

REPORT ON OIL ENGINE MACHINERY.

No. 30034

118 MAR 1953

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Writing Report 15.3.1953 When handed in at Local Office 15.3.1953 Port of Glasgow
 Survey held at Glasgow Date, First Survey 23.6.1949 Last Survey 11.3.1953
 Number of Visits 108

Single on the Twin Triple Quadruple Screw vessel "POLARTANK"
 Glasgow By whom built Barclay, Curle & Co., Ltd. Yard No. 724 When built 1953-3
 Glasgow By whom made Barclay, Curle & Co., Ltd. Engine No. 724 When made 1953-3
 Glasgow By whom made Barclay, Curle & Co., Ltd. Boiler No. 724 When made 1953-3
 Horse Power Maximum 8000 Owners. Messrs. Thomson & Co. Ltd. Port belonging to Lamin.
 Service 8000 Is Refrigerating Machinery fitted for cargo purposes. No. Is Electric Light fitted. Yes.
 per Rule 1600 (Old Mtd. 1621) for which vessel is intended. Open Sea Service - Carrying Petroleum in Bulk.

ENGINES, &c. - Type of Engines "Diesel" Opposed Piston 2 or 4 stroke cycle. 2. Single or double acting. Single Opposed.
 Maximum pressure in cylinders 640 lb/sq. in. Diameter of cylinders 750 in. Length of stroke 2500 in. No. of cylinders 6. No. of cranks 18.
 Indicated Pressure 85 lb/sq. in. Span of bearings (i.e., distance between inner edges of bearings in crank). 1400 in.
 Is there a bearing between each crank. No. Revolutions per minute { Maximum 104 Service 104.
 Apr 28674 in. Apr 1.8 in. Moment of inertia of flywheel (lb. in.² or Kg. cm.²) 2nd 17 6.73. Means of ignition Compression Kind of fuel used Diesel Oil
 dia 3rd 1810 in. Weight 1st 2436 lb. 1.5 lb. fixed " " " balance wts. (" " " ")

Solid forged Semi built dia. of journals as per Rule. Approved. 580 in. Crank pin dia. 580 in. Crank webs Mid. length breadth 840 in. Thickness parallel to axis 320 in.
 as fitted 580 in. Mid. length thickness 320 in. shrunk Thickness around eyehole 260 in.
 Shaft, diameter as per Rule. Approved. 500 in. Intermediate Shafts, diameter as per Rule. Approved. 24 1/2 in. (25 in. coupling). Thrust Shaft, diameter at collars as per Rule. Approved. 500 in.
 as fitted 500 in. Is the tube screw shaft fitted with a continuous liner. Yes.

Shaft, diameter as per Rule. Approved. 20 1/2 in. as fitted 20 1/2 in. Is the after end of the liner made watertight in the stern tube. Yes.
 Liners, thickness in way of bushes as per Rule. Approved. 15 in. Thickness between bushes as per Rule. Approved. 3/4 in.
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner. Yes.
 If two liners are fitted, is the shaft lapped or protected between the liners. Yes. Is an approved Oil Gland fitted at the after stern tube. No.

er boss. Yes. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner. Yes.
 If two liners are fitted, is the shaft lapped or protected between the liners. Yes. Is an approved Oil Gland fitted at the after stern tube. No.
 If so, state type. Length of bearing in Stern Bush next to and supporting propeller 6'-6"
 er, dia. 20'-0" Pitch 15'-6" No. of blades 4. Material bronze. whether moveable. Solid Total developed surface 145 sq. feet
 of inertia of propeller including entrained water (lb. in.² or Kg. cm.²) 393 lb. Kind of damper, if fitted. Billy Returner.

