

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

AUG - 2 1938

of writing Report 25th May 1938 When handed in at Local Office 25th May 1938 Port of SHIMONOSEKI
 in Survey held at NAGASAKI Date, First Survey 2nd April 37 Last Survey 10th May 1938
 g. Book. (Number of Visits 104)
414 on the Single Screw Steamer "TENRYO MARU" ex "Bolshevik" Tons { Gross 2,193.50
 Net 1,156.41
 ult at Nagasaki By whom built Kawaminami Kogyo Kabushiki Kaisha Yard No. 106 When built 1938
Koyagijima Zosensho.
 Engines made at Nagasaki By whom made " " " Engine No. 106 When made 1938
 ers made at " " " " " Boiler No. 106 When made 1938
 istered Horse Power 1450 Owners Kawaminami Kogyo Kabushiki Kaisha Port belonging to Osaka
 Horse Power as per Rule 294 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 le for which Vessel is intended All Seas.

INES, &c.—Description of Engines Triple Expansion. Revs. per minute 90
 of Cylinders 480x810x1340 m/m Length of Stroke 990 m/m No. of Cylinders 3 No. of Cranks 3
 k shaft, dia. of journals as per Rule 268.9 m/m as fitted 278 m/m Crank pin dia. 285 m/m Crank webs Mid. length breadth 178 m/m Thickness parallel to axis /
 as fitted 278 m/m Mid. length thickness 334 m/m Thickness around eye-hole /
 mediate Shafts, diameter as per Rule 256.1 m/m as fitted 266 m/m Thrust shaft, diameter at collars as per Rule 268.9 m/m as fitted 278 m/m
 Shafts, diameter as per Rule / as fitted / Screw Shaft, diameter as per Rule 299.7 m/m as fitted 302 m/m Is the XX shaft fitted with a continuous liner Yes
 ze Liners, thickness in way of bushes as per Rule 16.7 m/m as fitted 22 m/m Thickness between bushes as per Rule 12.5 m/m as fitted 21 m/m Is the after end of the liner made watertight in the Yes
 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 Yes
 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
 o 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 Yes
 If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1230 m/m
 eller, dia. 4220 m/m Pitch 4450 m/m No. of Blades 4 Material C.S. whether Moveable Yes Total Developed Surface 54,464 M² sq. feet
 Pumps worked from the Main Engines, No. 2 Diameter 100 m/m Stroke 508 m/m Can one be overhauled while the other is at work Yes
 Pumps worked from the Main Engines, No. 2 Diameter 100 m/m Stroke 508 m/m Can one be overhauled while the other is at work Yes
 { No. and size 1 off, 305x215x455 m/m Pumps connected to the { No. and size 1 off, 100x580m/m: 1 off 305x203x254 m/m:
 { How driven Steam. Main Bilge Line { How driven Main Eng. direct & Steam driven.
 st Pumps, No. and size 1 off, 305x305x330 m/m Lubricating Oil Pumps, including Spare Pump, No. and size /
 o independent means arranged for circulating water through the Oil Cooler / Suctions, connected to both Main Bilge Pumps and Auxiliary
 Pumps;—In Engine and Boiler Room 4x65 m/m Bore in E.R: 4x65 m/m in B.R. 1x65 m/m in Shaft Tunnel.
 mp Room / In Holds, &c. 2 @ 65 m/m in No.1.2.3.4 & Crossbunker holds.

Water Circulating Pump Direct Bilge Suctions, No. and size 1 off, 180m/m Independent Power Pump Direct Suctions to the Engine Room Bilges,
 d size 1 off, 120 m/m. Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes
 Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes
 Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Yes Both.
 y fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Overboard Discharges above or below the deep water line Above
 y 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 / Have they been tested as per Rule /
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 rrangement 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
 ment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Bridge Dk and Eng. Room.

BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 429.08 Sq.M. 4617
 ceed Draft fitted Yes No. and Description of Boilers 2, Single ended Multitubular. Working Pressure 14 Kg/cm²

REPORT ON MAIN BOILERS NOW FORWARDED? YesDONKEY BOILER FITTED? NoIf so, is a report now forwarded? /onkey boiler intended to be used for domestic purposes only /NS. Are approved plans forwarded herewith for Shafting 4-2-37 Main Boilers 1-4-37 Auxiliary Boilers / Donkey Boilers /

(If not state date of approval)

aters 31-3-37General Pumping Arrangements 10-9-37Oil fuel Burning Piping Arrangements /

SPARE GEAR.

spare gear required by the Rules been supplied Yes.

principal additional spare gear supplied One set off water valves for Main boilers. 1 set of water valves for
t pump. 1 set of water valves for Fresh water pump. 1 set of water valves for Aux. feed pump.
escape valve spring. 1 MP escape valve spring. 1 LP escape valve spring. 1 HP. piston ring.
piston ring. 1 LP piston ring.

plete:— 2 c.s. propeller blades with one set of studs & nuts to be placed on board, Builders
states that these have been ordered and will be placed on board at first available
opportunity.

