

## REPORT ON OIL ENGINE MACHINERY.

No. 274

Received at London Office

16 FEB 1951

Date of writing Report 29th Jan. 1951 When handed in at Local Office 29th Jan. 1951 Port of K I E L  
 Date, First Survey 30th Nov. Last Survey 31st December 1950  
 Number of Visits 9  
 Survey held at K I E L  
 1624 on the Tugboat "OTIS" Single Screw vessel  
 Built at Hamburg By whom built Deutsche Werft A.G., Betr. Reihersstiegwerft Yard No. 1936  
 Engines made at Trollhättan By whom made Nydquist & Holm A-B. Engine No. 1243 Lengthened 1950-12 mo  
 When made 1949  
 Monkey Boilers made at - By whom made - Boiler No. - When made - Gothenburg  
 Brake Horse Power 935 Owners A/B Aug. Leffler & Son Port belonging to -  
 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 N. Power as per Rule 200  
 Grade for which vessel is intended Tanker Service

**L. ENGINES, &c.** — Type of Engines Heavy oil, trunk type (13.19/52") 2 or 4 stroke cycle 2 Single or double acting S.A.  
 Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 345 mm Length of stroke 580 mm No. of cylinders 6 No. of cranks 6  
 Mean Indicated Pressure 6.2 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders 1, 6, 2, 4, 3, 5 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 504 mm Is there a bearing between each crank yes Revolutions per minute 250  
 Flywheel dia. -- Weight -- Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) -- Means of ignition -- Kind of fuel used Diesel oil  
 Crank Shaft, Solid forged as per Rule -- dia. of journals as fitted 230 mm Crank pin dia. 230 mm Crank webs Mid. length breadth 310 mm Thickness parallel to axis --  
 Semi built as fitted 230 mm Mid. length thickness 124 mm shrunk Thickness around eye hole --  
 All built as fitted --  
 Flywheel Shaft, diameter as per Rule -- Intermediate Shafts, diameter as fitted 175 mm Thrust Shaft, diameter at collars as per Rule appr. 166 mm  
 as fitted --  
 Tube Shaft, diameter as per Rule -- Screw Shaft, diameter as fitted 210 mm Is the tube shaft fitted with a continuous liner yes  
 as fitted --  
 Bronze-Liners, thickness in way of bushes as per Rule 16 mm Thickness between bushes as fitted 14 mm Is the after end of the liner made watertight in the propeller boss yes 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 tube shaft -- If so, state type -- Length of bearing in Stern Bush next to and supporting propeller as built  
 Propeller, dia. 2480 mm Pitch 1510 mm No. of blades 4 Material M.B. whether moveable no Total developed surface 2.22 sq. feet  
 Moment of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) 1055 kg. m<sup>2</sup> Kind of damper, if fitted --  
 Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged yes Means of lubrication forced 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 non-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 -- Cooling Water Pumps, No. -- Is the sea suction provided with an efficient strainer which can be cleared within the vessel --  
 Bilge Pumps worked from the Main Engines, No. one Diameter 150 Stroke 120 Can one be overhauled while the other is at work --  
 Pumps connected to the Main Bilge Line (No. and size three - 28.5 m<sup>3</sup>/hr., 40 m<sup>3</sup>/hr. and 25 m<sup>3</sup>/hr. How driven One M.E. driven, two electric driven  
 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 -- Power Driven Lubricating Oil Pumps, including spare pump, No. and size 3-2 @ 16 1/2 m<sup>3</sup>/hr. 3-1 @ 27 1/2 m<sup>3</sup>/hr.  
 Are 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 4 @ 50 mm Ø and 1 @ 80 mm Ø In pump room as built  
 In holds, &c. --  
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size two - @ 80 mm dia.  
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes -- Are the bilge suction 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 both  
 Are all Sea Connections fitted direct on the skin of the Ship yes Are they fitted with valves or cocks -- 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 none How are they protected --  
 What pipes pass through the deep tanks as built 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 no 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. 1 No. of stages 2 diameters 85/110 stroke 250 driven by M.E.  
 Auxiliary Air Compressors, No. -- as built No. of stages -- diameters -- stroke -- driven by --  
 Small Auxiliary Air Compressors, No. -- as built No. of stages -- diameters -- stroke -- driven by --  
 What provision is made for first charging the air receivers hand pump 580 mm driven by M.E.  
 Scavenging Air Pumps, No. 1 (D.A.) diameter 735 mm stroke 580 mm driven by M.E.  
 Auxiliary Engines crank shafts, diameter as per Rule as built Position --  
 Have the auxiliary engines been constructed under special survey -- Is a report sent herewith --



AIR RECEIVERS:—Have they been made under survey as built State No. of report or certificate

Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver

Injection Air Receivers, No. Cubic capacity of each Internal diameter thickness by Rules

Seamless, welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual

Starting Air Receivers, No. Total cubic capacity Internal diameter thickness by Rules

Seamless, welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual

IS A DONKEY BOILER FITTED yes If so, is a report now forwarded as built

Is the donkey boiler intended to be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for shafting MR 2141, MR 2134 Receivers Separate fuel tanks

Donkey boilers General pumping arrangements Pumping arrangements in machinery space MR 2143

Oil fuel burning arrangements

Have Torsional Vibration characteristics been approved yes, subject as per Sec's letter 25.1.51. submitted by Gothenburg Date of approval

### SPARE GEAR.

Has the spare gear required by the Rules been supplied yes (except coupling bolts)

State the principal additional spare gear supplied

HOWALDTSWERKE

Aktiengesellschaft

WERK KIEL

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building During progress of work in shops 24th September 1948 - 10th February 1949 (7)  
During erection on board vessel 30/11, 4/12, 12/12, 15/12, 17/12, 23/12, 26/12, 29/12, 31/12  
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 30.11.50 Tube shaft 26.12.50

Screw shaft 27.12.50 Propeller 29.11.50 Stern tube 29.11.50 Engine seatings 9.12.50 Engine holding down bolts 31/12/50

Completion of fitting sea connections Completion of pumping arrangements 31.12.50 Engines tried under working conditions 31/12/50

Crank shaft, material Identification mark Flywheel shaft, material Identification mark

Thrust shaft, material SM steel Identification mark LLOYD'S No. 336 Intermediate shafts, material SM steel Identification marks LLOYD'S ES 115

Tube shaft, material Identification mark O.S.23/11/50 Screw shaft, material Identification mark 615 H.B. spar 8.6.36

Identification marks on air receivers as built

Welded receivers, state Makers' Name

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 Steam smothering and chemical extinguishers

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 yes, as built.

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 machinery has been satisfactorily installed under special survey, in accordance with the Rules, the Secret's letters and approved plans, tried under full power working

conditions, and is eligible, in my opinion, to be classed + LMC with fresh records of + NE made 49, fitted 50,

TS(CL) 12,50 and DBS 12,50, subject to the shaft spare coupling bolts being verified and to the torsional vibration

characteristics of the main propelling machinery being approved.

Note: The starting air receivers referred to in Gothenburg F.E. report 16748 have not been installed on the vessel.

The amount of Entry Fee ... £

Special ... £ When applied for 19

Donkey Boiler Fee... £ When received 19

Travelling Expenses (if any) £

Committee's Minute

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.



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