

REPORT ON OIL ENGINE MACHINERY.

No. FE-3026

Received at London Office 14 OCT 1955

London Office

Date of writing Report 19 When handed in at Local Office SEP. 26, 1955 19 Port of Kobe

No. in Survey held at Kobe, Japan Date, First Survey 17, Nov. 1954 Last Survey 20, July 1955 ~~1954~~

Reg. Book. Number of Visits

Single }
on the ~~Triple~~ Screw vessel M.V. "HIKAWA MARU" Tons { Gross 8092.32
Triple }
Quadruple }
Kobe, Japan By whom built Kawasaki Dockyard Co., Ltd., Kobe Yard No. 940 When built July, '55

Engines made at Kobe, Japan By whom made Kawasaki Dockyard Co., Ltd., Kobe Engine No. 1175 When made July '55

Donkey Boilers made at Kobe, Japan By whom made Kawasaki Dockyard Co., Ltd., Kobe Boiler No. 1200 When made July '55

Brake Horse Power 5490 Owners NIPPOH KAIUN K.K. & KAWASAKI KISEN K.K. Port belonging to Kobe, Japan

M.N. Power as per Rule 1098 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted

Trade for which vessel is intended Ocean going

OIL ENGINES, &c. — Type of Engines Kawasaki MAN K5Z 78/140 AS 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 52 Kg/cm² Diameter of cylinders 780 mm Length of stroke 1400 mm No. of cylinders 5 No. of cranks 5

Mean Indicated Pressure 7.22 Kg/cm² Ahead Firing Order in Cylinders 1-5-2-3-4 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1,040 m/m Is there a bearing between each crank Yes Revolutions per minute 114

Flywheel dia 2700 mm Weight 3040 Kgs Moment of inertia of flywheel ~~(Kgs. cm.²)~~ 11,120 Means of ignition Compression of fuel used Diesel oil

Crank Shaft, ~~as per Rule~~ dia. of journals as approved Crank pin dia 530 mm Crank webs Mid. length breadth 845 mm Thickness parallel to axis 315 mm
~~as fitted~~ 530 mm Mid. length thickness 315 mm shrunk Thickness around eyehole 242.5 mm

Flywheel Shaft, diameter as per Rule same as Intermediate Shaft, diameter as per Rule as approved Thrust Shaft, diameter at collars as fitted as approved
~~as fitted~~ thrust shaft 380 mm 500 mm

Tube Shaft, diameter as per Rule --- Screw Shaft, diameter as per Rule as approved Is the ~~tube~~ shaft fitted with a continuous liner { Yes }
~~as fitted~~ --- 440 mm

Bronze Liners, thickness in way of bushes as per Rule as approved Thickness between bushes as per Rule as approved 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 ---

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 tube shaft No. If so, state type --- Length of bearing in Stern Bush next to and supporting propeller 2,290 m/m

Propeller, dia. 5,100 mm Pitch 4,335 mm No. of blades 4 Material Mn Bc whether moveable Movable Total developed surface 8,52 meter sq. ~~sq. ft.~~

Moment of inertia of propeller ~~(Kgs. cm.²)~~ 148,300 Kind of damper, if fitted ---

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 45 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 syphoned back to the engine --- Cooling Water Pumps, No. 3 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. 1 Diameter 175 mm Stroke 80 mm Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and size Bilge p. 1, 20M³/H x 30M GSP.1, 200M³/H x 20M Ballast p. 1, 200 M³/H x 20M }
{ How driven Main engine Steam Steam }

Is the cooling water led to the bilges --- If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements ---

Ballast Pumps, No. and size 1, 200M³/H x 20M Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1, 50M³/H x 40M (Main)
2, 45M³/H x 30M (Aux.)

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 P. 1x2" Ag. 1x3" ; 2x2 1/2" M.E. pit F&A; 2x3" Tunnel F&A In pump room --- E.P.m. Flx 2
In holds, &c. D. 1x3", S. 1x3", P. 1x3", S. 1x3", plx 3", Slx 3", Plx 2", Slx 2", Dlx 3", Slx 3", Plx 3", Slx 3", Plx 3", Slx 3" Tank S.; x 2 1/2" Coff Alx 2

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 1x6" G.S. Pump, 1x6" Ballast pump, 1x9" Main cooling pump

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction in the machinery spaces led 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 Boiler Are they fixed efficiently 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

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 --- How are they protected ---

What 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 compartment to another Yes Is the shaft tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

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. --- No. of stages --- diameters --- stroke --- driven by ---

Auxiliary Air Compressors, No. 2 No. of stages 2 diameters L.P. 7" H.P. 6" stroke 5" driven by Aux. Engine

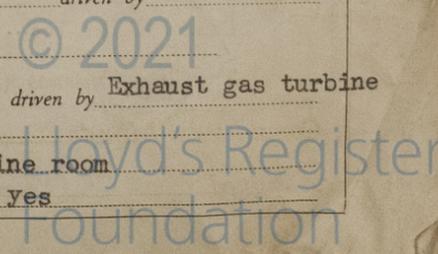
Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters L.P. 80 mm H.P. 35 mm stroke 75 mm driven by Kerosene Engine

What provision is made for first charging the air receivers small aux. air compressor stated above.

