

## REPORT ON OIL ENGINE MACHINERY.

No. 6954

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Date of writing Report 6/11 1924 When handed in at Local Office 10 Port of Copenhagen  
 No. in Survey held at Holteby and Oleinore Date, First Survey 17/11/1923 Last Survey 4/11 1924  
 Reg. Book. 20159 on the Single Motor "ODENSE" Screw vessels Tons {Gross 555.08  
Triple {Net 251.33  
 Master Eleinore Built at Eleinore By whom built A/S Helsingørsk Jernskibs- & Maskinfabrik Yard No. 170 When built 1924  
 Engines made at Holteby By whom made A/S Holteby Dieselmotor Fabrik Engine No. 170 When made 1924  
 Donkey Boilers made at Copenhagen By whom made A/S Petersen & Hraae Boiler No. 217 When made 1924  
 Brake Horse Power 500 Owners Det Forenede Dampskibs Selskab Port belonging to Odense  
 Nom. Horse Power as per Rule 94.143 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

OIL ENGINES, &c.—Type of Engines Diesel motor 2 or 4 stroke cycle 4 Single or double acting single  
 Maximum pressure in cylinders 35 kg/cm<sup>2</sup> No. of cylinders 6 No. of cranks 6 Diameter of cylinders 153.4 400 mm  
 Length of stroke 292 750 mm Revolutions per minute 155 Means of ignition Compression Kind of fuel used lube oil, F.P. above 150°  
 Is there a bearing between each crank yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 542 mm  
 Distance between centres of main bearings 810 mm Is a flywheel fitted yes Diameter of crank shaft journals 250 mm as per Rule 250 mm  
 Diameter of crank pins 250 mm Breadth of crank webs 469 mm as per Rule 469 mm Thickness of ditto 156 mm as per Rule 156 mm  
 Diameter of flywheel shaft 250 mm as per Rule 250 mm Diameter of tunnel shaft 167 mm as per Rule 167 mm Diameter of thrust shaft 145.6 mm as per Rule 145.6 mm  
 Diameter of screw shaft 193 mm as per Rule 193 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 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 yes  
 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 Hedervall's pat. Length of stern bush 1040 mm Diameter of propeller 10'6"  
 Pitch of propeller 9'-9" No. of blades 4 state whether moveable No Total surface 32.32 square feet  
 Method of reversing direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners 32 mm  
 Are the cylinders fitted with safety valves yes Means of lubrication forced 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 the exhaust led through a funnel above engine casing top  
 No. of cooling water pumps 1 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 engine 1 (2 plungers) Diameter of ditto 120 mm Stroke 55 mm  
 Can one be overhauled while the other is at work yes No. of auxiliary pumps connected to the main bilge lines 2 How driven by electro motor  
 Sizes of pumps 2 x 120 mm dia x 100 mm str. (20% capacity) No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 5 off 2 1/2", 1 off 3"  
 and in holds, etc. for hold 2 off 2 1/2", upper hold 2 off 2 1/2" No. of ballast pumps 1 How driven by electro motor Sizes of pumps rotary, 60 to 100  
 Is the ballast pump fitted with a direct suction from the engine room bilges yes State size 3" Is a separate auxiliary pump suction fitted in engine room and size yes, 2 off 2 1/2"  
 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 No sluices Are all connections with the sea direct on the skin of the ship yes  
 Are they valves or cocks valves, cups donkey trials Are they fitted 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 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 yes Is it fitted with a watertight door yes  
 worked from upper deck If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes  
 No. of main air compressors 1 No. of stages 3 Diameters 22-408-455 mm Stroke 230 mm Driven by main engine  
 No. of auxiliary air compressors 1 No. of stages 2 Diameters 68-225 mm Stroke 280 mm Driven by auxil. Diesel eng.  
 No. of small auxiliary air compressors 1 No. of stages 2 Diameters 32-80 mm Stroke 140 mm Driven by hand  
 No. of scavenging air pumps yes Diameter 140 mm Stroke yes Driven by yes  
 Diameter of auxiliary Diesel Engine crank shafts 140 mm as per Rule 140 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 4 Internal diameter 2 190 mm 312 mm 404 mm Cubic capacity of each 30 Litres  
 material steel Seamless, lap welded or riveted longitudinal joint seamless Range of tensile strength 36.9 kg/cm<sup>2</sup>  
 thickness 13.1923 mm working pressure by Rules 8610290 kg/cm<sup>2</sup> No. of starting air receivers 1 Internal diameter 1150 mm  
 Total cubic capacity 3.5 m<sup>3</sup> Material steel Seamless, lap welded or riveted longitudinal joint water gas welded  
 Range of tensile strength 41.2-42.9 kg/cm<sup>2</sup> thickness 22 mm Working pressure by rules 26.3 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 starting air receiver fitted with man hole  
 Is there a drain arrangement fitted at the lowest part of each receiver yes  
 arrangements made for showing air both starting and injection air receivers.



