

Rpt. 4c

Received London

Port.....Köln

522

Survey held at..... Köln-Deutz

No. of visits ..... 8

First date 4.11.59

Last date 21.12.59

# FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship..... H.D. 1.8627.0.0003  
(Or Contract No. if name unknown).

Owners..... Ad. Strüver, Hamburg  
(Or Consignees)

Ship Built at ..... by ..... when ..... Yard No. ....  
 Auxiliary Engines or Gas Turbines made at Köln-Deutz by Klöckner-Humboldt-Deutz AG when 12.59 Eng. Nos. 2535340-45  
 Total No. of sets and description (including type name) ..... one airless injection heavy oil BV6M 536

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 270 mm Stroke 360 mm  
2 or 4 stroke cycle 4 Service BHP 560 at 500 RPM Corresponding MIP 9.94 kg/cm<sup>2</sup> Maximum pressure 64 kg/cm<sup>2</sup>  
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 none No. of exhaust gas driven blowers or superchargers per engine 3 one Is welded construction  
used for: Bedplate? no Entablature? no Total internal volume of crankcase (if 20 cu. ft. or over) 1.5 m<sup>3</sup> No. and total area of  
crankcase explosion relief devices 3, area 285 cm<sup>2</sup> 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? no No. of main bearings 8 Are bearings of ball or roller type? - Distance between inner edges of bearings in way of cranks 284 mm Crankshaft: Built, semi-built, solid. Material of crankshaft Carbon steel Approved Y.P. 36 kg/mm<sup>2</sup> minimum tensile strength 65 kg/mm<sup>2</sup> Dia. of pins 165 mm Journals 165 mm Breadth of webs at mid throw 300 mm Axial thickness 75 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 1000 mm Weight 1025 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 454 B governing tested and found satisfactory? yes Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) are in preparation 22/10 Date of approval of shafting 18.2.55 Identification marks on shafting LLOYD'S KLN. 1892 HD 27.10.58 Particulars of driven machinery unknown

Port and No. of Certificate for Starting Air Receivers ..... HNO.C. 59/569

**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 " " "..... " ".....

(A small diagram should be attached showing gas cycle)

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?..... Engine No. 2515074-79, KIM. Report 511

**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 condition, was found to function satisfactorily. This engine, in my opinion, is suitable for installation in a vessel classed with this Society. This engine is supercharged with one exhaust gas driven blower No. B 38060.

Survey Fee 617.-  
RT 100.-  
Expenses 72.-  
Date when a/c rendered 8.1.60 A/C R 3291

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 ..... under full working conditions.  
at ..... in a proper manner and found satisfactory when tested on the (date) .....

*Engineer Surveyor to Lloyd's Register*

ing conditions

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Date of writing report ..... Received London ..... Port ..... No. ....  
Survey held at ..... No. of visits ..... First date ..... Last date .....  
Survey held at .....  
Date of writing report .....  
Rpt. 4c

FIRST ENTRY REPORT ON AUXILIARY STEAM TURBINE OR STEAM  
RECIPROCATING ENGINES

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

Ship Built at ..... by ..... when ..... Yard No. ....  
Auxiliary turbines or engines made at ..... by ..... when ..... Eng. Nos. ....

Total No. of sets and description .....

STEAM TURBINES.

No. of turbines per set .....

BHP per set .....

Steam pressure .....

Steam temperature .....

Type of turbines .....

Particulars of gearing .....

RPM of turbine shaft(s) .....

PCD of pinion(s) .....

PCD of wheel(s) .....

Material of

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 of

attached pumps .....

Has the set been tested in the shop? .....

If so, for how long at full

power? .....

Was the governing tested and found satisfactory? .....

Was the set tested with driven machinery attached? .....

Identification marks .....

Particulars of driven machinery .....

STEAM RECIPROCATING ENGINES.

BHP of each .....

at .....

RPM Steam pressure .....

Dia. of cylinders .....

Stroke .....

Dia. of crankshaft journals .....

Pins .....

Material of

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 .....

Particulars of Driven Machinery .....

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 .....

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.