Scavenging Air Pumps, No. 2-Turbo blowers diameter FAN 650 mm TURBINE 756 mm RPM 5000 driven by Exhaust gas turbine

Auxiliary Engines crank shafts, diameter as per Rule as approved No. 2 Position port side in engine room

Have the auxiliary engines been constructed under special survey yes Is a report sent herewith yes



AIR RECEIVERS:—Have they been made under survey Yes State No. of report or certificate AR 623 & AR624

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 ---

Starting Air Receivers, No. 2 Total cubic capacity 7.5 M³x2 Internal diameter 1712 mm thickness shell 30mm, Head 30.2 Kg

Seamless, welded or riveted longitudinal joint Welded Material Boiler Steel Range of tensile strength 43.7-55.0 kg/mm² Working pressure Actual 25Kg/cm²

IS A DONKEY BOILER FITTED Yes If so, is a report now forwarded Yes

Is the donkey boiler intended to be used for domestic purposes only No.

PLANS. Are approved plans forwarded herewith for shafting 8-12-54 Receivers 23-5-1955 Separate fuel tanks 1-3-55

Donkey boilers 4-4-1955 General pumping arrangements 19-4-55 Pumping arrangements in machinery space 19-4-55

Oil fuel burning arrangements 8-5-55

Have Torsional Vibration characteristics been approved Yes Date of approval 8-8-55

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied ---

17/10/55
for 114 RPM
BSR 34/66 RPM

The foregoing is a correct description,

Saburo Yamazaki Manufacturer. Managing Director of Kawasaki Dockyard Co

Dates of Survey while building: During progress of work in shops -- Nov. 17, 19, 26, Dec. 3, 10, 17, 22, 27, 29, Jan. 5, 14, 17, 19, 20, 24, 26, 28, Feb. 2, 4, 7, 9, 11, 14, 16, 18, 21, 23, 25, Mar. 2, 4, 7, 9, 14, 16, 17, 18, 23, 25, 28, 29, 30, Apr. 1, 4, 6, 8, 9, 11, 13, 15, 16, 18, 22, 25, May 2, 9, 11, 16, 20, 31, June 1, 3, 8, 10, 17, 29, July 1, 20

Dates of examination of principal parts: Cylinders 155 23-3-55 Covers 8-4-55 pistons 28-5-55 Rods 1-4-55 Connecting rods 4-4-55

Crank shaft 24-1-55 Flywheel shaft --- Thrust shaft 24-1-55 Intermediate shafts 1-4-55 Tube shaft ---

Screw shaft 16-4-55 Propeller 16-4-55 Stern tube 15-4-55 Engine seatings 22-6-55 Engine holding down bolts 22-6-55

Completion of fitting sea connections 22-4-55 Completion of pumping arrangements 6-7-55 Engines tried under working conditions 15-6-55

Crank shaft, material Forged steel Identification mark Y5784 1s B Flywheel shaft, material, --- Identification mark ---

Thrust shaft, material Forged steel Identification mark Y5784 1s B Intermediate shafts, material Forged steel Identification marks KW-F2095, KW-F2096, KW-F2102

Tube shaft, material --- Identification mark --- Screw shaft, material Forged steel Identification mark KW-F 2093

Identification marks on air receivers: No. AR 623 LLOYD'S TEST KOB. W.T.P. 41 KG W.P. 25KG 8-6-55 DC

Welded receivers, state Makers' Name Kawasaki Dockyard Co., Ltd., Kobe, Japan.

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 CO2 piping from port 2nd deck boiler room; 2x4.5 ; 13x9 foam exteng insher in E.R.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Yes If so, have the requirements of the Rules been complied with Yes

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 Yes If so, state name of vessel ENG. NO. 1171 (MV "TATEKAWA MARU") NK

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 letters.

The Materials and workmanship are sound and good.

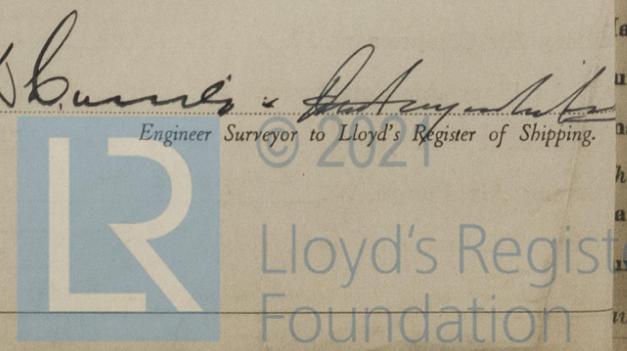
The Machinery has been examined under full working condition during shop and comprehensive trials and found satisfactory.

It is recommended that this machinery is eligible in our opinion to have a record of +LMC 7,5 DBS 7,55 W.P. 10kg/cm2.

The amount of Entry Fee ... 690.000 Special ... £630.000 Donkey Boiler Fee ... £ Travelling Expenses (if any) £ See R.H.!

When applied for AUG. - 3. 1955 When received 19

Committee's Minute Assigned +LMC 7.55 (with Tors. E. Exh. 1.) DB 142 lb. CL.



Certificate (if required) to be sent to Kobe

(The Suretyors are requested not to write on or below the space for Committee's Minute.)

Lloyd's Register Foundation