Rpt. 4c

Date of writing report 14th April, 1964 | Received London 3 - JUN 1964 | Port TRIESTE | No. 16237

Survey held at TRIESTE | No. of visits 18 | First date 16.12.1963 | Last date 18th March, 1964

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

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

Ship Built at GENOA *by* Messrs.ANSALDO S.p.A. *when* ..... *Yard No.* 1595

Auxiliary Engines ~~xxxxxxxxx~~ *made at* TRIESTE *by* Messrs.C.R.D.A. - F.M.S.A. *when* 1964 *Eng. Nos.* 5810, 5811, 5812

Total No. of sets and description (including type name) THREE CRDA-SULZER 6 BCAH 29

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 6 *Dia. of cylinders* 290 mm *Stroke* 360 mm *2 or 4 stroke cycle* 4 *Maximum approved BHP* 825 *at* 500 *RPM* *Corresponding MIP* 12.2kg/cm2 *Maximum pressure* 70 kg/cm2 *Fuel* Diesel oil *Are cylinders arranged in Vee or other special formation?* No *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* None *No. of exhaust gas driven blowers or superchargers per engine* one *Is welded construction used for: Bedplate?* no *Entablature?* no *Total Internal volume of crankcase (if 20 cu. ft. or over)* 1750 lts. *No. and total area of crankcase explosion relief devices* 3 - 240 cm2 *Are flame guards or traps fitted?* No *Cooling medium for: Cylinders* fresh water *Pistons* none *No. of attached pumps: F.W. cooling* one *S.W. cooling* none *Lubricating oil* one *How is engine started?* compressed 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* 320 mm *Crankshaft:* ~~xxxxxxxxx~~ solid. *Material of crankshaft* El.furnace steel *Approved minimum tensile strength* 50 kg/mm2 *Dia. of pins* 185 mm *Journals* 200 mm *Breadth of webs at mid throw* 295 mm *Axial thickness* 92 mm *If shrunk, radial thickness around eyeholes* solid *Dia. of flywheel* 1500 mm *Weight* 1400 kgs. *Are balance weights fitted?* no *Total weight* - *Rad. of gyration* - *Dia. of flywheel shaft* none

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)* 30.10.62 549 Z

Date of approval of shafting 30.10.62 *Identification marks on shafting* LLOYD'S KLN 920 AS 28.3.63

Particulars of driven machinery 690 KVA Alternator /LLOYD'S KLN 871 AS 21.1.63 (No.8003798 - 8003799 - 8003800 respectively/LLOYD'S KLN 895 AS 25.3.63

Port and No. of Certificate for Starting Air Receivers Starting air bottle will be supplied on board.

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* Our Certificate Nos.5368-5369-5370

For generators under 100 Kw., has Makers' Certificate been obtained? - *Are Certificates attached?* No - (certificates forwarded to Genoa)

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable)

Riproduzione Proibita

FABBRICA MACCHINE S. ANDREA

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 auxiliary engines have been constructed with tested materials under special survey in accordance with the Rules, approved plans and Secretary's letters. Material and workmanship are good. The engines have been tested in the shop at full load, with satisfactory results. On completion of the shops trials have been partly dismantled, the parts examined, found good and re-assembled.

Survey Fee Lire 574695.-
Expenses " 15.000.-
R.T. 3.30% 19.460.-
Date when a/c rendered 9.4.1964

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* "GIORDANO BRUNO" - Yard No.1595. *at* ANSALDO SESTRI *in a proper manner and found satisfactory when tested on the (date)* 6/6/1964 *under full working conditions.*

(S.DINNEN)

Engineer Surveyor to Lloyd's Register

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WITH YOUR FIRST ENTRY.