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Rpt. 4c L.R. 960a

E.R. / STBd. S

22 JUL 1963

Date of writing report 1.7.63 Received London ..... Port Köln No. 840

Survey held at Köln-Deutz No. of visits 6 First date 10.4.63 Last date 17.5.63

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship B.N. 1.8458.0.0059 *Owners* Ad. Strüver, Hamburg; 311 M 43267/68
(Or Contract No. if name unknown). *(Or Consignees)*

Ship Built at - *by* Bordograd *when* - *Yard No.* 137 -

Auxiliary Engines or ~~Gas Turbines~~ made at Köln-Deutz *by* Klöckner-Humboldt-Deutz AG *when* 5.63 *Eng. Nos.* 3531898-905

Total No. of sets and description (including type name) one airless injection heavy oil A8M 528

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 8 *Dia. of cylinders* 220 mm *Stroke* 280 mm
2 or 4 stroke cycle 4 *Maximum approved BHP* Service B.H.P. 390 500 *at* 750 600 *RPM* *Corresponding MIP* 6.6kg/cm2 *Maximum pressure* 73 kg/cm2
Fuel Diesel *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?* no *Entablature?* no *Total internal volume of crankcase (if 20 cu. ft. or over)* 0.96 m3 *No. and total area of crankcase explosion relief devices* 4, area 380cm2 *Are flame guards or traps fitted?* yes *Cooling medium for: Cylinders* water *Pistons* - *No. of attached pumps: F.W. cooling* - *S.W. cooling* - *Lubricating oil* one *How is engine started?* with air

SHAFTING. *Is a damper or detuner fitted?* yes *No. of main bearings* 9 *Are bearings of ball or roller type?* - *Distance between inner edges of bearings in way of cranks* 245.5 mm *Crankshaft: Built, semi-built, solid.* *Material of crankshaft* SM-steel Ck 45 *Approved minimum tensile strength* 70 kg/mm2 *Dia. of pins* 135 mm *Journals* 150 mm *Breadth of webs at mid throw* 230 mm *Axial thickness* 65 mm *If shrunk, radial thickness around eyeholes* - *Dia. of flywheel* 900 mm *Weight* 535 kg *Are balance weights fitted?* no *Total weight* - *Rad. of gyration* - *Dia. of flywheel shaft* - water brake
Has each engine been tested in shop? yes *How long at full power?* 6 hours *Was it tested with driven machinery attached?* *Was the governing tested and found satisfactory?* yes. *Date of approval of torsional vibration characteristics (for engines of 150 BHP and over)*
Date of approval of shafting 17.2.55 *Identification marks on shafting* LLOYD'S AUG AU 20 H.K.S. 22.2.63 C539:586/6297
Particulars of driven machinery unknown

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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* " " " - " -

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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)

Klöckner-Humboldt-Deutz Aktiengesellschaft

Manufacturer

Is this machinery duplicate of a previous case? yes *If so, which?* KLN. Rpt. 820, Engine No. 3454270-277

PLEASE RETURN THIS REPORT WITH YOUR FIRST ENTRY.

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.*

This engine has been constructed under special survey of tested materials and is in accordance with the Secretary's letters, approved plans and Rules Requirements. The materials and workmanship are good and the engine, when tested in the shops under full and overload conditions was found to function satisfactorily. This engine, in my opinion, is suitable for installation in a vessel classed with this Society.

Survey Fee DM. 588.-
Expenses RT DM. 100.- DM. 69.-
Date when a/c rendered KLN. 6558 dd. 14.6.63

For K. Böttcher and K. Weltken

H. Dröge
Engineer Surveyor to Lloyd's Register

7 AUG 1963

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the M.T. R. TORONG *at* TROGIR *in a proper manner and found satisfactory when tested on the (date)* 10.3.1965 *under full working conditions.*

Engineer Surveyor to Lloyd's Register

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