

## REPORT ON OIL ENGINE MACHINERY.

No. 743

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Writing Report 2, June 1952 When handed in at Local Office 19 Port of Kobe, Japan  
Survey held at KOFJE Date, First Survey Jan. 25, '51 Last Survey Jan. 28 1952  
Number of Visits 117  
Single on the ~~Double~~ Triple Screw vessel M. V. "SEIHO MARU" Tons {Gross 13064.82  
Net 9368.29  
Kobe, Japan By whom built Kawasaki Dockyard Co., Ltd. Yard No. 912 When built 1, 1952  
made at Kobe, Japan By whom made Kawasaki Dockyard Co., Ltd. Engine No. 1134 When made 1, 52  
Boilers made at Kobe, Japan By whom made Kawasaki Dockyard Co., Ltd. Boiler No. 1177 (3068) When made 1, 52  
Horse Power 8000 Owners Iino Kaiun Co., Ltd. Port belonging to Tokyo  
Power as per Rule 2239.4/ Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.  
for which vessel is intended International

ENGINES, &c. — Type of Engines Kawasaki M.A.N. D8Z 72/120 R 2 or 4 stroke cycle 2 Single or double acting Double  
Mean pressure in cylinders 48 kgs/cm<sup>2</sup> Diameter of cylinders 720 m.m. Length of stroke 1,200 m.m. No. of cylinders 8 No. of cranks 8  
Indicated Pressure 5.6 kgs/cm<sup>2</sup> (Top) 45 kgs/cm<sup>2</sup> (Bot) Ahead Firing Order in Cylinders 1-8-2-4-6-3-5-7 (T) 6-3-5-7-1-8-2-4 (B) Span of bearings, adjacent to the crank, measured  
Inner edge to inner edge 1,100 mm. Is there a bearing between each crank Yes. Revolutions per minute 112  
Crank pin dia. 2,566 mm. Weight 8,840 kgs. Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 919 x 10<sup>7</sup> Means of ignition Compression Kind of fuel used Diesel Oil  
Solid forged dia. of journals as per Rule 487.3 mm Crank pin dia. 525 mm Crank webs Mid. length breadth 850 mm Thickness parallel to axis 330 mm  
Semi built dia. of journals as fitted 525 mm Crank webs Mid. length thickness 330 mm shrunk Thickness around eyehole 235 mm  
Steel Shaft, diameter as per Rule 487.3 mm Intermediate Shaft, diameter as per Rule 424.8 mm Thrust Shaft, diameter at collars as fitted 460 mm  
as fitted 525 mm as fitted 435 mm as per Rule 446.1 mm  
Shaft, diameter as per Rule 465.1 mm Is the ~~motor~~ screw shaft fitted with a continuous liner Yes.  
as fitted 475 mm  
Liners, thickness in way of bushes as per Rule 21.9 mm Thickness between bushes as per Rule 16.4 mm Is the after end of the liner made watertight in the  
as fitted 25 mm as fitted 19 mm  
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes.  
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  
tube shaft No If so, state type Length of bearing in Stern Bush next to and supporting propeller 2,000 mm.  
eller, dia. 5,800 mm. Pitch 4,310 mm. No. of blades 4 Material Manganese whether moveable Yes Total developed surface 11.72 sq. feet  
nt of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 3.40 x 10<sup>8</sup> Kind of damper, if fitted  
od of reversing Engines Direct, Self Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of  
ation Forced Thickness of cylinder liners 40 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled  
ugged with non-conducting material Yes. (both) If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned  
to the engine Cooling Water Pumps, No. 4 (2 fresh w. salt Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.  
e Pumps worked from the Main Engines, No. None Diameter Stroke Can one be overhauled while the other is at work  
ps connected to the Main Bilge Line {No. and size 1-25 T Bilge Pump 1-100 T General-service pump 1-100 T Fire & bilge pump  
How driven Steam driven Electric motor driven Electric motor driven  
ve cooling water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
gements 1-60 T in Aux. Pump Room  
last Pumps, No. and size 1-200 T in Engine Room Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1-5 T Service  
1-100 T (CS) 2-72 T Main  
two independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both main bilge pumps and auxiliary  
pumps, No. and size: In machinery spaces 8-90mm fore P & S., Mid. P & S., engine pit. fore & aft., fore coffer, and tunnel bilge well. In pump room 2x2 1/2" In PP.Rm. Cof. dm 2x2 1/2"  
holds, &c. 2-70mm Coffm. fore & aft. In Aux. PP.Rm. 2x2 1/2" In Aux. PP.Rm. Cof. Dam 1x2 1/2"  
ependent Power Pump Direct Suctions to the engine room bilges, No. and size 1-100 T Fire & Bilge pump, 1-200 T Ballast pump.  
all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes. Are the bilge suction pipes in the machinery spaces led from easily  
sible 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 or cocks Both Are they fixed  
ciently 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 below  
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.  
at pipes pass through the bunkers How are they protected  
at pipes pass through the deep tanks 1-3 1/2" Bilge Suction 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.  
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  
es, or from one compartment to another Yes. Is the shaft tunnel watertight Is it fitted with a watertight door No. worked from  
wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
in Air Compressors, No. No. of stages diameters stroke driven by  
Auxiliary Air Compressors, No. 2 No. of stages 3 diameters (350-100) stroke 240 driven by Aux Engine  
all Auxiliary Air Compressors, No. 1 No. of stages 2 diameters (350-290) stroke 4" (600 rpm) driven by Emerg. Engine  
at provision is made for first charging the air receivers Hand Air Compressor  
evenging Air Pumps, No. 2 - Roots blowers dia. 900 x 1460 (x4) R.P.M. 504 rpm driven by Main Engine  
Auxiliary Engines crank shafts, diameter as per Rule 167.8 mm. (as span 360 mm) No. 2 Position Port side.  
as fitted 185 mm (journal) 175 (Pin) Is a report sent herewith Yes.  
ve the auxiliary engines been constructed under special survey Yes.

