

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).....

Ship Built at **Genova-Sestri**.....

Auxiliary Engines or Gas Turbines made at **Saronno**.....

Total No. of sets and description (including type name) **1 - D26 S6V DK.556.A4**.....

Owners.....
(Or Consignees).....

by **Ansaldo-Cantieri Navali** when..... Yard No. **1598**

by **Isotta Fraschini & Motori** when **'63-64** Eng. Nos. **266092**

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° 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 - 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: ~~Butt joint~~ 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 Was the 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 " " " " " " | IP " " " " " " | " " " " " " |
| | LP " " " " " " | 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 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.

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= |
| V. Tax. | " | 4.420= |
| Date when a/c rendered | | |

(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, under full working conditions.

(S. DINNEN

Engineer Surveyor to Lloyd's Register

Date of writing report..... Received London **21 SEP 1964** Port..... No.....

Survey held at..... No. of visits..... First date..... Last date.....

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

Owners.....
(Or Consignees)

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

Particulars of gearing

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

attached wiring _____ Has the set been tested in the shop? _____ If so, for how long at first _____

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

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

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 |
|-----------------------|----------------------|
|-----------------------|----------------------|

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

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