

Rpt. 4c

Date of writing report 27th September, 1960 Received London Port KOBE No. FE8236

29 NOV 1960

Survey held at Tamano, Japan No. of visits 52 First date 11th Jan. 60 Last date 3rd August, 1960

RECD. Name of Ship M.V. "NAGAOSAN MARU" (Or Contract No. if name unknown) Ship Built at Tamano, Japan

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Owners Mitsui Steam Ship Co., Ltd. (Or Consignees)

by Mitsui Shipbuilding & Eng. Co., Ltd. when 1960-8 Yard No. 641

Auxiliary Engines or Gas Turbines made at Tamano, Japan by - do - when 1960-8 Eng. Nos. 818, 819, 820

Total No. of sets and description (including type name) 2 sets Mitsui B&W 525MTBHK-40 1 set 525MTBH-40

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 5 Dia. of cylinders 245 mm Stroke 400 mm 2 or 4 stroke cycle 4 Maximum approved BHP 350 at 514 RPM Corresponding MIP 8.2 kg/cm2 Maximum pressure 55 kg/cm2 Fuel Diesel oil Are cylinders arranged in Vee or other special formation? - If so, No. of crankshafts per engine - Is engine of opposed piston type? - 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) 77.5 ft3 No. and total area of crankcase explosion relief devices 1-38 in2 2-56 in2 Are flame guards or traps fitted? Yes Cooling medium for: Cylinders Fresh water Pistons - No. of attached pumps: F.W. cooling - S.W. cooling - Lubricating oil 1 How is engine started? Compressed air

Submitted 10/12/60

SHAFTING. Is a damper or detuner fitted? No No. of main bearings 6 Are bearings of ball or roller type? No Distance between inner edges of bearings in way of cranks 315 mm. Crankshaft: Built, semi-built, solid. Material of crankshaft Forged & Cast steel minimum tensile strength 44 kg/mm2 Dia. of pins 170 mm. Journals 170 mm. Breadth of webs at mid throw 290 mm. Axial thickness 90 mm. If shrunk, radial thickness around eyeholes 82.5 mm. Dia. of flywheel 1350 mm. Weight 1690 kgs. Are balance weights fitted? Yes Total weight 183 kgs. Rad. of gyration 246 mm. Dia. of flywheel shaft - 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) 31-5-60 476 0 Date of approval of shafting 26-4-60 Identification marks on shafting LLOYD'S ROB No. M-CK402 No. M-CK403 No. M-CK404 No. M-CK405 No. M-CK406 No. M-CK407 No. M-CK408 No. M-CK409 No. M-CK410 No. M-CK411 No. M-CK412 No. M-CK413 No. M-CK414 No. M-CK415 No. M-CK416 No. M-CK417 No. M-CK418 No. M-CK419 No. M-CK420 No. M-CK421 No. M-CK422 No. M-CK423 No. M-CK424 No. M-CK425 No. M-CK426 No. M-CK427 No. M-CK428 No. M-CK429 No. M-CK430 No. M-CK431 No. M-CK432 No. M-CK433 No. M-CK434 No. M-CK435 No. M-CK436 No. M-CK437 No. M-CK438 No. M-CK439 No. M-CK440 No. M-CK441 No. M-CK442 No. M-CK443 No. M-CK444 No. M-CK445 No. M-CK446 No. M-CK447 No. M-CK448 No. M-CK449 No. M-CK450 No. M-CK451 No. M-CK452 No. M-CK453 No. M-CK454 No. M-CK455 No. M-CK456 No. M-CK457 No. M-CK458 No. M-CK459 No. M-CK460 No. M-CK461 No. M-CK462 No. M-CK463 No. M-CK464 No. M-CK465 No. M-CK466 No. M-CK467 No. M-CK468 No. 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Particulars of driven machinery 3-self excited AC generator, 275KVA, 450Volt. 353 Amp. 14 Poles, 2 Air compressors by magnetic clutches :- Compressors Capacity, 4 Cub.M/minx 25 Kg/cm2 each.

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.

Y. Kojima 19/1/61

ELECTRIC GENERATORS. Port and No. of Certificate for generators of 100 Kw. and over Kobe, M-65759 For generators under 100 Kw., has Makers' Certificate been obtained? None Are Certificates attached?

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable) MITSUI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS.

S. Sakata Managing Director.

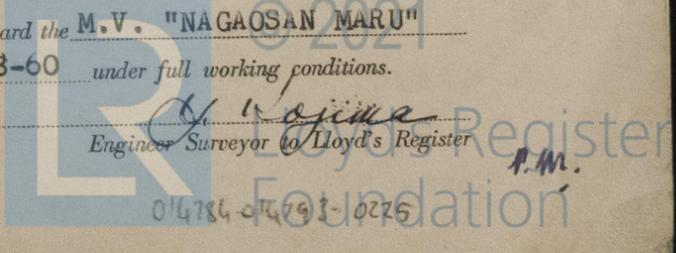
Is this machinery duplicate of a previous case? No If so, which?

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 have been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The workmanship and materials are sound and good. The auxiliary engines have been examined and tested under full load conditions during shop trials and found satisfactory.

Survey Fee ¥140,650,- Expenses Date when a/c rendered Y. Kojima 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. "NAGAOSAN MARU" at TAMANO in a proper manner and found satisfactory when tested on the (date) 20-8-60 under full working conditions.

Y. Kojima Engineer Surveyor to Lloyd's Register



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