Rpt. 4c

FE-5181

Date of writing report 30th July-1957 Received London 21 JAN 1958 Port YOKOHAMA YOKOHAMA No. 2400

Survey held at Tokyo No. of visits 21 4 First date 26th-Dec.-1956 31st Aug.,1957 Last date 8th-July-1957 16th Oct.,1957 (KOBE)

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "HOEI MARU" (Or Contract No. if name unknown). Owners Nitto Shosen K.K. (Or Consignees) & Engine Works,

Ship Built at Aioi, Japan by Harima Zosen K.K. Aioi Ship Yard when 10. 57 Yard No. S-512

Auxiliary Engines ~~or Gas Turbines~~ made at Tokyo by Mitsubishi Heavy Industries Ltd., Tokyo Engineering Works, when July-1957 Eng. Nos. D.133163 D.133164

Total No. of sets and description (including type name) 2 sets. Yokohama. M.A.N. trunk piston precombustion type Diesel Engine.

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 235mm Stroke 330mm Supercharged

2 or 4 stroke cycle 4 Maximum approved BHP 405 at 514 RPM Corresponding MIP 9.98 kg/cm2 Maximum pressure 65 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 1 set Is welded construction used for: Bedplate? - Entablature? - Total internal volume of crankcase (if 20 cu. ft. or over) 46 ft3 No. and total area of crankcase explosion relief devices 2 x 13.4 in2 Are flame guards or traps fitted? No Cooling medium for: Cylinders fresh water Pistons - No. of attached pumps: F.W. cooling 1 set S.W. cooling - Lubricating oil 1 set How is engine started? by Compressed air

SHAFTING. Is a damper or detuner fitted? No No. of main bearings 7 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 electric furnace steel Approved minimum tensile strength 55 kg/mm2 Dia. of pins 155 mm Journals 155 mm Breadth of webs at mid throw 273 mm Axial thickness 80mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 1300 mm Weight 1600 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? 3 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) Submitted 4-6-57 Approved 30-9-57

Date of approval of shafting 12-Dec.-1956 (D133163) 29-Dec.-1956 (D133164) Identification marks on shafting D133163: LLOYD'S NAG NO.1782 AM 24-11-56 D133164: LLOYD'S NAG NO.1811 AM 28-12-56 13-9-57

Particulars of driven machinery Air Compressor: 300 m3/Hr. 75 BHP (Tanabe Mfg. Co., Vertical two-stage water cooled)
Generator : 3 phase A.C. 60 cycle. 445V x 428A. 330 K.V.A. (Mitsubishi Electric Mfg. Co.)

Port and No. of Certificate for Starting Air Receivers AR-43755

AUXILIARY GAS TURBINES. BHP per set At RPM of output shaft. Open or closed cycle?

Arrangement of turbines. (A small diagram should be attached showing gas cycle) HP drives at RPM HP gas inlet temp. pressure
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 Kobe No.1160 & No.1161
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)
Mitubishi Heavy Industries Ltd.
Tokyo Engineering Works, Tokyo Kenji Okamura
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.

These Oil Engine Electric Generator sets have been constructed under supervision of the Society's Surveyors in accordance with the Rules, approved plans and Secretary's letters.
The workmanship and materials have been found satisfactory.
These Oil Engine Electric Generator sets have been examined during and after shop trial and found in order.
Crank case explosion relief devices are fitted as per Rules.
It is submitted that these Oil Engine Electric Generator Sets are eligible in our opinion to be classed with this Society with the notation of ✠ LMC with date when satisfactorily installed in the vessel.

Survey Fee ¥118,000.- charged 20th Sept, 1957. YKA.
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 M.V. "HOEI MARU" at Aioi, Japan in a proper manner and found satisfactory when tested on the (date) 13-9-57 17-9-57 under full working conditions.

Engines not to be operated Continuously under the following condition.
a) Above 540 r.p.m. or between 445 and 475 r.p.m., with clutch off, or
b) Above 530 r.p.m. or between 445 and 475 r.p.m., with clutch on.

Engineer Surveyors to Lloyd's Register

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