of reversing Engines. Direct Is a governor or other arrangement fitted to prevent racing of the engine. Yes. Means of
 tion. Forced. Thickness of cylinder liners 25 in. Are the cylinders fitted with safety valves. Yes. Are the exhaust pipes and silencers water cooled
 with non-conducting material. Lapped. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
 the engine. Cooling Water Pumps, No. and how driven 4 - Steam Driven Working F.W. 1 @ 360 T.P.H.
 480 T.P.H. Spare F.W. 1 @ 360 T.P.H. S.W. 1 @ 480 T.P.H. Is the sea suction provided with an efficient strainer which can be cleared within the vessel. No.
 pumps worked from the Main Engines, No. and capacity. None. Can one be overhauled while the other is at work. Yes.
 connected to the Main Bilge Line (No. and capacity of each. Ballast Pump (250 T.P.H.), Ballast Pump (120 T.P.H.), Bilge Pump (90 T.P.H.), 20 T.P.H. Transfer Pump, 10 T.P.H.)
 How driven. All steam driven.

ooling 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
 ements. Pumps, No. and capacity 1 @ 250 T.P.H. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 @ 80 T.P.H. each.
 independent means arranged for circulating water through the Oil Cooler. Yes. Branch Bilge Suctions. From 1 @ 2"
 size: In machinery spaces 3 @ 4", 3 @ 2 1/2", 2 @ 2 1/2" Offshore, 1 @ 4" 3rd Offshore + 2 @ 3" Shore Connections In pump room 2 @ 2 1/2", 1 @ 3"
 ls, &c. Chain locker 1 @ 2 1/2", 3rd Hold 2 @ 2 1/2", 3rd Offshore 1 @ 2 1/2" Note: pump room bilges connected to pump room pumps.

Bilge Suctions to the engine room bilges, No. and size 2 @ 6"
 the bilge suction pipes in holds and tunnel well fitted with strum-boxes. Yes. Are the bilge suction in the machinery spaces led from easily
 le mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. Yes. Are the overboard discharges above or below the deep water line. Below
 Sea Connections fitted direct on the skin of the Ship. Yes. Are they fitted with valves or cocks. Yes. Are they fixed
 tly high on the ship's side to be seen without lifting the platform plates. Yes. Are the blow off cocks fitted with a spigot and brass covering plate. Yes.

y 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.
 pipes pass through the bunkers. Apr Offshore Suction How are they protected. Steel Pipe
 pipes pass through the deep tanks. None. Have they been tested as per Rule. Yes.
 pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times. Yes.

he 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
 es, or from one compartment to another. Yes. Is the shaft tunnel watertight. None. Is it fitted with a watertight door. Yes. worked from.
 wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork. Yes.
 in Air Compressors, No. No. of stages. diameters. stroke. driven by.
 Auxiliary Air Compressors, No. 2 No. of stages 3. diameters. stroke. driven by Steam.

7.2 Hall Auxiliary Air Compressors, No. No. of stages. diameters. stroke. driven by.
 Separate provision is made for first charging the air receivers. Compressors are Steam Driven
 Evenging Air Pumps or Blowers, No. 3. (1800 in. dia + 658 in. stroke) How driven. Main Engine.
 Have they been made under survey. Yes. Engine Nos. R2 / 88680 / 2-4 & 6.
 Auxiliary Engines (Steam). Makers name. W. H. Allen. Position of each in engine room. Main on starboard side of
 main engine at starting platform. Report No. 124916

AIR RECEIVERS:—Have they been made under survey Yes. State No. of report or certificate —
State full details of safety devices 1" Dia. Single Spring Relief Valve on each receiver.
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. Two Total cubic capacity 504 ft³ Internal diameter 5-6" thickness 1 1/2"
Seamless, welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 29-33 1/2 Working pressure 600 lb.

IS A DONKEY BOILER FITTED Yes. If so, is a report now forwarded Yes.
Is the donkey boiler intended to be used for domestic purposes only No.

PLANS. Are approved plans forwarded herewith for shafting Yes. (If not, state date of approval) Receivers Yes. Separate fuel tank —
Donkey boilers Yes. General pumping arrangements — Pumping arrangements in machinery space Yes.
Oil fuel burning arrangements —
Have Torsional Vibration characteristics been approved Yes. Date and particulars of approval 30.4.49 Range 55

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes. State if for "short voyages" only —
State the principal additional spare gear supplied See attached list.

The foregoing is a correct description,

Wm G Diverall

Manufacturer.

