

27 JUN 1961

Rpt. 4c

Date of writing report 2.6.61. Received London Port NOTTINGHAM. No. FE. 1800. Survey held at Lincoln. No. of visits 9 First date 7.11.60. Last date 26.4.61.

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship M.V. "NORWID" Owners Polish Ocean Lines. (Or Contract No. if name unknown). Ship Built to the order of:- Societe Des Chantiers Reunis Doire Normandie. when 1961 Yard No. 323. Auxiliary Engines ~~crossed out~~ made at Lincoln by Ruston & Hornsby Ltd., when Eng. Nos. 462064. Total No. of sets and description (including type name) Two - Auxiliary - 5VEBXZ. 111 462065.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 5. Dia. of cylinders 10 1/2". Stroke 14 1/2". 2 or 4 stroke cycle 4. Maximum approved BHP 540 at 600 RPM Corresponding MIP 141 lbs. Maximum pressure 1050 lbs. Fuel Diesel Oil. Are cylinders arranged in Vee or other special formation? No. cranks per engine None. 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 None. Is welded construction used for: Bedplate? No. Entablature? No. Total internal volume of crankcase (if 20 cu. ft. or over) 96.3 c/ft. No. and total area of crankcase explosion relief devices 3 - 28 sq. ins. Are flame guards or traps fitted? Yes. Cooling medium for: Cylinders Water. Pistons Air. No. of attached pumps: F.W. cooling - S.W. cooling - Lubricating oil One. How is engine started? Comp. Air.

SHAFTING. Is a damper or detuner fitted? No. No. of main bearings 7. 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 8". Journals 8". Breadth of webs at mid throw 12 1/4". Axial thickness 3.7/16". If shrunk, radial thickness around eyeholes - Dia. of flywheel 4.6". Weight 46 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) 30.11.60. Date of approval of shafting 20.12.38. Identification marks on shafting LL.R. 5179.VS. 5129B. LL.R. 5181.VS. 5131B. Particulars of driven machinery 350 kW AC Thrige Generators Nos. 908535.6.

Port and No. of Certificate for Starting Air Receivers (One) Marked A 5728 NOTTINGHAM C33596

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 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 Copenhagen Nos. 908535 & 908536. For generators under 100 Kw., has Makers' Certificate been obtained? Are Certificates attached? Yes.

RUSTON & HORNSBY LTD LINCOLN Date 16/4/61 MARINE ENGINEERING DEPT. Manufacturer

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words in brackets if not applicable). 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 built under Special Survey in accordance with the Approved Plans and the Regulations of the Society, materials and workmanship being good. On completion the generating sets were tested in the Shops under working conditions and the governing tested with satisfactory results. The Sets have been despatched for installation in the vessel. Explosion relief devices and Flame Deflectors fitted.

Survey Fee £46.5s. per engine. Expenses incl. Date when a/c rendered

W.D.M.B. Engineer Surveyor to Lloyd's Register M.V. "NORWID" P.F. Chesters 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 M.V. "NORWID" at Grand Quevilly in a proper manner and found satisfactory when tested on the (date) 25.1.1961 under full working conditions. (Rouen)