

# REPORT ON OIL ENGINE MACHINERY.

No. 11750

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Date of writing Report 20th July 1945 When handed in at Local Office 19 Port of Copenhagen  
 No. in Survey held at Copenhagen Date, First Survey 19th March 1939 Last Survey 17th July 1945  
 Reg. Book. Number of Visits 91  
 on the Single Twin Triple Quadruple Screw vessel "ESSO NYBORG" Tons Gross 9948.56  
 Built at Copenhagen By whom built Akt. Bernicke & Wain Yard No. 669 When built 1945  
 Engines made at Copenhagen By whom made Akt. Bernicke & Wain Engine No. 3402 When made 1945  
 onkey Boilers made at Copenhagen By whom made Akt. Bernicke & Wain Boiler No. 2017 When made 1945  
 Brake Horse Power 5250 Owners Det Danske Petroleumskt Port belonging to Copenhagen  
 m. Horse Power as per Rule 946 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 ade for which vessel is intended Ocean going oil carrier

ENGINES, &c. — Type of Engines Vertical Diesel trunk pistons. Sol. injection or 4 stroke cycle 2 Single or double acting single  
 ximum pressure in cylinders 49 kg/cm<sup>2</sup> Diameter of cylinders 19 1/16 500 mm Length of stroke 35 7/16 900 mm No. of cylinders 2 x 7 No. of cranks 2 x 7  
 an Indicated Pressure 7.5 kg/cm<sup>2</sup> Is there a bearing between each crank yes  
 an of bearings, adjacent to the crank, measured from inner edge to inner edge 698 mm Kind of fuel used Heavy oil  
 olutions per minute 155 Turning 60° 3600 rpm Ball 40° 8470 rpm Kind of fuel used Heavy oil  
 ank Solid forged dia. of journals 331 mm Crank pin dia. 340 mm Crank webs 850 mm Mid. length breadth 208 mm Thickness parallel to axis 208 mm  
 aft, Semi built All built with 115 mm ch. hole with 115 mm ch. hole 200 mm 208 300 mm 306  
 wheel Shaft, diameter 264 mm Intermediate Shafts, diameter 266 mm Thrust Shaft, diameter at collars 278 mm  
 be Shaft, diameter 292 mm 295 mm Is the tubo screw shaft fitted with a continuous liner yes  
 onize Liners, thickness in way of bushes 16.4 mm Thickness between bushes 12.3 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 one length  
 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-  
 rosive yes If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after  
 af tube shaft yes If so, state type no Length of bearing in Stern Bush next to and supporting propeller 1255 mm  
 peller, dia 3950 mm Pitch 2980 mm No. of blades 3 Material Arm. Steel whether moveable no Total developed surface 4.93 sq. feet  
 thod of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declatched yes Means of  
 rication force Thickness of cylinder liners 33.5 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled  
 agged with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned  
 to the engine to pump Cooling Water Pumps, No. 3 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes  
 ge Pumps worked from the Main Engines, No. 2 Diameter 165 mm Stroke 230 mm Can one be overhauled while the other is at work yes  
 nps connected to the Main Bilge Line { No. and size 2 off 23.54/h each 1 off 35 to 1/1 1 off 180 to 1/4  
 How driven by main engine by steam by steam  
 he 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  
 ngements no  
 ast Pumps, No. and size 1 off 180 to 1/4 Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 off 100 to 1/4 each  
1 off 200 to 1/4  
 two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both main bilge pumps and auxiliary  
 e pumps, No. and size: — In machinery spaces 3 off 3 1/2" 2 off 3" 1 off 4"  
1 off 2" In pump room 1 off 2"  
 olds, Hold: 2 off 2 1/2" Cofferdams: F. 73-74-1 off 3 1/2" F. 43-44-1 off 5" Change locker - peak space 1 1/2" hand pump suction  
 ependent Power Pump Direct Suctions to the engine room bilges, No. and size 1 off 9" 1 off 3 1/2" + 1 direct 3" from engine bilge p.  
 all the bilge suction pipes in holds and tunnel well fitted with strum-boxes yes Are the bilge suction in the machinery spaces led from easily  
 ssible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes  
 all Sea Connections fitted direct on the skin of the Ship yes Are they fitted with valves or cocks valves Are they fixed  
 ciently 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  
 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  
 it pipes pass through the bunkers none How are they protected no  
 it pipes pass through the deep tanks none Have they been tested as per Rule no  
 all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 e 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  
 es, or from one compartment to another yes Is the shaft tunnel watertight none Is it fitted with a watertight door no worked from no  
 wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no  
 DEUVERING one 240 No. of stages 2 diameters 250/100 mm stroke 150 mm driven by steam eng.  
 Air Compressors, No. one 240 No. of stages 2 diameters 250/100 mm stroke 150 mm driven by no  
 ilary Air Compressors, No. no No. of stages no diameters no stroke no driven by no  
 all Auxiliary Air Compressors, No. no No. of stages no diameters no stroke no driven by no  
 at provision is made for first charging the air receivers The steam driven air compressor  
 avenging Air Pumps, No. 2 off 114 mm diameter 111 mm stroke no driven by the main engine  
 uxiliary Engines crank shafts, diameter 111 mm as per Rule 125 mm No. one Position Port side of engine room, from lower  
 ave the auxiliary engines been constructed under special survey The main engine yes Is a report sent herewith yes

