

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 6574.

TUE MAY 22 1923

Date of writing Report 14<sup>th</sup> May 1923 When handed in at Local Office  
No. in Survey held at Copenhagen & Odense Reg. Book.

80 811 on the Single, Twin, Triple Screw vessels " Sally Marsk."

Received at London Office  
19 Port of CopenhagenDate, First Survey 27<sup>th</sup> April 1922 Last Survey 4<sup>th</sup> April 1923.

Number of Visits 62.

Tons Gross 3252.29.  
Net 1984.61.

Master Built at Odense. By whom built vrd A.P. Møller Yard No. 10 When built 1922-23.

Engines made at Copenhagen. By whom made Akt. Burmeister &amp; Wain's Maskin Skibsværft Engine No. 913. When made 1922-23.

Donkey Boilers made at Copenhagen. By whom made Akt. Burmeister &amp; Wain's Maskin Skibsværft Boiler No. When made 1922.

Brake Horse Power 1100. 1800 I.H.P. Owners Dampskibsselskabet af 1912 (A.P. Møller) Port belonging to Odense.

Nom. Horse Power as per Rule 330 ✓ Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

OIL ENGINES, &amp;c.—Type of Engines Vertical Diesel Oil Engine 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 630 mm = 24 1/3/16"Length of stroke 1300 mm = 51 3/16" Revolutions per minute 85 Means of ignition Air compression Kind of fuel used Crude oil  
(Flash point about 150° F.)

Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 880 mm.

Distance between centres of main bearings 1250 mm. Is a flywheel fitted Yes. Diameter of crank shaft journals as per Rule 404 mm. ✓ as fitted 404 mm. ✓

Diameter of crank pins 404 mm. ✓ Breadth of crank webs as per Rule 538 mm. ✓ as fitted 630 mm. Thickness of ditto as per Rule 226 mm. ✓

Diameter of flywheel shaft as per Rule 404 mm. ✓ Diameter of tunnel shafts as per Rule 11 1/8" ✓ as fitted 11 1/8" ✓ Diameter of thrust shaft as per Rule 12 1/2" ✓ as fitted 12 1/2" ✓

Diameter of screw shaft as per Rule 12 3/4" ✓ Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes. ✓

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 The liner is in one length.

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 ✓ If without liners, is the shaft arranged to run in oil ✓

Type of outer gland fitted to stern tube ✓ Length of stern bush 5' - 2" ✓ Diameter of propeller 15' - 0" ✓

Pitch of propeller 11' - 0" No. of blades 4. state whether moveable No. Total surface 70 ft square feet

Method of reversing Direct reversible. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Thickness of cylinder liners 48 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 The pipes are water cooled. 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 silencers are lagged.

joints are lagged. pipes are led up through a small funnel above the top of engine casing. No. of cooling water pumps one 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 none Diameter of ditto ✓ Stroke ✓

Can one be overhauled while the other is at work ✓ No. of auxiliary pumps connected to the main bilge lines one off How driven by electro motor. ✓ Port side one 4' 6" dia 3 1/2" ✓

Sizes of pumps Diam. of plungers 6 1/2" Stroke 9" ✓ No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 1 stord., two 4' 6" dia 3 1/2" ✓ and in holds, etc. In F.T.T. &amp; A.P.T. on in each 3" Tunnel well one off 3" diam. ✓ No. of ballast pumps 2 off How driven electro motor. ✓ Rotary wing pumps

Suction pipes to DB tanks 3" diam. each. No. but 2 direct suctions are fitted to the 4 diam. Is a separate auxiliary pump suction fitted in

Is the ballast pump fitted with a direct suction from the engine room bilges Cooling water pump. State size

Engine Room and size Yes, one off 4" diam. 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 None. Are all connections with the sea direct on the skin of the ship Yes.

Are they valves or cocks Boiler blow off 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. 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 height. If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no woodworks.

No. of main air compressors one off ✓ No. of stages 3 Diameters H.P. = 600 mm. ✓ Stroke 480 mm. Driven by the main engine.

No. of auxiliary air compressors 3 off ✓ No. of stages 2 Diameters H.P. = 120 mm. ✓ Stroke 220 mm each. Driven by one of the auxiliary Diesel oil engines.

No. of small auxiliary air compressors one off ✓ No. of stages 2 Diameters H.P. = 32 mm. ✓ Stroke 140 mm. Driven by hand or by 1/2 HP. Buzin motor.

No. of scavenging air pumps ✓ Diameter ✓ Stroke ✓ Driven by ✓

Diameter of auxiliary Diesel Engine crank shafts as per Rule 161.69 mm. ✓ Are the air compressors and their coolers made so as to be easy of access Yes.

Thickness of as fitted 162.0 mm. ✓ Internal diameter 190 mm. ✓ Cubic capacity of each 1/11 225 liters

AIR RECEIVERS:—No. of high pressure air receivers 1/11 - 3 off. Internal diameter 190 mm. ✓ Cubic capacity of each 1/11 225 liters

material Siemens Martin Steel. Seamless, lap welded or riveted longitudinal joint Lap welded. Seamless. Range of tensile strength 23.2 to 26.0 Tons per sq. in.

thickness 1/16" - 25 mm. working pressure by Rules 65 Atm. No. of starting air receivers One. Internal diameter 6' - 1 1/16".

