

## REPORT ON OIL ENGINE MACHINERY.

No. 6879.

24 APR 1930

Received at London Office

of writing Report

19

When handed in at Local Office

8-4-30

Port of

Kobe.

in Survey held at

Osaka

Date, First Survey

13<sup>th</sup> March 1929.

Last Survey

31 March 1930

Book.

Number of Visits

on the <sup>Single</sup>  
Twin  
<sup>Triple</sup>  
<sup>Quadruple</sup>

Screw vessel

"HEIYO MARU"

Tons { Gross 9815.69.  
Net

Built at

Osaka

By whom built

Osaka Iron Works

Yard No. 1127

When built 1930

Engines made at

Nagasaki

By whom made

Mitsubishi Zosen Kaisha

Engine No. 464

When made

Boilers made at

Osaka

By whom made

Osaka Iron Works

Boiler No. 1127

When made 1930

Horse Power

8000

Owners

Nippon Yusen Kaisha

Port belonging to

Tokyo

Horse Power as per Rule

2004

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Made for which vessel is intended

Ocean going

ENGINES, &amp;c.—Type of Engines Mitsubishi - Sulzer

2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders

Diameter of cylinders

Length of stroke

No. of cylinders

No. of cranks

No. of bearings, adjacent to the Crank, measured from inner edge to inner edge

Is there a bearing between each crank

Revolutions per minute

120

Flywheel dia.

Weight

Means of ignition

Kind of fuel used

Crank Shaft, dia. of journals

as per Rule

Crank pin dia.

Crank Webs

Mid. length breadth

Thickened parallel to axis

Wheel Shaft, diameter

as per Rule

Intermediate Shafts, diameter

as per Rule

Thrust Shaft, diameter at collars

as per Rule

Propeller Shaft, diameter

as per Rule

Screw Shaft, diameter

as per Rule

Is the { screw } shaft fitted with a continuous liner {

Cylinder Liners, thickness in way of bushes

as per Rule

Thickness between bushes

as per Rule

Is the after end of the liner made watertight in the

Cylinder 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

If two 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

If so, state type

Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia.

15'-0"

Pitch

16'-1 1/2"

No. of blades

4

Material C.S. Bars whether Moveable

Yes

Total Developed Surface

67.5 sq. feet

Method of reversing Engines

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

Means of lubrication

Thickness of cylinder liners

Are the cylinders fitted with safety valves

Are the exhaust pipes and silencers water cooled or lagged with

Conducting material

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

Suction Water Pumps, No.

6 (4 main, 2 auxiliary)

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Yes (Exhaust)

Suction Pumps worked from the Main Engines, No.

2

Diameter

Stroke

Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line

No. and Size

1 Bilge Pump 5 1/2" 1 Emergency Bilge Pump 5 1/2" Ballast Pump 7"

Pumps connected to the Main Bilge Line

How driven

All Electric Driven

Fast Pumps, No. and size

1-200 7/8"

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

2 Cog-wheel type

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 1/2"

1-5 1/2" Bilge pump, 1-5 1/2" Emergency drain 1-7" Ballast drain 2-2 1/2" Bilge hose 1-3 1/2" Tunnel well

Holds, &amp;c.

1-3 1/2" Chain locker

N-1 Hold

2-3 1/2" N-2 H.

2-3 1/2" N-3 H.

2-3 1/2" N-4 H.

2-3 1/2" N-5 H.

2-2 1/2" Shaft tunnel

2-2 1/2" Pipe passage

2-2 1/2" Gunter way out well

5-2 1/2" Cofferdams

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

2-5 1/2" 1-7"

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

Yes

Are the Bilge Suctions in the Machinery Spaces

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

Yes

All Sea Connections fitted direct on the skin of the ship

Yes

Are they fitted with Valves &amp; Cocks

Yes

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

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

Pipes pass through the bunkers

None

How are they protected

—

Pipes pass through the deep tanks

Oil fuel pipes

Have they been tested as per Rule

Yes

All 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

Department to another

Yes

Is the Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

Worked from

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

Yes

Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

All Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Suctioning Air Pumps, No.

Diameter

Stroke

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

210 7/8"

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

Yes

The internal surfaces of the receivers be examined

Yes

What means are provided for cleaning their inner surfaces

Manholes

Are a drain arrangement fitted at the lowest part of each receiver

Yes

Pressure Air Receivers, No.

