

Rpt. 4b.

REPORT ON ^{Auxiliary} OIL ENGINE MACHINERY.

No. 8494.

Date of writing Report 23/4 31 When handed in at Local Office 19 Port of Copenhagen
No. in Survey held at 90858 on the Twin Screw vessel "HENRIK AMELN"
Reg. Book. Date, First Survey 24/10 1930 Last Survey 18/4 1931
Number of Visits 11

Built at Nakskov By whom built Nakskov Skibsværft Yard No. 44 When built 1931
Engines made at Holby By whom made Holby Dieselmotor Fabrik Engines No. 356-7 When made 1930
Donkey Boilers made at Aarhus By whom made Fritsch Boilers No. 850-1 When made 1930
Brake Horse Power 2 x 100 Owners 9/4 Frøgt & Søn (L. Jacobsen & Co.) Port belonging to Oslo.
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
Trade for which vessel is intended Ocean going oil carrier.

OIL ENGINES, &c.—Type of Engines Various Diesel, trunk type, air injection or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 310 mm Length of stroke 350 mm No. of cylinders 2 No. of cranks 2
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 360 mm Is there a bearing between each crank Yes.
Revolutions per minute 400 Flywheel dia. 1240 mm Weight 2650 kg Means of ignition compression Kind of fuel used crude oil.
Crank Shaft, dia. of journals as per Rule 162 mm as fitted 170 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 355 mm dia. Thickness parallel to axis
Mid. length thickness 95 mm Thickness around eye-hole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube screw shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted Is the after end of the liner made watertight in the

propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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 Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication

Thickness of cylinder liners Are the cylinders fitted with safety valves Are the exhaust pipes and silencers water cooled or lagged with non-conducting material 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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

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

Pumps connected to the Main Bilge Line No. and Size How driven

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

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

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks Have they been tested as per Rule

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

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 Is the Shaft Tunnel watertight 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. No. of stages Diameters A B C Stroke Driven by

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 318-285-78 Stroke 170 mm Driven by auxiliary engine

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position

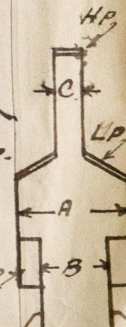
AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.

Can the internal surfaces of the receivers be examined and cleaned Yes. Is a drain fitted at the lowest part of each receiver Yes.

High Pressure Air Receivers, No. 2 Cubic capacity of each 27 ltrs Internal diameter 185 mm thickness 9.5 mm

Seamless, lap welded or riveted longitudinal joint seamless Material S.M. Steel Range of tensile strength 60.3 kg/cm² Working pressure by Rules 26 kg/cm² Actual 65 kg/cm²

Starting Air Receivers, No. Total cubic capacity Internal diameter thickness Working pressure by Rules Actual



W261-0028(1/3)

IS A DONKEY BOILER FITTED? *yes. 2 off.* If so, is a report now forwarded? *yes.*

Is the donkey boiler intended to be used for domestic purposes only *for dealing with the cargo oil.*

PLANS. Are approved plans forwarded herewith for Shafting *yes.* Receivers *yes.* Separate Tanks *yes.*
Donkey Boilers *27/3 30.* General Pumping Arrangements *yes.* Oil Fuel Burning Arrangements *yes.*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes.*

State the principal additional spare gear supplied *please see accompanying list.*

The foregoing is a correct description,

AKTIESELSKABET
HOLEBY DIESELMOTOR FABRIK

Manufacturer.

Dates of Survey while building
During progress of work in shops -- *24/10. 21/11. 12/12 1930*
During erection on board vessel -- *10/2. 20/2. 3/3. 11/3. 18/3. 27/3. 1/4. 18/4 1931*
Total No. of visits *11.*

Dates of Examination of principal parts—Cylinders *with* Covers *24/10. 21/11* Pistons *24/10. 21/11* Rods *✓* Connecting rods *24/10*
Crank shaft *24/10* Flywheel shaft *✓* Thrust shaft *✓* Intermediate shafts *✓* Tube shaft *✓*
Screw shaft *✓* Propeller *✓* Stern tube *✓* Engine seatings *20/12. 23/1* Engines holding down bolts *10/2. 20/2*
Completion of fitting sea connections *✓* Completion of pumping arrangements *✓* Engines tried under working conditions *12/12. 1/4. 18/4*
Crank shaft, Material *J.M. ing of steel* Identification Mark *24/10. 30* Flywheel shaft, Material *✓* Identification Mark *✓*
Thrust shaft, Material *✓* Identification Mark *✓* Intermediate shafts, Material *✓* Identification Marks *✓*
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *✓* Identification Mark *✓*

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes.*

Is the vessel *(not being an oil tanker)* fitted for carrying oil as cargo *yes.* If so, have the requirements of the Rules been complied with *yes.*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *✓*

Is this machinery duplicate of a previous case *✓* If so, state name of vessel *✓*

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

These auxiliary engines have been built and fitted under special survey and in accordance with the Society's Rules, the approved plan and the requirements contained in the Secretary's letter E dated 10/330.