Total cubic capacity 650 cub. feet. Material Siemens Martin Steel. Seamless, lap welded or riveted longitudinal joint Approved 25 Atm. ✓ Riveted.

Range of tensile strength 28-32 &amp; 26-30 Tons thickness 15/16" + 1/32" 1" x 1 1/16" Working pressure by rules 25 Atm. ✓ 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

The starting air receiver is fitted. man hole covers are inner surfaces fitted from the donkey boiler to the high pressure air receiver. Is there a drain arrangement fitted at the lowest part of each receiver to enable them to be cleaned by means of caustic soda and steam. Yes.

W118-0126 (1/2)

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Lloyd's Register Foundation

IS A DONKEY BOILER FITTED? yes, for heating purpose. If so, is a report now forwarded? yes.

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
" COVERS	1/10. 22. 4/1. 10/1. 23.	15 lbs. per sq. in.	30 lbs. per sq. in.	LLOYD'S TEST 30 LBS. <b>K</b>	10. 1. 23.
" JACKETS	1/10. 22. 10/1. 23.	15 lbs. per sq. in.	30 lbs. per sq. in.	LLOYD'S TEST 30 LBS. <b>K</b>	10. 1. 23.
" Oil	1/11. 22.	15 lbs. per sq. in.	30 lbs. per sq. in.	<b>K</b>	
PISTON WATER PASSAGES					
MAIN COMPRESSORS—1st STAGE	Water jacket } 25/11 & 3/12. 22.	15 lbs. per sq. in.	30 lbs. per sq. in.	<b>K</b>	
" 2nd	2/12. 22.	15 lbs. per sq. in.	30 lbs. per sq. in.	<b>K</b>	
" 3rd "	2/12. 22.	65 Atm.	130 Atm.	<b>K</b>	
" 3rd "	18/10. 22.	25 kg/cm. <sup>2</sup>	39 kg/cm. <sup>2</sup>	LLOYD'S TEST 39 kg/cm. <sup>2</sup> W.P. 25 kg/cm. <sup>2</sup> No. 23. 24. 25. 26. 27. 28	
AIR RECEIVERS—STARTING					
" INJECTION	28/12. 22.	65 Atm.	130 Atm.	<b>K</b>	
AIR PIPES { for starting purpose	{ for injection do.	25 lbs. per sq. in.	50 lbs. per sq. in.	<b>K</b>	
FUEL PIPES { suction space	{ delivery space	12/10. 22. 13/12. 22.	15 lbs. per sq. in.	<b>K</b>	
FUEL PUMPS { suction space	{ delivery space	75 Atm.	150 Atm.	<b>K</b>	
SILENCER					
" Pipe to WATER JACKET	27/11. 22.	15 lbs. per sq. in.	30 lbs. per sq. in.	LLOYD'S TEST 30 LBS. <b>K</b>	27. 11. 22.
SEPARATE FUEL TANKS	1/11 & 3/11. 22.	none.	10 lbs. per sq. in.	LLOYD'S TEST 10 LBS. <b>K</b>	1 & 3. 11. 22.

PLANS. Are approved plans forwarded herewith for shafting Yes. Starting Air Receivers Yes Separate Tanks Yes.

(If not, state date of approval) SPARE GEAR as per accompanying list.

The foregoing is a correct description,

AKTIESELSKEDET

BURMEISTER & WAINS

MASKIN OG SKIBSBYGGERI

Manufacturer.

Dates of Survey while building During progress of 1/24-28 April, 8, 17, 27, 31 May, 6, 9-14 June, 10, 12, 19 July, 1, 2, 29 Aug., 5, 6, 9, 15, 21, 27, 30 Sept., 6, 6, 12, 13, 19, 18, 25, 27 Oct., 3, 6, 15, 19, 18, 20, 25, 27 Nov. work in shops—} 2, 4, 6, 7, 8, 12, 14-22, 23 Dec. 1922. 4-10 Jan. 1923.

During erection on 1/6 Nov. 1922, 3 Jan. 6-16 Feb. 6, 15, 19, 24, 27, 28, 31 March, 4 April 1923.

62.

Total No. of visits 17/10, 27/8, 9/9, 6/10, 22 17/10, 27/8, 9/9, 6/10, 22 2/8, 5/9, 29/9, 3/5, 14/6, 2/8, 8/5, 19/6, 10/7, 2/9/4, 27/5, 6/6, 6/6, 17/9, 5/10 6/6, 17/9, 24/9, 22 6/6, 17/9, 24/9, 22 Connecting rods 1/8, 17/10, 22. Rods 1/8, 17/10, 22.

Crank shaft 14/6, 8/10, 22 Thrust shaft 15/7, 4/22. Tunnel shafts 15/11, 22. Screw shaft 3/1-23 Propeller 3/1-23 Stern tube 3/1-23 3/1-23 Engine seatings 6/1, 22 3/1-23.

