

REPORT ON OIL ENGINE MACHINERY.

No. 4599

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Date of writing Report 1/12 1927 When handed in at Local Office 19 Port of Copenhagen
No. in Survey held at Copenhagen & Odense Date, First Survey 24/11 1926 Last Survey 24/11 1927
Reg. Book. Number of Visits 84

420/3 on the Single Motor "NYHOLM" Triple Screw vessel
Built at Odense By whom built Odense Skibskonstruktør
Engines made at Copenhagen By whom made J. Burmeister & Wain
Donkey Boilers made at Elshøj By whom made J. Helsingør Jensen & Co.
Brake Horse Power 2100 Owners Christian Haaland
Nom. Horse Power as per Rule 526 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
Trade for which vessel is intended Ocean Trade, carrying petroleum in bulk

IL ENGINES, &c.—Type of Engines Vertical Diesel, trunk piston type or 4 stroke cycle 4 Single or double acting single
Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 550 mm Length of stroke 1000 mm No. of cylinders 2 x 6 = 12 No. of cranks 2 x 6 = 12
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 430 mm Is there a bearing between each crank yes
Revolutions per minute 140 Flywheel dia. 1362 mm Weight 850 mm Means of ignition Compression Kind of fuel used Crude oil, F.P. above 150°
Crank Shaft, dia. of journals as per Rule 339.9 mm Crank pin dia. 340 mm Crank Webs Mid. length breadth 670 mm Thickness parallel to axis 213 mm
as fitted 340 mm Mid. length thickness 193 mm Thickness around eye hole 159 mm
Flywheel Shaft, diameter as per Rule 339.9 mm Intermediate Shafts, diameter as per Rule 9 1/4" Thrust Shaft, diameter at collars as per Rule 9.7125"
as fitted 340 mm as fitted 9 1/4" as fitted 340 mm
Tube Shaft, diameter as per Rule — Screw Shaft, diameter as per Rule 10.17" Is the tube shaft fitted with a continuous liner yes
as fitted — as fitted 10 1/2" as fitted 10 1/2"

Bronze Liners, thickness in way of bushes as per Rule 0.61" Thickness between bushes as per rule 0.46" 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 junctions made by fusion through the whole thickness of the liner 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 Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft yes

Length of Bearing in Stern Bush next to and supporting propeller 4'-6"
Propeller, dia. 11'-0" Pitch 8'-6" No. of blades 3 Material Bronze whether Moveable No Total Developed Surface 30 sq. feet

Method of reversing Engines direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when decelerated yes Means of lubrication forced
Thickness of cylinder liners 38 mm Are the cylinders fitted with safety valves yes 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

Cooling Water Pumps, No. 2 off, 125 to each, electric driven the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 2 Diameter 150 mm Stroke 175 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 2 off, 150 mm dia. x 175 mm str.; 1 off, 100 to (ballast p.); 1 off, 20 to
How driven by main engines electrically electrically

Ballast Pumps, No. and size 1 off, 100 to Lubricating Oil Pumps, including Spare Pump, No. and size 2 off, 45 to each

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 5 off, 3"

In Holds, &c. AFT COFFERDAM: 1 off 5", 1 off 3", FORWARD COFFERDAM: 1 off 3 1/2", PUMP ROOM AMIDSH: 1 off 3", FORWARD PUMPR: 1 off 3 1/2", HOLD FORWARD: 2 off 3 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 off 5", 2 off 3"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves, except blow off cocks for empty bilges

Are they fixed sufficiently 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 above

Are they each fitted 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

What pipes pass through the bunkers How are they protected forward pump room, 3" Have they been tested as per Rule yes

What pipes pass through the deep tanks Suction pipe to F.P. tank from ballast pump

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

Is the arrangement 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 compartment to another yes Is the Shaft Tunnel watertight No Is it fitted with a watertight door 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

Main Air Compressors, No. 2 No. of stages 3 Diameters 600 540 120 mm Stroke 320 mm Driven by main engines

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 318 285 78 mm Stroke 170 mm Driven by 2 off 2-cyl. auxil. engines

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 225 68 mm Stroke 220 mm Driven by 1 off 1-cyl. auxil. engine

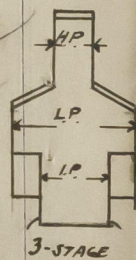
Scavenging Air Pumps, No. — Diameter — Stroke — Driven by steam engines

Auxiliary Engines crank shafts, diameter as per Rule 162 mm as fitted 162 mm

IR RECEIVERS:—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 manholes in starting air receiver

Is there a drain arrangement fitted at the lowest part of each receiver yes
High Pressure Air Receivers, No. 2 (SPARE) 250 LITERS Internal diameter 404 mm thickness 23 mm
3 (MAIN ENG) 125 mm 312 mm 19 mm
3 (AUXIL. ENG) 25 mm 7 1/4" 3 1/8" (SPARE 66.3 kg/cm² MAIN 71.4 " AUXIL. 92.5 ")
Seamless, lap welded or riveted longitudinal joint SEAMLESS Material S.M. steel Range of tensile strength 22.2-28.5 kg/cm² Working pressure by Rules 66.3 kg/cm² (MAIN 71.4 " AUXIL. 92.5 ")
Starting Air Receivers, No. 2 Total cubic capacity 850 cub. ft. Internal diameter 5'-11 1/16" thickness 15 1/32" ENDS 13 1/16"
Seamless, lap welded or riveted longitudinal joint riveted Material S.M. steel Range of tensile strength 28-32 kg/cm² Working pressure by Rules 25.01 kg/cm² (SHALL 28 kg/cm² ENDS 26 kg/cm² RIVERS 26 kg/cm²)



