

Rpt. 4c

Date of writing report 21st August, 1957 Received London 4 SEP 1957 Port of Augsburg No. 977
Survey held at Ulm/Donau No. of visits one First date and Last date 30th July, 1957

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Engines ordered by: Ad.Strüver, Hamburg

Name of Ship Owners Messrs. Malabar Steamship Cy.
Ship Built at Bruges by Chantiers Navals when 1957 Yard No.s. C34 + C 35
Auxiliary Engines or Gas Turbines made at Ulm (Donau) by Messrs. Klöckner-Humboldt-Deutz AG. when 1957 Eng. Nos. 1946 141-44
Total No. of sets and description including type name 2 x A4L 514 1946 145-48 x

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 4 Dia. of cylinders 110 mm Stroke 140 mm
2 or 4 stroke cycle 4 Maximum approved BHP 50 at 1500 RPM Corresponding MIP 7.5 kg/cm2 Maximum pressure 70 kg/cm2
Fuel gas 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 - 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) - No. and total area of
crankcase explosion relief devices - Are flame guards or traps fitted? no Cooling medium for: Cylinders air
Pistons - No. of attached pumps: F.W. cooling - S.W. cooling - Lubricating oil 1 How is engine started? electr.

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 114 mm Crankshaft: Built, semi-built, solid Material of crankshaft SM Steel Approved
minimum tensile strength 80 kg/mm2 Dia. of pins 75 mm Journals 75 mm Breadth of webs at mid throw 116 mm Axial
thickness 29 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 485 mm Weight 80 kgs Are balance
weights fitted? yes Total weight 57 kgs Rad. of gyration 64 mm Dia. of flywheel shaft -
Has each engine been tested in shop? yes How long at full power? 4 h 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) not applicable.
Date of approval of shafting 13.6.51 Identification marks on shafting Lloyd's DSF x Lloyd's DSF
369/7 RFK 369/3 RFK
Particulars of driven machinery 10. 55 HD 10. 55 HD

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 (since such work is not applicable)
KLOCKNER-HUMBOLDT-DEUTZ
WERK ULM 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.
These heavy oil auxiliary engines have been constructed under special survey in accordance with the requirements of the Rules and otherwise with the approved plans. The materials used in the construction are good
and the workmanship was found to be satisfactory. The engines were tested running on makers' test bed under
full-, over-, and partial loads with satisfactory results. In my opinion the engines can be recommended for
the notation L.M.C. (with date) when the whole machinery has been satisfactorily fitted on board.

Survey Fee DM 160.-
Expenses 40.- Total DM 270.-
Date when a/c rendered 23.8.1957
For Mr. Czerny:-
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.

Engineer Surveyor to Lloyd's Register
Lloyd's Register Foundation
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