

REPORT ON OIL ENGINE MACHINERY. No. 6546. 12 AUG 1929

Received at London Office

Date of writing Report 11th July 1929 When handed in at Local Office 11th July 1929 Port of Kobe
Date, First Survey 30.5.29 Last Survey 15th July 1929
Number of Visits 9

Survey held at Tama
on the ^{Single} Screw vessel "SENSAN MARU"
Built at Tama By whom built Mitsui Bussan Kaisha Yard No. 160 When built 1929
Engines made at Copenhagen By whom made Burmeister & Wain Engine No. 1584 When made 1929
Monkey Boiler made at Tama By whom made Mitsui Bussan Kaisha Boiler No. 160 When made 1929
Indicated Horse Power 1400 Owners Dairen Kisen Kaisha Port belonging to Dairen
Net Horse Power as per Rule 270 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Type of Engines Solid injection trunk piston — 4 stroke cycle Single ~~double~~ acting
Maximum pressure in cylinders 35 kg/cm² No. of cylinders 6 Diameter of cylinders 550 mm No. of cranks 6 Length of stroke 1000 mm
Pitch of bearings, adjacent to the Crank, measured from inner edge to inner edge 710 mm Is there a bearing between each crank yes
Revolutions per minute 140 Flywheel dia. 1362 mm Weight 843 kg. Means of ignition self Kind of fuel used heavy oil
Crank Shaft, dia. of journals as per Rule 340 mm Crank pin dia. 340 mm Crank Webs Mid. length breadth 670 Kind of fuel used heavy oil
as fitted 340 mm Mid. length thickness 213 Thickness parallel to axis 213
Wheel Shafts, diameter as per Rule 9.43" Thrust Shaft, diameter at collars as per Rule 340 mm
as fitted 9.2" (PART OF CRANK SHAFT fitted) 340 mm
Propeller Shafts, diameter as per Rule 10.34" Is the screw shaft fitted with a continuous liner yes
as fitted 10.5/8" 1/2"

Cylinder Liners, thickness in way of bushes as per Rule 19/32" Thickness between bushes as per Rule 7/16"
as fitted 1/16" 3/4" 1/2" Is the after end of the liner made watertight in the
seller 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
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
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 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 declutched yes Means of lubrication
used Thickness of cylinder liners 38 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with
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
Cooling Water Pumps, No. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
Bilge Pumps fitted to the Main Engines, No. 2 Diameter 150 mm Stroke 175 mm Can one be overhauled while the other is at work yes
Pumps connected to the Main Bilge Line { No. and Size 1 Ballast 150 tons/hr. — 2 main engine 15 tons/hr each — Ind. Bilge & Sump 20 tons/hr
How driven main engine and electric motors

Bilge Pumps, No. and size one 150 tons/hr Lubricating Oil Pumps, including Spare Pump, No. and size (2) 30 tons/hr each
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 Engine and Boiler Room 4'-3" in E.R. and 1'-3" tunnel well
Holds, &c. No. 1 Hold 2'-3", No. 2 Hold 2'-3", No. 3 Hold 2'-3"

