

REPORT ON OIL ENGINE MACHINERY.

No. 2512

Received at London Office

3 DEC 1924

Date of writing Report *29 Nov. 1924* When handed in at Local Office *10* Port of *Stockholm*
 No. in Survey held at *Sickla, Skm. dist.* Date, First Survey *6 March 1918* Last Survey *28 Nov. 1924*
 Reg. Book. *71182* on the *Single* *Twin* *Triple* Screw vessels *Grosholm* Tons { Gross *1888* Net *1734*
 Master *By whom built* *Skibbyhavn* By whom built *Skibbyhavn* Yard No. *50060* When built *1920*
 Engines made at *Stockholm* By whom made *Skibbyhavn* Engine No. *50060* When made *1924*
 Donkey Boilers made at *See letter later* By whom made *Skibbyhavn* Boiler No. *50060* When made *1924*
 Brake Horse Power *360* Owners *Skibes 1/5 Grimstad* Port belonging to *Christiania*
 Nom. Horse Power as per Rule *92* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

OIL ENGINES, &c.—Type of Engines *Polar Diesel Oil Engine (type P4/V)* 2 stroke cycle Single or double acting
 Maximum pressure in cylinders *35 kg/cm²* No. of cylinders *4* No. of cranks *4* Diameter of cylinders *360 mm*
 Length of stroke *530 mm* Revolutions per minute *200* Means of ignition *diesel* Kind of fuel used *Crude Oil*
 Is there a bearing between each crank *Yes* Span of bearings (Page 92, Section 2, par. 7 of Rules) *452 mm*
 Distance between centres of main bearings *750 mm* Is a flywheel fitted *Yes* Diameter of crank shaft journals *218 mm*
 Diameter of crank pins *220 mm* Breadth of crank webs *290 mm* Thickness of ditto *122 mm*
 Diameter of flywheel shaft *218 mm* Diameter of tunnel shaft *220 mm* Diameter of thrust shaft *121 mm*
 Diameter of screw shaft *202 mm* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no liner*
 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* If without liners, is the shaft arranged to run in oil *yes*
 Type of outer gland fitted to stern tube *Cadmium* Length of stern bush *27 1/2"* Diameter of propeller *2174 mm*
 Pitch of propeller *1755 mm* No. of blades *3* state whether movable *no* Total surface *1,32* square m
 Method of reversing *manoeuvring cyls* Is a governor or other arrangement fitted to prevent racing of the engine when decoupled *yes* Thickness of cylinder liners *none fitted*
 Are the cylinders fitted with safety valves *yes* Means of lubrication *pumps* 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
 No. of cooling water pumps *2* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *yes* No. of bilge pumps fitted to the main engines *1* Diameter of ditto *155 mm* Stroke *68 mm*
 Can one be overhauled while the other is at work *no* No. of auxiliary pumps connected to the main bilge lines *See rep. 2511* How driven
 Sizes of pumps *no* No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room *no*
 and in holds, etc. *no* No. of ballast pumps *See report 2511* How driven *no* Sizes of pumps *no*

Is the ballast pump fitted with a direct suction from the engine room bilges *no* State size *no* Is a separate auxiliary pump suction fitted in Engine Room and size *no* Are all the bilge suction pipes fitted with roses *no* Are the roses in Engine Room always accessible *no*
 Are the sluices on Engine Room bulkheads always accessible *no* Are all connections with the sea direct on the skin of the ship *no*
 Are they valves or cocks *no* Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates *no*
 Are the discharge pipes above or below the deep water line *no* Are they each fitted with a discharge valve always accessible on the plating of the vessel *no*
 Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times *no* Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges *no* Is the screw shaft tunnel watertight *no* Is it fitted with a watertight door *no*
 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*
 No. of main air compressors *2* No. of stages *2* Diameters *270 mm* Stroke *420 mm* Driven by *main engine*
 No. of auxiliary air compressors *no* No. of stages *no* Diameters *no* Stroke *no* Driven by *no*
 No. of small auxiliary air compressors *no* No. of stages *no* Diameters *no* Stroke *no* Driven by *no*
 No. of scavenging air pumps *2* *Porton Outside* made *no* Diameter *580 mm* Stroke *420 mm* Driven by *main engine*
 Diameter of auxiliary Diesel Engine crank shafts *no* Are the air compressors and their coolers made so as to be easy of access *yes*

