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Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 8091  
APR 1930

Date of writing Report 25<sup>th</sup> Sept. 1929 When handed in at Local Office 29 Sept. 1929 Port of 8R Copenhagen

No. in Survey held at Copenhagen Date, First Survey 8R Feb. Last Survey 27<sup>th</sup> Sept. 1929  
Reg. Book. Number of Visits 53.

on the Motor vessel "MELBOURNE MARU" Tons Gross 5437 Net 3237

Built at Yokohama By whom built Yokohama Dock Co. Ltd. Yard No. 174 When built 1930.

Engines made at Copenhagen By whom made Akt. Burmeister, Wain's Engine No. 1594 When made 1929

Donkey Boilers made at Lincoln By Babcock & Wilcox Ltd. Designated "OSAKA" Boiler No. When made 1929

Brake Horse Power 3000 Owners Osaka Shosen Kaisha Port belonging to Osaka

Nom. Horse Power as per Rule 489 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which vessel is intended Japan to Australia.

IL ENGINES, &c.—Type of Engines Vertical Diesel Engines Solid injection 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 35 kg/cm<sup>2</sup> Diameter of cylinders 740 mm = 29 1/8" Length of stroke 1500 = 59" No. of cylinders 6 No. of cranks 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 mm. Is there a bearing between each crank Yes

Revolutions per minute 112 TURNING dia. 2136 mm Weight 1950 kg Means of ignition air Compression and of fuel used Cude oil flash point above 150° F.

Crank Shaft, dia. of journals as per Rule 470 mm. as fitted 476 mm. Crank pin dia. 476 mm. Crank Webs Mid. length breadth 770 mm. Thickness parallel to axis 310 mm. M.d. length thickness 290 mm. Thickness around eye hole 217.5 mm.

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 13.06" as fitted 13.5" Thrust Shaft, diameter at collars as per Rule 14.175 mm. as fitted 14 1/4"

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 14.31" as fitted 14.75" Is the tube shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule .738" as fitted FORD 7/8" of 13/16" Thickness between bushes as per rule .55" as fitted 9/16" 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'-3"

Propeller, dia. 15 ft Pitch 12 ft 8 in No. of blades 4 Material P. Bronze whether Moveable yes Total Developed Surface 73 sq. feet

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

Thickness of cylinder liners 53.5 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 off. Centrifugal - 150 tons each. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. 2 off. diameter of pump 127 mm. Stroke 288 mm. Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line No. and Size One 165 mm x 230 mm stroke (Two plungers). How driven Electric motor.

Ballast Pumps, No. and size 180 mm x 250 mm stroke Lubricating Oil Pumps, including Spare Pump, No. and size 2 off. Cog wheel pumps, 60 tons 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 Eleven 2 1/2" x 3" dia

In Holds, &c. Nine 2" x 3 1/2" dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 180 mm x 250 mm & 2 centrifugal pumps (cooling water)

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces

and 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 yes Is it fitted with a watertight door yes worked from top of Engine Room

On 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. none No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 2 off. No. of stages 2 Diameters 210 - 176 mm. Stroke 216 mm. Driven by Electric motors

Small Auxiliary Air Compressors, No. 1 off. No. of stages 2 Diameters 90 - 35 mm. Stroke 120 mm. Driven by Hand

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 132 mm. as fitted 140 mm. Auxiliary Diesel oil engines 3 off. 4 Cyl. 4 P.C.S.A. - 150 B.H.P. each Cyl. diam. 112 mm. Stroke 380 mm.

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

Are the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Yes

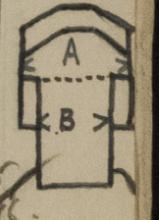
Is there a drain arrangement fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. Two Cubic capacity of each 15 m<sup>3</sup> Internal diameter 6'-0" thickness 1 1/32" ends 1/16" + 1/32"

Are all receivers fitted with a limited Material steel Range of tensile strength 28-32 tons Working pressure by Rules 35.5 lb

Emergency Starting Air Receivers, No. 1 off. Total cubic capacity 300 Litres Internal diameter 418 mm. thickness 12 mm. Working pressure by Rules 24.4 kg/cm<sup>2</sup> 3.2 kg/cm<sup>2</sup>

Are all receivers fitted with a limited Material S.M. Steel Range of tensile strength 38.1 kg/mm<sup>2</sup> Working pressure by Rules 3.2 kg/cm<sup>2</sup>



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IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

PLANS. Are approved plans forwarded herewith for Shafting *No* *17th Sept 28* Receivers *Yes*

Donkey Boilers *General Pumping Arrangements 11/6, 24/5, 29* Separate Tanks *Oil Fuel Burning Arrangements*

SPARE GEAR *As per accompanying list checked aboard.*

*One spare propeller shaft & two bronze blades fitted aboard.*

The foregoing is a correct description,

*Arteselikebet*  
*Burneister Wains maskin - og*  
*Skibbyggeri* Manufacturer.

