

# REPORT ON OIL ENGINE MACHINERY.

No. 6236

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Date of writing Report 3rd Oct 1937 When handed in at Local Office 28/10/1937 Port of Yokohama

No. in Survey held at Yokohama Date, First Survey 3rd June 1936 Last Survey 22nd Oct 1937.  
Reg. Book. Number of Visits 103.

on the ~~Triple~~ ~~Quadruple~~ <sup>Single</sup> Screw vessel M.V. "YUKAGIR"

Tons } Gross 1435  
          } Net 860

Built at Yokohama By whom built Mitsubishi Jukogyo. K.K. Yokohama Dock Yard No. 264 When built 1937  
Engines made at Yokohama By whom made Mitsubishi J. K. K. Yokohama Dock Engine No. 264 When made 1937  
Donkey Boilers made at Yokohama By whom made Mitsubishi J. K. K. Yokohama Dock Boiler No. 264 When made 1937  
Brake Horse Power 800 Owners Union of Soviet Socialist Republics Port belonging to MURMANSK.  
Nom. Horse Power as per Rule 185 <sup>184</sup> Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended Carrying Petroleum in bulk.

**OIL ENGINES, &c.**—Type of Engines Mitsubishi M.A.N. 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 450 mm Length of stroke 600 mm No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 590 mm Is there a bearing between each crank yes.  
Revolutions per minute 225 Flywheel dia. 1800 mm Weight 4260 kgs Means of ignition Solid Kind of fuel used Crude Oil  
Crank Shaft, dia. of journals as per Rule 260 mm Crank pin dia. 270 mm Crank Webs Mid. length breadth 380 mm Thickness parallel to axis shrunk  
as fitted 270 mm Mid. length thickness 45 mm Thickness around eye-hole shrunk  
Flywheel Shaft, diameter as per Rule shrunk Intermediate Shafts, diameter as per Rule shrunk as fitted 175 mm Vulcan Coupling Shaft as per Rule shrunk as fitted 300 mm  
Tube Shaft, diameter as per Rule shrunk Screw Shaft, diameter as per Rule shrunk as fitted 200 & 185 mm Is the screw shaft fitted with a continuous liner yes  
Bronze Liners, thickness in way of bushes as per Rule shrunk as fitted 15 mm Thickness between bushes as per rule shrunk as fitted 12 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 yes If so, state type shrunk  
Propeller, dia. 2600 mm Pitch 4265 mm No. of blades 4 Material Chrome Nickel whether Moveable yes Length of Bearing in Stern Bush next to and supporting propeller 1000 mm Total Developed Surface 2.04 M<sup>2</sup>  
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication Faced Thickness of cylinder liners 29 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 yes

Cooling Water Pumps, No. One 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. One Diameter 95 mm Stroke 210 mm Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line } No. and Size 1-50 M<sup>3</sup>/hr. 1-30 M<sup>3</sup>/hr. 1-16 M<sup>3</sup>/hr.  
  } How driven motor motor main engine  
Ballast Pumps, No. and size shrunk Lubricating Oil Pumps, including Spare Pump, No. and size 1-5 M<sup>3</sup>/hr & 1-4.5 M<sup>3</sup>/hr  
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 3-60 mm, 2-65 mm, 2-50 mm, 1-120 mm In Pump Room shrunk  
In Holds, &c. Fore hold 2-52 mm, each cofferdam 1-50 mm dia.  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-120 mm & 1-65 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 shrunk How are they protected shrunk  
What pipes pass through the deep tanks shrunk Have they been tested as per Rule shrunk  
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 shrunk Is it fitted with a watertight door shrunk worked from shrunk  
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork shrunk

Main Air Compressors, No. Two No. of stages Two Diameters 60 & 145 mm Stroke 100 mm Driven by Generated Engines  
Auxiliary Air Compressors, No. shrunk No. of stages shrunk Diameters shrunk Stroke shrunk Driven by shrunk  
Small Auxiliary Air Compressors, No. One No. of stages Two Diameters 45 & 95 mm Stroke 95 mm Driven by Hand  
Scavenging Air Pumps, No. shrunk Diameter shrunk Stroke shrunk Driven by shrunk  
Auxiliary Engines crank shafts, diameter as per Rule shrunk as fitted 105 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. shrunk Cubic capacity of each shrunk Internal diameter shrunk thickness shrunk  
Seamless, lap welded or riveted longitudinal joint shrunk Material shrunk Range of tensile strength shrunk Working pressure shrunk  
Starting Air Receivers, No. Four Total cubic capacity 20 1500 LITRES Internal diameter 20 740 mm thickness 20 16 mm  
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength shrunk Working pressure shrunk  
Actual shrunk by Rules shrunk Actual shrunk by Rules shrunk Actual 30 kg/cm<sup>2</sup>

List of  
33.  
4/9.  
33.