IR RECEIVERS:—No. of high pressure air receivers *2* Internal diameter *240 and 350 mm* Cubic capacity of each *45 and 330 litres*
 material *I.M. Steel* Seamless, lap welded or riveted longitudinal joint *lap welded* Range of tensile strength *min 23 tons*
 thickness *15.5 and 21 mm* working pressure by Rules *1024 and 1014 lbs* No. of starting air receivers *1* Internal diameter *950 mm*
 Total cubic capacity *2300 litres* Material *I.M. Steel* Seamless, lap welded or riveted longitudinal joint *lap welded*
 Range of tensile strength *min 23 tons* thickness *11.5 mm* Working pressure by rules *184 lbs* 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 *manhole* 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	19.11.24	35 kg/sg. cm	80 kg/sg. cm	LLOYD'S TEST 80 kg AI 19.11.24 A	
" " COVERS	"	ditto	ditto	ditto	
" " JACKETS	"	—	4 kg/sg. cm	—	
" " PISTON WATER PASSAGES	(open pistons) 19.11.24	13 kg/sg. cm	26 kg/sg. cm	LLOYD'S TEST 140 kg AI 19.11.24 A	
MAIN COMPRESSORS—1st STAGE	19.11.24	70 " " "	140 " " "		
" 2nd "	—	—	—	No 5258 LLOYD'S TEST 26 kg W.P. 13 kg AI 28.11.24 A	spare
" 3rd "	—	—	—	No 5259 LLOYD'S TEST 140 kg W.P. 70 kg AI 21.11.24 A	No 5260 LLOYD'S TEST 140 kg W.P. 70 kg AI 19.11.24 A
AIR RECEIVERS—STARTING	28.11.24	13 kg/sg. cm	26 kg/sg. cm		
" INJECTION	19.11.24	70 " " "	140 " " "		
AIR PIPES	21.11.24	70 " " "	140 " " "		
FUEL PIPES	21.11.24	70 " " "	140 " " "		
FUEL PUMPS	21.11.24	70 " " "	140 " " "		
SILENCER					
" WATER JACKET					
SEPARATE FUEL TANKS					

See Secretary's letters E 27.7.1916 E 8.11.1917 Receivers 17 12 1919 Separate Tanks

PLANS. Are approved plans forwarded herewith for shuffling (If not, state date of approval)

SPARE GEAR as per list, approved on the 3rd Oct. 1924 will be inspected when machinery is being fitted in ship

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 7 3 9 18; 13 27 19; 16 23; 19.21 28 24
During erection on board vessel - - 3.19.24, 20.21.23, 13 12, 10.24, 14.24, 17.5, 19.25.
Total No. of visits 9 in shop, 11 during erection on board.

Dates of Examination of principal parts—Cylinders 16 23; 19 24; Covers 16 23; 19 24; Pistons 19 24; Rods - - Connecting rods 7 3 8; 13 27 2
Crank shaft 28 24; Thrust shaft 2 24; Tunnel shaft 28 24; Screw shaft 13 25; Propeller 14 25; Stern tube 14 25; Engine seatings 14 25.
Engines holding down bolts 14 25; Completion of pumping arrangements 14 25; Engines tried under working conditions in shop 16 23
Completion of fitting sea connections 14 25; Screw shaft and propeller 14 25
Material of crank shaft S.M. Steel Identification Mark on Do. LLOYD'S No 5263 AI 28.11.24 A Material of thrust shaft S.M. Steel Identification Mark on Do. LLOYD'S No 5264 AI 28.11.24 A
Material of tunnel shaft S.M. Steel Identification Marks on Do. LLOYD'S No 5265 AI 28.11.24 A Material of screw shafts S.M. Steel Identification Marks on Do. 2.139 P.B.R.

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

Is this machinery duplicate of a previous case yes If so, state name of vessel see Pam report 1647.

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

I am of opinion, that this engine is of superior material and workmanship, and as it has been designed and constructed under my special survey. I have respectfully to submit that it will be eligible to be classed **LMC**, as soon as it has been fitted in ship to the satisfaction of the Society's Surveyors.

This engine fitted on board, examined during the erection and tried under working condition and found to work satisfactorily. Recommend that she be classed **LMC 5.25**

The amount of Entry Fee ... £ : : When applied for,
Special ... 418 : 60 : 29.11.1924
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) 38 : 22 : Dec. 1924
456 : 82

Committee's Minute

TUES. 9 JUN 1925

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.
Assisted by Mr. K. J. Anderson

Osls 23rd May 1925
P. R. B. Penzance - R. L. Lloyd's Register Foundation