

REPORT ON OIL ENGINE MACHINERY.

No. 4694

1 JUN 1931

Received at London Office

Date of writing Report 11th May 1931 When handed in at Local Office

11/5/1031 Port of YOKOHAMA

No. in Survey held at YOKOHAMA
Reg. Book.Date, First Survey 18th February 1930 Last Survey 4th May 1931
Number of Visits 88on the Single
Twin
Triple
Quadruple
Screw vessel "TEIYO MARU"Tons Gross 9849.86
Net 5722

Built at Yokohama By whom built Yokohama Dock Co. Ltd Yard No. 181 When built 1931
Engines made at Yokohama By whom made Yokohama Dock Co. Ltd Engine No. 181 When made 1931
Donkey Boilers made at Yokohama By whom made Yokohama Dock Co. Ltd Boiler No. 181 When made 1931
Brake Horse Power 2 at 3,600 Owners NIPPON TANKER KABUSHIKI KAISHA Port belonging to Yokohama
Nom. Horse Power as per Rule 2340 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 Yokohama M.A.N. 2 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 45 atm Diameter of cylinders 600 mm Length of stroke 900 mm No. of cylinders 2 x 6 No. of cranks 2 x 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 885 mm Is there a bearing between each crank yes

Revolutions per minute 125 Flywheel dia. 2100 mm Weight 3400 kgs Means of ignition Solid injection Kind of fuel used

Crank Shaft, dia. of journals as per Rule 391 mm Crank pin dia. 420 mm Crank Webs Mid. length breadth 560 mm Mid. length thickness 235 mm Thickness parallel to axis as fitted 420 mm Thickness around eye hole as fitted 380 mm

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 317.5 mm Thrust Shaft, diameter at collars as per Rule 333.3 mm as fitted as fitted 362 mm as fitted 380 mm

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 358.3 mm Is the shaft fitted with a continuous liner yes as fitted as fitted 410 mm as fitted 380 mm

Bronze Liners, thickness in way of bushes as per Rule 20 mm Thickness between bushes as per rule 15 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 yes

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 yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type Length of Bearing in Stern Bush next to and supporting propeller 6'-5"

Propeller, dia. 14'-3" Pitch 13'-6" No. of blades 4 Material M. Bronze whether Moveable yes Total Developed Surface 63 sq. feet

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

Forced Thickness of cylinder liners 40 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes

Cooling Water Pumps, No. Two 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 1-5'x5'x6"=20 T/hr. 2-12'x8'x10"=70 T/hr. each How driven Steam Engines

Ballast Pumps, No. and size One 12'x8'x10"=70 T/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 3-9'x8'x20"=40 T/hr. each

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 3-3'x3' dia. 2-3' dia. 2-2'x3' dia. In Pump Room 2-4' dia

In Holds, &c. Void Hold 4'-3' dia. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 5'x2' dia.

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 Both

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 no Is it fitted with a watertight door no 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. One Duplex No. of stages Two Diameters H.P. 7, L.P. 15" Stroke 6 1/2" Driven by steam

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Scavenging Air Pumps, No. Two Diameter 1380 mm Stroke 700 mm Driven by Main Engines

Auxiliary Engines crank shafts, diameter as per Rule as fitted

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

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

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 Actual

Starting Air Receivers, No. Two Total cubic capacity 15 cu. metres Internal diameter 1800 mm thickness 1 1/2" 9 1/16" by Rules Actual 496

Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 26/30, 28/35 Working pressure by Rules Actual

23/6, 24/6, 26/6
3/9, 8/9, 9/9
7/11, 19/11, 22/11
20/3, 31/3
Visits 87

007288-001300-0249

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. all auxiliary machinery, steering engine & winches steam driven

PLANS. Are approved plans forwarded herewith for Shafting Kobe. 8/2/29, 17/2/30 Receivers 22-10-29

Separate Tanks 31-8-30.

Donkey Boilers 11/7/30, 5/9/30

General Pumping Arrangements 12/5/30, 10/7/30.

Oil Fuel Burning Arrangements 21/4/30, 24/10/30.

SPARE GEAR.

Has the spare gear required by the Rules been supplied

yes.

