

REPORT ON OIL ENGINE MACHINERY.

No. 1770

9 DEC 1953

Received at London Office

18 DEC 1953

and a Li

4b.

Writing Report 19 When handed in at Local Office 19 Port of

Survey held at Kobe Date, First Survey 30th January, 1953 Last Survey 24th October 1953

Number of Visits 78

Single Triple Quadruple

Screw vessel M.V. "HIYEHARU MARU"

Kobe, Japan

By whom built Mitsubishi H.I. Reorganized Ltd., Kobe Shipyard & Engine Wks. Yard No. 855

By whom made - ditto - Engine No. 1375

By whom made - ditto - Boiler No. 325

Horse Power { Maximum 7500 ✓ Service 5625 Owners Shinnihon K.K.

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

for which vessel is intended Ocean going

ENGINES, &c. - Type of Engines Sulzer 10SD72

um pressure in cylinders 53 kg/cm² ✓ Diameter of cylinders 720mm ✓ Length of stroke 1250mm ✓ No. of cylinders 10 ✓ No. of cranks 10

Indicated Pressure 6.14 kgs/cm² ✓

a crank 934mm ✓ Is there a bearing between each crank Yes

Revolutions per minute { Maximum 130 ✓ Service 118

Span of bearings (i.e., distance between inner edges of bearings in

el dia. 2397.9mm Weight 1428kgs Moment of inertia of flywheel (lbs. in² or Kg. cm²) 5x10⁷ Means of ignition Compression Kind of fuel used Diesel oil

Solid forged Semi built All built

dia. of journals as per Rule 470.66mm as fitted 490mm ✓ Crank pin dia. 490mm ✓ Crank webs Mid. length breadth 846mm Mid. length thickness 295mm Thickness parallel to axis 295mm Thickness around eyehole 243mm

el Shaft, diameter as per Rule 470.66mm as fitted 490mm Intermediate Shafts, diameter as per Rule 429.09mm as fitted 440mm ✓ Thrust Shaft, diameter at collars as per Rule 391.587mm as fitted 490mm ✓

Shaft, diameter as per Rule 470.66mm as fitted 490mm Screw Shaft, diameter as per Rule 20.752mm as fitted 24mm

Liners, thickness in way of bushes as per Rule 24mm as fitted 20mm

er boss Yes ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -

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-

ve. - If two liners are fitted, is the shaft lapped or protected between the liners. - Is an approved Oil Gland fitted at the after

stern tube No ✓ If so, state type - Length of bearing in Stern Bush next to and supporting propeller 1800mm ✓

er, dia. 5400mm Pitch 3850mm No. of blades 4 Material Bronze whether moveable Movable Total developed surface 10.190 sq. feet

of inertia of propeller including entrained water (lbs. in² or Kg. cm²) 6.96 x 10⁸ Kind of damper, if fitted Not fitted

of reversing Engines Self direct Is a governor or other arrangement fitted to prevent racing of the engine Yes

ion forced Thickness of cylinder liners 45mm Are the cylinders fitted with safety valves Yes

Are the exhaust pipes and silencers water cooled

ed with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

the engine Cooling Water Pumps, No. and how driven 4 motor Working F.W. 2x4HP x 10T/h

60HP x 35 Spare F.W. - S.W. 1 x 4HP Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

umps worked from the Main Engines, No. and capacity No ✓ Can one be overhauled while the other is at work -

connected to the Main Bilge Line No. and capacity of each Bilge & Ballast P. 1x150T/h, Bilge & Sanitary P. 1x20T/h, Fire & G.S.P. 1x150T/h

How driven Electric Motor ✓

ooling 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

ments -

Pumps, No. and capacity 1 x 150T/h ✓ Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 x 130HP x 290T/h

independent means arranged for circulating water through the Oil Cooler Yes ✓ Branch Bilge Suctions as follows:-

size: In machinery spaces 6 x 2", 2 x 1/22", 2 x 3" ✓ In pump room

No. 1H No. 2H No. 3H No. 4H No. 5H No. 6H F.C.D. E.C.D. A.C.D. DP. T Stern Cant No. 4 T.D. Cargo

, & 1x3" ✓ 2x3" ✓ 2x3" ✓ 2x2 1/2" ✓ 2x2" ✓ 2x3" ✓ 1x2" ✓ 4x2" ✓ 1x2" ✓ 2x2 1/2" ✓ 2 x 2" ✓ 2 x 2 1/2" ✓ 2-2 1/2"

Bilge Suctions to the engine room bilges, No. and size 2 x 3" 1 1/2" 2 x 5"

he 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

e mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges.

ea Connections fitted direct on the skin of the Ship Yes ✓ Are they fitted with valves or cocks Yes ✓ Are they fixed

ly 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

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 ✓

ipes pass through the bunkers - How are they protected -

ipes pass through the deep tanks - Have they been tested as per Rule 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

7. or from one compartment to another Yes ✓ Is the shaft tunnel watertight Yes ✓ Is it fitted with a watertight door Yes ✓ worked from Up. Deck