010580-010588-0128



AIR RECEIVERS:—Have they been made under survey Yes.

State No. of report or certificate AR 252 AR 253

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 and cleaned Yes.

Is a drain fitted at the lowest part of each receiver Yes.

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

Seamless, welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules

Starting Air Receivers, No. 2 Total cubic capacity (2x15m<sup>3</sup>) 30 M<sup>3</sup> Internal diameter 1,850 mm. T/ " thickness End Shell 32mm

Seamless, welded or riveted longitudinal joint Riveted Material Boiler Steel Range of tensile strength 29.9-34.7 Working pressure by Rules Actual 30

IS A DONKEY BOILER FITTED Yes. If so, is a report now forwarded Yes. (B305 & B307 B327)

Is the donkey boiler intended to be used for domestic purposes only cargo pumps, ballast pump, bilge pump, windlass & domestic use.

PLANS. Are approved plans forwarded herewith for shafting 21 - 6 - 51 (London) Receivers 9 - 8 - 51 (Kobe) Separate fuel tanks

Donkey boilers 17 - 7 - 51 (Kobe) General pumping arrangements 3-12-51 (London) Pumping arrangements in machinery space 3-12-51 (L)

Oil fuel burning arrangements 3-12-51 (L)

Have Torsional Vibration characteristics been approved Yes. Date of approval 3 - 9 - 51 (London)

### SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.

State the principal additional spare gear supplied 1 screw shaft, 8 set of fuel needle valves, 16 set of piston rings for one pis

2 set of telescopic cooling pipes for one piston, 4 set of rubber rings for liner joints, 4 crosshead bearing bolts

4 set of packings for one piston rod, 4 main bearing bolts & nuts.

The foregoing is a correct description,

Takes. Morimoto

Manufacturer. Standing Director, Kawasaki Dockyard

Dates of Survey while building During progress of work in shops -- 1951, Jan. 25, 31, Feb. 17, 19, 26, Mar. 2, 5, 7, 10, 12, 14, 16, 19, 22, 23, 30, Apr. 2, 4, 5, 9, 11, 16, 18, 20, 23, 24, May 2, 7, 11, 14, 18, 21, 28, 30 June 1, 4, 8, 11, 13, 15, 18, 20, 22, 25, 27, 30, July 2, 6, 9, 11, 13, 16, 20, 23, 24, Aug. 3, 6, 10, 11, 13, 17, 20, 24, 27, 31, Sept. 3, 7, 10, 14, 17, 19, 20, 21, 24, 26, 28, Oct. 1, 3, 5, 8, 9, 10, 11, 12, 24, 29, Nov. 2, 7, 9, 10, 12, 14, 16, 22, 26, 27, 28, 30, Dec. 3, 5, 7, 14, 19, 24, 1952 Jan. 9  
During erection on board vessel -- 1951 Dec. 10, 27 1952 Jan. 23, 25, 28  
Total No. of visits 117

Dates of examination of principal parts—Cylinders 3-8-51 13-8-51 Covers 10-9-51 pistons 30-7-51, 20-8-51 Rods 30-7-51 Connecting rods 13-8-51

Crank shaft 11-5-51 Flywheel shaft 13-8-51 Thrust shaft 5-10-51 Intermediate shafts 5-10-51 Tube shaft -

Screw shaft 5-10-51 Propeller 10-10-51 Stern tube 8-10-51 Engine seatings 10-12-51 Engine holding down bolts 27-12-51

Completion of fitting sea connections 15-10-51 Completion of pumping arrangements 28-1-52 Engines tried under working conditions 23-1-52

Crank shaft, material Forged Steel Identification mark Y1315, Y1338, Y1294 Flywheel shaft, material Forged Steel Identification mark KW-F701

Thrust shaft, material Forged Steel Identification mark KW-F 835 Intermediate shafts, material Forged Steel Identification marks KW-F867

Tube shaft, material - Identification mark - Screw shaft, material Forged Steel Identification mark KW-F795

Identification marks on air receivers No. AR.252 LLOYD'S TEST WTP. 44 kgs., WP. 30 kgs. MM. LR. 24-8-51

No. AR.253 LLOYD'S TEST WTP. 44 kgs., WP. 30 kgs. MM. LR. 3-9-51

Welded receivers, state Makers' Name -

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.

Description of fire extinguishing apparatus fitted Steam Smothering in Engine Rm. & Boiler flat, Hose Couplings in Eng. Rm. & Boiler flat, fire Extinguishers 9.6 L x 6 & 150 L x 1 in Eng. Rm. & Boiler

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 -

If the notation for ice strengthening is desired, state whether the requirements in this respect have 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 of this vessel has been constructed

under Special Survey in accordance with the Rules, approved Plans and Secretary's letter

Materials were found to be sound and free from defects and the workmanship is good

The Machinery was examined under working condition during shop trial and comprehensive sea trials and found satisfactory.

In our opinion the Machinery of this vessel is worthy of record of + L.M.C. 1, 52, Oil engine D.B.S. 1, 52. W.P. 12.5 kg/cm<sup>2</sup> + 14.5 kg/cm<sup>2</sup>, T.S. (C.L.) 1, 52.

The amount of Entry Fee ... £1,000.00

When applied for 19

When received 19

Committee's Minute

Assigned + LMC 1, 52 Oil Eng.

TUES. 22 JUL 1952

Lloyd's Register Foundation