 11.3.36

Flywheel shaft, Material O.H. Steel Identification Mark LLOYD'S see thrust shaft 12271-2-3 M.B. 10.4.36

Thrust shaft, Material O.H. Steel Identification Mark LLOYD'S 10713-4 J.L. 17.4.36 12270 M.B. 16.7.36

Intermediate shafts, Material O.H. Steel Identification Marks LLOYD'S 16359-60-1 K.H. 3.7.36 12269 M.B. 10.7.36

Tube shaft, Material O.H. Steel Identification Mark LLOYD'S 16357 K.H. 3.7.36

Screw shaft, Material O.H. Steel Identification Mark LLOYD'S 16355 K.H. 3.7.36 Spare: 364 L.S. 11.11.36

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 no ✓ 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 no If so, state name of vessel ✓

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

This oil engine machinery has been built under Special Survey in accordance with the Society's Rules, the approved plans and instructions thereto. The materials used in the construction are made at works recognized by the Committee and of good quality. The workmanship is satisfactory and the outfit is ample. During extensive trial trips the machinery has given full satisfaction under working and manoeuvring conditions. In my opinion it is eligible to be classed in the Society's Register Book with notation of

+LMC—11.36 and TS (OG)

(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 RM	£	100.—	When applied for,
Special	£	18.41.—	21.12.36 19
Donkey Boiler Fee ✓	£	: :	When received,
Travelling Expenses (if any)	£	4.03.—	22.1 37

Committee's Minute FRI. JAN. 8 1937

Assigned + LMC 12.36 OG

J. A. Whitelaw
Engineer Surveyor to Lloyd's Register of Shipping.