State the principal additional spare gear supplied

The following items are extra to those required by the Rules:
 1 Top & 1 Bottom cylinder cover complete, 6 fuel nozzles & valves, 1 piston complete & 2 piston rods, 1 set of telescopic cooling pipes, 1 set of cam shaft driving wheels, 2 crosshead brasses & 1 set of bolts & nuts, One crank pin brass (1 set), 1 set of coupling bolts for crank shaft & 1 set for intermediate shaft, 1 top & 1 bottom cylinder liner, 1 set of thrust shaft bearings with bolts & nuts, 2 Fuel pumps complete for both top & bottom cylinders. One set of suction & delivery valves ready to fit for scavenging pumps.

The foregoing is a correct description,

J. Neuchiga

Manufacturer.

Dates of Survey while building
 During progress of work in shops -- Feb. 18th, April 17, 21, May 2, 14, 15, 24, 22, 28, 29, June 5, 11, 24, 27, July 28, Aug. 13, 20, 25, Sept. 5, 16, 19, 25, 29, Oct. 6, 10, 14, 18, 24, 30, Nov. 4, 10, 14, 19, Dec. 8, 12, 17, 18, 24, 27, 1930. Jan. 9, 24, 28, 29, 31, Feb. 4, 5, 6, 2, 16, 17, 24, 25, 28, March 2, 12, 13, 16, 20, 28, 30. April 9, 14, 23, 27, 28, 30. May 4th 1931.
 During erection on board vessel -- Aug. 20, Sept. 5th 1930, Jan. 9, 15, 16, 19th, Feb. 12, March 6, 9, 2, 26, 28, April 4, 7, 16, 20, 28, 30.
 Total No. of visits 88

Dates of Examination of principal parts—Cylinders 18-2-30 to 30/4/31. Spare 79 visits. Covers 4/10/14/15/30/31. Pistons GERMANY. Rods GERMANY. Connecting rods 5, 25/9, 25/9, 10/11, 17/3, 21/3, 9/14/15, 21, 5, 11, 24/6, 20/7, 15/2.

Crank shaft Kobe. Flywheel shaft Thrust shaft 5, 16, 25/9, 6, 10/10, 4/10/11, 6/12/20. Intermediate shafts 4/11, 8/12, 27/12, 3/1/31. Tube shaft 20/7, 13/8, 25/9, 10/10.

Screw shaft 24/27/2, 16/1/31. Propeller 6, 21, 30/10, 4/11, 27/12/31. Stern tube 27/14, 4/11, 5/4, 10/1/31. Engine seatings 15/11, 16/1/31. Engines holding down bolts 6/3, 9/4/13, 24/3, 4/4, 20-4-31.

Completion of fitting sea connections 15-1-31. Completion of pumping arrangements 16-4-31. Engines tried under working conditions.

Crank shaft, Material Steel (Kobe) Identification Mark Lloyd's 2548 1-9-30. Flywheel shaft, Material Identification Mark Lloyd's 2548 1-9-30.

Thrust shaft, Material Steel Identification Mark Lloyd's 2392 10-11-30. Intermediate shafts, Material Steel Identification Marks Lloyd's 2811, 2835.

Tube shaft, Material Identification Mark Lloyd's 2811, 2835. Screw shaft, Material Steel Identification Mark Lloyd's 2811, 2835.

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 Oil tanker. 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.

Is this machinery duplicate of a previous case. If so, state name of vessel.

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built and fitted onboard the vessel under special survey in accordance with the Rules, materials & workmanship good. The machinery was examined running on shop testbed and examined when opened up after shop trials. On completion of fitting out onboard, all machinery tried under full working conditions with satisfactory results. Manoeuvring trials carried out & found in order.

The machinery of this vessel is eligible in my opinion to have the record of L.M.C. 5-31 in the Register Book.

Note: A fee of £33-0-0 for the testing of various parts of the machinery which were made in Germany and charged for by the Bremen Surveyors, has been deducted from the Special Survey fee. See shown below is the amount charged at Yokohama.

The amount of Entry Fee YEN 460.00 : When applied for, 9-5-1931.
 Special ... YEN 12173.00 :
 Donkey Boilers Fee YEN 922.00 : When received, 7-7-31.
 Travelling Expenses (if any) YEN 42.00 :

Committee's Minute FRI. 5 JUN 1931

Assigned + L.M.C. 5,31 C.L.

Oil Eng. 200B. 180 lb. D.H. (C) 120 lb.

FRI. 10 JUL 1931

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