

4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 9570

Received at London Office

-1 APR 1935

Writing Report 19/3 1935 When handed in at Local Office 19 Port of Copenhagen  
 Survey held at Odense Date, First Survey 12/11 1934 Last Survey 12/3 1935  
 Number of Visits 16  
 on the Single } Screw vessel "PERNA"  
 Twin }  
 Triple }  
 Quadruple }  
 at Odense By whom built Odense Maskfabrik Yard No. 54 When built 1935  
 es made at Amsterdam By whom made v.v. Werkspoor Engine No. 631 When made 1934  
 y Boilers made at Amsterdam By whom made v.v. Werkspoor Boiler No. 2668 When made 1934  
 Horse Power 2800 Owners v.v. Petroleum Maats. 19 CORONA Port belonging to S Gravenhage  
 Horse Power as per Rule 502 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes.  
 for which vessel is intended ocean trad, carrying petroleum in bulk.

ENGINES, &c.—Type of Engines 2 or 4 stroke cycle Single or double acting

m pressure in cylinders Diameter of cylinders Length of stroke No. of cylinders No. of cranks

icated Pressure 110 lbs / sq. in. Diameter of cylinders Length of stroke No. of cylinders No. of cranks

bearings, adjacent to the Crank, measured from inner edge to inner edge Is there a bearing between each crank

ns per minute Flywheel dia. Weight Means of ignition Kind of fuel used

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

el Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule  
 as fitted as fitted as fitted as fitted

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 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 as fitted

boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

uer 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

er, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

of reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication

Thickness of cylinder liners Are the cylinders fitted with safety valves Are the exhaust pipes and silencers water cooled or lagged with

acting material If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine to funnel

Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes.

umps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

connected to the Main Bilge Line No. and Size 2 off 35 to 1/4 inch 1 off 10" 8" 8" duplex  
 How driven by main engine by steam

ling 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

nts

Pumps, No. and size 1 off 10" 8" 8" duplex Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

D. PUMP: 1 off 6" 6" 6" duplex 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 3 off 3 1/2" 2 off 3 1/2" FROM COFFERS IN DOUBLE BOTTOM In Pump Rooms: 1 off 3"

&c. FOREHOLD: 3 off 2" F. PUMP ROOM: 1 off 2" F. COFF.: 3 off 2 3/4" AFT COFF.: 1 off 5"

dent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 off 5" 1 off 6 1/4"

he Bilge Suction pipes in Holds and Tank Well fitted with strum-boxes yes. 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 yes.

ea Connections fitted direct on the skin of the ship yes. Are they fitted with Valves or Cocks valves.

red 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.

uch 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.

s pass through the bunks How are they protected

s pass through the deep tanks 1 off 5" COFF. SUCTION Have they been tested as per Rule yes.

ipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes.

ngement 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

nt to another yes. 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

Compressors, No. No. of stages Diameters Stroke Driven by

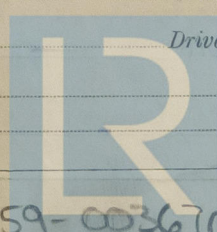
VERING 2 No. of stages 2 CAPACITY 120 CB. FT. PR. MIN. Driven by Steam.

Air Compressors, No. No. of stages Diameters Stroke Driven by

g Air Pumps, No. Diameter Stroke Driven by

Engines crank shafts, diameter as per Rule as fitted 110 7/8

FOR REMAINING ITEMS PLEASE SEE AMSTERDAM RPT. NO. 13334 A



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AIR RECEIVERS:—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*

High Pressure Air Receivers, No. *None* 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. *None* Total cubic capacity *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure by Rules Actual

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 *✓* Receivers *✓* Separate Tanks *yes*

Donkey Boilers *no* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *yes*

### SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*

State the principal additional spare gear supplied *1 cylinder head, 2 cylinder liners, 1 piston, 1 piston rod, 1 crosshead guide shaft, 1 connecting rod, 6 exhaust valves complete, 8 exhaust valves w. spindles & seats, 3 inlet valves, 2 escape valves complete, 2 starting valves w. spindles, 4 fuel valves complete, 1 chain for cam, 1 crosshead bolt, 2 crank pin bearing bolts, 2 main bearing bolts, 48 piston ring scrapers, 1 fuel pump complete, 1 propeller shaft, 1 cast iron propeller.*

The foregoing is a correct description,

PR. ODENSE STAALSKIBSVÆRFT

VED A. P. MØLLER

Manufacturer.

