

Rpt. 4b

Date of writing report 31st July, 1960

Survey held at Nagasaki, Japan

Received London

In shops 130
No. of visits 29
On vessel

Port Nagasaki

1.8.1959

First date 22.3.1960

FE-1069

No.

1200117.1960
Last date 16.7.1960

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

m.v. "BROOKLYN MARU"

No. in R.B. _____ Name _____ Gross tons 9549.99

Owners Daido Kaiun Kaisha Managers _____ Port of Registry Kobe

Hull built at Nagasaki, Japan By Mitsubishi Zosen K.K. Yard No. 1532 Year 1960 Month 7

Main Engines made at Nagasaki, Japan By Mitsubishi Zosen K.K. Eng. No. 314 (39619) When 1960-5

Gearing made at _____ By _____

Donkey boilers made at Osaka, Japan By Hirano Iron Works Co., Ltd. Blr. Nos. 1646 When 1960-2

Machinery installed at Nagasaki, Japan By Mitsubishi Zosen K.K. When 1960-5

Particulars of restricted service of ship, if limited for classification Ocean Going

Particulars of vegetable or similar cargo oil notation, if required Carrying Vegetable Oil in Deep Tank Aft.

Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No

Is refrigerating machinery fitted? Yes If so, is it for cargo purposes? Yes Type of refrigerant Dichlorodifluormethane

Is the refrigerating machinery compartment isolated from the propelling machinery space? No Is the refrigerated cargo installation intended to be classed? Yes

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system Main engine direct coupled propulsion.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Mitsubishi Nagasaki 9 UEC 75/150 Type Engine

No. of cylinders per engine 9 Dia. of cylinders 750mm stroke(s) 1,500mm 2 or 4 stroke cycle 2 Single or double acting Single

Maximum approved BHP per engine 13,000 at 124 RPM of engine and 124 RPM of propeller.

Corresponding MIP 8.79 kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 58 kg/cm² Machinery numeral 2,400 2600

Are the cylinders arranged in Vee or other special formation? No If so, number of crankshafts per engine _____

TWO STROKE ENGINES. Is the engine of opposed piston type? No If so, how are upper pistons connected to crankshaft? _____

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? Valves No. and type of mechanically driven scavenge pumps or blowers per engine and how driven No

No. of exhaust gas driven scavenge blowers per engine 3 Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? Yes

If a stand-by or emergency pump or blower is fitted, state how driven Electric Motor Driven No. of scavenge air coolers 3 Scavenge air pressure at full power 0.45 kg/cm² Are scavenge manifold explosion relief valves fitted? Yes

FOUR STROKE ENGINES. Is the engine supercharged? _____ Are the undersides of the pistons arranged as supercharge pumps? _____ No. of exhaust gas driven blowers per engine _____

No. of supercharge air coolers per engine _____ Supercharge air pressure _____ Can engine operate without supercharger? _____

TWO & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel 1 Inlet None Exhaust 3 Starting 1 Safety 1

Material of cylinder covers Special Cast Iron Material of piston crowns Cr.Mo.Steel Forging Is the engine equipped to operate on heavy fuel oil? Yes

Cooling medium for :—Cylinders F.W. Pistons F.W. Fuel valves F.W. Overall diameter of piston rod for double acting engines _____

Is the rod fitted with a sleeve? _____ Is welded construction employed for: Bedplate? Yes Frames? Yes Entablature? No Is the crankcase separated from the underside of pistons? Yes Is the engine of crosshead or trunk piston type? Crosshead Total internal volume of crankcase 127.98m³ No. and total area of explosion relief devices 9 x 1653.9cm² Are flame guards or traps fitted to relief devices? No Is the crankcase readily accessible? Yes If not, must the engine be removed for overhaul of bearings, etc? _____ Is the engine secured directly to the tank top or to a built-up seating? Tank Top How is the engine started? Compressed Air

Can the engine be directly reversed? Yes If not, how is reversing obtained? _____

Has the engine been tested working in the shop? Yes How long at full power? 2 hours at official shop trial

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 20.5.1960 State barred speed range(s), if imposed 924.10.60

for working propeller _____ For spare propeller _____ Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No

Where positioned? _____ Type _____ No. of main bearings 12 Are main bearings of ball or roller type? No

