

Date of writing report Received London Port NEWCASTLE-ON-TYNE, No. 1177252 MAY 1961
Survey held at Wallsend No. of visits In shops 109, On vessel First date 16.5.60, Last date 21.2.61.

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 93317 Name MONTROSE Gross tons 1493
Owners MONTSHIP LINES LTD. Managers BUIRES MARKES LTD. Port of Registry LONDON
Hull built at Sunderland By Bartram & Sons LTD. Yard No. 386 Year Month 1961 3
Main Engines made at Wallsend By North Eastern Marine Eng. Co. Ltd. Eng. No. 3414 When 1961

Particulars of restricted service of ship, if limited for classification
Particulars of vegetable or similar cargo oil notation, if required
If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3 Is ship an oil tanker?
Is refrigerating machinery fitted? If so, is it for cargo purposes? Type of refrigerant

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.

No. of main engines One No. of propellers One Brief description of propulsion system Direct coupled heavy oil engine
MAIN RECIPROCATING ENGINES. Licence Name and Type No. NEM - Gotaverken. 760/1500 VGS -5U (Turbo charged)
No. of cylinders per engine 5 Dia. of cylinders 760 mm stroke(s) 1500 mm 2 or 4 stroke cycle 2 Single or double acting single
Maximum BHP per engine approved for this installation 6300 at 112 RPM of engine and 112 RPM of propeller.

Corresponding MIP 125 lb/sq.in. Maximum cylinder pressure 797 lb/sq.in. Machinery numeral 1260
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? No 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? Valves in cover No. and type of mechanically driven scavenge pumps or blowers per engine and how driven 2 piston sc. pumps per cylinder

No. of exhaust gas driven scavenge blowers per engine One Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? Yes
If a stand-by or emergency pump or blower is fitted, state how driven None No. of scavenge air coolers One Scavenge air pressure at full power 9-10 p.s.i. Are scavenge manifold explosion relief valves fitted? Yes 2 separate scav. pump pistons each cylinder
TWO AND FOUR STROKE ENGINES. Is the engine supercharged? Yes Are the undersides of the pistons arranged as supercharge pumps? No No. of exhaust gas driven blowers per engine One No. of supercharge air coolers per engine One Supercharge air pressure 9/10 p.s.i. Can engine operate without supercharger? Yes

No. of valves per cylinder: Fuel 2 Inlet None Exhaust One Starting One Safety One
Material of cylinder covers Upper cover cast steel Lower cover cast iron Material of piston crowns Forged steel Is the engine equipped to operate on heavy fuel oil? Yes
Cooling medium for: Cylinders Fresh water Pistons Oil Fuel valves Oil Overall diameter of piston rod for double acting engines -
Is the rod fitted with a sleeve? No Is welded construction employed for: Bedplate? Yes Frames? Yes Entablature? Yes Is the crankcase separated from the underside of pistons? Yes Is the engine of crosshead or trunk piston type? Cross-head Total internal volume of crankcase 3500 cuft. No. and total area of explosion relief devices 12 - 1636 ins^2 Are flame guards or traps fitted to relief devices? Guards 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? Built-up seating How is the engine started? Compressed air

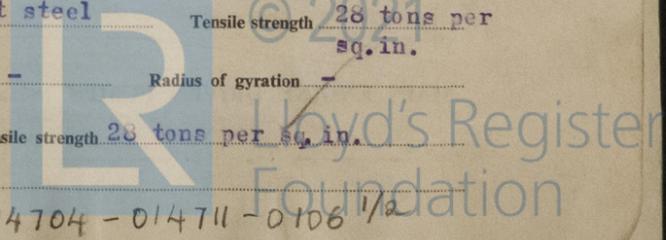
Can the engine be reversed? Yes If not, how is reversing obtained? -
Has the engine been tested working in the shop? Yes How long at full power? 3 hrs full power, 1/2 hr at 110%
CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 4.8.60 State barred speed range(s), if imposed for working propeller 40 to 50 rpm For spare propeller 40 to 50 rpm Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No

Where machined? Type No. of main bearings - Are main bearings of ball or roller type? No Distance between inner edges of bearings in way of crank(s) 990 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines -
Crankshaft type: Built, semi-built, solid. (State which) semi-built
Diameter of journals 540 mm Centre 540 mm -105 mm hole Breadth of webs at mid-throw 890 mm Axial thickness of webs 293 mm
If shrunk, radial thickness around eyeholes 245 mm Are dowel pins fitted? No Crankshaft material: Journals Forged steel Approved 28 tons per sq.in. Webs Cast steel Tensile strength 28 tons per sq.in.
Diameter of flywheel 2392.5 mm Weight 3.17 tons Are balance weights fitted? No Total weight - Radius of gyration -
Diameter of flywheel shaft 540 mm Material Forged steel EN 3A Minimum approved tensile strength 28 tons per sq.in.

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

Various parts as per list.

482A
G.V.
13.3.61.



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.

The engine described above has been constructed under Special Survey in accordance with approved plans, the requirements of the Rules or their equivalent.

The materials and workmanship are good.

This engine will be eligible, in my opinion, to be classed * LMC (with date) when installed in the ship and tested under working conditions - all in accordance with the requirements of the Rules.

The main engine is not to be operated continuously between 40 & 50 r.p.m. and a notice board to that effect is to be fitted and the tachometer marked accordingly. ✓

The engine is being despatched to Sunderland for installation.

SURVEY OF MACHINERY.
SUNDERLAND

The above noted machinery has been installed on board Messrs. Bartram's Yard, No. 386, M.V. "Montrose" in an efficient manner and tested under full working conditions. For recommendations see Sunderland Machinery Report 46
F. Wilson

W. Nicholson

Engineer Surveyor to Lloyd's Register of Shipping.

W. NICHOLSON.

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

RODS Conn. rods - GOT. 1014 - 15-10-17-18
Piston rods - GOT. 2120, 2121, 2122, 2117, 2118, 2119
Crosshead pins - Got. 2134 (4 off) Sld 4773

CRANKSHAFT OR PROTOR SHAFT Got. Cert. 28167 - 2158, 2159

FLYWHEEL SHAFT

THRUSTSHAFT } Got. cert. 28168. 2160.

GEARING

INTERMEDIATE SHAFTS Sld. 2326. 2327. 2312. 2322. 2334.

SCREW AND TUBE SHAFTS Sld. 2317 2333

PROPELLERS Gls. C.66977 ABS 4746

OTHER IMPORTANT ITEMS Piston tops - Got 20 KG 86558

Upper cyl. covers Ant. 3042, 43, 44, 45, 46, 47

Is the installation a duplicate of a previous case? No Yes If so, state name of vessel _____

Date of approval of plans for crankshaft 23.5.60 24.5.60 Straight shafting 4.8.60 Gearing _____ Clutch _____

Separate oil fuel tanks _____ Pumping arrangements 11.11.60 Oil fuel arrangements 11.11.60

~~Original pumping arrangements~~ Air receivers 7.9.60 19.7.60 ~~Air receiver bulges~~

Dates of examination of principal parts:—

Fitting of stern tube _____ Fitting of propeller _____ Completion of sea connections _____ Alignment of crankshaft in main bearings _____

Engine chocks & bolts _____ Alignment of gearing _____ Alignment of straight shafting _____ Testing of pumping arrangements _____

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

Date of Committee FRIDAY 23 JUN 1967 Special Survey Fee Constr. £295. 0. 0. ✓

Decision _____ Welded bedplate = 3 9-5-0 32 TONS ✓
Two welded air Recvrs. £ 22. 0. 0. ✓

Expenses _____

1 MAR 1961

