

REPORT ON OIL ENGINE MACHINERY.

No. 4608

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Date of writing Report 12th March, 1938 When handed in at Local Office 19 Port of Stockholm.

No. in Survey held at Sickla, Skm. District Date, First Survey 18/11/36 Last Survey 24/2/1938
Reg. Book. Number of Visits 32

on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel "MORVIKEN"

Tons ^{Gross} _{Net}

built at Landskrona. By whom built Öresundsvarvet. Yard No. 49 When built 1938

Engines made at Stockholm. By whom made A.B. Atlas Diesel. Engine No. 85599, 85600, 85601, 85602 When made 1938.

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 4 x 1100 Owners Wallem & Co., A/S. Port belonging to Bergen.

Nom. Horse Power as per Rule 4 x 188 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes.

Trade for which vessel is intended

Oil Engines, &c.—Type of Engines Polar Diesel Oil Engines, type H46H 2 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 55 kg/cm² 13^{3/8} Diameter of cylinders 340 mm Length of stroke 570 mm No. of cylinders 6 No. of cranks 6.

Mean Indicated Pressure 6.7 span of bearings, adjacent to the Crank, measured from inner edge to inner edge 484 mm Is there a bearing between each crank Yes.

Revolutions per minute 300 Flywheel dia. 1830 mm Weight 2450 kgs. Means of ignition Compression Kind of fuel used Marine Diesel Oil.

Crank Shaft, dia. of journals as per Rule as fitted 220 mm Crank pin dia. 220 mm Crank Webs Mid. length breadth 308 mm Thickness parallel to axis shrunk Mid. length thickness 122 mm Thickness around eyehole

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 See report on gear.

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 Compressed air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication

pumps Thickness of cylinder liners 27.5 mm Are the cylinders fitted with safety valves Yes. 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

Cooling Water Pumps, No. 2 repairs @ 50000 lts/min 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

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements

Ballast Pumps, No. and size Power Driven 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

For starting air Main Air Compressors, No. 4 x 1. No. of stages 2 Diameters 175/70 mm Stroke 350 mm Driven by Main Engines.

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 180/70 mm Stroke 140 mm Driven by El. motor.

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 80/30 mm Stroke 80 mm Driven by Aux. Engine

Scavenging Air Pumps, No. 4 x 1. (D.A.) Diameter 940 mm Stroke 350 mm Driven by Main Engines.

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. Position

The outer rotor of the slipcoupling is used as flywheel.

Lloyd's Register Foundation W349-0175

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

Can the internal surfaces of the receivers be examined and cleaned

Is a drain fitted at the lowest part of each receiver

High Pressure Air Receivers, No. *None fitted*

Cubic capacity of each

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting

E. 28.7.36

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

As per enclosed list. The spare gear has been examined before it was despatched.

2 separate lubricating oil pumps delivered

(about 1800 lbs. fuel)

The foregoing is a correct description,

AKTIEBOLAGET ATLAS DIESEL

G. Jacobsson

Manufacturer.

Dates of Survey while building

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|----|--------------------|----|----|-------|---|----|----|----|---|----|----|----|---|----|---|----|---|----|----|----|---|----|----|--|
| During progress of work in shops-- | 11 | 18.36; | 20 | 27 | 16.31 | 7 | 15 | 22 | 30 | 7 | 12 | 19 | 27 | 7 | 11 | 7 | 20 | 3 | 13 | 27 | 31 | 2 | 22 | 37 | |
| During erection on board vessel-- | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total No. of visits | | <i>32 in shop.</i> | | | | | | | | | | | | | | | | | | | | | | | |

Dates of Examination of principal parts—Cylinders

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|--------|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | | | | | | | | | | | | |
| 13.21.29 | 17.38. | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 |

Covers

| | | | | | | | | |
|-------|-------|----|-------|-------|----|-------|-------|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 |

Pistons

| | | | | | | | | |
|-------|-------|----|-------|-------|----|-------|-------|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 | 13.21 | 29.12 | 38 |

Rods

| | | | | | | | | | | | | |
|-------|-------|----|------|------|---|---|------|-------|-------|----|-------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | |
| 18.56 | 20.23 | 11 | 7.30 | 7.27 | 4 | 5 | 7.15 | 15.24 | 24.29 | 31 | 17.24 | 2 |

Connecting rods

| | | | | | | | | |
|------|------|---|---|------|-------|-------|----|-------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7.30 | 7.27 | 4 | 5 | 7.15 | 15.24 | 24.29 | 31 | 17.24 |

Tube shaft

| | | | | | | | | |
|------|------|----|-----|----|----|------|-------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7.20 | 3.31 | 37 | 7.1 | 17 | 38 | 7.15 | 24.31 | 3 |

Engines holding down bolts

| | | | | | | | | |
|----|----|------|-------|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 17 | 38 | 7.15 | 24.31 | 3 | 1 | 2 | 3 | 4 |

Completion of fitting sea connections

Completion of pumping arrangements

Engines tried under working conditions

Crank shaft, Material *S.H. Steel* Identification Mark *Lloyd's No 6990 K.R. 7.5.37*

Thrust shaft, Material Identification Mark *Lloyd's No 7000 T.B. 30.4.37*

Tube shaft, Material Identification Mark *Lloyd's No 6981 T.B. 7.5.37*

Scav air pump Identification Mark *Lloyd's No 7082 K.R. 31.8.37*

Physical shaft, Material *S.H. Steel* Identification Mark *Lloyd's No 7010 K.R. 7.6.37*

Intermediate shafts, Material Identification Mark *Lloyd's No 7020 T.B. 22.9.37*

Screw shaft, Material Identification Mark *Lloyd's No 7020 K.R. 7.6.37*

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

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

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

If so, have the requirements of the Rules been complied with.

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 *Yes* If so, state name of vessel *Please see skew. Rpt. No. 4481.*

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

We are of opinion that these engines are of superior material and workmanship, and as they have been designed and constructed under special survey, we respectfully submit that they be classed +L.H.C. as soon as they have been fitted into Messrs. Oresundsvaer A.B., of Landskrona, Yard No 49, to the satisfaction of the Society's Surveyors. The engines will be coupled to electro-magnetic slip couplings and gear. The slip couplings and gear have been tried at works. (Please see attached reports.)

The amount of Entry Fee .. £

Special *slip coupling* ... £ *400.-*

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

Committee's Minute

Assigned

When applied for, 19

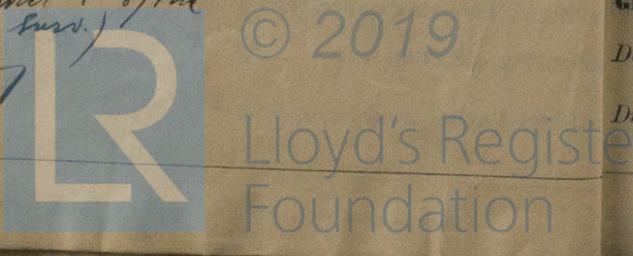
When received, 19

2.20.20 *25.7.38*

113:20 *(17.4.20)* *Received as per Sec. letter T. of the 3.6.1938 to Lloyd's Reg.*

H. J. Anderson & Frank Talbot
Engineer Surveyor to Lloyd's Register of Shipping.

See Htg. J.C. 1187



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.