

REPORT ON OIL ENGINE MACHINERY.

No. 2170
10 AUG 1954

Received at London Office

KOBE

Date of writing Report 19... When handed in at Local Office JUL 26 1954 19... Port of KOBE

No. in Survey held at Tamano & Osaka Date, First Survey 16th March, 1953 Last Survey 2nd June, 1954
Reg. Book. Number of Visits 47

266975 on the Single Screw vessel M.V. "INUISAN MARU" Tons Gross 7197.46
Triple Net 4118.24
Quadruple Osaka

Built at Osaka By whom built Fujinagata Shipbuilding Co., Ltd. Yard No. S-31 When built 1954 6mo.

Engines made at Tamano By whom made Mitsui S.B. & Eng. Co., Ltd. Engine No. 517 When made 1954 6mo.

Donkey Boilers made at Kobe By whom made Mitsubishi Heavy Ind., Reorganized Boiler No. 122 When made 1944 4mo.
WHEN FITTED 1954 6mo.

Brake Horse Power Maximum 7500 Owners Inui Steam Ship Co., Ltd. Port belonging to Kobe

M.N. Power as per Rule 1500 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Ocean Going

OIL ENGINES, &c. — Type of Engines B. & W. D.E. 674VTBF-160 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 55kg/cm² Diameter of cylinders 740mm Length of stroke 1600mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 8kg/cm² Ahead Firing Order in Cylinders 1-6-2-4-3-5 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 972.6mm Is there a bearing between each crank Yes Revolutions per minute Service 115

Flywheel dia. 1903mm Weight 2198kg Moment of inertia of flywheel (lbs.in² or Kg.cm²) 11000000 Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, Solid forged dia. of journals as per Rule 515.98mm as fitted 550mm Crank pin dia. 550mm Crank webs Mid. length breadth 1020mm Thickness parallel to axis 335mm
Semi built as fitted 550mm with 220mm central hole Mid. length thickness 280mm shrunk Thickness around eye-hole 225.1mm
All built

Flywheel Shaft, diameter as per Rule 394.64mm as fitted 420mm Intermediate Shafts, diameter as per Rule 452.55mm as fitted 465mm Thrust Shaft, diameter at collars as per Rule 500mm with 160mm dia hole

Tube Shaft, diameter as per Rule 21.49mm as fitted 28mm Screw Shaft, diameter as per Rule 21.49mm as fitted 27mm Is the tube shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 28mm as fitted 28mm Thickness between bushes as per Rule 21.49mm as fitted 27mm Is the after end of the liner made watertight in the propeller boss Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland or other appliance fitted at the after end of tube shaft No If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1935mm

Propeller, dia. 5500mm Pitch 4,380mm No. of blades 4 Material MnBr whether moveable Yes Total developed surface 111.2 sq. feet

Moment of inertia of propeller (lbs.in² or Kg.cm²) - Kind of damper, if fitted -

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 52mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine - Cooling Water Pumps, No. 3 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. and capacity Diameter 1-24M3/h, 1 stroke Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and size 1-24M3/h, 1x100M3/h, 1x120M3/h How driven Main Eng. Motor, Motor

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements -

Ballast Pumps, No. and capacity 1-70M3/h, 120M3/h Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-75 HP Ver. Screw type

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces 3x3" 2x3" +3 of 2" In pump room -

In holds, &c. No.1 2x3 1/2" No.2 2x3 1/2" No.3 2x3 1/2" No.4 2x3 1/2" No.5 2x3 1/2"

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 x 5" 1 @ 7" Bilge injection (M/S Kibella 28.9.54)

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction in the machinery spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

Are all Sea Connections fitted direct on the skin of the Ship Yes Are they fitted with valves or cocks Yes Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the overboard discharges above or below the deep water line below

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes

What pipes pass through the bunkers - How are they protected -

What pipes pass through the deep tanks None fitted Have they been tested as per Rule -

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the shaft tunnel watertight Yes Is it fitted with a watertight door Yes worked from up.

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -

Main Air Compressors, No. 2 No. of stages 2 diameters HP-3" IP-9" stroke 6" driven by Dynamo eng.

Auxiliary Air Compressors, No. 1 No. of stages 2 diameters HP-1 1/2" IP-4 1/2" stroke 3" driven by Motor

Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters HP-1 1/2" IP-3 1/2" stroke 3 1/2" driven by Hand

What provision is made for first charging the air receivers by hand pump

Scavenging Air Pumps, No. Turbo Blower 2 sets diameters STROLEX How driven Exhaust gas.

or Blowers as per Rule 151.12 mm No. 2

Auxiliary Engines crank shafts, diameter as fitted 170 mm Position port in Engine room

Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

98
10/9/54

012165-02171-0158

Lloyd's Register
Foundation

AR 18652
AR 565, AR 566

AIR RECEIVERS:—Have they been made under survey... Yes ✓ State No. of report or certificate... AR 565, AR 566

Is each receiver, which can be isolated, fitted with a safety valve as per Rule... Fusible plug fitted on header of each receiver ✓

Can the internal surfaces of the receivers be examined and cleaned... Yes ✓ Is a drain fitted at the lowest part of each receiver... Yes ✓

Injection Air Receivers, No. - Cubic capacity of each - Internal diameter - thickness -

Seamless, welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules - Actual -

Starting Air Receivers, No. 2 ✓ Total cubic capacity... 18.64M3 Internal diameter... 1675mm ✓ thickness... 25mm ✓

Seamless, welded or riveted longitudinal joint riveted joint Material boiler plate Range of tensile strength 485kg/mm2 Working pressure 25kg/cm2 Actual ✓

IS A DONKEY BOILER FITTED Yes If so, is a report now forwarded... Yes

Is the donkey boiler intended to be used for domestic purposes only... No, to be used for windlass, winch, harbour pump and room heating and domestic.

