

Rpt. 4b

21 MAY 1958

LIVERPOOL

A3

Date of writing report

Received London

Port

No.

Survey held at

No. of visits

In shops

First date

Last date

On vessel

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name HEATH COCK Gross tons 193
Owners North West-Lugs limited Managers By Cannell Laird (S.E.) Ltd Port of Registry Liverpool
Hull built at Birkenhead By Ruston Hornsby limited Yard No. 1296 Year Month 1958 2
Main Engines made at Lincoln By modern Wheel Drive Ltd Eng. No. 422558 When
Gearing made at Blough Bucks By Cannell Laird & Co (Shipbuilders & Engineers) Ltd When 1958
Donkey boilers made at Birkenhead By limited by safety equipment to within limits Mersey Bar
Machinery installed at Birkenhead 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? no Is ship intended to carry petroleum in bulk? no
Is refrigerating machinery fitted? no If so, is it for cargo purposes? no Type of refrigerant no
Is the refrigerating machinery compartment isolated from the propelling machinery space? no Is the refrigerated cargo installation intended to be classed? no

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 One No. of propellers One Brief description of propulsion system Holset flexible coupling & reversing gear box

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Ruston & Hornsby limited, 6 V.L.B.X.M. (supercharged)

No. of cylinders per engine 6 Dia. of cylinders 15" stroke(s) 20" 2 or 4 stroke cycle 4 Single or double acting single

Maximum approved BHP per engine 1170 at 375 RPM of engine and 123 RPM of propeller.

Corresponding MIP 141 lbs. (For DA engines give MIP top & bottom) Maximum cylinder pressure 775 ± 3 lbs. Machinery numeral 234

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? no

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

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

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

Are scavenge manifold explosion relief valves fitted? no

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 no Can engine operate without supercharger? yes

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

Material of cylinder covers C.I. Material of piston crowns C.I. Is the engine equipped to operate on heavy fuel oil? no

Cooling medium for:—Cylinders Water Pistons no Fuel valves no Overall diameter of piston rod for double acting engines no

Is the rod fitted with a sleeve? no 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 302 cu ft No. and total area of explosion relief devices 24 570 sq ins

Are flame guards or traps fitted to relief devices? no 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? no How is the engine started? Compressed air

Can the engine be directly reversed? no If not, how is reversing obtained? Reverse & reduction gear through Holset Flexible Coupling

Has the engine been tested working in the shop? yes How long at full power? 12-8-57 386 H.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 12-8-57 State barred speed range(s), if imposed

for working propeller none For spare propeller none Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? no Type no No. of main bearings 8 Are main bearings of ball or roller type? no

Distance between inner edges of bearings in way of crank(s) 18" Distance between centre lines of side cranks or eccentrics of opposed piston engines no

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

Diameter of journals 11 3/4" Diameter of crankpins 9 1/4" Breadth of webs at mid-throw 15 1/4" Axial thickness of webs 5 1/4"

If shrunk, radial thickness around eyeholes no Are dowel pins fitted? no Crankshaft material Journals no Approved no

Minimum approved tensile strength no Webs no Tensile strength no

Diameter of flywheel 66" Weight 6300 lbs. Are balance weights fitted? no Total weight no Radius of gyration no

Diameter of flywheel shaft no Material no Minimum approved tensile strength no

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

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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.) See London Report.

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. Holzer-Flexible Coupling

Can the main engine be used for purposes other than propulsion when declutched? No If so, what?.....

STRAIGHT SHAFTING. Diameter of thrustshaft in gear box..... Material..... Minimum approved tensile strength.....

Shaft separate or integral with crank or wheel shaft? Gear box output shaft..... Diameter of intermediate shaft 8 3/8" Material Stainless steel

Minimum approved tensile strength 28 tons sq in Diameter of screwshaft cone at large end 10 1/2" Is screwshaft fitted with a continuous liner? No

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 Stainless Steel Minimum approved tensile strength 28 tons sq in

Is an approved oil gland fitted? Yes If so, state type Newark Length of bearing next to and supporting propeller 3'-8 1/4"

Material of bearing Gunmetal with metal lined 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 10'-0" Pitch 8'-8" RED at Root Built up or solid Solid Total developed surface 48 sq ft

No. of blades 4 Blade thickness at top of root fillet 6 7/8" Blade material Cast-iron Moment of inertia of dry propeller 16849 lbs in sec²

If propeller is of special design, state type No Is propeller of reversible pitch type? No If so, is it of approved design?.....

State method of control..... Material of spare propeller Cast-iron Moment of inertia 16849 lbs in sec²

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) Two: One electrically driven 26 cu ft/min @ 300 lbs. sq in One clutch operated from 10KW Diesel Generator 9 cu ft/min at 300 lbs. sq in

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Two @ 23 1/2 cu ft. port side aft engine room

How are receivers first charged? Stand by Diesel compressor Could start Maximum working pressure of starting air system 300 lbs. sq in Are the safety devices 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 One No. of main engine lubricating oil coolers One main engine & one gear box cooler

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) One Fresh Water circ. One Salt Water circ. One Lubricating Oil scavenge. One lubricating oil pressure.

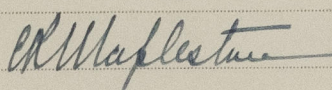
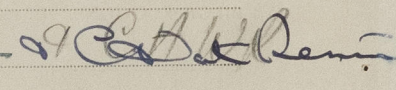
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GENERAL REMARKS

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 machinery has been constructed under Special Survey in accordance with the approved Plans the Society's Rules, & Secretary's letters. The materials & workmanship are good.

It has been properly installed in the vessel, & tried under full working conditions with satisfactory results, & is eligible in my opinion to be classed with the Record of  L.M.C. 2.58 T.S. 09.

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.)

RODS

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING *Hindmarch / M.W.D. Type M2.W.R. Size 5 :- No 12149 See Lm. Rpt. M.W.D. - 1739*

INTERMEDIATE SHAFTS *E.S.C. 7139 Lloyds H.H.S.H.F 22-8-57 P.H.F. L.Y. 19-12-57*

SCREW ~~AND~~ SHAFTS *E.S.C. 7140 Lloyds H.H.S.H.F 2-9-57 C.R.M. L.Y. 18-12-57*

PROPELLERS

14-11-57 - 51

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

30-7-56

Straight shafting

12-8-57

Gearing

Clutch

Separate oil fuel tanks

✓

Pumping arrangements

26-11-57

Oil fuel arrangements

26-11-57

Cargo oil pumping arrangements

✓

Air receivers

App. Durng. 47 B. 342/3

Donkey boilers

✓

Dates of examination of principal parts:—

Fitting of stern tube

21-12-57

Fitting of propeller

18-12-57

Completion of sea connections

20-12-57

Alignment of crankshaft in main bearings

17-1-58

Engine checks & bolts

17-1-58

Alignment of gearing

17-1-58

Alignment of straight shafting

17-1-58

Testing of pumping arrangements

11-2-58

Oil fuel lines

✓

Donkey boiler supports

✓

Steering machinery

11-2-58

Windlass

11-2-58

Date of Committee

LIVERPOOL

20 MAY 1958

Special Survey Fee

Installation £57-10-0.

Decision

+ Lmc 2.58

T.S.(09.)

Do

✓

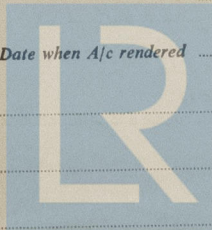
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23.5.58

Expenses

Date when A/c rendered

11/4/58 Paid 3/5/58



Lloyd's Register
Foundation