Dates of Survey while building *During progress of work in shops-- 2/11, 27/11, 9/12, 17/12, 1934; 3/1, 10/1, 15/1, 22/1, 29/1, 1/2, 13/2, 20/2, 28/2, 7/3, 12/3, 1935.*  
Total No. of visits *16*

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods

Crank shaft Flywheel shaft Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller *17/12* Stern tube *9/12, 17/12* Engine seatings *17/12* Engines holding down bolts *3/1*

Completion of fitting sea connections *27/1* Completion of pumping arrangements *13/2* Engines tried under working conditions *7/3*

Crank shaft, Material Identification Mark Flywheel shaft, Material Identification Mark

Thrust shaft, Material Identification Mark 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. *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 *yes* (OIL TANKER) 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 *✓*

Is this machinery duplicate of a previous case *✓* If so, state name of vessel *✓*

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

*The above machinery has been supplied by Messrs. N.V. Werkspoor of Amsterdam and has been fitted on board the vessel under special survey and in accordance with Society's Rules, the approved plans and the requirements contained in the Letters E dated 19/12/1934 and 18/1/1935.*

*On completion of the installation the whole of the main & auxiliary machinery as the cargo pumping arrangement was tried under working conditions and satisfactory and on the first trial trip, on which a speed of 13 knots was obtained, the manoeuvring of the main engine was tested and found good.*

*Recommend the vessel's machinery to have notation of +LMC-3.35*

C.L.

The amount of Entry Fee .. *£26.88*

1/5 Special ... *£448.48*

Donkey Boiler Fee ... *£300.00*

Travelling Expenses (if any) *£542.00*

Committee's Minute *FRI. 5 APR 1935*

Assigned *+LMC 3.35*

*SB. 180 lb oil engines*

When applied for, *28.3.1935*

When received, *10.4.1935*

*12/4*

*Cl. Liff.*

Engineer Surgeon to Lloyd's Register of Shipping

*Copenhagen*

Continuation of Report No. 9570 dated 19/3 1935 on the

*Motor Tanker 'PERNA' of 'Gravenhage'*

## The Auxiliary Machinery comprises

*a single ended stirrutebular donkey boiler, 2560 sq. ft. H.S., 180 LBS. W.P., fitted for exhaust gas and oil firing.*

*The steam is used for the following purposes:*

*off Win's feed pumps, 6" x 8 1/2" x 18" simple*

*2 lb unit for oil burning, Smith's patent, consisting of 2 oil fuel pressure pumps, 3" x 4 1/2" x 6" simple, 2 preheaters and 2 filters.*

*fan for forced draught.*

*evaporator*

*ballast pump (general service pump), 10" x 8" x 8" duplex.*

*shand by centrifugal salt water cooling pump, 200 to 600*

*" piston cooling water pump (fresh water), 8" x 8" x 10" duplex.*

*" lubricating oil pump, 8" x 8" x 10" duplex.*

*coffee dam pump, 6" x 6" x 6" duplex.*

*oil fuel transfer pump, 6" x 8" x 6" duplex.*

*lubricating oil transfer pump (drum pump), 4 1/2" x 3" x 4" duplex.*

*2 stage, manouvering air compressor, each driven by a 1-cyl.*

*50 H.P. engine, 450 R/M., capacity 120 cu. ft. free air per minute.*

*16 kwh. compound wound dynamo, driven by a 1-cyl. steam*

*engine, 110 V. x 140 A. x 390 R/M.*

*2-cyl. NH<sub>3</sub> compressor for the cooled provision stores, driven by a*

*1-cyl. steam engine, placed in a special compartment aft.*

*cargo oil pumps, 12" x 10" x 24" duplex } In the 1 main*

*stripping & btlg pump 6" x 6" x 6" duplex } pump room.*

*cargo oil pumps, 12" x 10" x 24" duplex } In the 2 main*

*stripping & btlg pump 6" x 6" x 6" duplex } pump room.*

*oil fuel transfer pump, 6" x 6" x 6" duplex } In the forward*

*btlg & ballast pump, 6" x 6" x 6" duplex } pump room*

*hydraulic steering gear, worked by a 2-cyl. steam engine, con-*

*trolled from the bridge through telemotor.*

*windlass on deck, 1 windlass and heating coils in oil*

*belts, daily service tanks, D.B. tanks and heater in the*

*accommodation space.*

*the aft-most centre tank for cargo oil is fitted a 18 to 1/2" ejector*

*with a 2" suction pipe to centre, port and starboard tanks, grand pump*

*Further a 26/30 H.P. 2 S.C.S.A. Thruout Diesel oil engine, 210 Tm*

*diam. x 27 1/2" Tm stroke x 390 R/M. is working a 16 kwh. compound*

*wound dynamo, 110 V. x 140 amp x 390 R/M. like the steam driven*

*quams intended for giving current for the electric light in*

*allation and for the following electric motor:*



