

# REPORT ON OIL ENGINE MACHINERY.

No. 18915.  
9-APR 1952

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Date of writing Report 21st March 1952 When handed in at Local Office 4th April 1952 Port of Gothenburg

No. in Survey held at Gothenburg Date, First Survey 12th April 1951 Last Survey 13th March, 1952

Reg. Book. 36242 on the Single Screw vessel Motor Tanker "ASTRID ONSTAD" Tons Gross 14685 Net 8673

Built at Gothenburg By whom built Aktiebolaget Götaverken Yard No. 660 When built 1952

Engines made at Gothenburg By whom made Aktiebolaget Götaverken Engine No. 2239 When made 1952

Donkey Boilers made at Stockton By whom made Stockton Chemical Eng. & Riley Boilers Ltd. Boiler No. 7183/4 When made 1951

Brake Horse Power { Maximum 8200 BHP Owners Rederi Aktiebolaget Monacus Port belonging to Kungsbacka  
Service 1640

M.N. as per Rule 1640 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

Trade for which vessel is intended General

**L ENGINES &c.** — Type of Engines Heavy oil, DM 760/1500 VG 9 2 or 4 stroke cycle 2 Single or double acting SA

Maximum pressure in cylinders 49 kgs/cm<sup>2</sup> Diameter of cylinders 760 mm. Length of stroke 1500 mm. No. of cylinders 9 No. of cranks 9

Mean Indicated Pressure 6.60 kgs/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 974 mm. Is there a bearing between each crank Yes Revolutions per minute { Maximum 112 Service ---

Flywheel dia. 2368 mm. Weight 2640 kgs. Moment of inertia of flywheel (kg. cm sec<sup>2</sup>) 20200 Means of ignition Comp. Kind of fuel used Diesel oil

Crank shaft, Solid forged dia. of journals as per Rule Appd. 520/130 mm. Crank pin dia. 520/105 mm. Crank webs { Mid. length breadth --- Thickness parallel to axis 320 mm.  
Semi built shrunk Mid. length thickness --- Thickness around eyehole 250 mm.

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Appd. 430 mm. Thrust Shaft, diameter at collars & as per Rule Appd. 520 mm.

Stern Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Appd. 477.5 mm. at fwd end of prop. Is the screw shaft fitted with a continuous liner { Yes

Bronze Liners, thickness in way of bushes & as per Rule Appd. 23 & 27 mm. Thickness between bushes & as per Rule Appd. 22.5 mm. 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 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 tight If two liners are fitted, is the shaft lapped or protected between the liners --- Is an approved Oil Gland fitted at the after end of stern tube --- If so, state type --- Length of bearing in Stern Bush next to and supporting propeller 2000 mm.

Propeller, dia. 5740 mm. Pitch 4385 mm. No. of blades 4 Material Bronze whether moveable --- Total developed surface 12.85 sq. met.

Moment of inertia of propeller including entrained water (kg. cm. sec<sup>2</sup>) 347500 Kind of damper, if fitted None fitted

Method of reversing Engines Direct with compr. air. Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication Forced Thickness of cylinder liners 55 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 led to a funnel Cooling Water Pumps, No. and how driven 4 electrically Working F.W. 1x5250 lit/m.

Working F.W. 1x5833 1/m. Spare F.W. 1x5250 1/m. S.W. 1x5833 1/m. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. and capacity --- Can one be overhauled while the other is at work ---

|                          |                           |                          |                          |
|--------------------------|---------------------------|--------------------------|--------------------------|
| No. and capacity of each | <u>1 x 150 tons/hour.</u> | <u>1 x 25 tons/hour.</u> | <u>1 x 50 tons/hour.</u> |
| How driven               | <u>El. driven</u>         | <u>El. driven</u>        | <u>Steam driven</u>      |

Is the cooling water led to the bilges No. 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 capacity 1 x 150 tons/hour Power Driven Lubricating Oil Pumps, including spare pump, No. and size 3x150 m<sup>3</sup>/hour

Are two independent means arranged for circulating water through the Oil Cooler Yes Branch Bilge Suctions { Fwd. 1x2 1/2"; c/d 1x5"  
No. and size: — In machinery spaces. 3x3 1/2"; 2x3"; c/d fwd. 1x4"; c/d ER 1x3"; c/d aft 1x2" In pump room Fwd. Main 3x3"  
Aft. Main 3x3"

In holds, &c. Dry cargo hold 2x2 1/2"; Handpump: c/d & aft. peak tank top 3x2"; c/d & fore peak tank top 3x2"

Direct Bilge Suctions to the engine room bilges, No. and size 1 x 5" and 1 x 7"

Are all the bilge suction pipes in holds --- fitted with strum-boxes Yes Are the bilge suction pipes 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 --- boxes or on tank top --- Are they fitted with valves or cocks Both Are they fixed --- Above and below ---

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the overboard discharges above or below the deep water line below

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 No coal bunkers How are they protected ---

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

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 shaft tunnel 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 --- stroke --- driven by ---

Auxiliary Air Compressors, No. 2 No. of stages 2 diameters 280/320 mm. stroke 150 mm. driven by El. motors

Small Auxiliary Air Compressors, No. --- No. of stages --- diameters --- stroke --- driven by ---

What provision is made for first charging the air receivers By the aux. air compressor. Current supplied by the steam driven generator. Also one separate scavenge pump to each cylinder.

Scavenging Air Pumps or Blowers, No. 1x9; underside of each piston --- driven --- by a lever from each crosshead.

