

REPORT ON OIL ENGINE MACHINERY.

NEWCASTLE-ON-TYNE, No. 107110.

Received at London Office 30 MAR 1950

Date of writing Report 1/12/19 49 When handed in at Local Office 1/12/49 19 Port of GENOA

No. in Survey held at TURIN Date, First Survey 26/10/48 Last Survey 23/4/49 19 Reg. Book. Number of Visits 14

on the ~~Triple~~ ^{Single} Screw vessel BLYTH DRYDOCK & SHIPBUILDING CO.Ld. YARD N°."342" Tons Gross - 8223.08 Net - 4805.36

Built at BLYTH By whom built BLYTH DD. & SB. CO. LD. Yard No. 342 When built 1949

Engines made at TURIN By whom made SOC. AN. FIAT STAB. GRANDI MOTORI Engine No. 2973 When made 1942

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

Brake Horse Power 5100 Owners Messrs. A.P. MOLLER Port belonging to -

M.N. Power as per Rule 1328 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

Trade for which vessel is intended -

OIL ENGINES, &c. - Type of Engines FIAT DL 646 C AIRLESS Inj. 2 or 4 stroke cycle 2 Single or double acting Double

Maximum pressure in cylinders 60Kgs/cm² Diameter of cylinders 25 3/16" 640 mm. Length of stroke 45 1/16" 1160 mm. No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 5.4 Kgs/cm² 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 933 mm.

Flywheel dia. 2670 mm. Weight 6600 Kgs. Moment of inertia of flywheel (xxxxxx Kg.cm²) 82920 Means of ignition Compressor Kind of fuel used Diesel

Is there a bearing between each crank YES. Revolutions per minute 125 1/5

Crank Shaft, dia. of journals as per Rule Appd. 450 mm. Crank pin dia. 450 mm. Crank webs Mid. length breadth 880 mm. Thickness parallel to axis 290 mm. as fitted 450 mm. Mid. length thickness 290 mm. shrunk Thickness around eye-hole 212.5 mm.

Flywheel Shaft, diameter as per Rule Appd. 450 mm. Intermediate Shafts, diameter as per Rule Appd. 381 mm. Thrust Shaft, diameter at collars as fitted Appd. 450 mm.

Tube Shaft, diameter as per Rule - Screw Shaft, diameter as per Rule Appd. 415 mm. in bed. shaft fitted with a continuous liner (Yes) as fitted 400 mm. at Coupling

Bronze Liners, thickness in way of bushes as per Rule Appd. 20.5 mm. Thickness between bushes as fitted 15 mm. 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 tube shaft -

If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1710 mm.

Propeller, dia. 5000 mm. No. of blades - Material - whether moveable - Total developed surface - sq. feet

Moment of inertia of propeller (xxxxxx Kg.cm²) 131,100 Kind of damper, if fitted -

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Governor

Means of lubrication Forged Thickness of cylinder liners - 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 off board near the waterline, what means are arranged to prevent water from being syphoned back to the engine -

Cooling Water Pumps, No. 1 SW - Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Bilge Pumps worked from the Main Engines, No. 1 Recip. Diameter - Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line No. and size - How driven - NO

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 size - Power Driven Lubricating Oil Pumps, including spare pump, No. and size -

Are two independent means arranged for circulating water through the Oil Cooler - Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: - In machinery spaces - In pump room -

Independent Power Pump Direct 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 - What pipes pass through the bunkers - How are they protected -

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 -

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 -

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 - stroke - driven by -

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

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

What provision is made for first charging the air receivers -

Scavenging Air Pumps, No. 2 pumps with 3 pistons diameter 880 mm. stroke 850 mm. driven by Main Eng.