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 *16/3/36, 11-11-36* Receivers *7/6, 2/10, 28/8/36* Separate Tanks *2/9, 9/9, 8/10, 19/10/36*  
(If not, state date of approval)

Donkey Boilers *23-6-36* General Pumping Arrangements *14/9, 30/10, 23/1/37* Oil Fuel Burning Arrangements *22-1-37*

SPARE GEAR.

Has the spare gear required by the Rules been supplied? *yes*

State the principal additional spare gear supplied *Please see attached list.*

The foregoing is a correct description,

*Z. Adachi*

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- *3, 9, 15, 30/6, 6/7, 4, 11, 27, 31/8, 3, 6, 9, 23, 24/10, 14, 17, 28/11, 7, 9, 10, 17, 23/12/36, 8, 12, 13, 14, 16, 19, 21, 25/1, 6, 8, 9, 15, 17, 23, 24/2/37, 2, 6, 9, 10, 11, 17, 18, 19, 24, 29/3, 2, 5, 8, 10, 16, 24, 28/4, 3, 7, 10, 11, 15, 18, 19, 20, 25/27, 28, 31/5, 1, 2, 4, 8, 9, 10, 14, 15, 18, 19/6, 23, 25, 24/6, 2, 5, 6, 8, 14, 16, 29, 31/7, 18/8, 8/9, 11/9/37.*  
During erection on board vessel --  
Total No. of visits *103.*

Dates of Examination of principal parts—Cylinders *27/3, 7, 19/5/37* Covers *20/8/37* Pistons *25, 27/6/37* Rods *✓* Connecting rods *3, 9/6, 4/8/36*

Crank shaft *6-7-37* *Vulcan gear* *✓* Thrust shaft *✓* Intermediate shafts *6-7-37* Tube shaft *✓*

Screw shaft *6-7-37* Propeller *6-7-37* Stern tube *9/2, 6/7/37* Engine seatings *7-7-37* Engines holding down bolts *10/7, 20/7/37*

Completion of fitting sea connections *4-7-37* Completion of running arrangements *9-9-37* Engines tried under working conditions *16-9-37*

Crank shaft, Material *Steel* Identification Mark *LLOYD'S No. 1581 H.D.B. 24/12/36 LR* Flywheel shaft, Material *✓* Identification Mark *✓*  
Vulcan gear shafts, Material *Steel* Identification Mark *LLOYD'S No. 6117A+B* Intermediate shafts, Material *Steel* Identification Mark *LLOYD'S No 1796*  
Screw shaft, Material *Steel* Identification Mark *E.I. 6-3-37 LR* Identification Mark *SS. 22-4-37 LR*  
Screw shaft, Material *Steel* Identification Mark *LLOYD'S No 1680B* Identification Mark *K.K. 6-7-37 LR*

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 *✓* 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 *yes* If so, state name of vessel *NENETS. Report now forwarded.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey in accordance with the Rules & approved plans materials & workmanship good.*

*On completion of fitting out all tried under full working conditions with satisfactory results. Vulcan gear coupling is fitted to this engine and found in order when tested on trials*

*The machinery of this vessel is eligible in our opinion to be classed*  
*✓ HMC 10-37, oil engines.*

The amount of Entry Fee .. £ 3 : 0 :  
Special ... .. £ 57 : 16 :  
Donkey Boiler Fee ... .. £ 7 : 18 :  
Air receivers *10 10*  
Travelling Expenses (if any) *10 31 50*

When applied for, *19-10-37*

When received, *14/2/38*

Committee's Minute

Assigned

TUE. 7 DEC 1937

*J. Milolas & C. Kirigami*  
Engineer Surveyor to Lloyd's Register of Shipping.



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The Surveyors are requested not to write on or below the space for Committee's Minute.

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