

and give possible.

Rpt. 4b L.R. 747

29 MAY 1961

Date of writing report 8.5.61 Received London Port Köln -2 NOV. 1961 No. 630

Survey held at Köln-Deutz No. of visits In shops 11 First date 9.1.61 Last date 22.3.61

B.N. 1.8648.5.7010

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 41556 Name "TORO" Gross tons 512

signee Owners A. Kracko Ltd., London Managers - Port of Registry - Year Month

Hull built at Leith/Edinburgh By Henry Robb Ltd. Yard No. 481 E When 1961

Main Engines made at Köln-Deutz By Klöckner-Humboldt-Deutz AG Eng. No. 2752055-62 When 3.61

Gearing made at - By - Blr. Nos. - When -

Donkey boilers made at - By - Machinery installed at Leith By Henry Robb Ltd. When 1961

Particulars of restricted service of ship, if limited for classification -

Particulars of vegetable or similar cargo oil notation, if required -

Is ship to be classed for navigation in ice? - Is ship intended to carry petroleum in bulk? -

Is refrigerating machinery fitted? - If so, is it for cargo purposes? - Type of refrigerant -

Is the refrigerating machinery compartment isolated from the propelling machinery space? - Is the refrigerated cargo installation intended to be classed? -

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the report need not be repeated below, but the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system engine - flywheel - intermediate shaft-shafting

MAIN RECIPROCATING ENGINES. Licence Name and Type No. one airless injection heavy oil RV8M 545

No. of cylinders per engine 8 Dia. of cylinders 320 mm stroke(s) 450 mm 2 or 4 stroke cycle 4 Single or double acting single

Maximum approved BHP per engine 660 at 380 RPM of engine and - RPM of propeller.

Corresponding MIP 6.54 kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 64 kg/cm² Machinery numeral 132

Are the cylinders arranged in Vee or other special formation? no If so, number of crankshafts per engine -

TWO STROKE ENGINES. Is the engine of opposed piston type? - If so, how are upper pistons connected to crankshaft? -

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? - No. and type of mechanically driven scavenge pumps or blowers per engine and how driven -

No. of exhaust gas driven scavenge blowers per engine - Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? -

If a stand-by or emergency pump or blower is fitted, state how driven - No. of scavenge air coolers - Scavenge air pressure at full power - Are scavenge manifold explosion relief valves fitted? -

FOUR STROKE ENGINES. Is the engine supercharged? no Are the undersides of the pistons arranged as supercharge pumps? no No. of exhaust gas driven blowers per engine -

No. of supercharge air coolers per engine - Supercharge air pressure - Can engine operate without supercharger? -

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1 Starting 1 Safety 1

Material of cylinder covers cast iron Material of piston crowns cast iron Is the engine equipped to operate on heavy fuel oil? no

Cooling medium for:—Cylinders water Pistons - Fuel valves - Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? - Is welded construction employed for: Bedplate? no Frames? no Entablature? no Is the crankcase separated from the underside of pistons? no

Is the engine of crosshead or trunk piston type? trunk Total internal volume of crankcase 3.52 m³ No. and total area of explosion relief devices 4, area 380cm² Are flame guards or traps fitted to relief devices? yes

Is the crankcase readily accessible? yes If not, must the engine be removed for overhaul of bearings, etc? - Is the engine secured directly to the tank top or to a built-up seating? - How is the engine started? with air

Can the engine be directly reversed? yes If not, how is reversing obtained? -

Has the engine been tested working in the shop? yes How long at full power? 6 hours

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system Prov. London letter dd. 17.2.1961 State barred speed range(s), if imposed

for working propeller - For spare propeller - Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? yes

Where positioned? front, pumpside Type friction No. of main bearings 10 Are main bearings of ball or roller type? no

Distance between inner edges of bearings in way of crank(s) 346 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines -

Crankshaft type: Built, semi-built, solid. (State which) solid Diameter of journals 220 mm Diameter of crankpins Centre 210 mm Side 210 mm Breadth of webs at mid-throw 350 mm Axial thickness of webs 93 mm

If shrunk, radial thickness around eyeholes - Are dowel pins fitted? - Crankshaft material Journals carbon steel Minimum Y.P. 35 kg/mm² Approved 17.2.55

Webbs - Tensile strength 65 kg/mm²

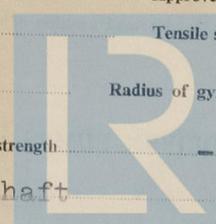
Diameter of flywheel 1500 mm Weight 3300 kg Are balance weights fitted? no Total weight - Radius of gyration -

Diameter of flywheel shaft - Material - Minimum approved tensile strength -

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) integral with crankshaft

Handwritten notes: 30/6/61

Handwritten notes: Final 8/3/61 501A



Lloyd's Register Foundation

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GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

This engine has been constructed under special survey of tested materials and is in accordance with the Secretary's letters, approved plans and Rules Requirements. The materials and workmanship are good and the engine, when tested in the shops under full and overload conditions, was found to function satisfactorily. The governor tests were also found satisfactory. This engine, in my opinion, is suitable for main propelling purposes and when satisfactorily installed and reported will be eligible to receive the notation



LMC (with date).

W. D. ...
 Engineer Surveyor to Lloyd's Register of Shipping.

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

Conn.-RODS LLOYD'S KLN. 959/1/2/4/6/5/8/9/10/H.D. 3.2.61

CRANKSHAFT OR ROTORSHAFT LLOYD'S DSF JL 494 1.8.60

FLYWHEEL SHAFT -

THRUSTSHAFT -

GEARING -

INTERMEDIATE SHAFTS LLOYD'S KLN. 951/H.D. 22.3.61

SCREW AND TUBE SHAFTS -

PROPELLERS -

OTHER IMPORTANT ITEMS oilcooler: 1-6848-5-7010 LLOYD'S Mhm WP 5/4 kg/cm² TP 10/8 kg/cm² HW 2.2.61
 air receivers: 21698: LLOYD'S TEST HNO. TP 60 kg/cm² WP 30 kg/cm² 25.11.60 FK
 21482: LLOYD'S TEST HNO. TP 60 kg/cm² WP 30 kg/cm² 19.10.60 CS
 21918: LLOYD'S TEST HNO. TP 60 kg/cm² WP 30 kg/cm² 17. 1.61 CS

Is the installation a duplicate of a previous case? yes If so, state name of vessel KLN. Rpt. 582; Engine No. 2751815

Date of approval of plans for crankshaft 17.2.55 Straight shafting - Gearing - Clutch -

Separate oil fuel tanks - Pumping arrangements - Oil fuel arrangements -

Cargo oil pumping arrangements - Air receivers 29.3.56 Donkey boilers -

Dates of examination of principal parts:-

Fitting of stern tube - Fitting of propeller - Completion of sea connections - Alignment of crank shaft in main bearings -

Engine checks & bolts - Alignment of gearing - Alignment of straight shafting - Testing of pumping arrangements -

Oil fuel lines - Donkey boiler supports - Steering machinery - Windlass -

Date of Committee GLASGOW 31 OCT 1961 Special Survey Fee DM 725.-

Decision SEE ACCOUNTING & MACHINERY REPORT Runn. Test DM 100.-

Expenses DM 83.-

Date when A/c rendered 21.4.61 A/C R 4442



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