Auxiliary Engines crank shafts, diameter as per Rule - Position -

as fitted - Have the auxiliary engines been constructed under special survey - Is a report sent herewith -

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AIR RECEIVERS:—Have they been made under survey **YES** State No. of report or certificate **GENOCH No. 69/1**

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, welded or riveted longitudinal joint **-** Material **-** Range of tensile strength **-** Working pressure **-**
 Starting Air Receivers, No. **2** Total cubic capacity **10,000 Litres** Internal diameter **1346 mm.** thickness **27 mm.**
 Seamless, welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **45/55** Working pressure **28.5 Kg**

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 **Letter E of 16/9/48** Receivers **18/11/46** Separate fuel tanks **S**

Donkey boilers **-** General pumping arrangements **-** Pumping arrangements in machinery space **-**
 Oil fuel burning arrangements **-**
 Have Torsional Vibration characteristics been approved **Yes** **Letter E** Date of approval **28/2/49**

SPARE GEAR.

Has the spare gear required by the Rules been supplied **TO RULE REQUIREMENTS**
 State the principal additional spare gear supplied **TO BE SUPPLIED AT BLYTH**

Sgd. **FIAT S.G.M.**
Illegible

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics.
 Manufacturer.

Dates of Survey while building
 During progress of work in shops **26/10/48** **24/4/49**
 During erection on board vessel **14**
 Total No. of visits **14**
 Dates of examination of principal parts—Cylinders **7/1/49 to 14/1/49** Covers **26/1/49 to 15/12/49** Pistons **26/1/49 to 15/12/49** Rods **7/1/49 to 15/12/49** Connecting rods **18/1/49**
 Crank shaft **7/11/48** Flywheel shaft **18/1/49** Thrust shaft **7/11/48** Intermediate shafts **18/1/49** Tube shaft **-**
 Screw shaft **18/1/49** Propeller **-** Stern tube **-** Engine seatings **-** Engine holding down bolts **-**
 Completion of fitting sea connections **-** Completion of pumping arrangements **-** Engines tried under working conditions **Lloyd's**
 Crank shaft, material **Steel** Identification mark **CH 9224 GL** Flywheel shaft, material **STEEL** Identification mark **CH 9182**
 Thrust shaft, material **STEEL** Identification mark **as above** Intermediate shafts, material **Steel** Identification marks **CH 9182**
 Tube shaft, material **-** Identification mark **-** Screw shaft, material **Steel** Identification mark **CH 9182**

Identification marks on air receivers **No. 1037 - 1038 LLOYDS TEST**
48.5 Kg/cm2 WP. 28.5 Kg/cm2 7-2-48 A.G.
 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 **-**
 Description of fire extinguishing apparatus fitted **-**
 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 **-**
 Is this machinery duplicate of a previous case **Yes** If so, state name of vessel **ODENSE YARD No. 100.**

General Remarks (State quality of workmanship, opinions as to class, &c.) **This Engine has been reconstructed under Special Survey and is in accordance with the Secretaries letters, Approved Plans and Rule requirements. The Engine was built during the war under the special Survey of the Registro Italiano Navale and copies of the sheets covering the principal forgings are attached herewith. All parts of the engine have been opened up for examination; water spaces of cylinders, and covers hydraulically tested in our presence. Scantlings of the crank and thrust shaft checked with the Approved Plans and all found in order. Brinell test have been carried out on the propeller and intermediate shafts and also examined in accordance with the Secretaries letters E of 16/9/48. The torsional vibration characteristics of the shafting installation have been approved for a service speed of 125 rpm. provided torsion graphs be taken without fail from the completed installation with a view to determining the position and magnitude of the one node 6th order critical speed calculated to occur at 68 rpm. placing a suitable barred speed range in way of the critical. This engine has been despatched to Yard No. 342 and when this has been done and the engine fitted and tried under working condition to the satisfaction of the Society's Surveyors, the Vessel will be eligible to have the notation L.M.C. (with date) OIL ENGINE.**

This engine has been satisfactorily fitted on board the M.V. NELLY MAERSK BLYTH YARD No. 342
 The amount of Entry Fee ... £ : :
 Special ... £ : :
 Donkey Boiler Fee... £ : :
 Travelling Expenses (if any) £ : :
 When applied for **19**
 When received **19**
 (Sgd) **H.F. MANSFIELD.**
 Engineer Surveyor to Lloyd's Register of Shipping
 NEWCASTLE-ON-TYNE.
 Committee's Minute
 Assigned **See R.E. miley opt.**
FRI. 21 APR 1950

