

REPORT ON OIL ENGINE MACHINERY.

Received at London Office

Date of writing Report 4th Sep. 1941 When handed in at Local Office 10 Port of Stockholm
 No. in Survey held at Stockholm Date, First Survey 19.10.39 Last Survey 21.7.1941
 Reg. Book. Number of Visits 24

on the Single Screw vessel 1/2 "Star" Tons { Gross 640 Net 362
 Built at Stockholm By whom built M. Ekenbergs Varv Yard No. 177 When built 1941
 Engines made at Stockholm By whom made M. Atlas-Diesel Engine No. 85889 When made 1941
 Donkey Boilers made at Norrköping By whom made W. Iderströms Fj. & W. J. Boiler No. 1384 When made 1941
 Brake Horse Power 650 Owners Rederi M. Transocean Port belonging to Gothenburg
 Nom. Horse Power as per Rule 125 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes
 Trade for which vessel is intended "

OIL ENGINES, &c.—Type of Engines Polar Diesel Oil Engine, type M44M² or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 55 kg/cm² Diameter of cylinders 340 mm Length of stroke 570 mm No. of cylinders 4 No. of cranks 4
 Mean Indicated Pressure 6.35

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 280 Flywheel dia. 1550 mm Weight 2600 kgs Means of ignition Compression Kind of fuel used Diesel Oil

Crank Shaft, { Solid forged dia. of journals as per Rule 235 mm Crank pin dia. 235 mm Crank Webs Mid. length breadth 846.3 mm Thickness parallel to axis "
 { Semi built dia. of journals as fitted 235 mm Crank pin dia. 235 mm Crank Webs Mid. length thickness 122 mm shrunk Thickness around eyehole "
 { All built dia. of journals as per Rule 235 mm Crank pin dia. 235 mm Crank Webs Mid. length thickness 122 mm shrunk Thickness around eyehole "

The flywheel is fitted on the thrust shaft.
 Flywheel Shaft, diameter as per Rule " as fitted " Intermediate Shafts, diameter as per Rule " as fitted 140 mm Thrust Shaft, diameter at collars as per Rule " as fitted 260 mm

Tube Shaft, diameter as per Rule " as fitted " Screw Shaft, diameter as per Rule " as fitted 168 mm Is the { tube } shaft fitted with a continuous liner { No
 { screw } }

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 Yes If so, state type Cederwall's gland Length of Bearing in Stern Bush next to and supporting propeller 425 mm

Propeller, dia. 2050 mm Pitch 1335 mm No. of blades 3 Material cast steel whether Moveable no Total Developed Surface 1.42 sq. feet

Method of reversing Engines By comp. 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 25.5 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 the funnel

Cooling Water Pumps, No. Two 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. One Diameter 90 mm Stroke 140 mm (Double acting) Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size One; 18 tons per hour & One; 25.2 tons per hour. One; 315 lit/min.
 { How driven By aut. engine By main engine. By aut. eng.

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 size One; 18 tons per hour Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Two; 265 & 200 lit. per min.
 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 One off 2 1/2"; 3 off 3" In Pump Room "

In Holds, &c. Dry hold one off 2"; Cofferdamms 3 off 2"
 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 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 no Are they fitted with Valves or Cocks Valves
 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 "

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 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 " Is the Shaft Tunnel watertight None fitted 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. One No. of stages 2 Diameters 145/40 mm Stroke 350 mm Driven by Main Engine

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 95/40 mm Stroke 125 mm Driven by Atlas-Eng. E1B

Small Auxiliary Air Compressors, No. " No. of stages " Diameters " Stroke " Driven by "
 What provision is made for first Charging the Air Receivers By hand (Atlas Engine E1B can be started by hand)

Scavenging Air Pumps, No. One (Double acting) Diameter 770 mm Stroke 350 mm Driven by Main Engine
 Auxiliary Engines crank shafts, diameter as per Rule 45 mm No. " as fitted 80 mm Position "
 Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes (copy)