PLANS. Are approved plans forwarded herewith for shafting... 4-11-53 Receivers... 27-10-53 Separate fuel tanks... 10-12-53

Donkey boilers... London App. 20-11-53 (If not, state date of approval) General pumping arrangements... 19-1-54 Pumping arrangements in machinery space... 8-12-53

Oil fuel burning arrangements... 18-12-53

Have Torsional Vibration characteristics been approved... Yes Date of approval... 24-5-54.

SPARE GEAR.

Has the spare gear required by the Rules been supplied... Yes

State the principal additional spare gear supplied... 1 - Cylinder cover complete. 1 - cylinder liner, 9- fuel valves complete, 1 - exhaust valves complete, 2 - starting valves complete, 2 - safety valves complete, 8set - piston rings, 1set - main bearing and thrust bearing brass with bolts and nuts, 5set - fuel pump plungers and pump housing, 5cyl.- fuel pipe.

The foregoing is a correct description,
M. M. Brige Manufacturer.

Dates of Survey while building

During progress of work in shops - - 1953: Mar. 16, June 1, Oct. 7, 14, 20, 22, 26, 30, Nov. 5, 7, 13, 17, 20, 27 Dec. 4, 8, 11, 18, 29, 1954: Jan. 8, 16, 19, 22, 29, Feb. 2, 5, 11, 9, 19, March 3, 5, 12, 16, 19, 23, 26, 31

During erection on board vessel - - 1954: Apr. 10, 16, 20, 23 May 7, 17, 21, 29, 31 June 2

Total No. of visits... 47

Dates of examination of principal parts—Cylinders 19-1-54 Covers 5-2-54 Pistons 2-2-54 Rods 2-2-54 Connecting rods 1-6-53

Crank shaft 16-3-53 Flywheel shaft - Thrust shaft 11-2-54 Intermediate shafts 19-3-54 Tube shaft -

Screw shaft 12-3-54 Propeller 7-5-54 Stern tube 3-3-54 Engine seatings 10-4-54 Engine holding down bolts 10-4-54

Completion of fitting sea connections 19-3-54 Completion of pumping arrangements 21-5-54 Engines tried under working conditions 29, 31-5-54

Crank shaft, material FS 7 CS Identification mark K-CK315 SM LR Flywheel shaft, material - Identification mark 28466 1/3

Thrust shaft, material O.H. Steel Identification mark K-F1552 MS LR Intermediate shafts, material O.H. Steel Identification marks IS Y1890 28459 1/3

Tube shaft, material - Identification mark - Screw shaft, material O.H. Steel Identification mark IS Y1864 1/3

Identification marks on air receivers... AR 565, AR 566 W.T.P. 39kgs/cm2, W.P. 25kg/cm2 YK 30-3-54 LR

Welded receivers, state Makers' Name -

Is the flash point of the oil to be used over 150°F Yes ✓

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes ✓

Description of fire extinguishing apparatus fitted KIDDIE TYPE CO2 fire ext, system, 2-30 litre sand box 10-9.5 litre portable roaming type fire ext.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Yes ✓ If so, have the requirements of the Rules been complied with ✓ Yes

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with -

Is this machinery duplicate of a previous case No If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c. The Machinery of this vessel has been constructed under Special Survey in accordance with the Rules, Approved Plans and Secretary's letters.

The materials and workmanships are sound, good and free from defect.

The machinery has been examined under working condition during shop and comprehensive sea trials and found satisfactory.

In our opinion the machinery of this vessel is eligible to have a record of +LMC 6,54, +DB 6,54 (O.NB (Ext.gas) made 44 and fitted 54) and CL 6,54. DB(WT) 142 LBS made 44 fitted 54 DB (Exhaust) 142 LBS

(Plan of arrangement of engine room is enclosed herewith Dr. No. 28907-8)

The amount of Entry Fee ... £ 810.000

Special ... £ : : When applied for 26. 1954 19

Donkey Boiler Fee... £ : : When received 19

Travelling Expenses (if any) £ 35.950 (also see Rpt. 1)

Committee's Minute... TUESDAY 14 SEP 1954

Assigned... +LMC 6.54 (with Torsional End!) DB(WT) 142 lb. made 44 fitted 54. DB (Ex. Gas) 142 lb. CL.

Sturms G. Kajima
Engineer Surveyor to Lloyd's Register of Shipping.

L Lloyd's Register Foundation

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.