KOBE RPT. No. FE 1838

Rpt. 4c

Date of writing report 15-5-63 Received London 19 DEC 1963 Port YOKOHAMA No. 4723

Survey held at Yokohama, Japan No. of visits 51 First date 5-12-1962 Last Date 1-4-1963

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "LOZOVAYA" Owners Vsesojuznoje Exportno-Importnoje Objedinenije "Sudoimport" Moscow, U.S.S.R.
(Or Contract No. if name unknown). (Or Consignees)

Ship Built at Aioi, Japan by Ishikawajima-Harima Heavy Industries Ltd., Aioi Works. when Yard No. S.615

Auxiliary Engines ~~or Gas Turbines~~ made at Yokohama, Japan by Mitsubishi Nippon Heavy Industries Ltd., Yokohama S.Y.& Engine Works when 1963-3 Eng. Nos. 337, 338 DT33336

Total No. of sets and description (including type name) 3 set, Yokohama, M.A.N. G5V type trunk piston, direct injection, supercharged

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 5 Dia. of cylinders 235 mm Stroke 330 mm 2 or 4 stroke cycle 4 Maximum approved BHP 420 (metric) at 600 RPM Corresponding MIP 10.9kg/cm2 Maximum pressure 68kg/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) 1.12 m3 No. and total area of crankcase explosion relief devices 2 & 173 cm2 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? No No. of main bearing 6 Are bearing 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 55 kg/mm2 Dia. of pins 155 mm Journals 155 mm reduced to 149 mm dia. in way of output coupling Breadth of webs at mid throw 275 Axial thickness 80 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 1200 mm Weight 1310 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) 1-8-1961 5587

Date of approval of shafting ~~27-4-1961~~ 5-3-1963 Identification marks on shafting 7.3.63 15-3-1963

Particulars of driven machinery 336/LLOYD'S KOB 337/LLOYD'S KOB 338/LLOYD'S KOB

Each one 350 K.V.A. generator; 36/37 Each one air compressor NO.MB-CK951 H.N.2-11-62 NO.MB-CK950 H.N.2-11-62 NO.MB-CK955 Y.M.16-11-62

Port and No. of Certificate for Starting Air Receivers KOBE AR-87451 RT 16-1-63YKA RT 21-1-63YKA RT 21-1-63YKA

20/1/64

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 KOBE M-85230 (280 KW - 3 sets)
For generators under 100 Kw., has Makers' Certificate been obtained? - Are Certificates attached? Yes, Kobe M-85231-A (80 KW 1 set)

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

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

Is this machinery duplicate of a previous case? Yes If so, which? YKA Rpt.4c Nos. 4191, 4284 & 4445

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 and Secretary's letters. The quality of materials and workmanship has been found satisfactory, and the machinery examined under full power working conditions during shop trials and found satisfactory.

It is submitted that on being satisfactorily installed and tested on board in accordance with Rule requirements, the machinery is eligible to be classed with this Society and to have the notation ✠ LMC (with date).

Survey Fee ¥191800.-
Expenses
Date when a/c rendered MAY 23, 1963

R. Taneda 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.S. "LOZOVAYA" at AIOI, JAPAN in a proper manner and found satisfactory when tested on the (date) 2-8-'63 under full working conditions.

Engineer Surveyor to Lloyd's Register

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