Each engine is connected to a 66 kwts. dynamo, and after completion of the installation on board the vessel the engines were tested under working conditions and found to work satisfactorily.

The amount of Entry Fee .. *£ 2.00.00* When applied for *30/12 1930*
Special
Donkey Boiler Fee
Travelling Expenses (if any) *£ 5.00.00* When received *31/1 1931*

Committee's Minute *FRI. 15 MAY 1931*

Assigned

See other J.E. App

Cliff
Engineer Surveyor to Lloyd's Register of Shipping.

Rpt. No.

Port of

Copenhagen.

Continuation of Report No. 8494 dated 23rd April 1931 on the

4/5 "Henrik Ancler" of Oslo.

The Auxiliary Machinery comprises:

*Two centrifugal cooling water pumps for main engine, 120 t/h.
Two cog wheel lubricating oil pumps for main engine, 50 t/h.
One cog wheel oil fuel transfer pump, 15 t/h.
One bilge & sanitary pump, consisting of 2 trunk pistons, one for each purpose, 20 t/h each.
One centrifugal cooling water pump for auxiliary Diesel engine, 10 t/h.
Two 2-cylinder 4 S.C.S.A. Diesel oil engines, air injection, each working a 66 kwts. compound wound dynamo, giving current at 220 Volts pressure for the following purposes:*

2 off 35 hp shunt wound electromotors for the combined cooling water and

lubricating oil pumps.

*1 " 5 " " " " " oil fuel transfer pump.
1 " 9 " " " " " bilge & sanitary pump.
1 " 4 " " " " " cooling water pump for auct. engine.
2 " 3 " series " " " engine turning gears.
1 " 7.5 " shunt " " " CO₂ compressor for provision store.
1 " 2 " " " " " cooling water pump for CO₂ condenser.
1 " 1 " " " " " fresh water pump (sanitary).
1 " 2 " " " " " lubricating oil purifiers.
1 " 2.7 " " " " " turning lathes.
1 " 1 " " " " " drilling machine.
1 " 0.33 " " " " " grinding machine.
1 " 13 " series " " " electric steering gear.
1 " 0.25 " " " " " fan in the galley.
1 " 4 " shunt " " " " wireless telegraphy.
1 " 16 " " " " " direct coupled to and working a 10 kwts compound wound dynamo, giving current at 110 Volts pressure for the electric light installation.*

The Auxiliary steam plant comprises:

2 single ended multitubular donkey boilers of a combined heating surface of 2800 sq. ft., oil fired, placed on a platform aft in the engine room and giving steam of 170 lbs./sq. inch pressure for the following purposes:

*2 cargo oil pumps, 18" x 14" x 18" diaph. } fitted in the main
1 bilge & stripping pump, 19" x 20" x 17.5" diaph. } pump room.
1 oil fuel transfer pump, 15" x 15" x 15" diaph. } fitted in the forward
1 bilge & ballast pump, 18" x 15" x 15" diaph. } pump room.*

(continued.)

Port of *Copenhagen.*Continuation of Report No. 8494 dated 23rd April 1931 on the*M/S "Henrik Lund" of Oslo.*

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|---|--|----------------------------------|
| 1 | Todd Oil burning unit with simple oil fuel pressure pump, duplex filters and preheaters. | } all fitted in the engine room. |
| 2 | donkey feed pumps, 8" x 6" x 18, simple (THOS. LAMONT & CO. L3) | |
| 1 | ballast & circulating water pump (for the condenser), 9" x 10" x 10" duplex | |
| 1 | feed water preheaters. | |
| 1 | small air compressor for emergency use. | |
| 1 | 11.5 kwts. 110 Volts dynamo for electric light. | |
| 1 | windlass, 2 cargo winches & 1 warping winch on deck, heating coils and steaming out & fire extinguishing pipes in the cargo oil tanks and heaters in accommodation spaces. | |

*W. H. Milner*SURVEYOR TO LLOYD'S
REGISTER OF SHIPPING*The foregoing is a correct description.*AKTIESELSKABET
NAKSKOV SKIBSVÆRFT*H. P. Christensen*