

Rpt. 4c

Date of writing report 26-6-64

Received London

Port Milan

No. 52

Survey held at

No. of visits

First date

Last date

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship (Or Contract No. if name unknown) Owners (Or Consignees) Ship Built at Genova-Sestri by Ansaldo, Cantieri Navali when Yard No. 1597 Auxiliary Engines or Gas Turbines made at Milan by Alfa Romeo when 1963 Eng. Nos. 00506 1598 Total No. of sets and description (including type name) 1 - 1627 Ind.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 125 mm. Stroke 170 mm. 2 or 4 stroke cycle 4 Maximum approved MIP 165 at 1800 RPM Corresponding MIP 8.5 Kg/cm2 Maximum pressure 75 Kg/cm2 Fuel Gas Oil Are cylinders arranged in Vee or other special formation? line If so, No. of crankshafts per engine - 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? - Entablature? - Total internal volume of crankcase (if 20 cu. ft. or over) less than 20 cu. ft. No. and total area of crankcase explosion relief devices - Are flame guards or traps fitted? - Cooling medium for: Cylinders Water Pistons Oil No. of attached pumps: F.W. cooling 1 S.W. cooling - Lubricating oil 2 How is engine started? By hand inertia starter

SHAFTING. Is a damper or detuner fitted? damper No. of main bearings 7 Are bearings of ball or roller type? No Distance between inner edges of bearings in way of cranks 137 mm. Crankshaft: Built, semi built, solid Material of crankshaft 38 NCD4 steel Approved minimum tensile strength 95 Kg/mm2 Dia. of pins 85 mm. Journals 94 mm. Breadth of webs at mid throw 200 mm. Axial thickness 31 mm. If shrunk, radial thickness around eyeholes - Dia. of flywheel 548 mm. Weight 137 Kg. Are balance weights fitted? - Total weight - Rad. of gyration 181.5 mm. Dia. of flywheel shaft 130 mm. Has each engine been tested in shop? yes How long at full power? 4 hours 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) 22.5.1963 Date of approval of shafting 21.3.1963 Identification marks on shafting LLOYD'S M.L.G.L. Particulars of driven machinery centrifugal pump.

Port and No. of Certificate for Starting Air Receivers

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 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)

ALFA ROMEO S.p.A., Milano

Manufacturer

Is this machinery duplicate of a previous case? yes Rpt. 51 - Engine 00505 - for Ansaldo's Yard No. 1596

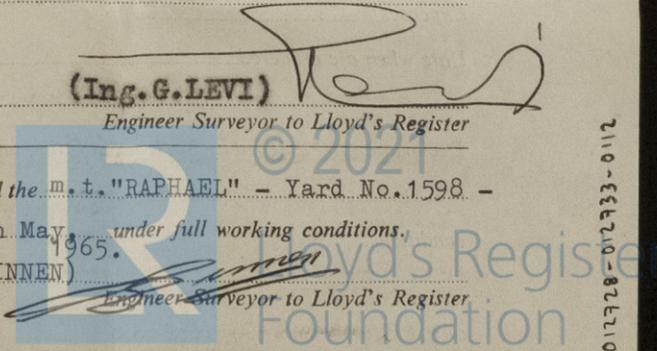
GENERAL REMARKS. State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible. The above machinery was constructed under special survey, in accordance with the Rules and approved plans. All the materials were submitted to the tests required by the Rules and found satisfactory. Workmanship satisfactory throughout.

Survey Fee Expenses Date when a/c rendered see previous report No. 50

(Ing. G. LEVI) 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.t. "RAPHAEL" - Yard No. 1598 - at ANSALDOS, P.A., SESTRI in a proper manner and found satisfactory when tested on the (date) 14th May 1965 under full working conditions.

(S. DINNEN) Engineer Surveyor to Lloyd's Register



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