12

Cubic capacity of each

800 Liters

Internal diameter

540 7/8"

Thickness

25 7/8"

Less, lap welded or riveted longitudinal joint

Seamless

Material

S.O. Steel

Range of tensile strength

28 to 35

Working pressure by Rules

75 1/2 lbs

Suctioning Air Receivers, No.

2

Total cubic capacity

16 cu. ft. each

Internal diameter

5'-9"

Thickness

1 1/8" - 1 1/4"

Working pressure by Rules

47.5

Less, lap welded or riveted longitudinal joint

Riveted

Material

Steel

Range of tensile strength

28-32

Working pressure by Rules

47.5

664711-009720-0124



IS A DONKEY BOILER FITTED? *yes*

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

PLANS. Are approved plans forwarded herewith for Shafting *TS. 12.1.29*  
(If not, state date of approval)

*14.12.29* Receivers

*16.1.29* Separate Tanks

*8.11.29*

Donkey Boiler

*26.2.29*

General Pumping Arrangements

*19.2.29*

Oil Fuel Burning Arrangements

SPARE GEAR

*See Nagasaki Report 1686*

The foregoing is a correct description,

*[Signature]* Manufacturer.

Dates of Survey while building  
(During progress of work in shops - -)  
(During erection on board vessel - -)  
Total No. of visits  
*1929 March 18 April 18 July 3<sup>rd</sup> 10<sup>th</sup> Aug 23<sup>rd</sup> Oct 7<sup>th</sup> 18<sup>th</sup> Nov 7<sup>th</sup> 14<sup>th</sup> Dec 3<sup>rd</sup> 11<sup>th</sup> 18<sup>th</sup>  
1930 Jan 9<sup>th</sup> 17<sup>th</sup> 21<sup>st</sup> 23<sup>rd</sup> 25<sup>th</sup> 29<sup>th</sup> Feb 4<sup>th</sup> 13<sup>th</sup> 15<sup>th</sup> 21<sup>st</sup> March 5<sup>th</sup> 14<sup>th</sup> 31<sup>st</sup>*

|  |   |  |   |   |
|--|---|--|---|---|
| Dates of Examination of principal parts—Cylinders          | Covers  | Pistons  | Rods  | Connecting rods                           |
| Crank shaft  | Flywheel shaft  | Thrust shaft   | Intermediate shafts                                     | Tube shaft                                |
| Screw shaft <i>3.7.29 14.9.29</i>                          | Propeller <i>19.5.29</i>                                | Stern tube <i>3.7.29 27.8.29</i>                             | Engine seatings <i>19.9.29</i>                          | Engines holding down bolts <i>7.11.29</i> |
| Completion of fitting sea connections                      | Completion of pumping arrangements <i>14.3.30</i>       | Engines tried under working conditions <i>21.2.30</i>        |   |   |
| Crank shaft, Material <input checked="" type="checkbox"/>  | Identification Mark <input checked="" type="checkbox"/> | Flywheel shaft, Material <input checked="" type="checkbox"/> | Identification Mark <input checked="" type="checkbox"/> |   |
| Thrust shaft, Material <input checked="" type="checkbox"/> | Identification Mark <input checked="" type="checkbox"/> | Intermediate shafts, Material <i>Steel</i>                   | Identification Marks <i>Steel</i>                       |   |
| Tube shaft, Material <input checked="" type="checkbox"/>   | Identification Mark <input checked="" type="checkbox"/> | Screw shaft, Material <i>Steel</i>                           | Identification Mark <i>Steel</i>                        |   |

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 ☒

Is this machinery duplicate of a previous case ☒

If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery has been installed under special survey in accordance with the requirements of the Rules and approved plans; the workmanship and materials are good and on completion was tested under full working conditions ahead & astern and found to be efficient and in our opinion is eligible for the record of +4 M.C. 3.30. T.S. (G). 3.30 2 D.B. 100 lb.*

The amount of Entry Fee ... £ *450*  
Special ... £ *126*  
Donkey Boiler Fee ... £  
Travelling Expenses (if any) £  
When applied for, *30/3/1930*  
When received, *31/3/1930*

Committee's Minute

Assigned

*[Signature]* Engineer Surveyor to Lloyd's Register of Shipping.

TUE 13 MAY 1930

TUE 28 OCT 1930

CERTIFICATE WRITTEN

WEL 8 APR 1930

FRI 17 APR 1930