

pt. 4b

Date of writing report 19.1.60.

Received London

Port PLYMOUTH

No. 8744

FEB 1960

Where held at DARTMOUTH

No. of visits

On vessel 26.2.59

First date 17.2.59

Last date 14.1.60

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

In R.B. 41394

Name "MOUNTWOOD"

Gross tons 464.28

Owners Birkenhead Corporation

Managers

Port of Registry Liverpool

Where built at Dartmouth

By Philip & Son Ltd.

Yard No. 1304

Year Month When 1960 1

Where engines made at Manchester

By Crossley Bros.

Eng. No. 148315 & 148446

When

Where rigging made at None

By

Where key boilers made at None

By

Blr. Nos.

When

Where machinery installed at Dartmouth

By Philip & Son Ltd.

When 1960 1

Particulars of restricted service of ship, if limited for classification Ferry Service in River Mersey

Particulars of vegetable or similar cargo oil notation, if required No

Is ship to be classed for navigation in ice? No

Is ship intended to carry petroleum in bulk? No

Is refrigerating machinery fitted? No

Is so, is it for cargo purposes?

Type of refrigerant

Is refrigerating machinery compartment isolated from the propelling machinery space?

Is the refrigerated cargo installation intended to be classed?

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 port need not be repeated below, but the port and report number should be stated.

No. of main engines 2 No. of propellers 2 Brief description of propulsion system Direct Reversing Diesel Engines

Are IN RECIPROCATING ENGINES. Licence Name and Type No. HRN8/35 Heavy Oil Engines.

No. of cylinders per engine 8 Dia. of cylinders 10 1/2" stroke(s) 13 1/2" 2 or 4 stroke cycle 2 Single or double acting Single

Maximum approved BHP per engine 680 at 350 RPM of engine and 350 RPM of propeller.

Maximum responding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 272

Are the cylinders arranged in Vee or other special formation? If so, number of crankshafts per engine

Are 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?

Is a stand-by or emergency pump or blower fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full

Are scavenge manifold explosion relief valves fitted?

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

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

Are 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?

Working medium for: Cylinders Pistons Fuel valves Overall diameter of piston rod for double acting engines

Is the piston rod fitted with a sleeve? Is welded construction employed for: Bedplate? Frames? Entablature? Is the crankcase separated from the

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

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

haul of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? Seating How is the engine started? Compressed Air

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

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

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

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

How is the propeller positioned? Type No. of main bearings Are main bearings of ball or roller

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

What is the crankshaft type: Built, semi-built, solid. (State which)

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

Side Pins Minimum

Thickness of crank, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved

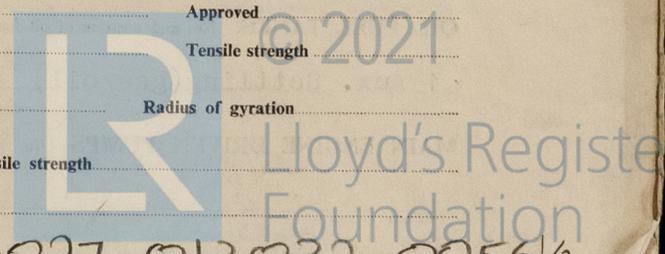
Number of flywheel Weight Are balance weights fitted? Total weight Radius of gyration

Number of flywheel shaft Material Minimum approved tensile strength

How is the crankshaft: separate, integral with crankshaft, integral with thrustshaft. (State which)

SEE MEMO REFS 100, 103

15/5/57 2/19/58 37410



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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
 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 stroke
 minute at full power Gas delivery pressure Gas delivery temperature Have the turbines and attached equipment been tested
 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
 journals Are the wheels of welded construction? Is gearcase of welded construction? Has the wheel/gearcase been heat treated on contact
 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 description and, for clutches, state how operated
 Can the main engine be used for purposes other than propulsion when de-clutched? If so, what?

