

# REPORT ON OIL ENGINE MACHINERY.

No. 11091.

24.1.40.

Received at London Office

Date of writing Report 14<sup>th</sup> January 1940 When handed in at Local Office 19 Port of Copenhagen  
To, in Survey held at Copenhagen & Askov Date, First Survey 26<sup>th</sup> January 39 Last Survey 4<sup>th</sup> January 1940  
eg. Book. Number of Visits 67  
on the Single Screw vessel Motor Tanker "SATURNUS" Tons Gross 9964.73  
Twin Net 5817.86  
Triple  
Quadruple  
built at Askov By whom built As Askov Skibsverft Yard No. 91 When built 1940  
Engines made at Copenhagen By whom made As Askov Skibsverft Engine No. 3000 When made 1940  
Donkey Boilers made at Aalborg By whom made As Aalborg Verft Boiler No. 503-04 When made 1940  
Brake Horse Power 5500 Owners Rederi A/S Saturnus Port belonging to Stockholm  
Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Tom. Horse Power as per Rule 1030  
ade for which vessel is intended Carrying Petroleum in Bulk. Ocean going

ENGINE, &c. Type of Engines Vertical Diesel engine 2 or 4 stroke cycle 2 Single or double acting double  
Maximum pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 620 mm Length of stroke 1400 mm No. of cylinders 5 No. of cranks 5  
Indicated Pressure 6.4 kg/cm<sup>2</sup> Weight 1164 kg Is there a bearing between each crank yes  
No. of bearings, adjacent to the Crank, measured from inner edge to inner edge 1164 mm  
Revolutions per minute 108 Means of ignition compression Kind of fuel used Enders oil  
Crankshaft, Solid forged as per Rule 495 mm Crank pin dia. 485 mm Crank Webs 1040 mm Thickness parallel to axis 250 mm  
Semi built dia. of journals as fitted 485 mm Mid. length thickness 250 mm Thickness around eyehole 272.5 mm  
All built as per Rule 115 mm as fitted 115 mm Thrust Shaft, diameter at collars as per Rule 460 mm  
Wheel Shaft, diameter as fitted Intermediate Shafts, diameter as fitted 382 mm  
Main Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 422 mm Is the yes shaft fitted with a continuous liner yes  
as fitted 405 mm as fitted 405 mm  
Bronze Liners, thickness in way of bushes as per Rule 22 mm Thickness between bushes as per Rule 17 mm Is the after end of the liner made watertight in the  
peller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner yes  
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 yes  
two liners are fitted, is the shaft tapped or protected between the liners yes Is an approved Oil Gland or other appliance fitted at the after end of the tube  
ft yes If so, state type yes Length of Bearing in Stern Bush next to and supporting propeller 1915 mm  
Propeller, dia. 5600 mm Pitch 4080 mm No. of blades 4 Material Brass whether Moveable no Total Developed Surface 132 sq. feet  
Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication  
Thickness of cylinder liners 42 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with  
conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine to pump  
Cooling Water Pumps, No. 2 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 160 mm Stroke 240 mm Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line 2 engine bilge pumps, 1 boiler pump 150 mm, 1 bilge suction pump 230 mm  
How driven chain engine Steam electrically  
the cooling water led to the bilges overboard If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements yes  
Ballast Pumps, No. and size 1 off 150 mm Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 230 mm 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 2 off 3 1/2" - 1 off 3" - 1 off 2 1/2" - 1 off 2 1/2" from oil pump room, 2 off 2" from bilge pump room, 1 off 1 1/2" from pump room  
Holds, &c. DRY HOLD: - 2 off 4" - 1 off 10-11 - 1 off 1 1/2" - 1 off 20-1 off 1 1/2" - 47-48 - 1 off 2 1/2" (diesel), 187-59 - 1 off 3 1/2" - 1 off 1 1/2" - 1 off 1 1/2" - 1 off 1 1/2"  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 off 7" - 2 off 4" - 1 off 3 1/2"  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces  
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 & below  
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 none How are they protected yes  
What pipes pass through the deep tanks none Have they been tested as per Rule yes  
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes  
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  
apartment to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from yes  
a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes  
Main Air Compressors, No. 2 No. of stages 2 Diameters 400 mm Stroke 190 mm Driven by air engine  
Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 250 mm Stroke 190 mm Driven by air engine  
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 106 mm Stroke 34 mm Driven by Steam  
What provision is made for first Charging the Air Receivers The steam driven emergency air compressor  
Savenging Air Pumps, No. 2 off 2 x Diameter 265 mm Driven by chain engine  
Auxiliary Engines crank shafts, diameter as per Rule 130 mm No. 2 Position In the engine room - P.S. side from bow  
Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes



*The foregoing is a correct description.*

Dates of Examination of principal parts—Cylinders  $30/6-197$  Covers  $24/8-26/5$  Pistons  $25/5-17/6-24/4$  Rods  $3/18-27-28/4$  Connecting rods  $19/3-27/3-1$   
 Crank shaft  $1/3-3/4-10/6$  Flywheel shaft  $27/10-19/2$  Thrust shaft  $27/3-4/10/6$  Intermediate shafts  $2/8-4/8-12/8-2/10$  Tube shaft  $-$   
 Screw shaft  $26/4/8-18/8-27/9/10$  Propeller  $27/10-19/2$  Stern tube  $12/11/10-20/10-19/2$  Engine seatings  $11/10-20/10-27/24-22/11$  Engines holding down bolts  $2/11-22/11$   
 Completion of fitting sea connections  $4/10/10-20/10-19/2$  Completion of pumping arrangements  $6/12/12-28/1-3/11$  Engines tried under working conditions  $3/28-29/3-18/12-12/1$   
 Crank shaft, Material *Sell. P. Steel* Identification Mark *LLOYD'S N° 4755-56* Flywheel shaft, Material  $-$  Identification Mark  $-$   
 Thrust shaft, Material *Sell. P. Steel* Identification Mark *LLOYD'S N° 4757* Intermediate shafts, Material *Sell. P. Steel* Identification Mark *LLOYD'S N° 4834*  
 Tube shaft, Material  $-$  Identification Mark  $-$  Screw shaft, Material *Sell. P. Steel* Identification Mark *LLOYD'S N° 4835-3*  
 Is the flash point of the oil to be used over  $150^{\circ}$  F. *yes*  $4/9.11.39$

*General Remarks* (State quality of workmanship, opinions as to class, &c. The above machinery has been constructed under special survey in accordance with the Rules the appraisals and the requirements contained in the Secretary's letter dated 11/16/3-28/3-12/5-9/8-11/8-1939.

On completion the whole installation was tested under full power conditions and found satisfactory in every respect.

Recommend the vessel machinery to have notation in the Regist. Book

Rpt. 9a.  
Port of *Leopoldshafen* Continuation of Report No. *11091* dated *4<sup>th</sup> January 1940* on the

- 1 " 1 cylinder, 48 BHK, steam engine (Roader & Son type S.F. 9) for 30 KW generator
- 1 " ballast pump, duplex 9" x 10" x 10" - 150 lb/min
- 1 " daily service oil fuel pump, duplex 6" x 7" x 7", 45 lb/min
- 2 " feed pumps, simplex 7" x 5" x 12"
- 1 " air pump, - - - 8" x 15" x 12"
- 1 " "Ford's" oil burning installation (double)
- 2 " deck winches
- 1 " warping winch
- 1 " windlass

<u>In Slidships Pumps</u>		Steam
2"	cargo oil pumps, duplex 20" x 14" x 24", - 385 lb/mon each	
1"	bilge pumps duplex 10" x 10" x 10", 120 lb/mon	

In the Forward Pumproom.

1 " ballast pump, duplex 8" x 8" x 10", 85 1/2 hp

1 " oil fuel service pump, duplex 8" x 8 1/2" x 10", 85 1/2 hp

Further 2 oil fired "scotch" donkey boilers, 1 exhaust gas fired "La Mont" boiler, 2 - 150 kW generating sets and a number of electric motors as specified on special reports herewith.

The foregoing is a correct description,

ARTISTELSKABET  
NATIONALT SKIBSVÆRFT  
*Andersen*

10m.4.30. (MADE AND PRINTED IN ENGLAND)

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