

REPORT ON OIL ENGINE MACHINERY.

No. 5415
25 JAN 1935

Received at London Office

Date of writing Report 18th December 1934 When handed in at Local Office 18/12/1934 Port of Yokohama

No. in Survey held at Yokohama Date, First Survey 11th April 1934 Last Survey 15th December 1934
Reg. Book. Number of Visits 172

8734 on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel M/V "NARUTO MARU" Tons { Gross 7142
Net 4246

Built at Yokohama By whom built Yokohama Dock Co. Ltd Yard No. 222 When built 1934-12

Engines made at do. By whom made do Engine No. 4704 When made 1934

Donkey Boilers made at Uraga By whom made Uraga Dock Co. Ltd Boiler No. ✓ When made 1934

Brake Horse Power 6700 ✓ Owners Nippon Yusen K. K. Port belonging to Tokio

Nom. Horse Power as per Rule 1857 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended All Seas.

L ENGINES, &c.—Type of Engines M. A. N. Airlens Injection 2 or 4 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 45 Kg/cm² Diameter of cylinders 700 mm Length of stroke 1200 mm No. of cylinders 7 No. of cranks 7

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1090 mm Is there a bearing between each crank Yes

Revolutions per minute 105 Flywheel dia. 2300 mm Weight 8670 Kg Means of ignition Airlens Kind of fuel used Heavy oil

Crank Shaft, dia. of journals as per Rule app^d London as fitted 500 mm Crank pin dia. 500 mm Crank Webs Mid. length breadth 790 mm Thickness parallel to axis 320 mm

Flywheel Shaft, diameter as per Rule app^d London as fitted 500 mm Intermediate Shafts, diameter as per Rule app^d London as fitted 430 mm Thrust Shaft, diameter at collars as per Rule app^d London as fitted 455 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule app^d London as fitted 470 mm Is the { tube screw } shaft fitted with a continuous liner { Yes

Bronze Liners, thickness in way of bushes as per Rule app^d London as fitted 25 mm Thickness between bushes as per rule app^d London as fitted 25 mm 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

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 the tube

Shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller 2080 mm

Propeller, dia. 5500 mm Pitch 5171 mm No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 9.28 METRES sq. feet

Method of reversing Engines Direct Air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

forced Thickness of cylinder liners 45 mm 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. 2 - Rotary 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. Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size 1-1x125 mm x 150 mm x 15T/h; 1-2x210 mm x 210 mm 100T/h (cargo oil pp); 1-110T/h Rotary (Ballast pp) How driven electric Motor

Ballast Pumps, No. and size 1-110T/h Rotary Lubricating Oil Pumps, including Spare Pump, No. and size 2x65 T/h Rotary

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 3-90 mm, 2-50 mm Tunnel Well 1-75 mm In Pump Room

In Holds, &c. No. 1, 2, 3, 5 Holds 2-90 mm each, No. 6 Hold 1-90 mm, A, B, C & D Deep Tanks 1-65 mm each

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-140 mm, 1-200 mm

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions 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 above

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 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 Engine Room Top

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. Nil No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters HP 105 mm MP 360-305 mm LP 360-105 mm Stroke 250 mm Driven by Aux Diesel Engine

Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 45/95 mm Stroke 95 mm Driven by Hand

Scavenging Air Pumps, No. One Diameter Stroke Driven by electric motor

Auxiliary Engines crank shafts, diameter as per Rule 166.5 mm as fitted 170 mm

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes

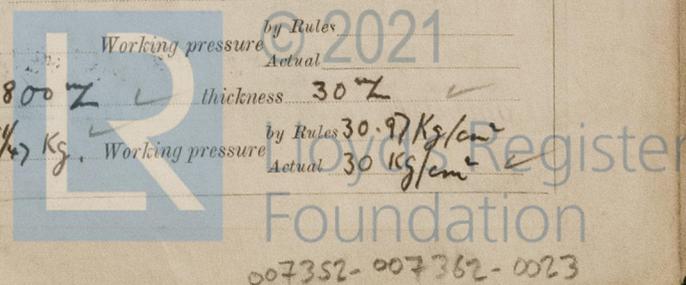
Can the internal surfaces of the receivers be examined and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules 2021 Actual

Starting Air Receivers, No. 2 Total cubic capacity 1059 cu ft Internal diameter 1800 mm thickness 30 mm

Seamless, lap welded or riveted longitudinal joint T. R. D. B. S Material Steel Range of tensile strength 44/55 44/47 Kg Working pressure by Rules 30.97 Kg/cm² Actual 30 Kg/cm²



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 Yes and for Heating Coils in O.F. Tanks.