STRAIGHT SHAFTING. Diameter of thrustshaft 5 1/4" Material Steel Minimum approved tensile strength 28 tons/sq. in.
 Shaft separate or integral with crank or wheel shaft? Separate Shaft Diameter of intermediate shaft 5" Material Steel
 Minimum approved tensile strength 28 tons/sq. in. Diameter of screwshaft cone at large end 5 3/4" Is screwshaft fitted with a continuous liner? No
 Diameter of tube shaft. (If these are separate shafts) None Is tube shaft fitted with a continuous liner in way of stem tube Thickness of screw/tube shaft 1/8"
 Thickness between bearings Material of screw/tube shaft Steel Minimum approved tensile strength 28 tons/sq. in.
 Is an approved oil gland fitted? Yes If so, state type V.S. Length of bearing next to and supporting propeller 36"
 Material of bearing Phos. Bronze In multiple screw vessels is the liner between stem tube and A bracket continuous? If not, is the exposed length of shafting
 Is it readily visible in dry dock?

PROPELLER. Diameter of propeller 5' 6" Pitch 4' 7" Built up or solid Solid Total developed surface 13,150 sq. ft.
 No. of blades 4 Blade thickness at top of root fillet 2.64 Blade material Manganese Bronze Moment of inertia of dry propeller 214,150
 If propeller is of special design, state type No Is propeller of reversible pitch type? No If so, is it of approved design?

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine None Can they be de-clutched?

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) 2 Electrically driven For'd & Aft
 Engine Room. Ips. 1394. Small Comp. driven by Aux. Engine Sou. D.13618
 No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 2 Main 65 cu.ft. - For'd & Aft
 Engine Room Not.C.3002d Small Aux. 5 cu.ft. Engine Room / to Follow
 How are receivers first charged? by small Compr. Maximum working pressure of starting air system 350 lbs/sq. in. Are the safety valves set in accordance with the Rules? Yes Has the starting of the main engines been tested and found satisfactory? Yes

COOLERS. No. of main engine fresh water coolers 1 each No. of main engine lubricating oil coolers 1 each Engine
 OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure All in Engine Room 1 - Twin
 1 Aux. Settling (gas oil) One Drain Tank, One Bludge Tank

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) One Sea Water Circulating pump on each engine.

INDEPENDENT PUMPS
 Name and Type No. below essential pumps, state position and how driven. Give capacity of bilge pumps.

Pump Name	Service for which each pump is connected to be marked thus X																
	SUCTION						DELIVERY										
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Heat Exchanger	Lub. Oil	Sludge & Oily Bilge	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	Oily Water Separator
All in Engine Room																	
Large Pumps Port Elec. Mtr. 100 G.P.H.	X	X	X				X										X
Main Service Pump For'd Elec. Mtr. 11200 G.P.H.		X	X	X			X	X			X	X		X			
Bludge Pump Elec. Mtr. 10 G.P.H.									X								X
W. Circ. Pump Stbd. Elec. Mtr. 8960 G.P.H.							X				X						
Oil Transfer Pump Elec. Mtr.					X								X				
Lub. Oil Pumps F.P.A.P. S. & A.S. Elec. Mtr.									X						X		
On Deck Emergency Fire Pump Petters 12,500 G.P.H.						X	X								X		

GE SUCTIONS. No. and size in each hold, deep tank or pump room F.P. 1 @ 2 1/2"; Store 2 @ 2 1/2"; F.D.B.T. 1 @ 3"; F.W.B.T. 1 @ 3"; Hold 2 @ 2 1/2"; Pipe Tunnel 1 @ 1 1/2"; Oily Bilge 1 @ 1 1/4"; Saloon 2 @ 2 1/2"; Aft Accm. drains to tunnel 1 @ 2 1/2"
 and size connected to main bilge line in main engine room 4 @ 2 1/2"
 Size and position of direct bilge suction in machinery spaces 1 @ 3" For'd Stbd.
 Size and position of emergency bilge suction in machinery spaces One @ 2 1/2" for'd from emergency pump
 Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? Yes Do the piping arrangements comply with the Rules for oil requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (strike out words not applicable). Yes

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Engine Room Port	Diesel	Ruston & Hornsby	Not.C.29927	Elec. Generator 60 KW.
" " Stbd.	"	"	Not.C.29927	" " "
" " Aft.	"	"	Not.C.30166	9KW Generator, Air Compr.

