

REPORT ON OIL ENGINE MACHINERY.

No. Kobe **2853**
YKA. 1723c

Kobe

Received at London Office

Date of writing Report **30th July 1955** When handed in at Local Office **JUN 20 1955** 19 Port of **KOBE &** **17 AUG 1955**
Kobe: **4th November, 1954** Kobe: **9th May 1955**
Date, First Survey **4th May 1955** Last Survey **23rd July 1955**

No. in Survey held at **Kobe, Osaka & Shimizu** Number of Visits **46 (Kobe)**
Reg. Book. **16 (Yokohama)**

Single) on the **Deck** } Screw vessel **M.V. "NISSHUN MARU"** Tons { Gross **9998.74**
~~Triple~~ } Net **6235.42**

Built at **Shimizu, Japan** By whom built **Nippon Kokan K.K. Shimizu Shipyard** Yard No. **120** When built **7-55**
Engines made at **Osaka, Japan** By whom made **Hitachi Shipbuilding & Eng., Co., Ltd.** Engine No. **2021** When made **Apr. 1955**
Sakurajima Shipyard **8185, 8186**

Donkey Boilers made at **Yokohama, Japan** By whom made **Nippon Kokan K.K. Tsurumi Shipyard** Boiler No. **8187** When made **4-55**
Brake Horse Power **5,530** Owners **Nissan Kisen K.K.** Port belonging to **Tokyo**

M.N. Power as per Rule **1,106** 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 674VTF160** 2 or 4 stroke cycle **2** Single or double acting **Single**

Maximum pressure in cylinders **49kg/cm2** Diameter of cylinders **740mm** Length of stroke **1,600mm** No. of cylinders **6** No. of cranks **6**

Mean Indicated Pressure **6.5kg/cm2** Ahead Firing Order in Cylinders **1-5-3-4-2-6** 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 **115**

Flywheel dia **1,903mm** Weight **2,198kgs** Moment of inertia of flywheel (lbs. in² or Kg. cm²) **44x10⁶** Means of ignition **Compression** Kind of fuel used **Heavy oil + Diesel oil**

Crank Shaft, { ~~Solid forged~~ dia. of journals as per Rule **486.16mm** as fitted **550mm** Crank pin dia **550mm** Crank webs Mid. length breadth **1,160mm** Thickness parallel to axis **335mm**
{ ~~Solid forged~~ All built as fitted **550mm** Mid. length thickness **280mm** shrunk Thickness around eye hole **320mm**

Flywheel Shaft, diameter as per Rule **356.48mm** as fitted **362mm** Thrust Shaft, diameter at collars as per Rule **392.14mm**

Tube Shaft, diameter as per Rule **411.8mm** as fitted **417mm** Is the { tube } shaft fitted with a continuous liner { **yes** }

Bronze Liners, thickness in way of bushes as per Rule **20.2mm** as fitted **25mm** Thickness between bushes as per Rule **15.15mm** as fitted **20mm** 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 tube shaft **—** If so, state type **—**

Propeller, dia. **5400mm** Pitch **3750mm** No. of blades **4** Material **Blade: Mn. Bronze** **Bozo: Cast iron** whether moveable **NO** Total developed surface **106.2** sq. feet

Moment of inertia of propeller (lbs. in² or Kg. cm²) **191,000 x 980** 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. **S.W. 1** 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. **1** Diameter **150mm** Stroke **200mm** Can one be overhauled while the other is at work **NO**

Pumps connected to the Main Bilge Line { No. and size **1 x Fire + Bilge Pump 89 m³ / 210 R x 60 m** **1 x General Service Pump 89 m³ / 210 R x 60 m**
{ How driven **(Steam driven working type)** **+ I M E**

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 size **1 x 509 m³ R x 10 m** **(Centrifugal type)** Power Driven Lubricating Oil Pumps, including spare pump, No. and size **2 x 210 m³ R x 40 m**

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 **100 mm x 5**, **50 mm x 1** **Cofferdam 50 mm x 1** In pump room **—**

In holds, &c. **80 mm x 12 (80 mm x 2 per each hold)**, **50 mm x 3 in pipe tunnel** **emergency bilge suction 300 mm x 1**

Independent Power Pump Direct Suctions to the engine room bilges, No. and size **160 mm x 1**, **100 mm x 1**

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 brasscovering plate **—**

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 **—** Is it fitted with a watertight door **—** worked from **—**

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. **—** No. of stages **—** diameters **—** stroke **—** driven by **—**

Auxiliary Air Compressors, No. **2** No. of stages **2** diameters **LP 7"** **HP 6"** stroke **5"** driven by **steam reciprocating engine**

Small Auxiliary Air Compressors, No. **—** No. of stages **—** diameters **—** stroke **—** driven by **—**

What provision is made for first charging the air receivers **Aux. air compressors were driven by steam reciprocating engine**

Scavenging Air Pumps, No. **2 Roots Blowers** diameter **818.6mm dia. x 1498mm long.** driven by **Main engine**
as per Rule **97mm** r.p.m. **393** No. **2**

Auxiliary Engines crank shafts, diameter as per Rule **130mm** as fitted **130mm** Position **Port inboard and outboard of the main engine platform**

