

REPORT ON OIL ENGINE MACHINERY.

115 N^o 16640
SEP 1955

Received at London Office 31 MAY 1955

Date of writing Report 4th May 1955 When handed in at Local Office 19 Port of MANCHESTER

Survey held at Manchester Date, First Survey 18.2.55 Last Survey 28.1.1955
Number of Visits 5

on the Twin Screw vessel "Heloza"
Single Triple Quadruple
Tons Gross 210 Net 70

built at Wallsend-on-Tyne By whom built Clelands (Successors) Ltd., Yard No. 207 When built 1955

engines made at Patricroft By whom made L. Gardner & Sons Ltd., Order K60007/8 Engine No. P.103207 S.103208 When made 1955

Boilers made at By whom made K.6307/8 Boiler No. When made

Indicated Horse Power 288 Total Owners Australasian Petroleum Co. Ltd., Port belonging to

Power as per Rule 58 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Use for which vessel is intended 8L3 Vertical Solid Injection Heavy Oil 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 850 PSI Diameter of cylinders 5 1/2" Length of stroke 7 3/4" No. of cylinders 8 No. of cranks 8

Indicated Pressure 120 PSI Ahead Firing Order in Cylinders P.15268473. S.13748625. Span of bearings, adjacent to the crank, measured inner edge to inner edge 6.15/16"

Wheel dia. 29 1/2" Weight 586 lbs Moment of inertia of flywheel (lbs.in² or Kg.cm.²) 89000 lbs.in² Is there a bearing between each crank Yes

Revolutions per minute 900 Compression Diesel Kind of fuel used Oil

Mean length breadth 5 1/2" Thickness parallel to axis
Crank pin dia. 3 5/8" Crank webs Mid. length thickness 1.11/16" Thickness around eyehole

Shaft, diameter as per Rule Intermediate Shafts, diameter as fitted Thrust Shaft, diameter at collars as fitted

Screw Shaft, diameter as fitted Is the tube screw shaft fitted with a continuous liner

Liner thickness in way of bushes as per Rule Thickness between bushes as fitted 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-

combustible 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

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

Moment of inertia of propeller (lbs.in² or Kg.cm.²) Kind of damper, if fitted Spring loaded type

Reverse/Reduction Gear 2:1 Ratio Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of

operation Forced Thickness of cylinder liners 110" Are the cylinders fitted with safety valves No. Are the exhaust pipes and silencers water cooled

lagged during installation If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

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

Pumps worked from the Main Engines, No. 1 Diameter 2 1/8" Stroke 1 1/4" Can one be overhauled while the other is at work

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

Is 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

Oil Pumps, No. and size Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 - 5 galls/min each

Two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary

pumps, No. and size:—In machinery spaces In pump room

Oil Pumps, No. and size

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

securely 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

Are pipes pass through the bunkers How are they protected

Are 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 a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

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

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

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

Is provision is made for first charging the air receivers

Air Pumps, No. diameter stroke driven by

Auxiliary Engines crank shafts, diameter as per Rule No. Position

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

012553-012563-0121



AIR RECEIVERS:—Have they been made under survey..... 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.....

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

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

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

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..... Approved 1.3.55. Receivers..... Separate fuel tanks.....

Donkey boilers..... General pumping arrangements..... Pumping arrangements in machinery space.....

Oil fuel burning arrangements.....

Have Torsional Vibration characteristics been approved..... Yes, Date of approval 1.3.55. 28/3/55

SPARE GEAR.

Has the spare gear required by the Rules been supplied..... As per Rule Requirements.

State the principal additional spare gear supplied.....

The foregoing is a correct description, and the particulars of the engine, as supplied, are as approved For and on behalf of L. GARDNER & SONS LTD Manufacturer for Torsional Vibration Characteristics

Dates of Survey while building: During progress of work in shops - 1955 Feb. 18, Mar. 2.9, April 21.28. During erection on board vessel - - -

Total No. of visits.....

Dates of examination of principal parts—Cylinders 2.3.55 Covers 18.2.55 Pistons..... Rods..... Connecting rods 2.3.55

Crank shaft 18.1.55 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.....

Crank shaft, material O.H. Steel Identification mark Lloyd's 1090E. 18.1.55 D.H. Flywheel shaft, material, Identification mark

Thrust shaft, material Identification mark Lloyd's 1089E. 13.1.55 R.J.Y. Intermediate shafts, material Identification marks

Tube shaft, material Identification mark Screw shaft, material Identification mark

Identification marks on air receivers.....

Welded receivers, state Makers' Name.....

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.....

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 Manchester Report No. 16592.

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c. This main propulsion machinery has been built under special survey of tested materials in accordance with the Secretary's letters, approved plans and requirements of the Rules. The torsional vibration characteristics have been approved for an engine service speed of 900 R.P.M. and the corresponding propeller speed of 160 R.P.M. Gear hammer may take place in the reduction gearing in way of 1 - node 1/4th order critical speed calculated to occur at 280 engine r.p.m. See Secretary's letter of 1.3.55 for remaining conditions. Materials and workmanship are good, and the engines when tested in the shop under full load conditions coupled to a hydraulic dynamometer through their respective 2:1 Reverse Reduction Gear Units showed satisfactory results. In my opinion this machinery is suitable for installation in a vessel to be classed with the Society for the purpose intended. These engines are not fitted with crankcase explosion devices.

Attached hereto:- Extract copies of Sheffield Forgings Reports. F.62204 and F62075

Table with columns for Total, The amount of Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses, and When applied for/When received.

Committee's Minute TUESDAY 25 OCT 1955 Assigned Sec Rpt 1

Signature of R. P. J. Stone, Engineer Surveyor to Lloyd's Register of Shipping. Includes stamp: SURVEYOR TO LLOYD'S REGISTER NEWCASTLE-ON-TYNE.

Vertical text on the left margin: Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)