Rpt. 4c

Date of writing report 10 March 1962 | Received London ..... | Port YOKOHAMA | No. 4185

Survey held at Yokohama | No. of visits 83 | First date 8-9-1961 | Last date 19-2-1962

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

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

Ship Built at Hiroshima, Japan *by* Mitsubishi Shipbuilding & Engineering Co. Ltd. Hiroshima Works. *when* ..... *Yard No.* 146

Auxiliary Engines ~~or Gas Turbines made at~~ Yokohama, Japan *by* Mitsubishi Nippon Heavy Ind., Ltd. *when* 1962-2 *Eng. Nos.* D133300,1,2.

Total No. of sets and description (including type name) 3 set, Yokohama M.A.N. G6VA, trunk piston, direct injection, supercharged

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 6 *Dia. of cylinders* 235 mm. *Stroke* 330 mm. *2 or 4 stroke cycle* 4 *Maximum approved BHP* 500(Metric) *at* 600 *RPM* *Corresponding MIP* 10.8 kg/cm2 *Maximum pressure* 68 kg/cm2 *Fuel* diesel 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* one *Is welded construction used for: Bedplate?* no *Entablature?* no *Total internal volume of crankcase (if 20 cu. ft. or over)* 1.34 cub.m *No. and total area of crankcase explosion relief devices* 2 & 173 sq/cm *Are flame guards or traps fitted?* no *Cooling medium for: Cylinders* fresh water *Pistons* – *No. of attached pumps: F.W. cooling* one *S.W. cooling* – *Lubricating oil* one *How is engine started?* compressed air.

SHAFTING. *Is a damper or detuner fitted?* yes *No. of main bearings* 7 *Are bearings of ball or roller type?* no *Distance between inner edges of bearings in way of cranks* 284 mm *Crankshaft: Built/semi-built/solid.* *Material of crankshaft* electric furnace steel *Approved minimum tensile strength* 53 kg/mm2 *Dia. of pins* 155 mm *Journals* 155 mm *Breadth of webs at mid throw* 273 mm *Axial thickness* 80 mm *If shrunk, radial thickness around eyeholes* – *Dia. of flywheel* 1250 mm *Weight* 1510 kg *Are balance weights fitted?* no *Total weight* – *Rad. of gyration* – *Dia. of flywheel shaft* – *Has each engine been tested in shop?* yes *How long at full power?* 4 Hr. *Was it tested with driven machinery attached?* yes *Was the governing tested and found satisfactory?* yes *Date of approval of torsional vibration characteristics (for engines of 150 BHP and over)* 21-8-1961 *Date of approval of shafting* 20-6-1961 *Identification marks on shafting* LLOYD'S KOB MB-CK 791 MS 22-7-61 JW 30-10-61 YKA. / LLOYD'S KOB MB-CK811 MS 12-9-61 ST 4-12-61 YKA. / LLOYD'S KOB MB-CK 852 MS 20-11-61 JW 20-12-61 YKA. *Particulars of driven machinery* Each-one 400 KVA Generator

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* Please refer to Nag. Surveyors

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)

T. Kondowaki

YOKOHAMA SHIPYARD & ENGINE WORKS, MITSUBISHI NIPPON HEAVY INDUSTRIES, LTD. *Manufacturer*

Is this machinery duplicate of a previous case? no *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.*

The machinery has been constructed under Special Survey in accordance with the Rules, approved plans & Secretary's letters.

The quality of materials & workmanship is good and the machinery has been examined under full working conditions during shop trials and found satisfactory.

It is submitted that on satisfactory installation on board, the machinery is eligible to be classed with this Society and to have the notation ✠ LMC (with date)

Survey Fee ¥204,000-

Expenses .....

Date when a/c rendered MAR. 31. 1962

J. Winn S. Takenaka

J. Winn S. Takenaka *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 motor tanker "LEBIDEN" *at* Hiroshima, Japan *in a proper manner and found satisfactory when tested on the (date)* 4th July, 1962 *under full working conditions.*

W. A. Cook J. Nonomura

Engineer Surveyor to Lloyd's Register

W.A. Cook & J. Nonomura

14 AUG 1962

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