

Rpt. 4c

Date of writing report... Received London... Port... Kobe... No... FE-5803  
Survey held at... Kobe... No. of visits... 50... First date... 9-3-57... Last date... 20-5-58

FIRST ENTRY REPORT ON AUXILIARY STEAM TURBINE OR STEAM RECIPROCATING ENGINES

Name of Ship... Owners...  
Ship Built at... Yokohama, Japan... by... Mitsubishi Nippon H.I. Ltd. / Yokohama Shipyard & Engine Works... when... Yard No. 823  
Auxiliary turbines... made at... Kobe, Japan... by... Mitsubishi H.I. Reorganized Ltd. / Kobe Shipyard & Engine Works... when... May 1958... Eng. Nos. 1458, 1459  
Total No. of sets and description... 2 sets ..... 1100 SHP Mitsubishi-Westinghouse All Impulse Single Reduction Geared Steam Turbines for 750 KVA A.C. Electric Generator

STEAM TURBINES. No. of turbines per set... 1... BHP per set... 1100... Steam pressure... 41.1 kg/cm<sup>2</sup>... Steam temperature... 449°C  
Type of turbines... Mitsubishi-Westinghouse All Impulse Single Reduction Geared Turbine  
Particulars of gearing... Double Helical Gear... (No. of Teeth... 45; 231... Spiral angle... 40°-2'-12"...) Pressure angle... 14 1/2" D.P. ... 11 (Hob)  
RPM of turbine shaft(s)... 9038... PCD of pinion... 138.73 mm... PCD of wheel... 696.68 mm... Material of pinion... Ni-Steel Forging... Material of wheel rim... Steel Forging... Has rotor been dynamically balanced? Yes  
shaft at bearings... 55 mm... Does the set include a steam condenser? Yes... Is an emergency governor fitted? Yes  
attached pumps... 2 (1 -- Main L.O. gear pump... 1 -- Aux. L.O. gear pump for starting... Has the set been tested in the shop? Yes... If so, for how long at full power? 4 hours... Was the governing tested and found satisfactory? Yes... Was the set tested with driven machinery attached? Yes  
Identification marks... LLOYD'S KOB M.No.1458 Sm 20-5-58... LLOYD'S KOB M.No.1459 Sm 20-5-58... Particulars of driven machinery... A.C. Generator  
(Rated Output... 750 KVA... (Speed of Generator... 1800 R.P.M... (Voltage... 450 V... (Current... 962 A.

STEAM RECIPROCATING ENGINES. BHP of each... at... RPM... Steam pressure...  
Dia. of cylinders... Stroke... Dia. of crankshaft journals... Pins... Material of crankshaft... Is crankcase enclosed?... If so, is the internal volume 20 cu. ft. or over?... No. and total area of crankcase explosion relief devices fitted?... Are the bearings forced lubricated?... No. and purpose of attached pumps...  
Is a Governor Fitted?... 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?... Are Certificates attached?...

The foregoing description is correct.

K. Ogata, Manager of Inspection Dept., Manufacturer  
KOBÉ SHIPYARD & ENGINE WORKS,

MITSUBISHI HEAVY-INDUSTRIES, REORGANIZED, LIMITED.

Is this machinery duplicate of a previous case? Yes If so, which? Yokohama Yard No.818 (S.S. "NEFELI")

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 steam turbines have been constructed under special survey in accordance with the Rules, approved plans and secretary's letters.

The materials and workmanship are sound and good.

These turbo generator sets have been examined under full working condition in the shop and found satisfactory.

Survey Fee... 128,000.-

Expenses

Date when a/c rendered... JUL. - 7. 1958

Engine 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... S.S. "ALTHEA"  
at... YOKOHAMA... in a proper manner and found satisfactory when tested on the (date) 18<sup>th</sup> Oct. 1958 under full working conditions.

Engine Surveyor to Lloyd's Register