

REPORT ON OIL ENGINE MACHINERY.

115 SEP 1955

31 MAY 1955

Received at London Office 31 MAY 1955

of writing Report 4th May 19 55 When handed in at Local Office 19 Port of MANCHESTER

in Survey held at Manchester Date, First Survey 18.2.55 Last Survey 28.1.1955

Book. Single on the Twin Triple Quadruple Screw vessel. Tons Gross 210 Net 70

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

ines made at Patricroft By whom made L. Gardner & Sons Ltd., P.103207 When made 1955

key Boilers made at By whom made Order K.6307/8 S.103208 When made

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

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

de for which vessel is intended.

8L3 Vertical Solid Injection Heavy Oil

ENGINE, &c. Type of Engines 2 or 4 stroke cycle 4 Single or double acting Single

um 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" Is there a bearing between each crank Yes

Revolutions per minute 900

Wheel dia. 29 1/2" Weight 586 lbs Moment of inertia of flywheel (lbs.in² or Kg.cm.²) 89000 lbs.in² Compression Diesel

Means of ignition Kind of fuel used Oil

Mid. length breadth 5 1/2" Thickness parallel to axis

Mid. length thickness 1.11/16" Thickness around eyehole

Cranks mounted on Crankshaft

Intermediate Shafts, diameter as per Rule as fitted

Thrust Shaft, diameter at collars as fitted

Shaft, diameter as per Rule as fitted

Screw Shaft, diameter as per Rule as fitted

Is the tube shaft fitted with a continuous liner

ze Liners, thickness in way of bushes as per Rule as fitted

Thickness between bushes as per Rule as fitted

Is the after end of the liner made watertight in the

eller boss. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner.

e 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-

sive. 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

of tube shaft. If so, state type. Length of bearing in Stern Bush next to and supporting propeller.

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

ent 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

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

agged with non-conducting material. 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.

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

e 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

gements.

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

wo 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.

lds, &c.

pendent Power Pump Direct Suctions to the engine room bilges, No. and size.

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

sible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges.

all Sea Connections fitted direct on the skin of the Ship. Are they fitted with valves or cocks. Are they fixed

iently 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.

hey 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.

pipes pass through the bunkers. How are they protected.

pipes pass through the deep tanks. Have they been tested as per Rule.

all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times.

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

s, or from one compartment to another. Is the shaft tunnel watertight. Is it fitted with a watertight door. worked from

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

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

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

provision is made for first charging the air receivers.

nging Air Pumps, No. diameter stroke driven by

liary Engines crank shafts, diameter as per Rule as fitted No. Position

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

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.....

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..... 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 9.3.55

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 XXX 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 purpose intended. These engines are not fitted with crankcase explosion devices.

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

Total

The amount of Entry Fee ... £ 26 : - - :

Special ... £ :

Donkey Boiler Fee... £ :

Travelling Expenses (if any) £ :

When applied for 26.5.55

When received 19

Committee's Minute

TUESDAY 25 OCT 1955

Assigned

Sec Rpt 1

Engineer Surveyor to Lloyd's Register of Shipping
These engines have been satisfactorily installed. See Newcastle Report N° 11273
Lloyd's Register
SURVEYOR TO LLOYD'S REGISTER
NEWCASTLE-ON-TYNE