

REPORT ON OIL ENGINE MACHINERY

No. 7168.

Received at London Office 14 JAN 1926

Report 30th December 1925. When handed in at Local Office

Port of Copenhagen

held at Copenhagen

Date, First Survey 9th March

Last Survey 19th December 1925.

Number of Visits 76.

Single Motor "DANMARK"
Twin Screw vessel

Tons { Gross 8390.97
Net 5342.41

By whom built Akt. Burmeister & Wain's Maskin og Kildebyggen Yard No. 337. When built 1925.

By whom made Akt. Burmeister & Wain's Maskin og Kildebyggen Engine No. 1088 When made 1925.

By whom made Akt. Holby Dieselmotor Fabrik Boiler No. When made 1925.

By whom made Akt. Petersen og Waal Port belonging to Copenhagen.

Power 4000 Owners Akt. Det Ostasiatiske Kompagni.

Power as per Rule 983. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes.

VES, &c. Type of Engines Vertical Diesel Oil Engines (Cross head type) 2 or 4 stroke cycle 4 Single or double acting Single

in cylinders 35 kg/cm² No. of cylinders 2 x 6 Diameter of cylinders 740 mm = 29 1/8" No. of cranks 2 x 6 Length of stroke 1300 mm = 51 3/16"

adjacent to the Crank, measured from inner edge to inner edge 984 mm Is there a bearing between each crank yes

minute 115 Flywheel dia. 2900 mm Weight 16.2 Tons Means of ignition air compression Kind of fuel used Flash point above 150° F.

dia. of journals as per Rule 453.9 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth 872 mm Thickness parallel to axis 290 mm

as fitted 460 mm Mid. length thickness 290 mm shrunk Thickness around eyehole 202 mm

as per Rule 453.9 mm Intermediate Shafts, diameter as per Rule 11.86" Thrust Shafts diameter at collars as per Rule 12.46"

as fitted 460 mm as fitted 12" as fitted 12 1/2"

as per Rule 13.03" Is the screw shaft fitted with a continuous liner yes

as fitted 14" as per rule 0.52" Is the after end of the liner made watertight in the

thickness in way of bushes as per Rule 0.696" Thickness between bushes as fitted 11/16"

as fitted 7/8" If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner yes

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

Is the shaft lapped or protected between the liners yes Is an approved Oil Gland or other appliance fitted at the after

shaft yes Length of Bearing in Stern Bush next to and supporting propeller 6'3"

14'-0" Pitch 12'-6" No. of blades 3 Material Brongze whether Moveable no Total Developed Surface 45 sq. feet

versing Engines Direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched governors fitted Means of Lubrication

Thickness of cylinder liners 53.5 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with

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 the main mast.

r Pumps, No. 3 off. capacity of each 120 Tons. Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes.

fitted to the Main Engines, No. each engine Diameter of trunk 6 1/4" Stroke 9 1/2" Can one be overhauled while the other is at work yes.

ed to the Main Bilge Line { No. and Size 2 off. 26 Tons each, 2 off. 33 Tons each, and 1 off. 150 Tons.

How driven by electro motors, by the main engines, by electro motors.

os, No. and size 1 off. - capacity 150 Tons. Lubricating Oil Pumps, including Spare Pump, No. and size 4 off. - capacity 40 Tons each.

ident means arranged for circulating water through the Oil Cooler yes. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

size: - In Engine and Boiler Room 2 off. 4", - 2 off. 3 1/2", - 2 off. 3" and 1 off 6".

No. 1 & 2 holds 2 off in each 3 1/2". In No. 4 & 5 holds 3 off in each 3 1/2". In tunnel well 1 off 3 1/2". In deep tanks 2 off in each 3 1/2" and further 2 off in each 5" connected to

the independent, special pump. In after peak tank 1 off 3. In F.T. 1 off 3 connected to the independent pump fitted in the fore peak.

Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 off. 3", - 1 off 6" and 2 off 7" connected to the cooling water pumps.

ge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes. Are the Bilge Suctions in the Machinery Space

accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes Please see London letters E dated the 23/1 & 14/2 1925

connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves except the donkey boiler blow off cocks.

efficiently 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 yes

ed 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

through the bunkers No coal bunkers. How are they protected yes

through the deep tanks The pipes to No. 1 and 2 holds. Have they been tested as per Rule yes

Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

vention 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

another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from the grating at the upper deck level.

is, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork A - B - C

mpressors, No. 2 off No. of stages 3 Diameters 750 mm - 675 mm - 150 mm Stroke 420 mm Driven by the main engines.

er Compressors, No. Please see the accompanying report on the auxiliary engines. Driven by

ary Air Compressors, No. 1 off No. of stages 2 Diameters 106 mm - 34 mm Stroke 80 mm Driven by a steam engine.

