LONDON REPORT No 153147 REFERS

Rpt. 4c

Date of writing report ..... Received London 11 JAN 1964 Port BIRMINGHAM No. 876

Survey held at Shrewsbury No. of visits 3 First date 12.12.63. Last date 8.1.64.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "CYRIL KIRKPATRICK" (Or Contract No. if name unknown). Owners PORT OF LONDON AUTHORITY (Or Consignees)

Ship Built at NORTH WOOLWICH by Harland & Wolff Ltd., when ..... Yard No. 927

Auxiliary Engines or Gas Turbines made at Shrewsbury by Rolls Royce Ltd., when 1964-1 Eng. Nos. 14320&1

Total No. of sets and description (including type name) 2-Oil Engines type C6/TFLM. Mk IV Series 605600 Model 168.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 5.125" Stroke 6"

2 or 4 stroke cycle 4SC Maximum approved BHP 212 at 1500 RPM Corresponding MIP 156 psi Maximum pressure 1390 psi

Fuel Diesel Are cylinders arranged in Vee or other special formation? No. If so, No. of crankshafts per engine – Is engine of opposed piston type? No. No. and type of mechanically driven scavenge pumps or blowers per engine None. No. of exhaust gas driven blowers or superchargers per engine One Is welded construction used for: Bedplate? No. Entablature? No. Total internal volume of crankcase (if 20 cu. ft. or over) Less than 20cu. ft. No. and total area of crankcase explosion relief devices None. Are flame guards or traps fitted? – Cooling medium for: Cylinders F.W. Pistons – No. of attached pumps: F.W. cooling One S.W. cooling – Lubricating oil One How is engine started? Air

SHAFTING. Is a damper or detuner fitted? Yes No. of main bearings 7 Are bearings of ball or roller type? No. Distance between inner edges of bearings in way of cranks 4.875" Crankshaft: ~~Built, semi-built~~ solid. Material of crankshaft EN 19 Approved minimum tensile strength 55 ton.sq.in. Dia. of pins 3.25" Journals 3.9" Breadth of webs at mid throw 5.25" Axial thickness 1.163" If shrunk, radial thickness around eyeholes – Dia. of flywheel 22.07" Weight 170 lb Are balance weights fitted? ..... Total weight 170 lb Rad. of gyration 7.96" Dia. of flywheel shaft Integral with crankshaft. Has each engine been tested in shop? Yes How long at full power? 4hrs & 1hr. overload. Was it tested with driven machinery attached? No. Was the governing tested and found satisfactory? Yes Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) Not Yet Approved. Date of approval of shafting 28.10.63. Identification marks on shafting R.6030. ~~LR BHM 7/63 EL. R6048 LR BHM 7/63 EL~~ Particulars of driven machinery Generators.

Case 589 H

Port and No. of Certificate for Starting Air Receivers ..... approved 16/6/64 and

AUXILIARY GAS TURBINES. BHP per set ..... At ..... RPM of output shaft. Open or closed cycle? .....

Arrangement of turbines. (A small diagram should be attached showing gas cycle) HP drives ..... at ..... RPM HP gas inlet temp. ..... pressure .....
IP " ..... at ..... " IP " " " ..... " .....
LP " ..... at ..... " LP " " " ..... " .....

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? ..... Are the turbines operated in conjunction with free piston gas generators? .....
Total No. of free piston gas generators ..... Dia. of working pistons ..... Dia. 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 in shop? ..... How long at full power? ..... Were they tested with driven machinery attached? ..... Particulars of gearing .....
Date of approval of plans ..... Identification marks ..... Particulars of driven machinery .....

ELECTRIC GENERATORS. Port and No. of Certificate for generators of 100 Kw. and over .....
For generators under 100 Kw., has Makers' Certificate been obtained? ..... Are Certificates attached? .....

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable)

K. E. Blazey
For Rolls-Royce Limited Manufacturer

Is this machinery duplicate of a previous case? No If so, which? –

GENERAL REMARKS. State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The above engines were built under Special Survey in accordance with the Rules, the approved plans and the Secretary's letters. Materials used were satisfactory.

Workmanship was considered satisfactory, it is submitted that these engines are eligible to be fitted in a classed ship.

THE FORE GOING GENERATOR ENGINES SATISFACTORILY INSTALLED AND SUBSEQUENTLY EXAMINED AND TESTED UNDER ~~ROAD~~ CONDITIONS TO RULE REQUIREMENTS

Survey Fee £51. 5. 0.
Expenses £5. 0. 0.
Date when a/c rendered 28 JAN 1964

R. Owen LONDON 16/12/64.
J. E. Lapmont
Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the "CYRIL KIRKPATRICK" at NORTH WOOLWICH in a proper manner and found satisfactory when tested on the (date) 3/11/64 under full working conditions.

Engineer Surveyor to Lloyd's Register

Alg 13/3/64

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