The foregoing is a correct description.

T. Shinohara

Manufacturer. General Manager



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008158-008167-0148

Dates of Survey while building
 During progress of work in shops - - - 1937:- April 2.4.13.14 May 14.17.24.29.31 June 3.9.16.18.19.25 July 3.5.6.9.10
 13.19.20.23.26.29.30 Aug 3.6.10.11.13.16.17.18.19 Sep 7.14.16.17.21.24.
 27.28.30 Oct 2.4.6.8.9.11.22.23 Nov 1.12.15.22.24.25.26.28.30 Dec 1.3.7.
 8.9.10.13.14.15.17.20.21.23.24.28.
 During erection on board vessel - - - 1938:- Jan 7.11.13.17.18.20.24.26.27.28 Feb 2.3.8.10.12.16.28 Mar 1.8.9.25.
 April 5.9.28 May 3.10.
 Total No. of visits 104.

Dates of Examination of principal parts—Cylinders 22 & 23-7-37 Slides 22-7-37 Covers 23-7-37
 Pistons 22-7-37 Piston Rods 10-8-37 Connecting rods 4-8-37
 Crank shaft 4-8-37 Thrust shaft 10-8-37 Intermediate shafts 17-8-37
 Tube shaft / Screw shaft 6-8-37 Propeller 17-8-37
 Stern tube 10-7-37 Engine and boiler seatings 1 to 7-9-37 Engines holding down bolts 24-11-37
 Completion of fitting sea connections 9-8-37
 Completion of pumping arrangements 27-1-38 Boilers fixed 23 & 26-8-37 Engines tried under steam 16-2-38 and 28-4-38.
 Main boiler safety valves adjusted 8-2-38 and 28-4-38. Thickness of adjusting washers Lock nuts fitted.
 Crank shaft material Steel Identification Mark LR No. 6155 HDB Thrust shaft material Steel Identification Mark LR No. 6325 HDB
 Intermediate shafts, material Steel Identification Marks See below Tube shaft, material / Identification Mark /
 Screw shaft, material Steel Identification Mark LR No. 6401 T.T. Steam Pipes, material Steel Test pressure 42 Kg/cm² Date of Test 10-12-37
 Is an installation fitted for burning oil fuel / Is the flash point of the oil to be used over 150°F. /
 Have the requirements of the Rules for the use of oil as fuel been complied with /
 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 Yes
 Is this machinery duplicate of a previous case No If so, state name of vessel No

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

Identification Marks for Tunnel Shaft:- LR No. 6398.6269.6268 & 6389, HDB.

The Machinery of this vessel has been constructed under Special survey in accordance with the Rules and Approved plans, the materials have been tested, found efficient, and the workmanship is good. It has been efficiently installed on board tried under full working conditions with satisfactory results. The Boiler & Superheater safety valves were adjusted & accumulation test carried out and found safety valves adequate in size and working satisfactorily.

The discharge valves fitted direct on the ship's side are not in accordance with the Rules being fitted with screw down valves at the request of the U.S.S.R. representative, but a relief valve has been fitted on the discharge side of all pumps to avoid increase of pressure in the discharge lines, also a relief valve has been fitted on the feed heater to ensure that an increase of the steam pressure in the heater will not be attended with serious consequences.

Upon completion of trials, Engines & Boilers were opened up, examined all over and found good.

This case is eligible in our opinion to have the record of **LMC 5-38** in the Register Bk.

Note:- The 2 spare cast steel propeller blades with 1 set of studs & nuts have not been placed on board, but they have been ordered and will be placed on board at some future date.

The amount of Entry Fee ... £ 4- 0- 0 :
 Special ... £ 86- 7- 6 :
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) £ :
 When applied for, 7. 7 19.38
 When received, 9. 12 19.38

Committee's Minute TUE. 9 AUG 1938

Assigned + LMC 5.38 subject F.D. CH

For Mr. H. J. Buchanan
 & Self. R. Lockhart
 Engineer Surveyor to Lloyd's Register of Shipping.



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