

# REPORT ON OIL ENGINE MACHINERY.

No. 6658

-4 DEC 1929

Received at London Office

Date of writing Report 11-9 1929 When handed in at Local Office 11-9 1929 Port of Kobe  
No. in Survey held at Reg. Book. Jama Date, First Survey 24-6-29 Last Survey 31-8 1929  
Number of Visits 20

on the <sup>Single</sup> ~~Triple~~ Screw vessel "KONSAN MARU" Tons <sup>Gross</sup> ~~Net~~  
Built at Jama By whom built Mitsui Bussan Kaisha Yard No. 161 When built 1929  
Engines made at " By whom made " Engine No. 161 When made 1929  
Donkey Boiler made at Lincoln By whom made Babcock & Wilcox Boiler No. 4598 When made 1929  
Brake Horse Power 1400 Owners Dairen Kisen Kaisha Port belonging to Dairen  
Nom. Horse Power as per Rule 240 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes  
Trade for which vessel is intended Japan Chem

**OIL ENGINES, &c.**—Type of Engines Diesel Oil Engine (Frank Type) 2 or 4 stroke cycle 4 Single or double acting single  
Maximum pressure in cylinders 35 kg/cm<sup>2</sup> Diameter of cylinders 550 m/m Length of stroke 1000 m/m No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 730 m/m Is there a bearing between each crank Yes  
Revolutions per minute 140 TURNING Wheel dia. 1362 m/m Weight 435 kg. Means of ignition self Kind of fuel used oil fuel flash pt. above 150°F  
Crank Shaft, dia. of journals as per Rule approved Crank pin dia. 340 m/m Crank Webs Mid. length breadth 670 m/m Thickness parallel to axis 213 m/m  
as fitted 340 m/m M. d. length thickness 193 m/m Thickness around eye-hole 159 m/m  
Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule approved Thrust Shaft, diameter at collars as per Rule approved  
as fitted 9 1/2" Combined with crankshaft as fitted 340 m/m  
Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule approved Is the <sup>tube</sup> ~~screw~~ shaft fitted with a continuous liner Yes  
as fitted 10 5/8" 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  
haft no If so, state type Length of Bearing in Stern Bush next to and supporting propeller 4'-3"  
Propeller, dia. 11'-3" Pitch 8'-5" No. of blades 4 Material Mn. Br. whether Moveable no Total Developed Surface 38 sq. feet  
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Means of lubrication forced  
Thickness of cylinder liners 38 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with on-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. one centrifugal 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. two Diameter 150 m/m Stroke 175 m/m Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line { No. and Size one ballast 150 tons/hr., two main engine 15 tons/hr each, Ind. Bilge & Sanit. 20 tons/hr.  
How driven Main Engine + electric motors.  
Ballast Pumps, No. and size one 150 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size (2) 30 tons/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 4-3" in E.R. + 1-3" tunnel well + 1-6" in E.R. See list 25/9/29  
In Holds, &c. No 1 Hold 2-3" No 2 Hold 2-3" No 3 Hold 2-3"  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-6" ~~in E.R.~~, 1-3" ~~in E.R.~~ (both in centre of well)  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces  
fitted from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes (centre suction)  
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 Is the Blow Off Cock fitted with a spigot and brass covering plate Yes  
What pipes pass through the bunkers Yes How are they protected Yes  
What pipes pass through the deep tanks Yes Have they been tested as per Rule Yes  
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 above L.W.L.  
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. none No. of stages 2 Diameters 320 - 280 Stroke 170 Driven by  
Auxiliary Air Compressors, No. one No. of stages 2 Diameters 210 - 175 Stroke 216 Driven by Aux. Diesel Engines  
Small Auxiliary Air Compressors, No. one No. of stages 2 Diameters 90 - 35 Stroke 120 Driven by Hand  
Scavenging Air Pumps, No. Diameter Stroke Driven by  
Auxiliary Engines crank shafts, diameter as per Rule as fitted OK. See Gen. Box 367

