29 NOV. 1961

Rpt. 4c

Date of writing report 31st May, 1961 Received London ..... Port KOBE No. FE-8937

Survey held at Osaka, Japan No. of visits 7 First date 14th Feb., 1961 Last date 30th May, 1961

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship ..... Owners (Or Consignees) .....
(Or Contract No. if name unknown).
Ship Built at Nagasaki, Japan by Mitsubishi S.B. & Eng.Co.,Ltd., Nagasaki Shipyard, Nagasaki when ..... Yard No. 1561
Auxiliary Engines or Gas Turbines made at Osaka, Japan by Daihatsu Kogyo K.K. when 5,1961 Eng. Nos. 622037, 622038 & 622039
Total No. of sets and description (including type name) 3 6PST-22 type Oil Engines

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 6 Dia. of cylinders 220 mm Stroke 280 mm 2 or 4 stroke cycle 4 Maximum approved BHP 340 at 600 RPM Corresponding MIP 9.38 kg/cm2 Maximum pressure 60 kg/cm2 Fuel Heavy 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 Is welded construction used for: Bedplate? No Entablature? No Total internal volume of crankcase (if 20 cu. ft. or over) 1.10 M3 No. and total area of crankcase explosion relief devices 3 x 194 cm2 Are flame guards or traps fitted? Cooling medium for: Cylinders Fresh water Pistons No No. of attached pumps: F.W. cooling 1 S.W. cooling None Lubricating oil 1 How is engine started? Compressed air.

SHAFTING. Is a damper or detuner fitted? No No. of main bearings 7 Are bearings of ball or roller type? No Distance between inner edges of bearings in way of cranks 242 mm Crankshaft: Built, semi-built, solid. Material of crankshaft Forged Steel Approved minimum tensile strength 55 kg/cm2 Dia. of pins 155 mm Journals 170 mm Breadth of webs at mid throw 230 mm Axial thickness 60 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 950 mm Weight 750 kgs Are balance weights fitted? No Total weight - Rad. of gyration - Dia. of flywheel shaft 140 mm
Has each engine been tested in shop? Yes How long at full power? 4 hrs. 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) 24th May, 1961
Date of approval of shafting 18th April 1961 Identification marks on shafting OI-CK495 ~~YK~~ LR 16-3-61, OI-CK496 YK LR 22-3-61, OI-CK497 ~~YK~~ LR 27-3-61
Particulars of driven machinery One (1) 300 KVA A.C. Generator for each.
One (1) Vert. two stage water cooled air compressor for E.Nos. 622038 and 622039.
Port and No. of Certificate for Starting Air Receivers -

509 D.

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 " " " ..... " .....
(A small diagram should be attached showing gas cycle) 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 Yokohama No.
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)

N. Hirota
N. Hirota
Chief of Osaka Plant
Daihatsu Kogyo K. K.
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 auxiliary engines of this vessel has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.
The workmanship and materials are good.
On completion these machines have been examined under full working condition in shop and found satisfactory.

Survey Fee ¥140,650.-
Expenses 3,500.-
Date when a/c rendered JUN - 2 1961

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

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the M.V. "MANHATTAN MARU" at Nagasaki in a proper manner and found satisfactory when tested on the (date) 3.8.1961 under full working conditions.

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

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