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**AIR RECEIVERS:**—Have they been made under survey *yes* ✓ State No. of report or certificate *✓*  
 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 *11 m<sup>3</sup>* ✓ Internal diameter *1830 mm* ✓ thickness *24 mm* ✓  
 Seamless, lap welded or riveted longitudinal joint *✓* Material *S. C. H. Steel* ✓ Range of tensile strength *41* ✓ Working pressure *Actual 25 kg/cm<sup>2</sup>* ✓  
**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 *yes* ✓ Receivers *yes* ✓ Separate fuel tanks *yes* ✓  
 Donkey boilers *yes* ✓ General pumping arrangements *yes* ✓ Pumping arrangements in machinery space *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 spare propeller shaft.*

**AKTIESELSKABET**  
**BURNISTER & WAIN'S MASKIN OG SKIBSBYGGERI**  
*A. Rasmussen*  
 Manufacturer.  
 Dates of examination of principal parts—Cylinders *and* Cover 3/13/17 7/2-42 7/2-45 14/1-7/2-42 7/2-45 Connecting rods 13/11/41  
 Crank shaft 19/3-14/4-39 4/5-3/6-58 Thrust shaft 19/3-14/4-39 4/5-3/6-58 Intermediate shaft 17/1-24/3/30 4/1/19/4-42  
 Screw shaft 24/8-4/18-10/4-42 Propeller 3/5-4/5 Stern tube 1/2-4/1 Engine seatings 14/10-29/4-42 Engine holding down bolts 24/11-42  
 Completion of fitting sea connections 14/10-42 3/5-4/5 Completion of pumping arrangements 14/10-42 3/5-4/5 Engines tried under working conditions 24/11-42  
 Crank shaft, material *S. C. H. P. Steel* Identification mark *LL005 7:5503-4* Flywheel shaft, material *S. C. H. P. Steel* Identification mark *LL005 7:5668-9-7*  
 Thrust shaft, material *S. C. H. P. Steel* Identification mark *LL005 7:5503-4* Intermediate shafts, material *S. C. H. P. Steel* Identification mark *LL005 7:5668-9-7*  
 Tube shaft, material *S. C. H. P. Steel* Identification mark *LL005 7:5503-4* Screw shaft, material *S. C. H. P. Steel* Identification mark *LL005 7:5668-9-7*  
 Identification marks on air receivers *LL005 TEST*  
*4/18/41*  
*W. R. 25/4/41*  
*4/9/42*

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* ✓  
 Description of fire extinguishing apparatus fitted *1. 2000 liter Stelhammer foam extinguishing installation 2. 25 liter foam extinguisher 3. steam extinguishing apparatus in boiler room*  
 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 *✓*  
 Is this machinery duplicate of a previous case *yes* ✓ If so, state name of vessel *Geo Copenhagen*  
**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery has been constructed and fitted on board under special survey in accordance with the Rules and the approved plans. The material used in construction has been tested as required by the Rules and the workmanship is good. On completion the whole machinery was tested under working conditions under a trial trip in the Sound and found satisfactory.*

**Recommend the vessel's machinery to have notation in the Register Book.**  
**8 LMC-745, OIL ENGINES and 2 DB-180Us**  
 The amount of Entry Fee *£135.00*  
 Special *£2785.20*  
 Filling Donkey Boiler Fee *£100.00*  
 Travelling Expenses (if any) *£19.50*  
**FRI. 16 NOV 1945**  
 Assigned *+ LMC 745 Oil Eng.*  
*C.L. 2 DB. 180Us*

Rpt. 9a.

Port of *Copenhagen* Continuation of Report No. *11750* dated *20th July 1945* on the

*Twin Se. Motor Tanker "Esso NYBORG" of Copenhagen*  
*Yard No. 642 by A. Rasmussen, Main'skibsskibbyggeri, Copenhagen*

**LIST OF AUXILIARY MACHINERY**  
**In the engine room**  
 2 seawater cooling pumps each 100 gpm.  
 2 fresh water pumps each 100 gpm. *driven by chains*  
 2 lubricating oil pumps each 100 gpm. *from the main engine*  
 1 bilge pump 23.5 gpm.  
 1 sanitary pump 23.5 gpm.  
 1 ballast pump duplex 190x260x300 mm.  
 1 bilge pump 135x135x125 mm.  
 1 sanitary pump 135x135x125 mm.  
 1 oil fuel transfer pump 150x175x150 mm.  
 1 oil fuel service pump 135x135x125 mm.  
 1 condenser pump 190x260x300 mm.  
 1 spare cooling water pump 230x300x350 mm.  
 1 spare lub. oil pump 230x300x350 mm.  
 2 feed pumps simplex 200x150x375 mm.  
 2 oil firing pumps duplex 115x70x150 mm.  
 1 steam engine for general light 180 mm dia x 150 mm str x 620 RPM.  
 1 manoeuvring air compressor 2 stage 250/100 mm dia x 150 mm str.  
 1 feed water pump duplex 135x90x125 mm.  
 1 fresh water pump rotary 6 gpm.  
 1 cool. water pump for air eng + Ref. chiller 6 gpm. *driven by electromotors*

**In the ship's Pump Room.**  
 2 cargo oil pumps duplex 514x360x600 mm 380 gpm. *driven by steam*  
 1 bilge pump 190x200x250 mm 50 gpm.

**In the Forward Pump Room.**  
 1 bilge pump duplex 190x200x250 mm 50 gpm. *driven by steam*  
 1 oil fuel pump duplex 190x200x250 mm 50 gpm.

*P. S. P.*