

# REPORT ON OIL ENGINE MACHINERY.

6 - MAR 1956

Received at London Office

Date of writing Report 7th Feb. 1956 When handed in at Local Office 7th Feb. 1956 Port of KIEL

No. in Survey held at KIEL Date, First Survey 3rd January Last Survey 2nd February 1956  
Reg. Book. Number of Visits 5

Single on the Twin Triple Quadruple Screw vessel 'CAPELLA' Tons Gross 1168/9 Net 1956

Built at Zaandam By whom built Scheepswerf Kraaier N.V. Yard No. 1168/9 When built 1956

Engines made at Kiel-Friedrichsort By whom made MAK Maschinenbau Kiel Aktienges. Engine No. 15659 When made 1956

Donkey Boilers made at - By whom made - Boiler No. - When made -

Brake Horse Power { Maximum 520 Service 520 Owners - Port belonging to -

M.N. as per Rule 104 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

Trade for which vessel is intended -

OIL ENGINES, &c. — Type of Engines heavy oil - MAK type MAu 423 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 4.8 kg/cm<sup>2</sup> Diameter of cylinders 290 mm Length of stroke 420 mm No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 6.8 kg/cm<sup>2</sup> Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 332 mm Is there a bearing between each crank yes Revolutions per minute { Maximum 375 Service 375

Flywheel dia. 1200 Weight 2200 Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 1970 kgm<sup>2</sup> Means of ignition compr. Kind of fuel used Diesel

Crank Shaft, { Solid forged solid forged dia. of journals as per Rule 180 mm Crank pin dia. 180 mm Crank webs Mid. length breadth - Thickness parallel to axis shrunk Mid. length thickness - Thickness around eyehole -

Flywheel Shaft, diameter as per Rule - Intermediate Shafts, diameter as per Rule - Thrust Shaft, diameter at collars as per Rule -

Tube Shaft, diameter as fitted - Screw Shaft, diameter as per Rule - Is the { tube screw } shaft fitted with a continuous liner { - }

Bronze 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 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 fitted at the after end of stern tube - If so, state type - Length of bearing in Stern Bush next to and supporting propeller -

Propeller, dia. - Pitch - No. of blades - Material - whether moveable - Total developed surface - sq. feet -

Moment of inertia of propeller including entrained water (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) - Kind of damper, if fitted friction

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine yes Means of lubrication forced Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes not connected to the sea

Plugged with non-conducting material yes 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. and how driven two - M.E. Working F.W. one

W. one Spare F.W. - S.W. - Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Bilge Pumps worked from the Main Engines, No. and capacity one - 18 m<sup>3</sup>/hr. Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and capacity of each - How driven -

Is the cooling water led to the bilges - 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 capacity - Power Driven Lubricating Oil Pumps, including spare pump, No. and size two at 6.5 m<sup>3</sup>/hr.

Are two independent means arranged for circulating water through the Oil Cooler - Branch Bilge Suctions -

No. and size:—In machinery spaces - In pump room -

holds, &c. -

Direct Bilge Suctions to the engine room bilges, No. and size -

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 -

Are all Sea Connections fitted direct on the skin of the Ship - Are they fitted with valves or cocks - Are they fixed efficiently high on the ship's side to be seen without lifting the platform plates - Are the overboard discharges above or below the deep water line -

Are they each fitted with a discharge valve always accessible on the plating of the vessel - Are the blow off cocks fitted with a spigot and brass covering plate -

Do all pipes pass through the bunkers - How are they protected -

Do all 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 -

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 - Is the shaft tunnel watertight - Is it fitted with a watertight door - worked from -

Is the vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -

Auxiliary Air Compressors, No. one No. of stages two diameters 120(120-108) stroke 70 mm driven by M.E.

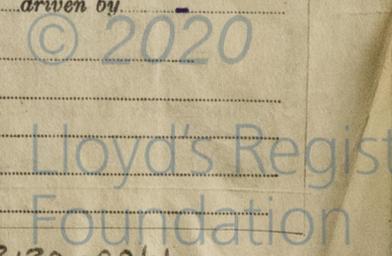
Primary Air Compressors, No. - No. of stages - diameters - stroke - driven by -

All Auxiliary Air Compressors, No. - No. of stages - diameters - stroke - driven by -

Is provision made for first charging the air receivers -

Enging Air Pumps or Blowers, No. - How driven -

Have they been made under survey - Engine Nos. - Position of each in engine room - Report No. -



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**AIR RECEIVERS:** —Have they been made under survey..... State No. of report or certificate.....  
 State full details of safety devices.....  
 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.....  
 Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....  
**Starting Air Receivers, No.**..... Total cubic capacity..... Internal diameter..... thickness.....  
 Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

**IS A DONKEY BOILER FITTED**..... If so, is a report now forwarded.....  
 Is the donkey boiler intended to be used for domestic purposes only.....  
**PLANS.** Are approved plans forwarded herewith for shafting no - 4.1.51 Receivers - Separate fuel tanks -  
 (If not, state date of approval)  
 Donkey boilers - General pumping arrangements - Pumping arrangements in machinery space -  
 Oil fuel burning arrangements -

Have Torsional Vibration characteristics been approved no - submitted Date and particulars of approval 27/3/52 torsional; torsiongraph  
13.12.55 **SPARE GEAR.** to be taken & submitted  
 Has the spare gear required by the Rules been supplied yes State if for "short voyages" only -  
 State the principal additional spare gear supplied -

**MAK**  
 Maschinenbau Kiel  
 Aktiengesellschaft  
 Manufacturer. *W. Nagel*

The foregoing is a correct description,

Dates of Survey while building  
 During progress of 1956: Jan. 3, 9, 13, 31, Feb. 2  
 work in shops - -  
 During erection on board vessel - - -  
 Total No. of visits 5  
 Dates of examination of principal parts - Cylinders 3.1.56 Covers 3.1.56 Pistons 3.1.56 Rods - Connecting rods 3.1.56  
 Crank shaft 3.1.56 Flywheel shaft - Thrust shaft - Intermediate shafts - Tube shaft -  
 Screw shaft - Propeller - Stern tube - Engine seatings - Engine holding down bolts -  
 Completion of fitting sea connections - Completion of pumping arrangements - Engines tried under working conditions 2.2.56

Crank shaft, material SM steel Identification mark LLOYD'S DSF 1075 HS 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 -  
 Identification marks on cylinder block LLOYD'S TEST KEL  
No. 1572  
10 ATM  
 Welded receivers, state Makers' Name - ES 3.1.56 ES

Is the flash point of the oil to be used over 150°F -  
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with -  
 Full description of fire extinguishing apparatus fitted in machinery spaces -  
 \*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 -  
 What is the special notation desired -  
 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, Speed restrictions, &c.....)  
 This engine has been built under special survey in accordance with the Secretary's letters, approved plans and the Rules. The material and workmanship are good, and when examined on the test bed under full load, the engine was found in order.  
 The engine is eligible, in my opinion, for installation in a classed vessel with notation of + LMC, subject to the torsional vibration characteristics being found in order.  
 Crankcase explosion relief valves are fitted.

The amount of Entry Fee ... £ 50.0.0 *L. Kue 9/3/52*  
 Special ... £ 44.7.6  
 Donkey Boiler Fee... £ : :  
 Travelling Expenses (if any) £ 2.0.0  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)  
 Committee's Minute  
 Assigned See Rpt. 1.  
 When applied for London 7/3  
 When received 19  
 A/o rendered from London 7/3  
 Engineer Surveyor to Lloyd's Register of Shipping. *L. Chamber*  
 TUESDAY 18 JUN 1957

