

Pt. 4c L.R. 960b  
 Date of writing report 26.7.63  
 Survey held at Köln-Deutz  
 Received London  
 No. of visits 6  
 Port Köln  
 First date 10.4.63  
 Last date 17.5.63  
 No. 841

# FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship B.N. 1.8458.0.0060 Owners Ad. Striver, Hamburg; 311 M.43257/68  
(Or Contract No. if name unknown) (Or Consignees)  
Ship Built at - by Brodograd when - Yard No. 137  
Auxiliary Engines ~~on Gas Turbines~~ made at Köln-Deutz by Klöckner-Humboldt-Deutz AG when 5.63 Eng. Nos. 3531906-13  
Total No. of sets and description (including type name) one airless injection heavy oil 48M 528

INTERNAL COMBUSTION RECIPROCATING ENGINES ✓

No. of cylinders per engine..... 8..... Dia. of cylinders..... 220 mm..... Stroke..... 280 mm.....

Service BHP..... 390..... at..... 750..... RPM..... Corresponding MIP..... 6.6 kg/cm<sup>2</sup>..... Maximum pressure..... 73 kg/cm<sup>2</sup>.....

2 or 4 stroke cycle..... 4..... Maximum approved BHP..... 500..... at..... 600..... RPM.....

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 m<sup>3</sup>..... No. and total area of

crankcase explosion relief devices..... 4..... area 380 cm<sup>2</sup>..... Are flame guards or traps fitted?..... yes..... Cooling medium for: Cylinders..... water.....

Pistons..... -..... No. of attached pumps: F.W. cooling..... one..... 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/mm<sup>2</sup> 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) - 28/5/6 Date of approval of shafting 17.2.55 Identification marks on shafting LLOYD'S AUG AU 20 HKS 22.2.63 G 639/6384 ✓ Particulars of driven machinery unknown

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..... —

IP    "    ..... —    at..... —    "    IP    "    "    "    ..... —    "    ..... —

(A small diagram should be attached showing gas cycle)    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 (strike out words not applicable)

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

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:-  
RTT DM. 100:-  
Expenses DM. 69:-  
Date when a/c rendered KLN. 6559 dd. 14.6.63

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 W. T. K. 2015  
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

012124-012128-0091