6/16/2, 16/3, 23. Completion of pumping arrangements 2/8, 8/8, 28/3, 23. Engines tried under working conditions 2/8, 28/3, 3/1, 4/4, 28.

Engines holding down bolts 1/2, 1/3, 23. Completion of fitting sea connections 3/1, 23. Stern tube 3/1, 23. Screw shaft and propeller 3/1, 23.

Completion of fitting sea connections 3/1, 23. Stern tube 3/1, 23. Screw shaft and propeller 3/1, 23. LLOYD'S No. 6405 & 6406

Material of crank shaft SM I Steel Identification Mark on Do. CK-8/11-22. Material of thrust shaft SM I Steel Identification Mark on Do. A 15/11-22.

LLOYD'S No. 6412, 13/14 & 15

Material of tunnel shafts SM I Steel Identification Marks on Do. A 15/11-22. Material of screw shafts SM I Steel Identification Marks on Do. A 4-1-22.

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 "S. Leise Marok." Eng. Rpt. No. 6207.

General Remarks (State quality of workmanship, opinions as to class, &c.) In accordance with the Rules for Special Survey we have

examined the material and workmanship from the commencement of construction until the final trial under full power

working condition and found it good in every respect.—The material used in the construction of the engine and the air

receivers have been tested as required by the Rules, either by us or as per certificates produced.

The dimensions are as specified and in accordance with the Rules, the approved plans and the requirements contained in letters

E dated 18<sup>th</sup> March, 2<sup>nd</sup> June, 9<sup>th</sup> September, 14<sup>th</sup> October, 18<sup>th</sup> January 1923.

On the trial trip, the main engine and the whole auxiliary machinery have been tested under full power working

condition and found to work satisfactorily. The manufracturing of the main engine has been tested under working condition and

found satisfactory.—

Recommend the vessel's machinery to have notation of **80 LMC-4.23** Oil Engine. C.L.

The amount of Entry Fee ... K. 122. 30. When applied for,

Special ... K. 1810. 04. When received,

Donkey Boiler Fee ... K. 48. 92. When received,

Electric light ... K. 758. 26. Travelling Expenses (if any) K. 603. 50. TUE. 29 MAY. 1923

16. K. 24. 46. Committee's Minute

Assigned + £m. 4.23. C.L.

oil engines

9a.

of Copenhagen

Continuation of Report No. 6574 dated 14<sup>th</sup> May 1923 on the

Steel Screw Motor Vessel "Sally Marok" of Odense.

Yard No. 10 by Odense Staal Skibsvaft ved A. P. Moller.

Eng. No. 913 by akt. Burmeister & Wain, Copenhagen.

The auxiliary machinery comprising:-

Two - 75 Tons rotary wing pumps for ballast purpose

(The pump can also be used for the cooling water purpose).

One - 70 Tons centrifugal pump for the cooling water purpose.

One - pump with two separate plungers - the one plunger being for bilge purpose and the other for bilge and sanitary purpose. Diam. of plunger 6 1/2", stroke 9". Revolutions 100 p.m. Capacity of bilge pump 20 Tons and of sanitary pump 15 Tons. (The bilge pump can also be used for the cooling water purpose).

One - 20 Tons rotary cog wheel pump for the forced oil lubrication.

One - 20 Tons rotary cog wheel spare pump for the forced oil lubrication.

One - 5 Tons rotary cog wheel transfer pump to the daily service oil fuel tanks.

All driven by electric motors.

The centre one was replaced by 2 cog by.

3 - one cylinders, four cycle single acting Diesel oil engines, each of 50 E.H.P. all placed on port side of the motor room and working three compound wound dynamos, each of 33 K.W. and 220 Volts, - supplying electric current for motive power for the following:-

One - 15 H.P. shunt wound electro motor for working the ballast pumps.

One - 25 H.P. shunt wound electro motor for working the cooling water pump and the pump for the forced oil lubrication.

One - 7.5 H.P. shunt wound electro motor for working the bilge and sanitary pumps.

One - 7.5 H.P. shunt wound electro motor for working the transfer pump to the daily service oil fuel tanks, and the spare pump for the forced oil lubrication.

One - 6 H.P. series wound electro motor for working the engine turning gear.

One - 6 H.P. shunt wound electro motor for working the CO<sub>2</sub> compressor for the provision refrigerating appliance.

One - 34 H.P. series wound electro motor for working the windlass.

One - 10 H.P. shunt wound electro motor for working the electro hydraulic steering gear.

One - 22 H.P. series wound electro motor for working a 5 Tons cargo winch.

One - 15 H.P. — — — for working seven 3 Tons cargo winches.

And electric current for the whole lighting installation with the voltage reduced from 220 to 110 Volts after having passed the transformer.

A spare oil fuel transfer pump is fitted to be worked by hand.

The foregoing AKTIESELSKEDET description.

BURMEISTER & WAINS

MASKIN OG SKIBSBYGGERI

A.O. Prebeck.

SURVEYOR TO LLOYD'S

REGISTER OF SHIPPING