**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 Yes What means are provided for cleaning their inner surfaces Steam hose  
Is there a drain arrangement fitted at the lowest part of each receiver Yes  
**STARTING** Air Receivers, No. one Cubic capacity of each 250 litres Internal diameter 380 m/m thickness See Gen. Rpts.  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules  
Starting Air Receivers, No. two Total cubic capacity 190 m<sup>3</sup> each Internal diameter 4'-1 1/2" thickness 3/4"  
Seamless, lap welded or riveted longitudinal joint riveted Material S.M. Steel Range of tensile strength 28/32 Working pressure by Rules 25 kg/cm<sup>2</sup>

SEE COPENHAGEN REPORTS ON B. + W. ENGS. NOS 1666 & 1688

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? no, see Gyms. Rpt.  
 PLANS. Are approved plans forwarded herewith for Shafting 14.12.28 Receivers 6.12.28 Separate Tanks   
 (If not, state date of approval)  
 Donkey Boiler  General Pumping Arrangements 9.9.29 Oil Fuel Burning Arrangements

SPARE GEAR  
Spare gear checked on board + found in order. (see list forwarded for Ship No 159)

The foregoing is a correct description,

FOUNTSUI BUSSAN KAISHA, LTD.  
 J. N. Kai  
 Ship Manager  
 SHIP BUILDING DEPARTMENT

Dates of Survey while building  
 During progress of work in shops -- 1929 June 24, 5, 6, 7 July 1, 2, 5, 8, 9, 12  
 During erection on board vessel -- July 17, 26-9, 30 Aug 2, 6, 14, 15, 26, 31  
 Total No. of visits 20

Dates of Examination of principal parts—Cylinders and Covers 24.6.29 Pistons 5.6.29 Rods  Connecting rods 18.1.29  
 Crank shaft 4.5.29 Flywheel shaft  Thrust shaft see crank shaft Intermediate shafts 1.3.29 Tube shaft   
 Screw shaft 6.3.29 Propeller 2.7.29 Stern tube 2.7.29 Engine seatings 9.4.29 Engines holding down bolts 26.4.29  
 Completion of fitting sea connections 2.7.29 Completion of pumping arrangements 14.8.29 Engines tried under working conditions 26.8.29

Crank shaft, Material steel Identification Mark 2007 AW 4.5.29 Flywheel shaft, Material  Identification Mark   
 Thrust shaft, Material Part of crankshaft Identification Mark  Intermediate shafts, Material steel Identification Marks 1866 AW. 1  
 Tube shaft, Material  Identification Mark  Screw shaft, Material steel Identification Mark 1868 AW. 6

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 no If so, have the requirements of the Rules been complied with   
 Is this machinery duplicate of a previous case Yes If so, state name of vessel m/v "SENSAN MARU"

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The main propelling machinery and starting air receivers have been constructed under Special Survey and comply with Rule requirements + approved plans. The materials + workmanship employed are good. The Auxiliary Machinery of this vessel has been installed under Special Survey. All machinery examined under working conditions + found Satisfactory. The Donkey Boiler has been securely installed in the upper part of the motor room + its Safety valve has been adjusted under Steam to 101 lb.  
In my opinion the vessel is now entitled to the notation in the Register Book of + LMC.8.29, T.S.(C.L) and records of D.B.(100 lbs) and "Oil Engines"

NB Copies of Crank, Screw + Intermediate Shaft forging certificates attached

The amount of Entry Fee ... ¥ 42 :  
 Special ... ¥ 1020 :  
 AIR RECEIVERS ... ¥ 65 :  
 Donkey Boiler Fee ...  
 Travelling Expenses (if any) £ see receipt :  
 Committee's Minute  
 Assigned

Clive Bell  
 Engineer Surveyor to Lloyd's Register of Shipping.  
 FR. 5 DEC 1930  
 TUE 13 JAN 1931  
 Lloyd's Register Foundation

For S.S.O.F. please see F.E. Rept m.v. "Sensan Maru" Kob 6536

WED. 11 JUN 1930  
 + L.M.C. 8.29 Oil Engines  
 Subject D.B. 100 lbs  
 FR. 10 OCT 1930