

REPORT ON OIL ENGINE MACHINERY.

No. 3929

23 AUG 1934

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Writing Report 20th Aug 1934 When handed in at Local Office 19 Port of Stockholm
Survey held at SICKLA, Stockholm Date, First Survey Sept 9th, 1932 Last Survey July 30th, 1934.
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 13 3/8 22 7/8
GINES, &c.—Type of Engines Polar Diesel Oil Engine, type H36M2 stroke cycle Single or double acting
Pressure in cylinders 49 kg/cm² 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.

Revolutions 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. Thickness around eye-hole

Is fitted on the Main Shaft Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collar as per Rule 170 mm.
as fitted as fitted as fitted 220 mm.
Shaft, diameter as per Rule Is the tube screw shaft fitted with a continuous liner
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
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
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
If so, state type Length of Bearing in Stern Bush next to and supporting propeller

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

Element 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
located 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
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

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

Are the valves, 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

On vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
for starting air
Air Compressors, No. 1 No. of stages 2 Diameters 175/70 mm. Stroke 350 mm. Driven by Main engine.
Auxiliary 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.
Working Air Pumps, No. 1 Diameter 940 mm. Stroke 350 mm. Driven by Main engine.
Main Engines crank shafts, diameter as per Rule Position
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 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/cm² Working pressure by Rules 25.3 kg/cm² Actual 25 kg/cm²

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 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,

ARTIFERLAGET ATLAS DIESEL

Johu Foerden

Manufacturer.

Dates of Survey while building During progress of work in shops - 16.27.9, 20.10.10, 10.11.12, 1932; 21.10.1933; 25.6.7.12.17.30.1934; During erection on board vessel - - - Total No. of visits in ship 11.

Dates of Examination of principal parts - Cylinders 7.12.17.34 Covers 7.12.17.34 Pistons 12.7.34 Rods - Connecting rods 16.2.9 Crank shaft 1.12.32, 25.6.12.34 Sea pump shaft 1.12.32, 25.6.12.34 Thrust shaft 20.10.32, 25.6.12.34 Intermediate shafts Tube shaft 12.7.34 Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of filling sea connections Completion of pumping arrangements Engines tried under working conditions in ship Crank shaft, Material S.H. Steel Identification Mark LLOYDS No 6279 KA 25-6-34 Sea pump shaft, Material S.H. Steel Identification Mark LLOYDS No 6281 KA 25-6-34 Thrust shaft, Material S.H. Steel Identification Mark LLOYDS No 6281 KA 25-6-34 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. 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 Mem. Rpt No 3729.

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

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

The amount of Entry Fee ... £ : : When applied for, Special in shops £r. 684.00 : : 19 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 29.9 19 34

Committee's Minute Assigned Sec Lt. Apt 1252 TUE. 26 MAR 1935

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