Distance between inner edges of bearings in way of crank(s) 1,020mm Distance between centre lines of side cranks or eccentrics of opposed piston engines _____

Crankshaft type: Built, semi-built, solid. (State which) Semi-built up

Diameter of journals 560mm Diameter of crankpins 260mm dia. centre hole for Nos. 1, 2, 4, 5 & 6 Pins } Forged Steel Minimum 34 Ton/□" Approved Tensile strength 28 Ton/□"

If shrunk, radial thickness around eyeholes 242.5mm Are dowel pins fitted? No Crankshaft material Journals } Forged Steel Webs } Minimum 34 Ton/□" Approved Tensile strength 28 Ton/□"

Diameter of flywheel 2679.27mm Weight 2300 kg Are balance weights fitted? no Total weight _____ Radius of gyration _____

Diameter of flywheel shaft 560mm Material Forged Steel Minimum approved tensile strength _____ Integral with thrust shaft

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with thrust shaft

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GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The machinery of this vessel has been constructed and installed under Special Survey in accordance with the requirement of Rules, approved plans and Secretary's letters. The material and the workmanship are good.

The main engine was tested under full power working condition in the shop and subsequently during sea trial and found satisfactory.

The explosion relief devices have been fitted to the crank case of main and auxiliary heavy oil engines.

An exhaust gas heated economizer has been fitted to the donkey boiler.

It is submitted that the machinery of this vessel is efficient and eligible to have the class notation \star LMC in the Register Book with notation of db 100 lbs and the records of machinery surveys: Engine N 7/60, Boiler nd 7/60 and Tail Shaft CL 7/60.

A. Maci Zuma
Engineer Surveyor to Lloyd's Register of Shipping.

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS Connecting rods: LLOYD'S NAG NO.S-F 3281-1, 2, 3, 4, 5, 6, 7, 8, & 9 (Nagasaki)
Piston rods: LLOYD'S NAG NO. 3097-A, B, C, E, F, G, H, J, & K (Nagasaki)
CRANKSHAFT OR ROTOR SHAFT LLOYD'S NAG NO.S-F 3013F, 3013A, & 3013M (Nagasaki) (OK 3128)
FLYWHEEL SHAFT } LLOYD'S NAG NO.Y 14965 (Nagasaki)
THRUST SHAFT }
GEARING LLOYD'S NAG NO.3174, 5, 6, 7, 8 & 9 (Nagasaki)
INTERMEDIATE SHAFTS LLOYD'S NAG NO.3180 (Nagasaki)
SCREW AND TUBE SHAFTS LLOYD'S NAG NO.MN-BC 3142 (Nagasaki)
PROPELLERS Eccentric Shaft: LLOYD'S NAG NO.S-F3016 (Nagasaki)
OTHER IMPORTANT ITEMS
Crosshead Pins: LLOYD'S NAG NO.S-F 3023-7, 3021-1, 3021-3, 3021-4, 3021-5, 3021-8, 3021-6
3021-7 & 3021-9 (Nagasaki)
Piston Crowns: LLOYD'S NAG NO. 3115-B, C, D, E, F, G, H, J & K. (Nagasaki)

Is the installation a duplicate of a previous case? No If so, state name of vessel
Date of approval of plans for crankshaft 1-9-1960 Straight shafting 19-4-1960 Gearing - Clutch -
Separate oil fuel tanks 17,23,26-3/1960 Pumping arrangements 31-5-1960 Oil fuel arrangements -
Cargo oil pumping arrangements - Air receivers 26-1-1960 Donkey boilers 18-12-1959
Dates of examination of principal parts:-
Fitting of stern tube 8-4-1960 Fitting of propeller 11-4-1960 Completion of sea connections 12-4-1960 Alignment of crankshaft in main bearings 28-6-1960
Engine checks & bolts 3-6-1960 Alignment of gearing - Alignment of straight shafting 13-6-1960 Testing of pumping arrangements 31-5-1960
Oil fuel lines 28-6-1960 Donkey boiler supports 5-4-1960 Steering machinery 9-7-1960 Windlass 9-7-1960
Date of Committee FRIDAY 11 NOV 1960
Decision See Rpt. 1. Special Survey Fee £928,125
Expenses See Rpt. 1 No. FE-1069

Date when A/c rendered SEP 20 1960
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