

REPORT ON OIL ENGINE MACHINERY.

No. 6536

Received at London Office

18 JUN 1929

Date of writing Report 24 May 1929 When handed in at Local Office

Port of Kobe

No. in Survey held at Reg. Book.

Date, First Survey 22ND JAN 1929 Last Survey 16TH May 1929

Number of Visits 14

on the ~~Single~~ ~~Double~~ ~~Triple~~ ~~Quadruple~~ Screw vessel

"Tensen Maru"

Tons Gross Net

Built at Yama

By whom built Mitsui Bussan Kaisha

Yard No. 159 When built 1929

Engines made at Copenhagen

By whom made Burmeister & Wain

Engine No. 1581 When made 1929

Donkey Boiler made at Yama

By whom made Mitsui Bussan Kaisha

Boiler No. 159 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

Use for which vessel is intended Japan China (coal)

ENGINES, &c.—Type of Engines SOLID INJECTION, TRUNK PISTON TYPE 2-4 stroke cycle Single or double acting

Mean pressure in cylinders 35 kg/cm² Diameter of cylinders 550 mm Length of stroke 1000 mm No. of cylinders 6 No. of cranks 6

Bearings, adjacent to the Crank, measured from inner edge to inner edge. Is there a bearing between each crank

Revolutions per minute 140 Flywheel dia. Weight Means of ignition self Kind of fuel used Heavy Oil

Shaft, dia. of journals as per Rule as fitted 340 mm Crank pin dia. 340 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis

Steel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 9.43" Thrust Shaft, diameter at collars as per Rule as fitted 340 mm

Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 10.37" Is the shaft fitted with a continuous liner yes

Cylinder Liners, thickness in way of bushes as per Rule as fitted 19/32" Thickness between bushes as per Rule as fitted 7/16" Is the after end of the liner made watertight in the stern boss yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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 the liners are fitted, is the shaft lapped or protected between the liners. 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. Bt. Whether Moveable No Total Developed Surface 38 sq. feet

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

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 insulating 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

Exhausting Water Pumps, No. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Pumps worked from the Main Engines, No. 2 Diameter 150 mm Stroke 145 mm 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 & San. 20 tons/hr.

How driven Main Engine & Electric motors

Exhausting Pumps, No. and size one, 150 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size two, 30 tons/hr. each

Independent means arranged for circulating water through the Oil Cooler yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

No. and size:—In Machinery Spaces 4-3" in E.R. and 1-3" tunnel well

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" port 1-3" starboard

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

Are the Bilge Suctions in the Machinery Spaces

In easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Sea Connections fitted direct on the skin of the ship yes

Are they fitted with Valves or Cocks both

Are they fitted 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

How are they protected

Have they been tested as per Rule

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

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

If the vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Air Compressors, No. none No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 3 No. of stages 2 Diameters Stroke Driven by AUX. DIESEL

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters Stroke Driven by HAND

Exhausting Air Pumps, No. none Diameter Stroke Driven by

Main Engines crank shafts, diameter as per Rule as fitted one 2 cyl & two 1 cyl. engines, crank shaft dia. 140 mm each

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

Internal surfaces of the receivers be examined yes

What means are provided for cleaning their inner surfaces steam hose

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

Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness

Is lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

Exhausting Air Receivers, No. 2 Total cubic capacity 190 c.ft. Internal diameter 4'-1 1/2" thickness 3/4"

Is lap welded or riveted longitudinal joint riveted Material steel Range of tensile strength 28/32 Working pressure by Rules 25 kg/cm²

SEE COPENHAGEN REPORT ON B.A.W.'s Eng. No. 1581

SEE COPENHAGEN REPORT ON B.A.W.'s Aux. Eng. Nos. 1582-3-6

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

PLANS. Are approved plans forwarded herewith for Shafting
(If not, state date of approval)

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

The foregoing is a correct description,

S. J. K. S.

Manufacturer.

Dates of Survey while building
During progress of work in shops - 1929 JAN. 22. FEB 2. 7. 13. ✓ MAR 4. 25.
During erection on board vessel - 1929 April 11, 12, 23 May 2, 6, 10, 11, 16
Total No. of visits 6 in shops 8 on board vessel

Dates of Examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓
Crank shaft ✓ Flywheel shaft ✓ Thrust shaft ✓ Intermediate shafts { 19-1-29 25-1-29 } Tube shaft ✓
Screw shaft 25-1-29 Propeller 25-2-29 Stern tube 25-2-29 Engine seatings 11-4-29 Engines holding down bolts 23-4-29
Completion of fitting sea connections 27-2-29 Completion of pumping arrangements 6-5-29 Engines tried under working conditions 11-5-29
Crank shaft, Material ✓ Identification Mark ✓ Flywheel shaft, Material ✓ Identification Mark
Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material steel Identification Marks LLOYD'S NO 144 LR. A.H. 25-1
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material steel Identification Mark LLOYD'S NO 144 LR. A.H. 25-1

Is the flash point of the oil to be used over 150° F. Yes

Is this machinery duplicate of a previous case no If so, state name of vessel

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 conditions and found satisfactory.

In our opinion the vessel is now entitled to the notation in the Register Book of L.M.C.-5-29 and the record of "OIL ENGINES" T.S.(C.L.)

Copies of Propeller & intermediate shaft forging certificates attached.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5-29. OIL ENGINES. 45C.S.A. 6cy. 21 5/8 - 29 3/8 DB. 100%.

27/6/29

The amount of Entry Fee ... £ 44 : - : When applied for
Special 1/5 FEE ... £ 214 : - : 25th May 1929
AIR RESERVOIRS
Donkey Boiler Fee ... £ 68 : - :
Travelling Expenses (if any) See full Rpt. : 26-8-29

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

Committee's Minute

Assigned

28 JUN 1929
Oil Engines DB-1001b



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