

Rpt. 4b

Date of writing report 13.11.64.

Received London 33 MAY 1964

Port BIRMINGHAM

No. 879

Survey held at Shrewsbury.

No. of visits

In shops 7

First date

Last date

13.3.64.

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name CYRIL KIRKPATRICK Gross tons 847.04  
Owners Port of London Authority Managers - Port of Registry LONDON.  
Hull built at North Woolwich By Harland & Wolff Ltd., Yard No. 927 - 928 Year Month 1964. 12  
Main Engines made at Shrewsbury. By Rolls Royce Ltd., Eng. No. DV102 DV101 When 1964  
Gearing made at - By -  
Donkey boilers made at - By - Blr. Nos. - When -  
Machinery installed at North Woolwich By Harland & Wolff Ltd. When 1964  
Particulars of restricted service of ship, if limited for classification CLASSED AS HOPPER BARGE "RIVER THAMES SERVICE"  
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? - 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 2 No. of propellers 2 Brief description of propulsion system 2 - Oil Engines driving through Schottel propulsion system to 2 propellers.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Rolls Royce type DV8TM series 3000 Model 3001 - 1/2

No. of cylinders per engine 8 Dia. of cylinders 6.625" stroke(s) 7.25" 2 or 4 stroke cycle 4SC Single or double acting S.A.

Maximum approved BHP per engine 500 at 1800 RPM of engine and 450 RPM of propeller.

Corresponding MIP 145 psi (For DA engines give MIP top & bottom) Maximum cylinder pressure 1270 psi Machinery numeral 200

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

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? 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 2 Supercharge air pressure 15 hg. Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel One Inlet Two Exhaust Two Starting Safety

Material of cylinder covers Cast Iron. Material of piston crowns Aluminium Alloy Is the engine equipped to operate on heavy fuel oil? No.

Cooling medium for: Cylinders F.W. 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 Less than 20 cu. ft.

devices None. Are flame guards or traps fitted to relief devices? No. Is the crankcase readily accessible? No. If not, must the engine be removed for

overhaul of bearings, etc? Yes Is the engine secured directly to the tank top or to a built-up seating? Built up seating How is the engine started? Air

Can the engine be directly reversed? No. If not, how is reversing obtained? Propeller system rotated through 180°

Has the engine been tested working in the shop? Yes How long at full power? 4 hrs. & 1 hr. overload.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system TVCS to be submitted 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? For'd end Type Holset Viscous No. of main bearings 5 Are main bearings of ball or roller

type? No. Distance between inner edges of bearings in way of crank(s) 7.35" Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Solid. (State which) Solid.

Diameter of journals 5.375" Diameter of crankpins Centre 4.625" Side Breadth of webs at mid-throw app 7.375" Axial thickness of webs 1.45"

If shrunk, radial thickness around eyeholes - Are dowel pins fitted? - Crankshaft material Journals EN 40B Approved 55 tons sq. in. Webs Tensile strength

Diameter of flywheel 29.7" Weight 218 lbs. Are balance weights fitted? Integral Bal weight 218 lbs. Radius of gyration 10.4"

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

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



879.                      4.<sup>B</sup>

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

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

Can the main engine be used for purposes other than propulsion when declutched?..... If so, what?.....

**AIR COMPRESSORS & RECEIVERS.** No. of main engine driven compressors per engine ..... 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

accordance with the Rules? .....

COOLERS. No. of main engine fresh water coolers..... Fan cooled  
Radiator No. of main engine lubricating oil coolers..... One

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) 1-FW, 1-SW, 1-LO, 1-FO, on each engine.

Service for which each pump is connected to be marked thus X

[illegible]

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room.....

No. and size connected to main bilge line in main engine room.....

In aux. engine room.....	Size and position of M. in .....
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Size and position of emergency bilge suction in machinery spaces.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side?..... Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (*strike out words not applicable*). .....

## STEAM & OIL ENGINE AUXILIARIES

[illegible]

Is electric current used for essential services at sea? \_\_\_\_\_ If so, state the kind \_\_\_\_\_

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 decked boiler.....

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the steam range or do they operate only as economisers in conjunction with oil fired boilers?

oilers..... Is steam essential for operation of the ship at sea? Are you at present.....

material? .....

No. of steam condensers..... No. of Evaporators.....

TEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars)



Have the Rule Requirements for fire extinguishing arrangements been complied with?.....	Brief description of arrangements

Is the spare gear required by the Rules been supplied?

over sea trials of main engines.....

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~~).

novel or experimental nature? (Give particulars)

For Rolls-Royce Ltd., *Builder*



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.

These engines have been constructed under Special Survey in accordance with the Rules, approved plans Secretary's letter. The material and workmanship found satisfactory.

It is submitted that these engines are eligible for installation in a vessel classed or intended for classification with this Society.

These engines have now been despatched to Messrs. Harland & Wolff London for installing in their Yard No. 927.

ENGINE No DV 102 SATISFACTORILY INSTALLED AS THE STARBOARD MAIN ENGINE AND SUBSEQUENTLY TESTED DURING DOCK AND RIVER TRIALS AND FOUND TO BE IN GOOD ORDER

R. J. Dunn

LONDON 16-12-64.

J. Smith

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 3001/1:- LS 1726, 1627, 1728, 1729, 1730, 1731, 1732 & 1733

3001/2:- LS 1656, 1657, 1658, 1659, 1660, 1661, 1662 & 1663

CRANKSHAFT OR ROTORSHAFT 3001/1:- SL 3966-2 HH 10.5.63. LR SHF: 3001/2:- SL 3966-1 HH 10.5.63 LR SHF

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

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 25.11.63. Straight shafting Gearing Clutch

Separate oil fuel tanks Pumping arrangements Oil fuel arrangements

Cargo oil pumping arrangements Air receivers Donkey boilers

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

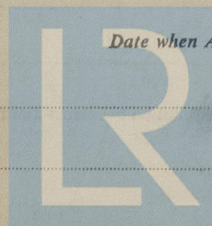
Oil fuel lines Donkey boiler supports Steering machinery Windlass

Date of Committee FRIDAY 12 MAR 1965 Special Survey Fee £98-0-0d.

Decision See Rpt. 1.

Expenses £10-10-0d.

Date when A/c rendered 2021R 1964



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