23 MAR 1964

Rpt. 4c

Date of writing report 4.3.64 Received London ..... Port Hamburg No. 13425

Survey held at Elmshorn No. of visits see Rpt.4b First date - Last date -

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "JWTA JAMUNA" Owners (Or Consignees) Inland Water Transport Authority East Pakistan

(Or Contract No. if name unknown).

Ship Built at Elmshorn by Messrs. Kremer Sohn when 1964 Yard No. 1103

Auxiliary Engines or Gas Turbines made at Köln by Messrs. Deutz AG. when 1963 Eng. Nos. 3454888/90 3633600/02

Total No. of sets and description (including type name) two oil engines type A3M514

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 3 Dia. of cylinders 110 mm Stroke 140 mm

2 or 4 stroke cycle 4 Maximum approved BHP 41 at 1500 RPM Corresponding MIP ..... Maximum pressure .....

Fuel ..... Are cylinders arranged in Vee or other special formation? ..... If so, No. of

crankshafts per engine ..... Is engine of opposed piston type? ..... 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? ..... Cooling medium for: Cylinders .....

Pistons ..... No. of attached pumps: F.W. cooling ..... S.W. cooling 1 Lubricating oil 1 How is engine started?

one engine hand started and one engine electrically started.

SHAFTING. Is a damper or detuner fitted? ..... No. of main bearings ..... Are bearings of ball or roller type? ..... Distance between

inner edges of bearings in way of cranks ..... Crankshaft: Built, semi-built, solid? Material of crankshaft ..... Approved

minimum tensile strength ..... Dia. of pins ..... Journals ..... Breadth of webs at mid throw ..... Axial

thickness ..... If shrunk, radial thickness around eyeholes ..... Dia. of flywheel 63/805 Weight ..... Are balance

weights fitted? ..... Total weight ..... Rad. of gyration ..... Dia. of flywheel shaft .....

Has each engine been tested in shop? ..... How long at full power? ..... Was it tested with driven machinery attached? ..... Was the

governing tested and found satisfactory? ..... Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) .....

Date of approval of shafting ..... Identification marks on shafting .....

Particulars of driven machinery one 12 kW generator and one general service pump each set

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 ,, ,, ,, ... ,, ...

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? yes Are Certificates attached? Rpt.13

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

..... Manufacturer

Is this machinery duplicate of a previous case? yes If so, which? Yard No. 1102

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 "JWTA JAMUNA" at Elmshorn in a proper manner and found satisfactory when tested on the (date) 31.1.64 under full working conditions.

..... Engineer Surveyor to Lloyd's Register

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