

REPORT ON OIL ENGINE MACHINERY.

No. 11527

Received at London Office 25 AUG 1945

Date of writing Report 29th March 1943 When handed in at Local Office

Port of Copenhagen

No. in Survey held at Copenhagen

Date, First Survey 9th August 1941 Last Survey 6th March 1943

Reg. Book. Single }
Twin }
Triple }
Quadruple }
Screw vessel

NAVITAS

Tons } Gross 2273.30
Net 1164.43

Built at Copenhagen By whom built Aht. Bumister & Wain's Yard No. 666 When built 1943

Engines made at Copenhagen By whom made Aht. Bumister & Wain Engine No. 3505 When made 1943

Donkey Boilers made at Copenhagen By whom made Aht. Bumister & Wain Boiler No. 2022 When made 1943

Brake Horse Power 950 Owners A/B O/B NAVITAS Port belonging to

Nom. Horse Power as per Rule 272 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

Trade for which vessel is intended General cargo. Open sea service.

OIL ENGINES, &c.—Type of Engines Vertical Diesel engine general gas 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 550 mm Length of stroke 1000 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure GAS 5.7 kg/cm² OIL 7.3 kg/cm² Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 724 mm Is there a bearing between each crank yes

Revolutions per minute OIL - 145 Flywheel G.P. 960 kgm² Weight 13080 kgm² Means of ignition Oil compression Kind of fuel used general gas

Crank Shaft, Solid forged dia. of journals as per Rule 342 mm as fitted 350 mm Crank pin dia. 350 mm Crank Webs Mid. length breadth 680 mm Mid. length thickness 218 mm Thickness parallel to axis 218 mm Thickness around eyehole 200 mm

Flywheel Shaft, diameter as per Rule - as fitted - Intermediate Shafts, diameter as per Rule 229 mm as fitted 285 mm Thrust Shaft, diameter at collars as per Rule 241 mm as fitted 300 mm

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 277 mm as fitted 285 mm Is the screw shaft fitted with a continuous liner no

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 B.W. oil light gland Length of Bearing in Stern Bush next to and supporting propeller 1100 mm

Propeller, dia. 3400 mm Pitch 2489 mm No. of blades 4 Material Steel whether Moveable no Total Developed Surface 3.80 sq. m

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

Thickness of cylinder liners 38 mm Are the cylinders fitted with safety valves no Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Cooling Water Pumps, No. 2 off centrifugal 2 x 45 hp 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. 2 Diameter 150 mm Stroke 175 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size 1 Ballast pump 150 hp. 2 bilge pumps 2 x 25 hp. 2 eng. bilge pumps 2 x 25 hp. How driven electrically

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 1 off 150 hp/rev Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 40 hp/rev each

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 off 3"-1 off 4". Dry tank 1 off 2" In Pump Room 1 off 2" each

In Holds, &c. No. I: 2 off 3" cl. II: 2 off 3" Chain locker 1 off 1 1/2 hand pump suction

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 off 6" 2 off 3"

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 yes 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 bilge pipes to hold How are they protected by strong wooden boxes

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 yes

Is the Shaft Tunnel watertight none 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 130 mm Stroke - Driven by -

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 130-115 mm Stroke 120 mm Driven by electromotors

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 40-45 mm Stroke 70 mm Driven by hand

What provision is made for first Charging the Air Receivers one hand worked compressor

Scavenging Air Pumps, No. - Diameter - Stroke - Driven by -

Auxiliary Engines crank shafts, diameter as per Rule 110 mm - 116 mm as fitted 125 mm No. 2 off 4 cyl 1 off 2 cyl Position in the engine room floor level

Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes

AIR RECEIVERS:—Have they been made under survey yes State No. of Report or Certificate see our reg. refer

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. - Cubic capacity of each - Internal diameter - thickness -
Seamless, lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure -

Starting Air Receivers, No. one Total cubic capacity 6 m³ Internal diameter 1470 mm thickness 24 mm
Seamless, lap welded or riveted longitudinal joint 3 m² Material S.M. Steel Range of tensile strength 47.5 kg/mm² Working pressure by Rules 32.2 and 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 for heating & gas generating plant

PLANS. Are approved plans forwarded herewith for Shafting yes Receivers yes Separate Fuel Tanks -
Donkey Boilers yes General Pumping Arrangements yes Pumping Arrangements in Machinery Space yes
Oil Fuel Burning Arrangements -

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes
State the principal additional spare gear supplied -

The foregoing is a correct description, J. P. Jensen
BURMEISTER & CO. A/S, KONGS VÆRKTØJ OG SKIBSBYGGERI

Manufacturer.

Dates of Survey while building
During progress of work in shops - 14/3-24/4-11/5-29/5-1/6-11/6-19/6-2/7-25/7-24/8-29/8
During erection on board vessel - 1942: 27/3-19/6-22/7-27/7-28/8-1/9-5/9-9/9-16/9-22/9-30/9-3/10-14/10-22/10-26/10-29/10-4/11 1943: 5/1-13/1
Total No. of visits 55

Dates of Examination of principal parts—Cylinders and Covers 28/2-42 Pistons 16/3-42 Rods - Connecting rods 29/10-12/11-4/12
Crank shaft 2/2-42 Flywheel shaft - Thrust shaft 25/7-22/11-4/12-42 Intermediate shafts 5/12-2/2-42 Tube shaft -
Screw shaft 16/1-30/1-20/4-42 Propeller 2/7-25/7-14/7-10-42 Stern tube 24/1 27/3-42 Engine sealings 19/1-22/7-23/8-42 Engines holding down bolts 23/8-42
Completion of fitting sea connections 27/3-7/10-42 Completion of pumping arrangements 1/9-30/9-42 13/1-5/2-43 Engines tried under working conditions 29/1-1/6-42 13/1-1/2-5/2

Crank shaft, Material S.M. S. Steel Identification Mark LLOYD'S NO 5695 C.K. 2.2.42 Flywheel shaft, Material - Identification Mark -
Thrust shaft, Material S.M. S. Steel Identification Mark LLOYD'S NO 5696 C.K. 2.2.42 Intermediate shafts, Material S.M. Steel Identification Marks LLOYD'S NO 5697 C.K. 2.2.42
Tube shaft, Material - Identification Mark - Screw shaft, Material S.M. S. Steel Identification Mark LLOYD'S NO 5728 C.K. 20.4.42

Identification Marks on Air Receivers LLOYD'S TEST 41 ATM W.P. 25 ATM 430.7.42

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 so far as applicable
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo no 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 yes
Is this machinery duplicate of a previous case no If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c.) This engine has been constructed under special survey and in accordance with the Society's Rules for Heavy Oil Engines and the plans approved in this office. The engine is at present intended for burning gas (for which reason the cylinder safety valve has been omitted) and for this purpose a duplex gas generating plant as described in the accompanying continuation report has been installed in the 'tween deck space. The fittings and installation has been carried out in accordance with the Rules, the approved plans and to our satisfaction, and the machinery has been tested under working conditions and found satisfactory

Recommend the vessel's machinery to have notation of LMC-3.43, GAS ENGINE
Machinery Experimental O.G.

Table with columns for Fee Type, Amount, and When Applied/Received. Includes Entry Fee (90.00), Special (1452.00), Donkey Boiler Fee (50.00), GAS GENERATING PLANT (600.00), and LATE FEES (60.00).

Signature of J. Langkilde Jensen, Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 JAN 1948
Assigned + LMC 1.45 Oil Eng 512.00 (O.G.)