Dates of Survey while building
During progress of work in shops - (1949) Jan 23, Aug 1-17, Dec 8, (1950) Jan 9-13, Mar 24, 26-30, Dec 15-27, 29, (1951) Aug 3-8, Oct 31-Nov 9, 12-14, 28-30, (1952) Jan 4-9, 16-23, 25-7, 13-18, 20-22, 26-29, Mar 3-7, 10-13, 17-19, 21-24, 26-28, 31-Apr 10-11, 15-16, 18-21, 23-28, 5-7, 8-14, 21-23, 26-28-30, Jun 2-4, 6-9, 16-18, 20-23, 27-30, Jul 2-4, 7-9, 10-11.
During erection on board vessel - 1952- July 14, 16, Oct 1-3, 13-20, 31, Nov 14, 18-25, Dec 2-12, 18-29, 1953- Jan 7-9, 16-20, 21-26, 28-30, Feb 4-12, 17-25, 27, Mar 5-11, 1954- Jan 14-16, 18-20, 22-24, 26-28, 30, Feb 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Mar 3-5, 7-9, 11-13, 15-17, 19-21, 23-25, 27-29, 31-Apr 2-4, 6-8, 10-12, 14-16, 18-20, 22-24, 26-28, 30, May 2-4, 6-8, 10-12, 14-16, 18-20, 22-24, 26-28, 30, Jun 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Jul 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Aug 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Sep 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Oct 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Nov 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31, Dec 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31.
Total No. of visits 108

Dates of examination of principal parts—Cylinders 22.10.52 Covers — Pistons 4.7.52 Rods 9.7.52 Connecting rods 24.10.52
Crank shaft 18.9.52 Flywheel shaft — Thrust shaft 18.9.52 Intermediate shafts 29.10.52 Tube shaft —
Screw shaft 20.10.52 Propeller 22.10.52 Stern tube 24.10.52 Engine seatings 21.10.52 Engine holding down bolts 26.10.52
Completion of fitting sea connections 18.12.52 Completion of pumping arrangements 17.2.53 Engines tried under working conditions 10.11.52
Crank shaft, material Steel Identification mark Lloyds. N° 20720, 20687, 18.9.52 Flywheel shaft, material Part of Crankshaft Identification mark —
Thrust shaft, material Steel Identification mark Lloyds. N° 20720, 18.9.52 Intermediate shafts, material Steel Identification marks Lloyds. 1956, 18.9.52
Tube shaft, material — Identification mark — Screw shaft, material Steel Identification mark Lloyds. 1956, 18.9.52
Identification marks on air receivers N° 1200 - Weyss Test 800 lb./sq. in. W.P. 600 lb./sq. in. A.C. 24.11.52.
N° 1201 - Weyss Test 800 lb./sq. in. W.P. 600 lb./sq. in. A.C. 24.11.52.

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.
Full description of fire extinguishing apparatus fitted in machinery spaces 15-20 gal. Foam Extinguishers 1-10 gal. Extinguishers, Sand Box in Boiler Room. Steam Smothering used below boilers & O.F. burning installation.
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 Yes. If so, state name of vessel "Polaris"

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.) The machinery of this vessel has been constructed under Special Survey in accordance with the Rules and the approved plans, the materials and workmanship found good.

Afterwards the machinery has been installed in the vessel, examined under full working conditions and found satisfactory.
A notice board has been fixed at the starting platform stating that the engine is not to be run continuously between 55 and 60 RPM and the tachometer has been marked accordingly.

The machinery is, in my opinion, eligible to be classed in the Register Book with record of 1 LMC 3.53 and the notation T.C.B., 2 D.B., 180 lb./sq. in. Oil Engine and with Torsional endorsement.

LMC. 44% de scale. £ 48 : 18 : -
The amount of Entry Fee £ 151 : 4 : - 17 MAR 1953
Special Installⁿ (incl. test) £ 150 : - : - When applied for 19
with de scale £ 33 : 9 : -
Donkey Boiler Fee £ 51 : 5 : - When received 19
Air Receivers £ 16 : - : -
Travelling Expenses (if any) £ 27 : - : -
Weyss

Committee's Minute

Assigned

+ LMC. 3.53. Oil Engine
with torsional endorsement
2 D.B. - 180 lb



Lloyd's Register
Foundation