PLANS. Are approved plans forwarded herewith for Shafting 22/2/33, 20/3/33 Receivers 17/1/34 Separate Tanks 11/7/33, 13/10/33, 19/10/33

Donkey Boilers 24/5/33 General Pumping Arrangements 20/4/34, 22/8/33 Oil Fuel Burning Arrangements 21/8/33

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes. See separate list

State the principal additional spare gear supplied

Spare Screw Shaft marked

LLOYD'S
No 3753
H.A.G. 20/12/33

The foregoing is a correct description,

S. Tsumetsu Manufacturer.

Dates of Survey while building { During progress of work in shops - 11, 26/4, 2, 8, 17, 26/5, 8, 26, 29/6, 4, 11, 26/7, 2, 15, 28/8, 4, 16, 16, 18, 21, 26/9, 4, 7, 20, 21/10, 13, 15, 20, 21, 24/11, 4, 13, 18, 19, 26, 27/12, 1933
During erection on board vessel - 2, 4, 5, 11, 12, 13, 16, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 30, 31/1, 1, 2, 3, 6, 7, 8, 9, 11, 13, 15, 16, 17, 18, 20, 21, 22, 23, 27, 28, 29, 30, 31/8, 1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 17, 18, 23, 25, 26, 27, 29, 29/10, 3/10
Total No. of visits 172

Dates of Examination of principal parts—Cylinders 29/9/34 Covers 3/10/34 Pistons 8/10/34 Rods 7/9/34 Connecting rods 8/8/34

Crank shaft 8/8/34 Flywheel shaft 12/10/34 Thrust shaft 12/10/34 Intermediate shafts 12/10/34 Tube shaft 16/18/8 Screw shaft 12/10/1934 Propeller 6, 8, 16/8/1934 Stern tube 26, 27/12/33, 20, 5, 10/1/1934 Engine seatings 28/9/34 Engines holding down bolts 12, 16, 18, 23/10/1934

Completion of fitting sea connections 29/8/34 Completion of pumping arrangements 16/11/34 Engines tried under working conditions 24/11/34

Crank shaft, Material Steel Identification Mark H.D.B. 1015/34 Flywheel shaft, Material Steel Identification Mark K.K. 7/3/34
Thrust shaft, Material Steel Identification Mark K.K. 26/11/34 Intermediate shafts, Material Steel Identification Marks B.N. 3739, K.K. 15+24/34, K.K. 27/2, 7/13
Tube shaft, Material Steel Identification Mark H.A.G. 20/12/33 Screw shaft, Material Steel Identification Mark G.N. 3754, H.A.G. 20/12/33

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

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 Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel NAGARA MARU & NAKO MARU

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built and fitted on board the vessel under Special Survey in accordance with the Rules and approved plans, material, and workmanship good. The machinery was examined running on Shop trials and subsequently under full working conditions on board, with satisfactory results.

The machinery of this vessel is eligible in my opinion to have the record of +L.M.C 12.34 in the Register Book.

The amount of Entry Fee .. £ 6-0-0 / When applied for, 20-12-1934
Special £ 183-0-0
Donkey Boiler Fee £ 5-5-0 / When received, 25-4-35
Travelling Expenses (if any) Yen 91.00
3 Air Receipts £ 13-2-6
Committee's Minute TUE 29 JAN 1935

G.H. Macdonald
Engineer Surveyor to Lloyd's Register of Shipping.



Assigned + L.M.C 12.34
SB-1000s
oil imp. C.K.
CERTIFICATE WRITTEN