

REPORT ON OIL ENGINE MACHINERY.

No. 22444

AUG 11 1937

Received at London Office

Date of writing Report 5.8.37 10 When handed in at Local Office 10 Port of HAMBURG

No. in Survey held at Kiel Date, First Survey 12.6.36 Last Survey 8.7.37 19
Reg. Book. 24 576 on the Single } Screw vessel Esso Bolivar Tons } Gross 10389
Triple }
Quadruple } Net 6081

Built at Kiel By whom built Fr. Krupp Germaniawerft A.G. Yard No. 568 When built 1937

Engines made at Kiel By whom made ditto Engine No. 5523 When made 1937

Donkey Boilers made at Kiel By whom made ditto Boiler No. 3960 1/2 When made 1937

Brake Horse Power 3600 Owners Panama Transport Co. Port belonging to Panama R.P.

Nom. Horse Power as per Rule 912 Is Refrigerating Machinery fitted for cargo purposes See below Is Electric Light fitted yes

Trade for which vessel is intended Tanker Service 25% 49%

II ENGINES, &c.—Type of Engines Heavy oil, Krupp's 60/125 c.c.a 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 48 kg/cm² Diameter of cylinders 650 mm Length of stroke 1250 mm No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 5.4 kg/cm² Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1035 mm Is there a bearing between each crank yes

Revolutions per minute 110 Flywheel dia. 2240 mm Weight 5270 kg Means of ignition Diesel system Kind of fuel used Diesel oil

Crank Shaft, { Solid forged as per Rule 408 mm Crank pin dia. 430 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis 270 mm
{ Semi built dia. of journals as fitted 430 mm Mid. length thickness 270 mm Thickness around eye-hole 180 mm
{ All built

Flywheel Shaft, diameter as per Rule 408 mm Intermediate Shafts, diameter as per Rule 329 mm Thrust Shaft, diameter at collars as per Rule 346 mm
as fitted 430 mm as fitted 352 mm as fitted 470 mm

Tube Shaft, diameter as per Rule 368 mm Screw Shaft, diameter as per Rule 398 mm Is the { tube } shaft fitted with a continuous liner { yes
as fitted 368 mm as fitted 398 mm screw }

Bronze Liners, thickness in way of bushes as per Rule 20-2 Thickness between bushes as per Rule 15-2 Is the after end of the liner made watertight in the
as fitted 23-2 as fitted 18-2 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 yes

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 no
If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube no

Propeller, dia. 5000 mm Pitch 3940 mm No. of blades 4 Material Bronze whether Moveable no Total Developed Surface 8.64 sq. feet
If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 2000 mm

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication for each
Thickness of cylinder liners 50 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or 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 yes
Cooling Water Pumps, No. 3 main driven for fresh water Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
2 for fresh water 1 for sea water of 150 m³/hr each, and 3 for sea water each of 50 m³/hr

Bilge Pumps worked from the Main Engines, No. 1 Diameter 225 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 of 200 mm 2 of 105 m³/hr 390 x 260 2 of 85 m³/hr 220 x 210
{ How driven main shafting steam steam

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 no

Cargo Ballast Pumps, No. and size 2 P.T.O. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 of 30 m³/hr
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 Stroke 100 mm In Pump Room 2 of 90 mm 2 of 80 mm

In Holds, &c. Fore. Cofferdam: 2 of 100 mm, Chain Locker: 1 of 70 mm, Dry Cargo hold: 2 of 70 mm, Fore. Store room: 2 of 70 mm

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 of 250 mm, 1 of 125 mm

Are all the Bilge Suction pipes in Holds and Tunnel Wall 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

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

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 yes

What pipes pass through the bunkers heating coils How are they protected no

What pipes pass through the deep tanks cargo lines 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 mach. aft Is it fitted with a watertight door none worked from no

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no

Main Air Compressors, No. solid injection No. of stages 2 Diameters 225 mm Stroke 150 mm Driven by no

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 225 mm, 200 mm Stroke 150 mm Driven by Steam engine

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 165 mm, 75 mm Stroke 150 mm Driven by no

What provision is made for first Charging the Air Receivers steam driven air compressors

Scavenging Air Pumps, No. 4 Diameter 780 mm Stroke 1250 mm Driven by 1-3-5-7 crossheads

Auxiliary Engines crank shafts, diameter as per Rule Atlaswerke's Standard type No. 2 dynamo sets, 1 compressor steam engine
as fitted 95 mm Position Engine room pt. 2 st. 5.

Have the Auxiliary Engines been constructed under special survey yes, Cert. dated Bremen, 18.3.37. Is a report sent herewith for main compressor: yes
" generator sets: yes.

AIR RECEIVERS:—Have they been made under survey yes Are reports or certificates now forwarded Certificate attached
 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
Injection 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. 2 Total cubic capacity 28 m³ Internal diameter 1248 mm thickness 26 mm
 Seamless, lap welded or riveted longitudinal joint fusion weld Material O.H. steel Range of tensile strength 41-47 kg/mm² Working pressure by Rules 28 kg/cm²
 Actual 30

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

PLANS. Are approved plans forwarded herewith for Shafting 28.4.36 22.4.36 6.3.36 Receivers 22.4.36 24.7.36 Separate Fuel Tanks 17.10.35
 (If not, state date of approval)
 Donkey Boilers 9.3.36 8.8.36 General Pumping Arrangements 18.5.37 10.6.37 Pumping Arrangements in Machinery Space 8.2.37
 Oil Fuel Burning Arrangements 17.3.37

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes
 State the principal additional spare gear supplied 1 crank throw without journals, 1 set of piston cooling water pipes, 2 top and 2 bottom end brasses, 1 set of thrust block pads, 1 piston compl. with skirt, 2 piston crowns, 2 crosshead lub. oil pumps, 2 main bearing brasses, 1 cylinder liner, 1 cylinder cover without valves, 2 Archæology pumps compl., 1 armature for turning gear

* 2 large oil pumps: 3 of 455 m³/h each = $\frac{450 \times 350}{560} \times 2$ (duplex) 2 sumbertank pumps of 193 m³/h each = $\frac{400 \times 250}{450}$
2 stripping pumps of 193 m³/h each = $\frac{390 \times 260}{450} \times 2$

The foregoing is a correct description,

KRUPP GERMANIA WERFT
 Aktiengesellschaft

Manufacturer.

Dates of Survey while building
 During progress of work in shops—1936: Jun: 12 Aug: 14, 18 Sept: 1, 8, 22, 25 Oct: 6, 20 Nov: 3, 6, 10, 13, 17, 20, 24, Dec: 1, 4, 18 1937: Jan: 12, 15, 18, 20, 27
 During erection on board vessel—1937: Feb: 1, 4, 9, 11, 15, 17, 22, 26 Mar: 1, 3, 10, 12, 15, 22, 25, 29, Apr: 2, 6, 9 Mar: 25 Apr: 13, 16, 20 May: 4, 7, 14, 18, 21, 25 Jun: 2, 9, 14, 18, 27 Jul: 2, 8
 Total No. of visits 59

Dates of Examination of principal parts—Cylinders 1.2.37 4.2.37 3.3.37 Covers 8.9.36 Pistons 27.1.37 Rods 1.2.37 Connecting rods 26.2.37
 Crank shaft 9.2.37 Flywheel shaft 9.2.37 Thrust shaft 9.2.37 Intermediate shafts 15.3.37 Tube shaft ✓
 Screw shaft 15.3.37 Propeller 22.2.37 23.3.37 Stern tube 1.9.36 Engine seatings on tank top Engines holding down bolts 30.4.37
 Completion of fitting sea connections 25.3.37 30.3.37 Completion of pumping arrangements 18.5.37 Engines tried under working conditions 8.7.37
 Crank shaft, Material O.H. steel Identification Mark 11345-6 J.L. 7.10.36 Flywheel shaft, Material O.H. steel Identification Mark 11246 J.L. 7.10.36
 Thrust shaft, Material O.H. steel Identification Mark 11347 J.L. 7.10.36 Intermediate shafts, Material O.H. steel Identification Marks 11725-6 J.L. 5.1.37
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material O.H. steel Identification Mark 11724 J.L. 5.1.37
 Is the flash point of the oil to be used over 150° F. yes Spare: 3578 F.S. 2.3.37
 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 tanker If so, have the requirements of the Rules been complied with yes
 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 "Henry Dundas," Ham. Reg. No. 2229

General Remarks (State quality of workmanship, opinions as to class, &c.)
This Heavy Oil Engine is constructed under Special Survey in accordance with the Society's Rules, as well as with the approved plans and instructions thereto. The materials used in the construction are of good quality and the outfit is ample. During the trial trip the machinery has given satisfaction under full working and manoeuvring conditions. In my opinion it is eligible for notation in the Reg. Book of
+LME-2.37 (oil eng) and TS(CL)

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

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|---------------------------------------|----------------|-------------------|------|
| The amount of Entry Fee <u>RM's</u> £ | <u>120.-</u> | When applied for, | |
| Special | £ <u>2 1/2</u> | 26.7.37 | 19 |
| Donkey Boiler Fee | £ <u>204.-</u> | When received, | |
| Travelling Expenses (if any) | £ <u>214.-</u> | 27.8 | 1937 |

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

Committee's Minute
 Assigned + L.M.C. 8.37 oil eng
3 DB-2004
C.L.