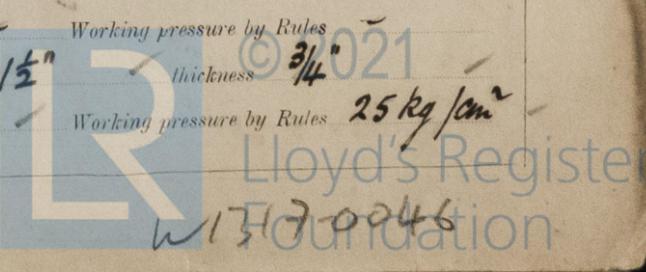
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-6" port, 1-3" Starboard
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Space
from easily accessible mud-boxes, placed above the level of the working 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 Is the Blow Off Cock fitted with a spigot and brass covering plate yes
Do all pipes pass through the bunkers How are they protected
Do all 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
apartment to another yes Is the Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from above L.W.L.
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 2 Diameters 320 x 280 Stroke 5" Driven by Aux. Diesel
Auxiliary Air Compressors, No. 3 No. of stages 2 Diameters 2 1/2 x 15/16 Stroke 5" Driven by Hand
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 2 1/2 x 15/16 Stroke 5" Driven by Hand
Scavenging Air Pumps, No. none Diameter Stroke Driven by
Auxiliary Engines crank shafts, diameter as per Rule one 2 cyl. & two 1 cyl. engines. Crank shaft dia. 170 mm each
as fitted
RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes What means are provided for cleaning their inner surfaces steam hose
Are the internal surfaces of the receivers examined yes Is there a drain arrangement fitted at the lowest part of each receiver yes
High Pressure Air Receivers, No. 2 Cubic capacity of each 190 cu. ft. Internal diameter 4'-1 1/2" thickness 3/4"
Seamless, lap welded or riveted longitudinal joint Material steel Range of tensile strength 28/32 Working pressure by Rules 25 kg/cm²

SEE COPENHAGEN REPORT
ON B. & W. ENG. NO. 1584

SEE COPENHAGEN REPORTS
ON B. & W. Aux. Eng. Nos 1586, 1663, 1665



IS A DONKEY BOILER FITTED? *Yes*
 HYDRAULIC TESTS:—

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

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
" " COVERS					
" " JACKETS					
" " PISTON WATER PASSAGES					
MAIN COMPRESSORS—1st STAGE					
" " 2nd "					
" " 3rd "					
AIR RECEIVERS—STARTING					
" " INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" " WATER JACKET					
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for Shafting *14.12.28* Receivers *6.12.28* Separate Tanks
 Donkey Boilers *21-12.28* General Pumping Arrangements *29.1.29* Oil Fuel Burning Arrangements

SPARE GEAR See separate list forwarded with report on sister vessel "Jensen"
 The spare gear supplied to ships 159-162 being the same in each case

The foregoing is a correct description.

Artas' Manufacturer.

Dates of Survey while building
 During progress of work in shops: *1929 March 20, 22, 25 April 15 May 22*
 During erection on board vessel: *1929 May 30 June 5, 13, 14, 19, 20, 21, 26 July 1*
 Total No. of visits: *9 (on board) 5 (in shops)*

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods
 Crank shaft Flywheel shaft Thrust shaft Intermediate shafts *12.2.29* Tube shaft
 Screw shaft *12.2.29* Propeller *22.5.29* Stern tube *8.5.29* Engine seatings *24.5.29* Engines holding down bolts *13.5.29*
 Completion of fitting sea connections *24.5.29* Completion of pumping arrangements *21.6.29* Engines tried under working conditions *21.6.29*
 Crank shaft, Material Identification Mark Flywheel shaft, Material Identification Mark
 Thrust shaft, Material Identification Mark Intermediate shafts, Material *Steel* Identification Marks *No 1823 A.W.*
 Tube shaft, Material Identification Mark Screw shaft, Material *Steel* Identification Mark *No 1824 "*

Is the flash point of the oil to be used over 150° F. *Yes*
 Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *m/v "Jensen Tharu"*

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The machinery of this vessel has been installed under Special Survey, examined under working condition + found satisfactory
 In my opinion the vessel is now entitled to the notation in the Register Book of +L.M.T.S.(C.L.) + the record of "Oil Engines"
 Copies of tail + intermediate shaft forging certificate attached.*

The amount of Entry Fee ... *£ 43* : - :
 Special AIR RESERVOIRS ... *£ 213* : - :
 Donkey Boiler Fee ... *£ 68* : - :
 Travelling Expenses (if any) £ : - :
 When applied for, *July 12th 1929*
 When received, *28.10.29*

Clive Bell
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI, 16 AUG 1929*

Assigned *Thurs 7.29* *cl*

Oil Engines DB-10016