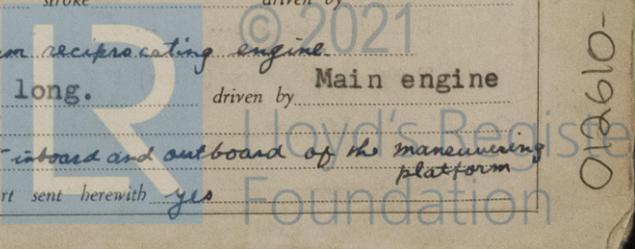
Have the auxiliary engines been constructed under special survey **yes** Is a report sent herewith **yes**

443.73
1743.74

27

15/9/55

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AIR RECEIVERS:—Have they been made under survey yes State No. of report or certificate YAR-39, YAR-40

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

Injection Air Receivers, No. — Cubic capacity of each — Internal diameter — thickness —
Seamless, welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure —
Starting Air Receivers, No. 2 Total cubic capacity 8 m³ x 2 Internal diameter 1340 mm thickness Shell 23 mm, end pl. 31 mm
Seamless, welded or riveted longitudinal joint Welded Material O.H. Steel Range of tensile strength Shell 47.1-49.6 kg/mm², end pl. 47.6-53.2 Working pressure by Rules 35.5 kg/cm², Actual 25 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 No

PLANS. Are approved plans forwarded herewith for shafting App. date 28-2-55 Receivers 22-12-54 Separate fuel tanks 22-12-54, 4-2-55, 15-3-55
Donkey boilers 26-1-55 (donkey boiler) General pumping arrangements — Pumping arrangements in machinery space 2-4-55
Oil fuel burning arrangements 16-2-55

Have Torsional Vibration characteristics been approved Yes Date of approval 28-2-55

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied 6-Fuel valves complete 1-Exhaust valve complete, 1-starting air valve complete, 1-Cylinder safety valve complete, 5 set Piston rings, 1-Piston rod, 1 set O.F. pump complete.

The foregoing is a correct description, Y. Izaki Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1954: Nov. 4, 9, 30, Dec. 4, 11, 14, 23, 24, 27 1955: Jan. 10, 14, 21, 24, 28, 29, 31 Feb. 4, 9, 14, 15, 21, 25, 28, Mar. 2, 4, 5, 11, 14, 17, 19, 22, 23, 24, 29, 30, 31 Apr. 9, 12, 13, 14, 23, 28
During erection on board vessel -- 1955: MAY 9, 12, 17 JUN 1, 4, 15, 20, 25 JUL 5, 9, 13, 14, 17, 18, 21, 23
Total No. of visits 46 (Kobe) 16 (Yokohama)

Dates of examination of principal parts — Cylinders 2-3-55 Covers 31-3-55 pistons 11-3-55 Rods 11-3-55 Connecting rods 4-3-55
Crank shaft 21-1-55 Flywheel shaft — Thrust shaft 21-1-55 Intermediate shafts 14-4-55 Tube shaft —
Screw shaft 30-4-55 Propeller 24-3-55 Stern tube 26-2-55 Engine seatings 9-5-55 Engine holding down bolts 25-6-55
Completion of fitting sea connections 20-3-55 Completion of pumping arrangements 9-7-55 Engines tried under working conditions Shop trial 23-4-55, actual 21-7-55

Crank shaft, material Forged and Cast Steel Identification mark No. K-CK 428 HI LR 21-1-55 Flywheel shaft, material, — Identification mark LLOYD'S KOB No. KF 1814 M.S.R. 13-4
Thrust shaft, material E.F. Forged Identification mark No. HC-F502 HI LR 21-1-55 Intermediate shafts, material O.H. steel Identification marks No. KF 1815 M.S.R. 15-4 LLOYD'S KOB
Tube shaft, material — Identification mark — Screw shaft, material O.H. steel Identification mark No. KF 1857 H.I.R. 30-4-55

Identification marks on air receivers NO. YAR 39 LLOYD'S TEST YKA 41KG W.P. 25KG R.T. 2-4-55 NO. YAR 40 LLOYD'S TEST YKA 41KG WP 25KG R.T. 30-3-55
Welded receivers, state Makers' Name Nippon Kokan K.K. Teurumi Shipyard.

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 Steam smothering system, 45^l x 2 foam type, portable foam type x 10 hydrant x 5
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with —
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with No
Is this machinery duplicate of a previous case Yes If so, state name of vessel M.V. "NIKKEI MARU" & M.V. "NICHIRYU"

General Remarks (State quality of workmanship, opinions as to class, &c. The Machinery has been constructed under the supervision of the Society's Surveyors in accordance with the Rules, approved Plans and Secretary's letters.

The materials were found to be sound and free from defects and the workmanship is good.
The Machinery was examined during shop trials under full and overload conditions and found good.
It is submitted that this machinery will be eligible for a Notation of +LMC when it has been installed to the satisfaction of the Society's Surveyors. with date on board the ves

Crank case explosion relief device fitted as per plan in accordance with cir. NO. 2045.
The machinery has been satisfactorily installed in the vessel and tried under working condition.
It is submitted that the machinery of this vessel is eligible to be classed with this Society with the notation of +LMC 7.55, DBS 7.55 & TSC 7.55.

The amount of Entry Fee during installation (YKA) ¥252,000 Special — Donkey Boiler Fee — Travelling Expenses (if any) ¥15,000
When applied for JUN - 8, 1955 When received 19

Committee's Minute FRIDAY 30 SEP 1955
Assigned +LMC 7.55 2WD B 135 ll. cl.

Shunichi Engineer Surveyor to Lloyd's Register of Shipping.
Lloyd's Register Foundation