

Rpt. 4b

Date of writing report 3/2/59. Received London 110 FEB 1959 Port Hull. No. 64692.  
Survey held at Hull. In shops No. of visits On vessel 5. First date 17/12/58 Last date 2/2/59.

REPLACEMENT  
**FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY**

No. in R.B. 65934 Name "JIM M" Gross tons 410  
Owners Metcalf Motor Coasters, Ltd. Managers T.J. Metcalf. Port of Registry London.  
Hull built at Goole. By Goole S.B. & Rep. Co. Ltd. Yard No.                      Year Month  
When 1944. 9.  
Main Engines made at Stamford. By R.A. Lister - Blackstone Co. Ltd. Eng. No. M. 85164 When 1958. 12.  
Gearing made at                      By                       
Donkey boilers made at                      By                      Blr. Nos.                      When                       
Machinery installed at Hull. By A. & E. Woodward, Ltd. When 1959. 1.

Particulars of restricted service of ship, if limited for classification Coasting service U.K., Eire, Channel Islands & Continent between R. Elbe & Brest

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? No. 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 wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that 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 Diesel.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. R.A. Lister - Blackstone E.R.S.M.G.R. 4.

No. of cylinders per engine                      Dia. of cylinders                      stroke(s) 2 or 4 stroke cycle 4 Single or double acting S.A.

Maximum approved BHP per engine                      at                      RPM of engine and                      RPM of propeller.

Corresponding MIP                      (For DA engines give MIP top & bottom) Maximum cylinder pressure                      Machinery numeral                     

Are the cylinders arranged in Vee or other special formation?                      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?                      Are the undersides of the pistons arranged as supercharge pumps?                      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                      Inlet                      Exhaust                      Starting                      Safety                     

Material of cylinder covers                      Material of piston crowns                      Is the engine equipped to operate on heavy fuel oil?                     

Cooling medium for: Cylinders Fresh 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?                      Frames?                      Entablature?                      Is the crankcase separated from the

underside of pistons?                      Is the engine of crosshead or trunk piston type?                      Total internal volume of crankcase                      No. and total area of explosion relief

devices                      Are flame guards or traps fitted to relief devices?                      Is the crankcase readily accessible? Yes. If not, must the engine be removed for

overhaul of bearings, etc? No. 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 directly reversed? No. If not, how is reversing obtained? Reverse reduction gear box M.W.D. No. 1890.

Has the engine been tested working in the shop? Yes. How long at full power?                     

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system Applied for. State barred speed range(s), if imposed

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

Where positioned?                      Type                      No. of main bearings                      Are main bearings of ball or roller

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

Crankshaft type: Built, semi-built, solid. (State which)                     

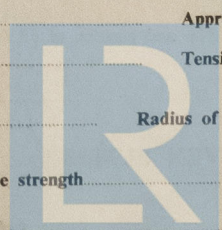
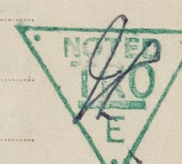
Diameter of journals                      Diameter of crankpins                      Centre                      Breadth of webs at mid-throw                      Axial thickness of webs                     

If shrunk, radial thickness around eyeholes                      Are dowel pins fitted?                      Crankshaft material Journals                      Approved                     

Diameter of flywheel                      Weight                      Are balance weights fitted?                      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)                     



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# MAIN GAS TURBINES. Name and Type No.

No. of sets of turbines Open or closed cycle BHP per set at RPM of output shaft

How is drive transmitted to propeller shaft?

ARRANGEMENT OF TURBINES. HP drives at RPM HP gas inlet temperature pressure  
(A small diagram should be attached showing gas cycle.)  
IP drives at RPM IP gas inlet temperature pressure  
LP drives at RPM LP gas inlet temperature pressure

No. of air compressors per set Centrifugal or axial flow type? Material of turbine blades Material of compressor blades  
No. of air coolers per set No. of heat exchangers per set How are turbines started?

How is reversing effected? Are the turbines operated in conjunction with free piston gas generators?  
Total No. of free piston gas generators Diameter of working pistons Diameter of compressor pistons No. of double strokes per minute at full power.  
Gas delivery pressure Gas delivery temperature Have the turbines and attached equipment been tested working in the shop?  
How long at full power?

## ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

No. of generators KW per generator at RPM AC or DC? Position  
No. of propulsion motors SHP per motor at RPM Position  
How is power obtained for excitation of generators? Motors?

## REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

Is gearing of single or double helical type? If single, position of gear thrust bearing Is gearing of epicyclic type?  
PCD of pinions: First reduction Second reduction PCD of wheels: First reduction Main  
Material of pinions Tensile strength Material of wheel rims Tensile strength  
Are gear teeth surface hardened? How are teeth finished? Diameter of pinion journals Wheel shaft journals  
Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated on completion of welding?  
Where is the propeller thrust bearing located? Are gear bearings of ball or roller type?

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give brief description and, for clutches, state how operated.  
Oil operated clutches in gearbox.  
Rubber bonded flexible coupling between engine and gearbox  
(attached London Cert.No.M.W.D.1890).  
Can the main engine be used for purposes other than propulsion when declutched? No. If so, what?

STRAIGHT SHAFTING. Diameter of thrustshaft Material Minimum approved tensile strength  
Shaft separate or integral with crank or wheel shaft? Diameter of intermediate shaft Material  
Minimum approved tensile strength Diameter of screwshaft cone at large end Is screwshaft fitted with a continuous liner?  
Diameter of tube shaft. (If these are separate shafts) Is tube shaft fitted with a continuous liner in way of stern tube Thickness of screw/tube shaft liner at bearings  
Thickness between bearings Material of screw/tube shaft Minimum approved tensile strength  
Is an approved oil gland fitted? If so, state type Length of bearing next to and supporting propeller  
Material of bearing In multiple screw vessels is the liner between stern tube and A bracket continuous? If not, is the exposed length of shafting between liners readily visible in dry dock?

PROPELLER. Diameter of propeller 61.5" Pitch 30.38" Built up or solid Solid R.H. Total developed surface 1670 sq.in.  
No. of blades 4 Blade thickness at top of root fillet 2.5/16" Blade material M.Bronze. Moment of inertia of dry propeller Not available.  
If propeller is of special design, state type Is propeller of reversible pitch type? No. If so, is it of approved design?  
State method of control Material of spare propeller None. Moment of inertia

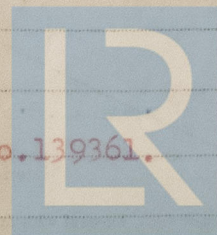
AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine None. Can they be declutched?  
No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate)

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate)  
How are receivers first charged? Maximum working pressure of starting air system Are the safety devices in accordance with the Rules?  
Has the starting of the main engines been tested and found satisfactory? Yes.

COOLERS. No. of main engine fresh water coolers No. of main engine lubricating oil coolers See London F.E.Rpt.No.139361.

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Please see London F.E.Rpt.No.139361.



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