M170-0179

AIR RECEIVERS:—Have they been made under survey Yes State No. of Report or Certificate ✓
 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
Injection 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 ✓
 Actual ✓
Starting Air Receivers, No. One Total cubic capacity 1200 litres Internal diameter 650 mm. thickness 14 mm.
 + two See below
 Seamless, lap welded or riveted longitudinal joint riveted Material S.W. Steel Range of tensile strength 41-44 kg/cm² Working pressure —
 by Rules ✓
 Actual 25 kg/cm²

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 —
PLANS. Are approved plans forwarded herewith for Shafting 23, 36, 30, 37, 20, 40 Receivers E. 9, -35 Separate Fuel Tanks —
 (If not, state date of approval) 9
 Donkey Boilers 6, -40 General Pumping Arrangements 9, -41 Pumping Arrangements in Machinery Space 9, -41
 Oil Fuel Burning Arrangements —

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes Please see enclosed list.
 State the principal additional spare gear supplied One screw shaft and one propeller.

The foregoing is a correct description,
AKTIEBOLAGET ATLAS DIESEL **A.-B. EKENSBERGS VARV**
 Manufacturer.

Dates of Survey while building	During progress of work in shops -	19, 7, 21, 39, 30, 5, 1, 9, 15, 10, 2, 9, 12, 25, 15, 21, 7, -40
	During erection on board vessel -	14, 21, 8, 23, 14, 18, 26, 21, -41
	Total No. of visits	24
Dates of Examination of principal parts	Cylinders	12, 21, 40
	Covers	12, 21, 40
	Pistons	12, 21, 40
	Rods	—
	Connecting rods	12, 21, -39
		10, 11, 4
Crank shaft	30, 5, -40	
Flywheel shaft	✓	
Thrust shaft	7, 21, 40	
Intermediate shafts	11, -40	
Tube shaft	✓	
Screw shaft	5, 41	
Propeller	25, 40	
Stern tube	17, 41	
Engine seatings	15, -40	
Engines holding down bolts	23, -41	
Completion of fitting sea connections	17, -41	
Completion of pumping arrangements	26, -41	
Engines tried under working conditions	15, -40	
Crank shaft, Material	S.W. Steel	Identification Mark
	Lloyd's No. 8899	K.A. 5.2.40
Flywheel shaft, Material	✓	Identification Mark
	Lloyd's No. 8863	K.A. 21.12.39
Intermediate shafts, Material	S.W. Steel	Identification Marks
	Lloyd's No. 9025	K.A. 2.8.40
Screw shaft, Material	S.W. Steel	Identification Mark
	Lloyd's No. 3248	Hj. 5.3.41

Identification Marks on Air Receivers	No. 9023 LLOYD'S TEST 50 KG. W.P. 25 KG. K.A. 12.9.40.	No. 251 LLOYD'S TEST 140 ATM. W.P. 70 ATM. R. 27.11.22	No. 321 LLOYD'S TEST 140 ATM. W.P. 70 ATM. R. 30.11.22
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NOTE:—These two air receivers have formerly been fitted in the yacht "NAZ TERWER". The receivers have now been tested with water pressure to 50 kg/cm², and found good.

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 Tanker 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 Yes
 Is this machinery duplicate of a previous case Yes If so, state name of vessel "BEYERLAND"

General Remarks (State quality of workmanship, opinions as to class, &c.)
 This engine has been built under Special Survey and all the requirements of the Rules have been complied with. The shafting as per forging reports attached. The workmanship is good and the material fulfils the requirements of the Rules. The dimensions are as specified and in accordance with the Rules and approved plans. The whole machinery has been tested on trial trip under full working power and found to work satisfactorily. The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book with the notation of L.M.C. 7.41.

The amount of Entry Fee	.. £12.57.-	When applied for,	5.9.19.41.
Special £" 594.-	When received,	
Donkey Boiler Fee £" 80.-		
Travelling Expenses (if any)	£" 5.90.		19.
DITTO FOR DONKEY B.	" 46.75		

R. J. Andersson
 Engineer, Surveyor to Lloyd's Register of Shipping.



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

Committee's Minute
 Assigned