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

ir Compressors, No. 2 ✓ No. of stages 2 diameters 305mm, stroke 180mm driven by main dynamo E.

y Air Compressors, No. - No. of stages - diameters 340mm stroke - driven by -

uxiliary Air Compressors, No. 1 No. of stages 2 diameters 30mm, 80mm stroke 75mm driven by Kerosine E.

ovision is made for first charging the air receivers hand starting / by above Kerosine Engine ✓

ing Air Pumps or Blowers, No. 10 ✓ How driven by main diesel engine

y Engines Have they been made under survey Yes ✓ Engine Nos. main dynamo E: 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 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2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684,

AIR RECEIVERS:—Have they been made under survey. Yes ✓ State No. of report or certificate. No. 496
State full details of safety devices. high lift spring loaded safety valve 30mm dia., 2mm lift ✓
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. 20.4M³ Internal diameter. 1.780mm ✓ thickness. —
Seamless, welded or riveted longitudinal joint. Welded ✓ Material boiler plate Range of tensile strength. 46-48 Working pressure. 30kgs/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. App. Date 6-4-53 Shafting 3-4-53 Receivers App. date 4-6-53 Separate fuel tank 23-4-53
Donkey boilers. 28-5-53 General pumping arrangements. 23-4-53 Pumping arrangements in machinery space. 23-4-53
Oil fuel burning arrangements. 21-11-52
Have Torsional Vibration characteristics been approved. Yes Date and particulars of approval. 23-5-53

SPARE GEAR.

Has the spare gear required by the Rules been supplied. Yes State if for "short voyages" only. No
State the principal additional spare gear supplied. 1 cylinder liner, 1 cylinder cover, 3 sets of piston packing
4 O.F. valves, 1 set of main bearing bolts and nuts, 2 propeller blades.

The foregoing is a correct description, for Murakami, Director & General Manager H. Ashima Manufacturer.

Dates of Survey while building
During progress of work in shops - - 1953:- Jan. 30, Feb. 10, 12, 17, 24, 28 Mar. 3, 5, 7, 10, 12, 14, 16, 17, 19, 24, 26, 31, Apr. 8, 9, 14, 16, 18, 21, 23, 25, 28, 30 May 4, 6, 7, 9, 12, 14, 16, 19, 21, 23, 26, 28, 30 June 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
During erection on board vessel - - 1953:- July 21, 27 Sept. 1 Oct. 1, 10, 12, 14, 16, 22, 24
Total No. of visits. 78

Dates of examination of principal parts—Cylinders 13-6-53 Covers 4-7-53 Pistons 4-6-53 Rods — Connecting rods 21-7-53
Crank shaft 4-6-53 Flywheel shaft and Thrust shaft 8-4-53 Intermediate shafts 16-7-53 Tube shaft —
Screw shaft 4-7-53 Propeller 16-7-53 Stern tube 20-7-53 Engine seatings 1-9-53 Engine holding down bolts 1-9-53
Completion of fitting sea connections 27-7-53 Completion of pumping arrangements 10-10-53 Engines tried under working conditions 20-10-53
Crank shaft, material forged steel Identification mark MM-CK106 AB Flywheel shaft, material forged steel Identification mark K-F1
Thrust shaft, material — Identification mark — Intermediate shafts, material forged steel Identification marks F-1
Tube shaft, material — Identification mark — Screw shaft, material forged steel Identification mark F-SF7
Identification marks on air receivers AR496 LLOYD'S TEST KOB WTP 48.5kg/cm², WP 30kgs/cm² LR AM 4-8-53
AR497 LLOYD'S TEST KOB WTP 48.5kg/cm², WP 30kgs/cm² LR AM 4-8-53

Welded receivers, state Makers' Name Mitsubishi Heavy Industries, reorganized Ltd., Kobe Shipyard & Engine

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

Full description of fire extinguishing apparatus fitted in machinery spaces. 21 CO₂ Extinguisher nozzles, 6x9 l. portable foam, 1x150 movable foaming, 0.3 l. sand box, 2x3" fire hose

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

What is the special notation desired. 7

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. M.V. "ASCHARU MARU"

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.) The Machinery of this vessel

been constructed under special Survey in accordance with the Rules, Approved Plans and Sectional drawings.

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

The machinery were examined under working condition during shop trial and comprehensive sea trial and found satisfactory.

In our opinion the Machinery of this vessel is worthy of record of +LMC 10.53 oil engine, 10.53 W.P. 9kgs per sq.cm. and T.S.(CL) 10.53.

The amount of Entry Fee ... £ 810.000 :
Special ... £ :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ 100.00 :
When applied for DEC. 10. 1953
When received 19

(Committee's Minute) TUESDAY 12 JAN 1954

Assigned +LMC 10.53 (oil Eng (Torsional End))

2 DB(WT) 128 lb.
CL.

Engineer Surveyor to Lloyd's Register of Shipping
Lloyd's Register Foundation