

Rpt. 4b

REPORT ON OIL ENGINE MACHINERY.

No. 7410.

Received at London Office

27 JUL 1931

Date of writing Report

When handed in at Local Office

8/7/31

Port of

Kobe

No. in Survey held at

Yama

Date, First Survey

30 May 1930

Last Survey

3 June

1931

Reg. Book.

Number of Visits

20

Single
on the Twin
Triple
Quadruple

Screw vessel

M.V. "SANSEI MARU"

Tons Gross 3234.31
Net 1820.48

Built at

Yama

By whom built

Hitachi Bussan Kaisha

Yard No. 185 When built 1931

Engines made at

Yama

By whom made

Hitachi Bussan Kaisha

Engine No. 185 When made 1931

Donkey Boilers made at

Sheffield

By whom made

Davy Bros. Ltd.

Boiler No. 3542 When made 11-1930

Brake Horse Power

1400

Owners

Daikin Kisen Kab. Kaisha

Port belonging to Daikin

Nom. Horse Power as per Rule

271.4

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which vessel is intended

Japan - China

215/8

393/8

L ENGINES, &c.—Type of Engines

Hitachi 8x6. Single piston

2 or 4 stroke cycle 4 Single or double acting Simple

Maximum pressure in cylinders

39 kg/cm²

Diameter of cylinders

550 mm

Length of stroke

1000 mm

No. of cylinders

6

No. of cranks

6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge

730 mm

Is there a bearing between each crank

Yes

Revolutions per minute

140

Rad. Flywheel Balancing weight

2.268 ft lbs

Flywheel dia.

7.7 tons

Means of ignition

Compression

Kind of fuel used

Heavy oil

Crank Shaft, dia. of journals

as per Rule 343 mm

as fitted 350 mm

Crank pin dia.

350 mm

Crank Webs

Mid. length breadth

shrink

Thickness parallel to axis

218 mm

Flywheel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule

as fitted

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the tube shaft fitted with a continuous liner

Yes.

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

Thickness between bushes

as per rule

as fitted

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

Yes

Shaft

If so, state type

Propeller, dia.

11'-2 1/2"

Pitch

8'-4 1/4"

No. of blades

4

Material

Brass

whether Moveable

No

Total Developed Surface

40

sq. feet

Method of reversing Engines

Direct

Is a governor or other arrangement fitted to prevent racing of the engine when declatched

Yes

Means of lubrication

Thinned 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

non-conducting material

Yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being siphoned back to the engine

Yes

Cooling Water Pumps, No.

1280 tons/h.

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.

2

Diameter

150 mm

Stroke

140 mm

Can one be overhauled while the other is at work

Yes

Pumps connected to the Main Bilge Line

No. and Size

2 20 tons

How driven

Electrically

10 150 tons

Ballast Pumps, No. and size

12 150 tons

Lubricating Oil Pumps, including Spare Pump, No. and size

2 230 tons/h.

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

126", 124 1/2", 22 3/4", 523"

In Holds, &c.

101, 223", 102, 223", 103, 223", Tunnel well 123"

126", 124 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Yes

Are the Bilge Suctions in the Machinery Spaces

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

Yes

Are the Bilge Suctions in the Machinery Spaces

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

Yes

How are they protected

What pipes pass through the deep tanks

Yes

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 E.R. 4th. 4th.

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.

Three

No. of stages

2

Diameters

280 & 320

Stroke

170 mm

Driven by

Aux. Diesel

Auxiliary Air Compressors, No.

Yes

No. of stages

Yes

Diameters

19 1/4 & 2 1/2"

Stroke

5"

Driven by

Hand

Small Auxiliary Air Compressors, No.

1

No. of stages

2

Diameters

Stroke

Driven by

Scavenging Air Pumps, No.

Yes

Diameter

Stroke

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

See separate report on Generator Set. 3 Feb 1931. 2 cy. 310-350

IR 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

Start up air - hand Re. spare air - hand Re.

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

Yes

High Pressure Air Receivers, No.

Yes

Cubic capacity of each

Internal diameter

thickness

Working pressure by Rules

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules

Starting Air Receivers, No.

2

Total cubic capacity

380 cu. ft.

Internal diameter

4'-1 1/2"

thickness

3/4"

Working pressure by Rules

517 1/2 psi

Seamless, lap welded or riveted longitudinal joint

T.R.L.

Material

H. Steel

Range of tensile strength

26-28 tons

Working pressure by Rules

517 1/2 psi

W1282-0130

IS A DONKEY BOILER FITTED?

yes yes

If so, is a report now forwarded

To: See Sheffield Rpt.

PLANS. Are approved plans forwarded herewith for Shafting

2-10-30

Receivers 26-9-30

Separate Tanks 30-12-30

Donkey Boilers at Sheffield

General Pumping Arrangements

3-9-30

Oil Fuel Burning Arrangements

15-10-30

SPARE GEAR

As per Rules. Checked & found satisfactory.

Herein Copies of Certificate for Forging.

Crank, Thrust & Tail shaft forging certificate enclosed with "Santo Malu" - Sister ship - Report No. 7387.

The foregoing is a correct description,

J. W. Kay

Manufacturer.

Dates of Survey while building
During progress of work in shops - 1930, May 30, Oct. 13, 14, Nov. 8, Dec. 2.
During erection on board vessel - 1931, Jan 13, 30, Mar 20, 30, Apr 3, 18, May 2, 14, 18, 30, June 2, 17, 24, 29, 30.
Total No. of visits 20

Dates of Examination of principal parts—Cylinders 14-5-31 Covers 14-5-31 Pistons 14-5-31 Rods 13-11-30
Crank shaft 10-3-31 Flywheel shaft 10-3-31 Thrust shaft 5-6-31 Intermediate shafts 7-1-31 Connecting rods 30-3-31
Screw shaft 4-5-31 Propeller 11-5-31 Stern tube 9-4-31 Engine seatings 3-4-31 Engines holding down bolts 13-6-31
Completion of fitting sea connections 14-5-31 Completion of pumping arrangements 22-6-31 Engines tried under working conditions 22-6-31

Crank shaft, Material Ingot steel Identification Mark B No 2996
Thrust shaft, Material Ingot steel Identification Mark B No 2995
Tube shaft, Material Ingot steel Identification Mark B No 2994
Intermediate shafts, Material Ingot steel Identification Marks See below
Screw shaft, Material Ingot steel Identification Mark B No 2994

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 Santo Malu

General Remarks (State quality of workmanship, opinions as to class, &c.)

Intermediate shaft marks:

LLOYD'S Nos. 713, 714, 715, 716, 717 M.K. 71-31 R

The machinery of this vessel has been constructed under special survey in accordance with the Rules & approved plans; the materials & workmanship are good, & on completion the machinery has been efficiently installed in the ship & tested under full working conditions, & in certificate, in my opinion, for classification with the bend of L.M.C. 6, 30.
T.S.(C.L) 6, 30. One D.B. 100 lbs.

The amount of Entry Fee ... £ 40
Special ... £ 986
Donkey Boiler Fee ... £ 63
Travelling Expenses (if any) £ (see Hull Rpt.)
When applied for, 6 July 1931
When received, 20/8/31

Committee's Minute FRI. 31 JUL 1931

Assigned

L.M.C. 6, 30
Oil Eng. C.L.
D.B. 100 lbs.

S. Simpson
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation