

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 16396

15 JUN 1925

Date of writing Report 30<sup>th</sup> May 1925 When handed in at Local Office

Port of HAMBURG

No. in Survey held at Reg. Book.

TIEL

Date, First Survey 21<sup>st</sup> Decemb. 1923 Last Survey 3<sup>rd</sup> May 1925

Number of Visits 57

on the <sup>Single</sup> Twin Screw vessels  
<sup>Triple</sup>

"PERSEPHONE"

Tons { Gross 8956  
Net 5041.

Master Built at TIEL By whom built FRIED. KRUPP GERMANY No. 470 When built 1925

Engines made at TIEL By whom made FRIED. KRUPP. Engine No. 1760 When made 1925

Donkey Boilers made at TIEL By whom made GERMANIA WERFT. A.G. Boiler No. 3632 When made 1925

Brake Horse Power 2 x 1450 Owners BALTI-AMERIK. PETROLEUM IMP. G.M.B.H. Port belonging to DANZIG.

Nom. Horse Power as per Rule 908905 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

OIL ENGINES, &c. Type of Engines Diesel Oil Engine - Krupp Germania 2 or 4 stroke cycle 2 Single or double acting single  
Maximum pressure in cylinders 500 lb 35 kg/cm<sup>2</sup> No. of cylinders 8 = 2 x 4 No. of cranks 2 x 4 = 8 Diameter of cylinders 650 mm.  
Length of stroke 1300 mm. Revolutions per minute 90 Means of ignition Diesel principle Kind of fuel used Diesel Gas oil, heavy fuel  
Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 990 mm.  
Distance between centres of main bearings 1450 mm. Is a flywheel fitted yes Diameter of crank shaft journals as per Rule 426 mm.  
Diameter of crank pins 440 mm. Breadth of crank webs as per Rule 566 mm. Thickness of ditto as per Rule 237 mm.  
Diameter of flywheel shaft as per Rule 426 mm. Diameter of tunnel shaft as per Rule 312 mm. Diameter of thrust shaft as per Rule 328 mm.  
Diameter of screw shaft as per Rule 358 mm. Is the screw shaft fitted with a continuous liner the whole length of the stern tube no  
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 joints burned  
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 vulcanized If without liners, is the shaft arranged to run in oil  
Type of outer gland fitted to stern tube Length of stern bush Forw. 800 mm. Aft. 1500 mm. Diameter of propeller 4600 mm.  
Pitch of propeller 4600 mm. No. of blades 3 state whether moveable yes Total surface 5.95 square feet.  
Method of reversing revers. motor. Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 55 mm.  
Are the cylinders fitted with safety valves yes Means of lubrication forced lubrication 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  
Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes No. of cooling water pumps 4 Is the sea suction provided with an efficient strainer which can be cleared  
No. of bilge pumps fitted to the main engines Diameter of ditto Stroke  
Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines 3 How driven 2 electric, 1 steam driven.  
Sizes of pumps 1 dupl. 160 x 160 x 300 mm. No. and sizes of suction connections connected to both main bilge pumps and auxiliary bilge pumps: - In engine room 5 each of 110 mm diam.  
and in holds, etc. 2 dupl. 150 mm diam. - 200 mm stroke. (2 of 126 mm from overhead tank) No. of ballast pumps 2 1 in engine room: electric driven  
Is the ballast pump fitted with a direct suction from the engine room bilges yes State size 180 mm. Is a separate auxiliary pump suction fitted in  
Engine Room and size yes - 110 mm. Are all the bilge suction pipes fitted with roses yes Are the roses in Engine Room always accessible yes  
Are the sluices on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship yes  
Are they valves or cocks valves and cocks. Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates yes  
Are the discharge pipes above or below the deep water line above & below. Are they each fitted with a discharge valve always accessible on the plating of the vessel yes  
Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any  
communication between the sea and the bilges yes Is the screw shaft tunnel watertight Is it fitted with a watertight door machinery aft.  
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  
No. of main air compressors 2 No. of stages 3 Diameters 710-640-150 mm. Stroke 760 mm. Driven by main engine.  
No. of auxiliary air compressors 1 No. of stages 3 Diameters 320-280-80 mm. Stroke 250 mm. Driven by belt, motor, diesel eng.  
No. of small auxiliary air compressors 1 No. of stages 2 Diameters 160-65 mm. Stroke 80 mm. Driven by hot bulb motor.  
No. of scavenging air pumps 4 Diameter 750 mm. Stroke 1300 mm. Driven by main engine.  
Diameter of auxiliary Diesel Engine crank shafts as per Rule 186 mm. as fitted 200 mm. Are the air compressors and their coolers made so as to be easy of access yes

AIR RECEIVERS: - No. of high pressure air receivers 5 Internal diameter 34 236 mm - 2 of 400 mm. Cubic capacity of each 0.05 - 0.25 cbm.  
material Steel Seamless, lap welded or riveted longitudinal joint riveted. Range of tensile strength 46-52 kg/cm<sup>2</sup>.  
thickness 12 mm - 23.5 mm working pressure by Rules 46 kg/cm<sup>2</sup> - 81.2 kg/cm<sup>2</sup> No. of starting air receivers 6 Internal diameter 1000 mm.  
Total cubic capacity 6 x 2.72 cbm. Material Steel Seamless, lap welded or riveted longitudinal joint riveted. Longitudinal joint.  
Range of tensile strength 44-50 kg/cm<sup>2</sup> thickness 32.5 mm. Working pressure by rules 63 kg/cm<sup>2</sup> 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 hatchhole - door - removed cover. Is there a drain arrangement fitted at the lowest part of each receiver yes

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

## HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS <i>Covers</i>	14/7 - 29/8/24.	35 kg.	60 kg.	THP	
" " COVERS	25/7 - 22/8/24.	35 "	60 "	THP	
" " JACKETS	22/8/24 - 8/10/24	2 "	5 "	THP	
" " PISTON WATER PASSAGES	9/7 - 3/10/24	2 "	5 "	THP	
MAIN COMPRESSORS—1st STAGE	29/8/24	3.1 "	10 "	THP	
" 2nd "	26/8/24	17.6 "	35 "	THP	
" 3rd "	26/8/24	65 "	100 "	THP	
AIR RECEIVERS—STARTING	5/11-14/11-30/12/24	63 "	77 "	THP + W.M.	
" INJECTION	H.K. 28.8.24 - J.G. 28.11.24.	70 " (996 lb.) 75 " (1055 lb.)	140 " (1992 lb.) 150 " (2120 lb.)	H.K. 26/1/22 J.G. 200/02/04.	
AIR PIPES	6/4/25	65 "	130 "	THP	
FUEL PIPES	6/4/25	65 "	130 "	THP	
FUEL PUMPS	22/8/24	65 "	130 "	THP	
SILENCER	25/2/25	0.5 "	7 "	THP	
" WATER JACKET	23/12/24	2. "	5 "	THP	
SEPARATE FUEL TANKS	17/9/24 - 22/4/25.	0.2 "	1.25	W.M.	

PLANS. Are approved plans forwarded herewith for shafting

Receivers

Separate Tanks

SPARE GEAR All spare articles required as per Section 6 of the Rules for the construction and survey of Diesel engine and their Auxiliaries - page 99 (Rules 1924-25) have been supplied.

The foregoing is a correct description,

**FRIED. KRUPP**  
**GERMANIA WERFT**  
Aktiengesellschaft

Manufacturer.

Dates of Survey while building	During progress of work in shops--	27/12/23 - 15/1-9/2-12/2-13/3-25/3-2/4-9/4-29/4-7/5-20/5-24/6-30/6-9/7-14/7-22/7-25/7-6/8-14/8-22/8-26/8-29/8-3/10-7/10-14/10-21/10-23/10-2/11-4/11-13/11-23/11-23/12-30/12/24-6/1-9/1-12/1-16/1-20/1-30/1-3/3-10/3-24/2/25.
	During erection on board vessel--	25/2-27/2-3/3-9/3-13/3-20/3-27/3-6/4-15/4-17/4-27/4-3/5/25.
	Total No. of visits	57

Dates of Examination of principal parts—Cylinders 25/2-29/8/24. Covers 9/4-22/8/24 Pistons 7/5-3/10/24 Rods 30/6/24 Connecting rods 25/3-29/4/24

Crank shaft 25/3/24 Thrust shaft 25/3/24. Tunnel shafts 26/8/24 Screw shaft 6/1/25 Propeller 6/1/25 Stern tube 6/1/25 Engine seatings 10/2/25

Engines holding down bolts 20/3/25 Completion of pumping arrangements 15/4/25 Engines tried under working conditions 3/5/25

Completion of fitting sea connections 21/2/25 Stern tube 21/2/25 Screw shaft and propeller 21/2/25

Material of crank shaft Steel. Identification Mark on Do. 1207 C.R.H. 1208 16.2.24. Material of thrust shaft Steel. Identification Mark on Do. 6181 4.6 6182 27.11.2

Material of tunnel shafts Steel. Identification Marks on Do. 6226 4.6 6227 5.5.24. Material of screw shafts Steel. Identification Marks on Do. 6270 4.6 6271 20.6.24. Part: 6273

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

Is this machinery duplicate of a previous case

General Remarks (State quality of workmanship, opinions as to class, &amp;c. material &amp; workmanship of engine and auxiliaries

are of good quality. The materials used in the construction have been made at works recognized by the Committee and tested by the Society's Surveyor in accordance with the Rules. The machinery has been built in conformity with the approved plans, the Secretary's letter, and otherwise in accordance with the requirements of the Rules. I attended to a 12 hour trial trip when the machinery has given full satisfaction under full working and manoeuvring conditions. This machinery having been built under Special Survey is eligible in my opinion for notification "L.M.C. 5.25" Oil engine - Auxiliary & Donkey Boiler. Fitted for oil fuel 5.25. F.P. above 150°F.

The amount of Entry Fee ... £ 6 : 0 : 1 When applied for,

Special ... £ 120 : 8 : 5<sup>th</sup> June 1925

Donkey Boiler Fee ... £ 12 : 12 : When received,

Travelling Expenses (if any) £ 30 : 7 : 25 APR 1925

Committee's Minute

FRI. 19 JUN 1925

FRI. 14 AUG 1925

Assigned

+ L.M.C. 5.25 Oil Engines  
2 W.T. D.B. - 200 lb

CERTIFICATE WRITTEN

TUES. 8 JUN 1926

Friedrich Hill  
Engineer Surveyor to Lloyd's Register of Shipping.

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FRI. 4 SEP 1925

FRI. 27 NOV 1925

Lloyd's Register  
Foundation

Port of HAMBURG Continuation of Report No. 16376 dated 30<sup>th</sup> May. 25 on theSteel S.C. Motor V. "PERSEPHONE"DESCRIPTION of Pumps

Description.	Type.	No.	Diam. St. Cyl.	Water or Oil Cyl.	Stroke	Capacity.
Cargo oil pump.	Steam driven. Vertical Compound Duplex.	2	HP-360 L.P. 588	381 $\frac{1}{2}$ in.	610 $\frac{1}{2}$ in.	480 cu. ft. per hr.
Surf. Cargo oil pump.	Steam driven. Vertical Duplex.	1	300 $\frac{1}{2}$ in.	200 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	102 "
Ballast pump in Foreship.	Steam driven. Vertical Duplex.	1.	250 $\frac{1}{2}$ in.	175 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	90 "
Fuel oil transf. in Foreship.	Steam driven. Vertical Duplex.	1	250 $\frac{1}{2}$ in.	175 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	90 "
Fuel oil pressure. sur.	Steam driven. Vertical duplex	2.	120 $\frac{1}{2}$ in.	80 $\frac{1}{2}$ in.	150 $\frac{1}{2}$ in.	960 lbs.
Forcers.						
Fuel oil pressure pump.	Steam driven	1	90 $\frac{1}{2}$ in.	50 $\frac{1}{2}$ in.	100 $\frac{1}{2}$ in.	0.06 cu. ft.
Donkey Forcer (dest. Pump).	Vertical duplex.					
Feed pump. Donkey F.	Steam driven. Vertical duplex.	1	80 $\frac{1}{2}$ in.	50 $\frac{1}{2}$ in.	80 $\frac{1}{2}$ in.	"
Sea water circulation.	electric driv. centrif.	1				150 cu. ft.
Spare lubricating pump.	electric driv. rotary.	1.				27 "
Oil fuel transfer	" " "	4.				3 cu. ft.
Filge pump.	electric driven. 2 cyl. plunger type.	2.		150 $\frac{1}{2}$ in.	200 $\frac{1}{2}$ in.	60 cu. ft.
Filge & Fire pump	Steam driven. duplex. Vertical.	1	160 $\frac{1}{2}$ in.	160 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	60 cu. ft.
Fire pump.	electr. driv. centrif.	1				40 cu. ft.
Ballast pump. engine room.	electr. driven. 2 cyl. Duplex.	1	"	220 $\frac{1}{2}$ in.	250 $\frac{1}{2}$ in.	150 cu. ft.
Daily service oil fuel.	electr. driven. 2 cyl. Plunger type.	1		150 $\frac{1}{2}$ in.	200 $\frac{1}{2}$ in.	40 cu. ft.
Fuel pump. Surf. Forcer.	vertical steam driven duplex	1.	165 $\frac{1}{2}$ in.	110 $\frac{1}{2}$ in.	250 $\frac{1}{2}$ in.	20 cu. ft.
Feed water transfer. P.	vertical steam driven duplex.	1	80 $\frac{1}{2}$ in.	100 $\frac{1}{2}$ in.	200 $\frac{1}{2}$ in.	20 cu. ft.
Fresh water pump.	electric driven. 2 cyl. pl. type.	1		75 $\frac{1}{2}$ in.	100 $\frac{1}{2}$ in.	5 cu. ft.
Sea water circulat. pump	horizontal steam					
for sur. condenser	driven. Duplex.	1	240 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	425 $\frac{1}{2}$ in.	300 cu. ft.
Air pump sur. cond.	vertical steam driven plunger.	1	180 $\frac{1}{2}$ in.	340 $\frac{1}{2}$ in.	300 $\frac{1}{2}$ in.	"

Friedrich G. J.



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