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					
COVERS	24/6 24.	15 lbs. per sq. in.	30 lbs. per sq. in.	LLOYD'S TEST 30 LBS. OK 26.6.24.	
JACKETS					
PISTON WATER PASSAGES					
MAIN COMPRESSORS—1st STAGE	25/7 24.	15 - - -	30 - - -	LLOYD'S TEST 30 LBS. OK 25.7.24.	
2nd					
3rd					
AIR RECEIVERS—STARTING	3/4 24.	25 atm.	50 atm.	No 6023. LLOYD'S TEST 50 KG. WP 25 KG. A.I. 3.4.24 A.	
INJECTION	24/5 - 12/6 24.	925 lbs. per sq. in.	1850 lbs. per sq. in.	No 285-86-87-1850 LBS. WP 925 LBS. MB. 24.5.24. H.B. 12.6.24.	
AIR PIPES	13/10 24.	65 atm.	130 atm.	OK.	
FUEL PIPES	7/8 24.	75 - - -	130 - - -	OK.	
FUEL PUMPS	25/7 24.	75 - - - SUCTION	130 - - -	OK.	
SILENCER					
WATER JACKET	25/7 24.	15 lbs. per sq. in.	5 atm.	LLOYD'S TEST 5 ATM. OK 25.7.24.	
SEPARATE FUEL TANKS	1/9 24.	0	15 lbs. per sq. in.	LLOYD'S TEST 15 LBS. OK 1.9.24.	

PLANS. Are approved plans forwarded herewith for shafting

Receivers

Separate Tanks

SPARE GEAR

The foregoing is a correct description,

AKTIESELSKABET  
HOLEBY DIESELMOTOR FABRIK  
C. Kasper  
Manufacturer.

Dates of Survey while building

During progress of work in shops - - - 17/11. 20/11. 21/11. 23/11. 27/11. 3/12. 11/12. 15/12. 1923. 9/1. 8/2. 5/3. 27/3. 3/4. 26/6. 25/7. 7/8. 1/9. 25/9. 1924.  
During erection on board vessel - - - 9/8. 11/8. 27/8. 11/9. 13/9. 17/9. 25/9. 3/10. 6/10. 8/10. 11/10. 13/10. 24/10. 3/11. 4/11. 1924.  
Total No. of visits 34.

Dates of Examination of principal parts—Cylinders 21/11. 9/1. 26/6. Covers 9/1. 25/7. Rods 17/11. 23/11. 25/7.  
Crank shaft and Thrust shaft 17/11. 20/11. 27/11. Tunnel shafts 25/7. 7/8. 13/9. Screw shaft 25/7. 7/8. Propeller 27/8. Stern tube 25/7. Engine seatings 11/8. 27/8.  
Engines holding down bolts 25/9. Completion of pumping arrangements 8/10. Engines tried under working conditions 1/9. 16/10. 4/11.  
Completion of fitting sea connections 9/8. Stern tube 11/9. Screw shaft and propeller 11/9. 8/10.  
Material of crank shaft S.M. steel. Identification Mark on Do. 27.3.24. Material of thrust shaft Identification Mark on Do. LLOYD'S No 5203.  
Material of tunnel shafts S.M. steel. Identification Marks on Do. 13.9.24. Material of screw shaft S.M. steel. Identification Marks on Do. 7.8.24.