Air Pumps, No. Diameter Stroke Driven by

engines crank shafts, diameter as per Rule Please see the accompanying report on the auxiliary engines.

as fitted 170 mm

CEIVERS: - Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes.

ual surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces The starting air receivers are fitted with manholes

rain arrangement fitted at the lowest part of each receiver yes I - 500 Liters II - 250 " III - 30 "

ure Air Receivers, No. 2 off No. of stages 3 Diameters 750 mm - 675 mm - 150 mm Stroke 420 mm Driven by the main engines.

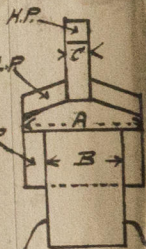
Material S.M. Steel Range of tensile strength 30.3 - 27.4 Working pressure by Rules 65 ATM.

Shells plates 1 1/4" + 1/32" thickness 1 1/16" as approved 25 ATM.

er Receivers, No. 2 off Total cubic capacity 1600 cubic feet Internal diameter 6'0" - 6'1 1/16"

Shells - 28 - 32 Tons Working pressure 25 ATM.

Material S.M. Steel Range of tensile strength Ends - 26 - 30



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Foundation
W162-0048(112)

IS A DONKEY BOILER FITTED? HYDRAULIC TESTS:—

yes ✓

If so, is a report now forwarded?

yes ✓

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.
ENGINE CYLINDERS				
COVERS AND WATER JACKETS	18/9, 8/10, 26/11 25	15 lbs per sq"	30 lbs per sq"	LLOYD'S TEST 30 LBS K 19/25, K 9/10 25, K 26/11 25.
PISTON WATER PASSAGES	The pistons are cooled by oil.			
MAIN COMPRESSORS—1st STAGE	4/9, 29/9 25.	4 ATM.	100 lbs per sq"	LLOYD'S TEST 100 LBS K 4/25, K 29/9 25.
2nd "	23/9, 24/9, 29/9 25.	16 ATM.	35 ATM.	LLOYD'S TEST 35 ATM. K 23/9, 24/9, 29/9 25.
3rd "	23/9, 24/9 25.	65 ATM.	65 ATM.	LLOYD'S TEST 65 ATM. K 23/9, 24/9 25.
AIR RECEIVERS—STARTING	2/9, 11/9 25.	25 ATM.	41 ATM.	LLOYD'S TEST 41 ATM. K 2/9, 11/9 25.
INJECTION	5/10 25	65 ATM.	130 ATM.	LLOYD'S TEST 130 ATM. K 5/10 25.
AIR PIPES for starting purpose	29/10, 7/11, 26/11, 9/12 25.	25 ATM.	50 ATM.	LLOYD'S TEST 50 ATM. K 29/10, 7/11, 26/11, 9/12 25.
FUEL PIPES for injection purpose	24/9 25.	1 ATM.	10 ATM.	LLOYD'S TEST 10 ATM. K 24/9 25.
FUEL PUMPS		75 ATM.	150 ATM.	LLOYD'S TEST 150 ATM. K 24/9 25.
SILENCER				
WATER JACKET	The silencers and exhaust pipes are lagged.			
SEPARATE FUEL TANKS	10/10, 13/10 25.	0	10 lbs per sq"	LLOYD'S TEST 10 LBS. K 10/10 25, K 13/10 25.

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

Donkey Boilers

yes ✓

General Pumping Arrangements

yes ✓

Receivers for Starting Air Receivers. Separate Tanks

yes ✓

SPARE GEAR

as per accompanying list. ✓

Oil Fuel Burning Arrangements

no

AKTIESELSKABET BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI

The foregoing is a correct description.

Lu. Mønstergaard

Manufacturer.

Dates of Survey while building
During progress of work in shops— 9, 11, 17 March, 20 April, 11, 15, 16, 17, 20, 23 June, 10, 16, 20 July, 20, 21, 24, 25, 26, 29, 31 Aug., 2, 3, 4, 5, 8, 9, 10, 11, 12, 15, 17, 18, 24, 25, 28, 29, 30
During erection on board vessel— 1, 2, 4, 5, 8, 9, 10, 12, 13, 17, 20, 23, 28, 29, October, 2, 3, 4, 7, 9, 12, 16, 19, 21, 25, 26, 28, 30, 1925, 1, 2, 3, 4, 5, 9, 12, 17, 18, 19, 1925.
Total No. of visits 76.

Dates of Examination of principal parts—Cylinders— and — Covers 20/8, 20/8, 4/9, 8/9, 11/9, 18/9, 25/9
Crank shafts 15/17, 16/17, 20/17, 20/8
Flywheel shafts — and — Thrust shafts 17/3, 23/3, 25/3, 9/9 25.
Screw shafts 11/16, 17/16, 19/16, 19/25. Propellers 9/9, 17/9, 21/9 25. Stern tube 26/8, 29/8, 12/9 25. Intermediate shafts 17/16, 20/16, 20/16, 13/16, 17/9 25. Tube shaft 17/16, 20/16, 13/16, 17/9 25.
Completion of fitting sea connections 10/9 25. Completion of pumping arrangements 3/12 25. Engines holding down bolts 9/11 25.

