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pt. 4c

Date of writing report 8.9.1964

Received London

Port MILAN

No. 58

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. 1598 Auxiliary Engines or Gas Turbines made at Saronno by Isotta Fraschini & Motori when '63-64 Eng. Nos. 266092 Total No. of sets and description (including type name) 1 - D26 S6V DK.556.A4 Breda

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 180 mm. Stroke 190 mm. 2 or 4 stroke cycle 4 Maximum approved BHP 384 at 1500 RPM Corresponding MIP 9.7 Kg/cm2 Maximum pressure 109.4 Kg/cm2 Fuel Class A. BSS. 2869 Are cylinders arranged in Vee or other special formation? 'V' of 60 degrees Is 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 - No. of exhaust gas driven blowers or superchargers per engine - Is welded construction used for: Bedplate? yes Entablature? yes Total internal volume of crankcase (if 20 cu. ft. or over) 5 cu. ft. No. and total area of crankcase explosion relief devices 2 - 22 sq. in. Are flame guards or traps fitted? pyropress cooling medium for: Cylinders Water Pistons Oil No. of attached pumps: F.W. cooling 1 S.W. cooling - Lubricating oil 1 How is engine started? electrically

SHAFTING. Is a damper or detuner fitted? No. No. of main bearings 5 Are bearings of ball or roller type? No. Distance between inner edges of bearings in way of cranks 219 mm. Crankshaft: ~~cast~~ solid. Material of crankshaft 38 NCD4 steel Approved minimum tensile strength 95 Kg/mm2 Dia. of pins 110 mm. Journals 140 mm. Breadth of webs at mid throw 230 mm. Axial thickness 47 mm. If shrunk, radial thickness around eyeholes solid Dia. of flywheel 765 mm. Weight 380 Kg. Are balance weights fitted? yes Total weight 84 Kg. Rad. of gyration 152 mm. Dia. of flywheel shaft 140 mm. Has each engine been tested in shop? yes How long at full power? 4 hours Was it tested with driven machinery attached? yes governing tested and found satisfactory? yes Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) 18.10.63 & 4.2.64 Date of approval of shafting 2.5.63 Identification marks on shafting LLOYD'S MI.16.7.63 - GL. Particulars of driven machinery type DK.556 A 4 STILL Generator.

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. (A small diagram should be attached showing gas cycle) IP at IP LP at LP Material of turbine blades. No. of air compressors per set. Centrifugal or axial flow type? 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 Hamburg - Certificate No. 63/2033 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)

FABBRICA AUTOMOBILI ISOTTA FRASCHINI & MOTORI Breda - SARONNO. Manufacturer

Is this machinery duplicate of a previous case? yes If so, which? Report No. 57 - Ansaldo's Yard No. 1597.

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 Lit. 101.250= Expenses " 9.250= Rev. Tax. " 4.420= Date when a/c rendered 17/9/64

(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 ANSALDO S.p.A., SESTRI in a proper manner and found satisfactory when tested on the (date) 22nd May 1964 under full working conditions.

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

8.10.64

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FIRST ENTRY REPORT ON AUXILIARY STEAM TURBINE OR STEAM RECIPROCATING ENGINES

Name of Ship..... Owners..... (Or Contract No. if name unknown) (Or Consignees)

Ship Built at..... by..... when..... Yard No.....

Auxiliary turbines or engines made at..... by..... when..... Eng. Nos.....

Total No. of sets and description.....

STEAM TURBINES. No. of turbines per set..... BHP per set..... Steam pressure..... Steam temperature.....

Type of turbines.....

Particulars of gearing.....

RPM of turbine shaft(s)..... PCD of pinion(s)..... PCD of wheel(s)..... Material of pinion(s).....

Material of wheel rim(s)..... Has rotor been dynamically balanced?..... Diameter of rotor shaft at bearings.....

Does the set include a steam condenser?..... Is an emergency governor fitted?..... No. and purpose of attached pumps.....

Has the set been tested in the shop?..... If so, for how long at full power?.....

Was the governing tested and found satisfactory?..... Was the set tested with driven machinery attached?.....

Identification marks..... Particulars of driven machinery.....

STEAM RECIPROCATING ENGINES. BHP of each..... at..... RPM Steam pressure.....

Dia. of cylinders..... Stroke..... Dia. of crankshaft journals..... Pins..... Material of crankshaft.....

Is crankcase enclosed?..... If so, is the internal volume 20 cu. ft. or over?..... No. and total area of crankcase explosion relief devices fitted?.....

Are the bearings forced lubricated?..... No. and purpose of attached pumps.....

Is a Governor Fitted?..... 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.

Manufacturer

Is this machinery duplicate of a previous case?..... 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.

Survey Fee.....

Expenses.....

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..... at..... in a proper manner and found satisfactory when tested on the (date)..... under full working conditions.