Auxiliary Engines Have they been made under survey. Yes Engine Nos. 2 oil and one steam aux. engine

Makers name Aktiebolaget Götaverken Position of each in engine room 1 oil engine and 1 steam engine on port side and 1 oil engine on starboard side of the Engine room floor. Report No. Report attached.

AIR RECEIVERS:—Have they been made under survey. Yes  State No./~~of survey~~/or certificate. C. 83420

State full details of safety devices. Springloaded safety valves

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

Injection Air Receivers, No. --- Cubic capacity of each --- Internal diameter --- thickness ---

Seamless, welded or riveted longitudinal joint --- Material --- Range of tensile strength --- Working pressure ---

Starting Air Receivers, No. 2 Total cubic capacity 28 m<sup>3</sup> Internal diameter 6'-0" thickness 1"

Seamless, welded or riveted longitudinal joint welded Material Steel Range of tensile strength 28-32 tons/sq. inch. Working pressure 356 lbs

IS A DONKEY BOILER FITTED Yes  If so, is a report now forwarded Yes

Is the donkey boiler intended to be used for domestic purposes only. No.

PLANS. Are approved plans forwarded herewith for shafting. L. 8.10.43 & 2.1.1950 Receivers --- Separate fuel tanks ---

Donkey boilers --- General pumping arrangements L 2.12.49. Pumping arrangements in machinery space L 2.4.49.

Oil fuel burning arrangements

Have Torsional Vibration characteristics been approved. Yes  Date and particulars of approval L. 8.10.1949 and 2.1.1950

SPARE GEAR.

Has the spare gear required by the Rules been supplied. Yes  State if for "short voyages" only ---

State the principal additional spare gear supplied. One propellershaft with nut, 4 fuel needle valves, 4 piston, a number of piston rings, 2 cylinder liners, 2 exhaust gas valves complete, 4 spindles and 4 valve seatings for exhaust gas valves, 1 complete main bearing, 1 complete fuel injection pump and 9 fuel oil pump chests with plungers.

The foregoing is a correct description and particulars of the installation as fitted are as approved for torsional vibration characteristics.

ARTIEBOLAGET GÖTAVERKEN

Manufacturer.

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - -

12th April, 1951 - 13th March, 1952.

Total No. of visits

69

Dates of examination of principal parts—Cylinders 12, 13, 14, 15, 17, 12-51 & Covers 7, 8, 10, 11, 12-51 17/10, 14, 26/11 1951 Rods 7.11.51. Connecting rods 21.9.51.

Crank shaft 6.11.51. Flywheel shaft --- Thrust shaft 13.11.51 Intermediate shafts 1.2.-1952. Tube shaft ---

Screw shaft 2.1.52. Propeller 6.2. & 4.3.52 Stern tube 5.12.51 Engine seatings 11.12.51 Engine holding down bolts 28.1.52

Completion of fitting sea connections 20.12.51 Completion of pumping arrangements 6.3.52 Engines tried under working conditions 3.1. & 13/

Crank shaft, material S.M. Steel Identification mark LL No. 7695/6 G.A. 18.5.51. Flywheel shaft, material --- Identification mark ---

Thrust shaft, material S.M. Steel Identification mark LL No. 7697 G.A. 18.5.51. Intermediate shafts, material S.M. Steel Identification marks LL No. 8264 O.S. 1.2.52 mg. se

Tube shaft, material --- Identification mark --- Screw shaft, material S.M. Steel Identification mark LL No. 8263 NF 12.10.51

Identification marks on air receivers Nos. 1002/3 Fitted LL No. 8263 NF 12.10.51

Welded receivers, state Makers' Name Messrs. Cochran & Co. Annan, Ltd. Spare LL No. 8262 NF 12.10.51

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

Full description of fire extinguishing apparatus fitted in machinery spaces Steam under donkey boiler and Engine room floor and 6 x 2gls. foam extinguishes

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

What is the special notation desired. ---

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with. M/T Margaret Onstad, Got. F. E.

Is this machinery duplicate of a previous case. Yes  If so, state name of vessel. Rpt. No. 18385

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

This machinery has been built under Special Survey in accordance with the Rules and appd. plans and has been securely

fitted on board under our inspection and to our satisfaction. The workmanship and materials used are good and test sheet

in respect of shaftings, air receivers, steam aux. engine and propellers are attached herewith.

The machinery has been examined under full working power on a trial trip and found to work satisfactorily.

An exhaust gas economiser of Götaverkens' Multitubular type has been built under Survey in accordance with approved

plan and has been securely fitted on board.

Rec. This machinery is eligible, in our opinion to be classed + LMC 3,52 with notation of T S fitted with C.L. and

2 DB & 150 lbs/in<sup>2</sup>.

Special Fee The amount of ~~Excess~~ Kr. 5930:-

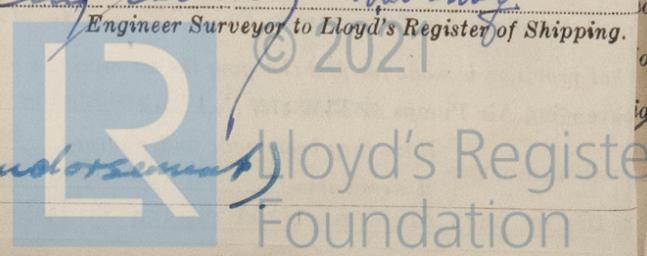
Special ... f----- When applied for 4th April 19 52

Exhaust gas economiser ~~Donkey Boiler~~ Fee... Kr. 100:- When received 19

Travelling Expenses (if any) Kr. 13:-

Committee's Minute

Assigned + LMC 352 Oil Eng (with torsional endorsement) C.L. 2DB 150lb.



Gothenburg Office

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)