Crank shafts Material S.M. Ingot Steel Identification Marks LLOYD'S NE 7764-65 K 24-8-25
Thrust shafts Material S.M. Ingot Steel Identification Marks LLOYD'S NE 7772-73 K 9-9-25
Tube shaft, Material Identification Mark
Screw shafts Material S.M. Ingot Steel Identification Marks LLOYD'S NE 7777, 80, 81, 82, 83 K
Is the flash point of the oil to be used over 150° F. yes ✓ Spare " " " S.M. Ingot Steel " " LLOYD'S NE 7784, 85

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.) In accordance with the Rules for Special Survey we have examined material and workmanship from the commencement of construction until the final test of the main and auxiliary engines under full power.

working condition and found it good in every respect. The material used in the construction of the engines and auxiliaries have been tested as required by the Rules, either by us or as per Certificates produced. The dimensions are as per drawings.

and in accordance with the Rules, the approved plans and the requirements contained in the London Letter of 18th Nov. 1923 addressed to Messrs. Burmeister & Wain, and Letters E dated the 25th Feb., 16th & 18th Decr. 1924, 9th & 23rd Jan. and 14th Feb. 1925.

On the trial trip the main engines and the whole auxiliary machinery have been tested under full power working condition and found satisfactory. The manœuvring of the main engines has been tested under working condition and found satisfactory.

Recommend the vessel's machinery to have notation in the Register Book of LMC-12,25 OIL ENGINES.

The amount of Entry Fee 117.60 When applied for, 6th January 1926.

Special 259.7.98 When received, 18/1 1926.

Fitting Donkey Boiler Fee 50.00
Electric Installation Fee 710.50
Late Fee 60.00

Committee's Minute FRI. 22 JAN 1926

Assigned + L.M.C. 12.25 oil engines



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Lloyd's Register Foundation

Copenhagen

Register Book 38721.

Steel Twin Screw Motor Vessel "DANMARK" of Copenhagen.

Burmeister & Wain

Yard No 337.

" "

Eng. No 1088 & 1089.

The auxiliary machinery comprising.

- 10 Tons rotary wing pump for the ballast purpose.
- ump with 3 separate trunks, - the two being for bilge purpose
- and the third for sanitary purpose. —
- Capacity of each pump = 26 Tons.
- 20 Tons centrifugal pumps for the cooling water purpose.
- 1 Tons rotary cog wheel pumps for the forced oil lubrication purpose.
- 2 Tons rotary cog wheel pumps for the oil fuel transfer purpose.
- 1 Tons rotary cog wheel pump for the vegetable oil cargo in the deep tanks.

All driven by
electro motors.

- 2 cylinders, 4 stroke cycle single acting Diesel oil engines, each of 100 H.P., fixed on the
- side of the engine room, - each working a compound wound dynamo of 65 KW, —
- lt and 295 amperes, - supplying electric current for motive power to the following, viz:—
- 1 H.P. shunt wound electro motor, working the ballast pump.
- 1 H.P. " " " " , working the bilge and sanitary pump.
- 5 H.P. " " " " , working the cooling water pumps.
- 5 H.P. " " " " , working the forced lubrication oil pumps.
- 5 H.P. " " " " , working oil fuel transfer pump.
- 5 H.P. " " " " , working the pump for the vegetable oil cargo in the deep tanks.
- 5 H.P. " " " " , working the small salt water sanitary pump.
- 1 H.P. series " " " , working the turning gear to the main engines.
- 1 H.P. shunt " " " , working the turning lathe.
- 1 H.P. " " " " , working the drilling machine.
- 1 H.P. " " " " , working the CO₂ compressor to the refrigerating appliance to provision room.
- 2 H.P. " " " " , working the brine pump to the " " " " "
- 2 H.P. " " " " , working the three oil separators.
- 25 H.P. " " " " , working the oil pump to the electro-hydraulic steering gear.
- 58 H.P. compound " " " , working the windlass.
- 15 H.P. series " " " , working the ten-3 Tons cargo winches.
- 22 H.P. " " " " , working the four-5 Tons " "
- 29 H.P. " " " " , working the two-7 Tons cargo winches and the warping winch aft.
- 2.7 H.P. shunt " " " , working the ballast pump fitted in the fore peak.
- 1.5 H.P. series " " " , working the sounding machine.
- 0.2 H.P. shunt " " " , working the motor in the galley.
- 60 Watts " " " , working the ventilator fans.

And supplying current for electric lighting purpose with the pressure reduced
from 220 to 110 Volt after having passed the transformer.

Transformer motor = 26 H.P. shunt wound and transformer dynamo = 15 H.W. compound wound.

The foregoing is a correct description.

AKTIESELSKABET
BURMEISTER & WAIN MASKIN OG SKIBSBYGGERI

A. O. Exbech.
SURVEYOR TO LLOYD'S
REGISTER OF SHIPPING

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