Is the flash point of the oil to be used over 150° F. Yes.  
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 machinery has been built under Special Survey and in accordance with the Rules, the approved plans and letters & dates 15/10. 30/11. 23 and 4/3. 30/4. 19/5. 16/7 24.  
The material used in the construction has been tested as required by the Rules, either by us or as per Certificates, provided, and the workmanship has been inspected from the commencement until the final trial and found good in every respect.  
On the trial trip the machinery, main & auxiliary, was tested under full working power conditions and was found to work satisfactorily, and the manoeuvring found good.  
Recommend the vessel's machinery to have notation of **LMC-11-24**, OIL ENGINE, O.G.

12 = L. 26/12  
The amount of Entry Fee ... H. 52. 24  
Special ... 613. 82  
Fitting of Donkey Boiler Fee ... 35. 00  
Travelling Expenses (if any) £ 292. 50

When applied for,

20. 11. 19 24

When received,

20. 11. 19 24

A. J. Fisher. Chief Officer.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES 25 NOV 1924

Assigned

+ L.M.C. 11.24. O.G.  
oil engines.



Copenhagen

The single screw motor vessel "Odense"List of Auxiliary Machinery.

- One 2-cylinder 4 stroke cycle single acting Diesel oil engine, working a 32 kwts. dynamo. The air compressor of the motor is so dimensioned as to give an excess of air and thus act as an auxiliary compressor for the main engine.
- One 1-cylinder 4 stroke cycle single acting Diesel oil engine of the Semi Diesel type working a 12 kwts. dynamo, intended for use when at sea.
- One 6.5 HP shunt wound Electromotor working a 60 to rotary ballast pump of the "IRON" type, arranged to act as spare cooling water pump.
- One 3.5 HP shunt wound Electromotor working the 10 to spare lubricating oil pump (coy wheel pump). The main lubricating oil pump being worked through spur wheels from the main engine crank shaft.
- One 3.5 HP shunt wound Electromotor working a 10 to coy wheel pump for transferring fuel oil from the D.B. tanks to the settling tanks and from tank to tank.
- One 5 HP shunt wound Electromotor working the independent bilge and sanitary pump, consisting of 2 plungers each of 10 to capacity. The main cooling water & bilge pumps are worked from a balance on the main engine, and on the same shaft is fitted a small plunger pump acting as a sanitary pump when at sea.
- One 1-HP shunt wound Electromotor working a centrifugal separator for lubricating oil.
- One 0.7 HP shunt wound - " - - - - - fresh water pump.
- One 2 HP compound - " - - - - fitted at the least steering gear and by a clutch coupling arranged to assist in the steering when manoeuvring out from and into a harbour.
- Four 15 HP series wound Electromotors, each working a 1.2-3.0 to cargo winch.
- One 20 HP compound wound - " - - working the winches.
- One 2-stage air compressor, worked by hand.
- One Duplex Washington pump, size 75.40.75 mm and a fuel injector for the auxiliary boiler.
- One hand worked brine pump for filling up settling tanks.

aux. eng.  
& compressor.

aux. eng.

Ballast & spare  
oil pp.spare  
4/0 pp.  
& 1 by ME.

off. water

Bilge/san. ED

main eng. &  
a bilge pp. by ME

*A. J. H. H.*  
SURVEYOR TO LLOYD'S  
REGISTER OF SHIPPING

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Lloyd's Register  
Foundation