

Rpt. 4c

Date of writing report 3.10.56. Received London 3 MAY 1957 Port NOTTINGHAM. No. 1289. Survey held at Lincoln. No. of visits 8. First date 18.11.55. Last date 16.5.56. 14.2.56. 19.6.56.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "AYRSHIRE" Owners (Or Contract No. if name unknown) Owners (Or Consignees) Ship Built to the order of: - J.G. Kincaid & Sons Ltd., when Yard No. 488. Auxiliary Engines or Gas Turbines made at Ruston & Hornsby Ltd., when Eng. Nos. 404647, 404648. Total No. of sets and description (including type name) Two - 8VEBZ - Auxiliary.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 8. Dia. of cylinders 10 1/4" Stroke 14 1/2" 2 or 4 stroke cycle 4. Maximum approved BHP 480 at 500 RPM Corresponding MIP 99.5. Maximum pressure 7.15 +/- 3% Fuel Diesel Oil. Are cylinders arranged in Vee or other special formation? No. If so, No. of crankshafts per engine None. Is engine of opposed piston type? No. and type of mechanically driven scavenge pumps or blowers per engine No. of exhaust gas driven blowers or superchargers per engine Is welded construction used for: Bedplate? No. Entablature? No. Total Internal volume of crankcase (if 20 cu. ft. or over) 148.2 cu. ft. No. and total area of crankcase explosion relief devices 16. 380 per in. Are flame guards or traps fitted? Cooling medium for: Cylinders. Pistons No. of attached pumps: F.W. cooling One. S.W. cooling Lubricating oil One. How is engine started?

SHAFTING. Is a damper or detuner fitted? No. No. of main bearings. Are bearings of ball or roller type? No. Distance between inner edges of bearings in way of cranks 12.5/16". Crankshaft: Built, semi-built, solid. Material of crankshaft Steel. Approved minimum tensile strength. Dia. of pins 6 1/4". Journals 8". Breadth of webs at mid throw 1.1". Axial thickness 3.7/16". If shrunk, radial thickness around eyeholes. Dia. of flywheel 4.6". Weight 24.5 cwts. Are balance weights fitted? No. Total weight. Rad. of gyration. Dia. of flywheel shaft 8". Has each engine been tested in shop? Yes. How long at full power? Was it tested with driven machinery attached? Yes. Was the governing tested and found satisfactory? Yes. Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) 24.11.54. Date of approval of shafting 24.11.54. Identification marks on shafting LL. R. 1381. VS. 1531A. LL. R. 1504. VS. 2800A. Particulars of driven machinery Elec. Generators - W.H. Allen, Sons & Co. Ltd., - Nos. E3/48727/3.4.

Port and No. of Certificate for Starting Air Receivers Ruston & Hornsby, Limited.

AUXILIARY GAS TURBINES. BHP per set. At. RPM of output shaft. Open or closed cycle? Arrangement of turbines. HP drives. at. RPM HP gas inlet temp. pressure. (A small diagram should be attached showing gas cycle) IP " at. " " " " " LP " at. " " " " " 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? Yes.

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable) Ruston & Hornsby, 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. These Engines have been constructed under Special Survey in accordance with the Approved Plans and Rules of the Society, materials and workmanship being good. The Generating Sets have been tested in the Shops under working conditions and the Governors tested with satisfactory results. The sets have been forwarded for installation in the vessel. Explosion relief device fitted on each crankcase door.

Survey Fee £34. per engine. Expenses Nil. Date when a/c rendered. 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 S.S. "AYRSHIRE" at GREENOCK in a proper manner and found satisfactory when tested on the (date) 2nd MAY, 1957 under full working conditions.