Is electric current used for essential services at sea? Yes If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea. One @ 60 KW
 Is an electric generator driven by Main Engine? No
 STEAM INSTALLATION. No. of donkey boilers burning oil fuel W.P. Type
 Is a superheater fitted? Are these boilers also heated by exhaust gas? No. of donkey boilers heated by exhaust gas only? W.P.
 Can the exhaust heated boilers deliver steam directly to steam range or do they operate only as economisers in conjunction with oil fired boilers? Port and No. of report on donkey
 Is steam essential for operation of the ship at sea? Are any steam pipes over 3 ins. bore? If so, what is their material?
 For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? No. of oil burning pressure
 No. of steam condensers No. of Evaporators
 GEARING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) Browns Electro Hydraulic
 One Motor & Pump
 Are the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements One 10 gallon & 2 - 2 gallon foamite & 2 - quart pistols Appd. by M.O.T.
 Has the spare gear required by the Rules been supplied? Yes Has all the machinery been tried under full working conditions and found satisfactory? Yes Date and duration of full sea trials of main engines 8 hours. 8.1.60.
 Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) No
 The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable).

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 Lloyd's Register
 Foundation
 Managing Director

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FEB 1960

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 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 machinery of this vessel has been installed under Special Survey in accordance with or equivalent to the Rules, approved plans and Secretary's letters.

The workmanship and materials are good and when tried under full power at sea the vessels' machinery was found satisfactory in every respect and is eligible, in my opinion, to have the record of + L.M.C. 1,60 and the notations OG

2 Oil Engines 2 S.A. each 8 Cy. 267 x 343 m/m.

Digby L.H. Collins
 Engineer Surveyor to Lloyd's Register of Shipping

(Digby L.H. Collins)

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

RODS Mch. rpt.

CRANKSHAFT OR ROTOR SHAFT Mch. rpt.

FLYWHEEL SHAFT Mch. rpt.

THRUST SHAFT Mch. rpt.

GEARING None

INTERMEDIATE SHAFTS 4560, 4562, 4563, 4554 18.12.58. J.M. Sld.

SCREW AND TUBE SHAFTS G.790 & G.793 Spare G.791 AB & YA. Shf.

PROPELLERS H.4769 R.V.I. & L.V.I. 8.1.59. & 16.2.59. Spare H.4769 R2 & L2 16.2.59. All F.C.I.

OTHER IMPORTANT ITEMS

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

Date of approval of plans for crankshaft Mch. rpt. Straight shafting 23.6.58. Gearing None Clutch None

Separate oil fuel tanks 22.4.59. Pumping arrangements 16.10.58. Oil fuel arrangements 2.7.58.

Cargo oil pumping arrangements None Air receivers See Not. rpt. Donkey boilers None

Dates of examination of principal parts:-

Fitting of stern tube 26.6.59. Fitting of propeller 30.12.59. Completion of sea connections 6.7.59. Alignment of crankshaft in main bearings Mch.

Engine chocks & bolts 24.11.59. Alignment of gearing None Alignment of straight shafting 2.10.59. & 6.12.59. Testing of pumping arrangements 12.

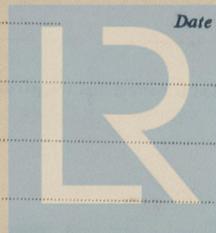
Oil fuel lines 3.1.60. Donkey boiler supports None Steering machinery 8.1.60. Windlass 8.1.60.

Date of Committee TUESDAY 29 MAR 1960 Special Survey Fee £ 65.0.0.

Decision See Rpt. 1 20% + 17-0-0

Expenses £ 8.4.0.

Date when A/c rendered 4.2.60.



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