*J. Teuchly*

Dates of Survey while building *During progress of work in shops - 10/3, 2/4, 6/6, 18/6, 3/7, 7/9, 24/9, 25/9, 22/10, 1/11, 7/11, 8/11, 16/11, 18/11, 28/11, 3/12, 10/12, 20/12, 16/14, 2, 16/2*  
*During erection on board vessel - 3/12, 10/12, 14/12, 29, 7/1, 15/1, 20/1, 23/1, 14/2, 20/2, 24/2, 28/2, 6/3, 14/3, 19/3, 28/3/20.*  
Total No. of visits *53 9 34*

Dates of Examination of principal parts - Cylinders *and* Covers *14/6, 12/7, 17/7, 23/7, 24/7, 15/7, 17/7, 27/7, 4/8, 28, 26/2, 17/3, 10/5, 28, 26/2, 13/3, 22/4*  
Crank shaft *13/7, 23/7, 3/8, 13/8, 24* Flywheel shaft *13/7, 23/7, 3/8, 13/8, 24* Thrust shaft *8/6, 20/7, 24* Intermediate shafts *4/6, 24/9, 3/12, 29, 7/1/30 Tube shaft*

Screw shaft *24/9, 28/9, 11/12, 29* Propeller *10/12, 14/12, 29* Stern tube *7/9, 3/12, 12/12, 29* Engine seatings *14/12, 29, 24/12, 29* Engines holding down bolts *24/12, 29, 7/1, 15/1, 2*

Completion of fitting sea connections *14/12/29* Completion of pumping arrangements *14/12/29/30* Engines tried under working conditions *7/9, 19, 19, 19*

Crank shaft, Material *S.M.I. Steel* Identification Mark *No. 151-152* Flywheel shaft, Material *LLLOYD'S* Identification Mark *LLLOYD'S*  
Crank webs *Cast Steel* Identification Mark *No. 151-152* Intermediate shafts, Material *Steel* Identification Mark *LLLOYD'S*  
Thrust shaft, Material *S.M.I. Steel* Identification Mark *No. 138 K* Identification Mark *LLLOYD'S*

Tube shaft, Material *Steel* Identification Mark *LLLOYD'S*  
Screw shaft, Material *Steel* Identification Mark *LLLOYD'S*

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*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *Copenhagen Report No. 8041*

General Remarks *(State quality of workmanship, opinions as to class, &c. In accordance with the Society's Rules for Special Survey we have examined the material and workmanship from the commencement of construction of main and auxiliary engines with their accessories until the final test under full power on condition on the test bed in the shop and found all good and satisfactory.*

*The material used in the construction of the engines and the air receiver has been tested as required by the Rules, either by us, or as per test certificates produced issued by the Surveyors to this Society.*

*The dimensions are as specified and in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letter "E" dated the 17th Sept. 1928.*

*The intermediate and screw shafts, plans of which was approved on 17th Sept. 1928, have not been*

Recommend the vessel to have notation in the Register Book of L.M.C. with date and Oil Ex when the machinery has been fitted on board under the supervision of and tested to the satisfaction of the Local Surveyors to this Society. Please see following sheet:

The amount of Entry Fee ... £s. 72. 80. When applied for, 27. 9. 29.  
4/5 Special ... £s. 1431. 98.  
Donkey Boiler Fee ... £s. : :  
Travelling Expenses (if any) £s. 10. 50.

(Signed) *A. F. Orbeck, L. Klausen*  
Engineer Surveyor to Lloyd's Register of Shipping.  
*J. Nicholas*

Committee's Minute *FRI 2 MAY 1928*  
Assigned *+ L.M.C. 3.30*

Rpt. 9a.

Port of

Continuation of Report No. 4501 dated

on the

"MELBOURNE MARU"

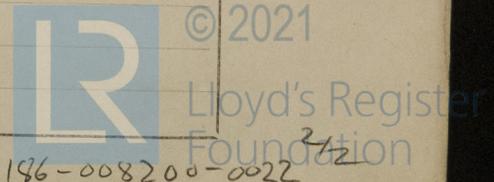
*This machinery has now been securely fitted onboard this vessel under special survey. After completion all machinery examined under full working conditions with satisfactory results.*

*The machinery of this vessel is eligible in my opinion to have the notation of L.M.C. 3-30, in the Register Book.*

*J. Nicholas*

YOKOHAMA. YEN.  
1/5 of FIRST ENTRY FEE. 10.00  
1/5 of Special 418.00  
EXPENSES. 15.00  
FEE APPLIED FOR - 7-4-30.  
Paid 24/4/30 *ellb*

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



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