002674-002681-0208 3

Foundation

IS A DONKEY BOILER FITTED? *Yes, 2 H.P.* If so, is a report now forwarded? *Yes.*

PLANS. Are approved plans forwarded herewith for Shafting *Yes* Receivers *Yes.* Separate Tanks *Yes*

Donkey Boilers *Yes.* General Pumping Arrangements *Yes.* Oil Fuel Burning Arrangements *Yes.*

SPARE GEAR *As per accompanying list.*

List of accompanying Plans.

Crank & Thrust Shafts for Main Engines.	Cargo Oil Pumping Arrangement
Intermediate & Crew Shafts	Piping Arrangement in Oil Cargo Pumping
Crank Shaft for the 1 cyl. aux. Engine.	Electric Installation.
Crank Shaft " " 2 cyl. " "	Donkey Boilers.
Harding air Receivers.	Daily service oil fuel tanks for Donkey
Oil Fuel Sedding Tanks.	Oil fuel burning arrangement
Pumping Arrangement	" " "
Piping Arrangement in fore pump room.	
One Certificate	

The foregoing is a correct description,

AKTIESELSKABET
BURMEISTER & WAIN'S MASKIN- OG SKIPSBYGGERI

...*Manufacturer.*

Dates of Survey while building		During progress of work in shops -		During erection on board vessel - -		Total No. of visits
		24/11. 30/11. 1/12. 2/12. 26. 31. 8/1. 8/12. 17/1. 19/1. 25/1. 7/2. 10/2. 11/2. 18/2. 21/2. 28/2. 24/3. 28/3. 31/3. 5/4. 9/4. 9/4. 9/4. 10/4. 15/4. 17/4. 21/4. 23/4.	24/11. 29/11. 29/11. 30/11. 31/11. 4/12. 4/12. 7/12. 11/12. 24/12. 13/1. 19/1. 24/1. 25/1. 27/1. 4/2. 7/2. 10/2. 17/2. 18/2. 20/2. 24/2. 25/2. 27/2. 28/2. 31/2. 4/3. 7/3. 17/3. 21/3. 25/3. 30/3.	1/9. 3/9. 8/9. 28/9. 1/10. 2/10. 7/11. 5/11. 14/11. 15/11. 20/11. 2/12. 22/12. 24/12. 27.	84.	

Dates of Examination of principal parts—Cylinders *AND* Covers $\frac{4}{16}, \frac{3}{16}, \frac{8}{16}, \frac{23}{16}$ Pistons $\frac{5}{16}, \frac{23}{16}$ Rods $\frac{7}{16}, \frac{27}{16}, \frac{1}{2}, \frac{13}{16}$

Crank shafts $\frac{17}{16}, \frac{1}{2}, \frac{22}{16}, \frac{26}{16}$ Flywheel shaft \checkmark Thrust shafts $\frac{17}{16}, \frac{1}{4}, \frac{21}{16}, \frac{26}{16}$ Intermediate shafts $\frac{23}{16}, \frac{1}{3}, \frac{1}{4}, \frac{25}{16}$ Tube shaft \checkmark

Screw shafts $\frac{1}{4}, \frac{7}{16}, \frac{8}{16}$ Propellers $\frac{7}{16}, \frac{8}{16}, \frac{22}{16}$ Stern tubes $\frac{17}{16}, \frac{23}{16}$ Engine seatings $\frac{1}{9}, \frac{3}{9}$ Engines holding down bolts $\frac{10}{10}$

Completion of fitting sea connections $\frac{1}{9}$ Completion of pumping arrangements $\frac{7}{16}$ Engines tried under working conditions $\frac{15}{16}, \frac{20}{16}, \frac{21}{16}$

Crank shaft, Material *S. M. steel* Identification Mark *LLOYDS N° 8462 - CC 11-2-27* Flywheel shaft, Material \checkmark Identification Mark \checkmark

Thrust shaft, Material *S. M. steel* Identification Mark *LLOYDS N° 8464 - CC 11-2-27* Intermediate shafts, Material *S. M. steel* Identification Marks *LLOYDS N° 8553-4 CC 15-6-27*

Tube shaft, Material \checkmark Identification Mark \checkmark Screw shaft, Material *S. M. steel* Identification Mark *LLOYDS N° 8690 - CC 8-9-27*

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 Society's Rules, the proved plans and the requirements & instructions contained in the Secretary's letters of dated 20/12 20 (21. 24/1. 12/4. 9/8. 30/8. 16/9. 3/10. 8/10 29). The material used in the construction has (with exception of the parts referred to in our letter of the 10/12 20, for which B.C. certificates are attached) been tested and examined as required by the Rules, either by us or as per certificates produced, and found good, and the workmanship is of good description throughout.

