

## REPORT ON OIL ENGINE MACHINERY.

No. 3929

23 AUG 1934

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Writing Report 20<sup>th</sup> Aug 34 19 When handed in at Local Office 19 Port of Stockholm  
 in Survey held at Sickla, Stockholm Date, First Survey Sept 9<sup>th</sup>, 1932 Last Survey July 30<sup>th</sup>, 1934.  
 Book. Number of Visits 11

4 on the Single  
 Triple  
 Quadruple } Screw vessel "Pakusa"

Tons { Gross  
 Net

By whom built Yard No. When built  
 made at Stockholm By whom made Aktiebolaget Atlas-Diesel Engine No. 85270 When made 1934  
 Boilers made at By whom made Boiler No. When made  
 Horse Power 750 Owners Richardson & Co. Ltd. Port belonging to Napier N.Z.  
 Horse Power as per Rule 188 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 which vessel is intended

GINES, &c.—Type of Engines Polar Diesel Oil Engine, type H36M2 stroke cycle Single or double acting  
 Pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 340 mm Length of stroke 570 mm No. of cylinders 6 No. of cranks 6  
 Springs, adjacent to the Crank, measured from inner edge to inner edge 440 mm Is there a bearing between each crank Yes  
 per minute 222 Flywheel dia. 1200 mm Weight 1700 kg Means of ignition Compression Kind of fuel used Crude Oil  
 Shaft, dia. of journals as per Rule 216 mm Crank pin dia. 320 mm Crank Webs Mid. length breadth 308 mm Thickness parallel to axis  
 as fitted 220 mm Mid. length thickness 122 mm shrunk Thickness around eyehole  
 is fitted on the thrust shaft Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule 170 mm  
 as fitted as fitted as fitted 220 mm

Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner  
 as fitted as fitted as fitted  
 Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the  
 as fitted as fitted as fitted

If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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  
 Is an approved Oil Gland or other appliance fitted at the after end of the tube  
 Length of Bearing in Stern Bush next to and supporting propeller

If so, state type reversing Engines by compressed air as a governor other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication  
 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  
 lagging material If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

Water Pumps, No. 1 Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
 Pumps worked from the Main Engines, No. 1 Diameter 100 mm Stroke 140 mm (double acting) Can one be overhauled while the other is at work

connected to the Main Bilge Line No. and Size How driven Lubricating Oil Pumps, including Spare Pump, No. and size  
 Pumps, No. and size independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 No. and size:—In Machinery Spaces In Pump Room

Power Pump Direct Suctions to the Engine Room Bilges, No. and size  
 Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are the Bilge Suctions in the Machinery Spaces  
 easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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

pass through the bunkers How are they protected  
 pass through the deep tanks Have they been tested as per Rule

es, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times  
 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  
 to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
 for sealing air 1 No. of stages 2 Diameters 175/70 mm Stroke 350 mm Driven by Main engine  
 Air Compressors, No. 1 No. of stages 2 Diameters Stroke Driven by Main engine

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters Stroke Driven by Main engine  
 ing Air Pumps, No. 1 Diameter 940 mm Stroke 350 mm Driven by Main engine

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

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes  
 internal surfaces of the receivers be examined and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

Pressure Air Receivers, No. Name fitted Cubic capacity of each Internal diameter thickness  
 lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules 2020  
 Actual

Air Receivers, No. 2 Total cubic capacity 2000 litres Internal diameter 650 mm thickness 14 mm  
 lap welded or riveted longitudinal joint Riveted Material SM Steel Range of tensile strength 41.44 kg/cm<sup>2</sup> Working pressure by Rules 25.3 kg/cm<sup>2</sup>  
 Actual 25 kg/cm<sup>2</sup>



## 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. 23-6-31.  
(If not, state date of approval)

Receivers E 6-8-30

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

## SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

} Spare gear as per attached lists. This gear has been examined before it was despatched. The remaining spare gear will be delivered by the erecting time.

The foregoing is a correct description,

ARTIFORLAGET ATLAS DIESEL

Johu Foerden

Manufacturer.

Dates of Survey while building { During progress of work in shops - 16.23. 20. 10. 11. 12 1932; 21 10 1933; 25 6 7.12.17.30 1934;  
During erection on board vessel - - -  
Total No. of visits in shop 11.

Dates of Examination of principal parts—Cylinders 7.12.17 34 Covers 7.12.17 34 Pistons 12 34 Rods - Connecting rods 16.2 9 12  
Crank shaft 12 32; 25 6 12 34. <sup>has pump</sup> Thrust shaft 20 32; 25 6 12 34 Intermediate shafts Tube shaft  
Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections. Completion of pumping arrangements. Engines tried under working conditions in shop  
Crank shaft, Material SM. Steel Identification Mark LLOYD'S 6279 <sup>has pump</sup> Thrust shaft, Material SM. Steel Identification Mark LLOYD'S 6281  
Thrust shaft, Material SM. Steel Identification Mark LLOYD'S 6281 Intermediate shafts, Material Identification Marks  
Tube shaft, Material Identification Mark LLOYD'S 6281 Screw shaft, Material Identification Mark

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 See Min. Rpt No 3729.

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

I am of opinion that this engine is of superior material and workmanship, and as it has been designed and constructed under special survey, I have respectfully to submit that it be eligible to be classed +LHC, as soon as it has been fitted into the "Pakusa" to the satisfaction of the Society's surveyor.

The amount of Entry Fee ... £ : : When applied for,  
Special in shop fee 684.00 : : 19  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) £ : : 29.9 1934

Committee's Minute

Assigned

TUE. 26 MAR 1935

Secy. L. Rpt  
1252

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



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Foundation