The machinery with all its accessories, cargo oil pumping arrangement, and donkey boiler with oil fuel burning arrangement have been fitted on board under our supervision and to our satisfaction and on completion the whole of the main & auxiliary machinery was tested under full power working conditions and found to work satisfactorily, and on the final trial trip the manoeuvring of the main engines was tested and found good.

Recommend the vessel's machinery to have notation of ~~8~~ LMC-11-27, OIL ENG., MCHY AFT. and C.D. in the Register Book.

The amount of Entry Fee	...	£ 109.20	When applied for,
Special	...	£ 1996.55	17/12 1927
INITIALISATION OF Donkey Boiler Fee	...	£ 100.00	When received,
Travelling Expenses (if any)	£	584.95	17/1 1928
SUNDAY FEE & LATE FEE	---	90.00	✓
Committee's Minute			

Committee's Minute

Assigned

CERTIFICATE WRITTEN

FRI. 30 DEC 1927

+ J. MC 11:24

Oil Engines 20B 1500.

20. T. Beck. Chubb & Co.
Engineer Surveyors to Lloyd's Register of Shipping

Rpt. 9a.

Port of

Copenhagen

Continuation of Report No. 4599. dated

1/12 27

on the

Steel Twin E. Motor vessel "NYHOLM"

List of Auxiliary Machinery.

- 1 Rotary Ballast Pump, system "IRON", 100 to.
- 2 Centrifugal Cooling Water Pumps, 120 to each.
- 2 Log Wheel Lubricating Oil Pumps, 45 to each.
- 1 Bile & Sanitary Pump, consisting of 2 trunk pistons,
one for each purpose, 20 to each.
- 1 Log Wheel Oil Fuel Transfer Pump, 30 to.
- 1 CO₂ Compressor for the cooled provision store.
- 1 Centrifugal cooling water pump for CO₂ condenser.
- 1 Ballast & Oil Fuel Transfer Pump, placed in the forward pumping
room and consisting of 2 pump cylinders, one for each purpose, 60 to each.
- 2 Large oil pumps, Hayward-Taylor & Co. Ltd., 18" x 12" x 18" duplex, 23 to each,
first in the main pump room.
- 1 Large oil stripping pump, Hayward-Taylor & Co. Ltd., 6" x 8" x 7" duplex,
first in the main pump room.
- 2 Oil fuel pressure pumps, G. & T. Weir Ltd., 2 1/4" x 5" duplex, connected
with a duplex set of heaters & filters for the White Patent Low Pressure
Oil Burning System.
- 1 Centrifugal Fan for the forced draught for smoking boilers.
- 2 Weir Fuel Pumps, 5" x 7" x 12, simplex.
- 1 Combined Air & Circulating pump, 25 1/4" x 33 1/2" x 33 1/2" x 30 1/2" - simplex,
connected to the condenser for exhaust steam from all the steam
driven auxiliary engines.
- 1 2-stage small Air Compressor.
- 1 Evaporator, (Caird & Rayner, London), 12 to.
- 1 Economizer (Henry Watson & Sons, Ltd.) 24 sq. ft. heating surface.
- 1 1-cylinder and
- 2 2-cylinder, 4 stroke, single acting Diesel Oil Engines, each working a compound
wound dynamo of resp. 33, 66 & 66 kwts. and giving current at 220 volts
pressure for the following purposes:
- 1 OFF 9 HP shunt wound Electromotor for ballast pump.
- 2 " 30 " " " " " the combined cooling water & lubricat. oil pumps.
- 1 " 9 " " " " " " bile & sanitary pump.
- 1 " 9 " " " " " " the oil fuel transfer pump.
- 1 " 7.5 " " " " " " CO₂ compressor.
- 1 " 2 " " " " " " cooling water pump for CO₂ condenser.
- 1 " 12 " " " " " " pump in the forward pump room.
- 2 " 3 " series " " " " engine turning gears.
- 1 " 3 " shunt " " " " fuel oil purifier.
- 1 " 3 " " " " " " lubr. " " " "
- 1 " 3 " " " " " " workshop.
- 1 " 20 " " " " " " elect. - hydraulic steering gear.

5m.2.27

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(continued)

M/S "NYHOLM."

1 off 52 H.P. compound wound Electromotor for the windlass.

1 " 22 " serie " " " 1 - 5 to warping winch.

2 " 15 " " " " " 2 - 3 to cargo winches.

2 " 18.5 " shunt " " " directly coupled to two 12 kwh.

compound wound dynamos, running at 1800 R/M. and giving current

at 110 Volts pressure for the whole Electric Light Installation and

1 " 6 HP shunt wound Electromotor for wireless telegraphy.

C. N. N. N. N.

**SURVEYOR TO LLOYD'S
REGISTER OF SHIPPING**

THE FOREGOING IS A CORRECT DESCRIPTION.

PR. ODENSE STAALSKIBSVÆRFT

VED A. P. MØLLER

John Morsb. Møller