

# REPORT ON OIL ENGINE MACHINERY

No. 595-A

24 MAR 1952

Received at London Office

Report 11th June 1951 When handed in at Local Office 19 Port of Kobe & Yokohama

Survey held at Kobe, Japan and Manila Date, First Survey 27th January 1951 Last Survey 29th Oct. 1951 Number of Visits 45

Single Twin Screw vessel M.V. "BANDON I" Tons Gross 395.18 Net 245.21

Manila Japan By whom built Nanso Shipyard & Engine Works East Japan Heavy Industries, Ltd. Yard No. N/130 When built Oct. 1951

Kobe By whom made Hanshin Internal Combustion Engine Mfg. Co., Ltd. Engine No. 6E2053 When made May 1951

Boiler No. - When made -

250 X 2 (METRIC) Owners Thai Navigation Co., Ltd. Port belonging to Bangkok

58 X 2 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

45CSA NES, &c. Type of Engine 86EC Solid Injection Diesel 2 or 4 stroke cycle 4 Single or double acting Single

50 kg/cm² Pressure 6.5 kg/cm² Diameter of cylinders 250 mm Length of stroke 380 mm No. of cylinders 6 No. of cranks 6

Ahead Firing Order in Cylinders 1-5-3-6-2-4 1-4-2-6-3-5 Span of bearings, adjacent to the crank, measured to inner edge 324 mm Is there a bearing between each crank yes Revolutions per minute 380

350 mm Weight 560 Kgs Moment of inertia of flywheel 66.5 X 10⁴ Means of ignition Compression Kind of fuel used Diesel oil

as per Rule 145.5 mm dia. of journals as fitted 156 mm Crank pin dia 156 mm Crank webs Mid. length breadth 240 mm Thickness parallel to axis -

as per Rule - Intermediate Shaft, diameter as per Rule 93.44 mm Thrust Shaft, diameter at collars as fitted 160 mm

as per Rule - Screw Shaft, diameter as per Rule 107.44 mm Is the shaft fitted with a continuous liner no

as per Rule 10.7 mm Thickness between bushes as per Rule - Is the after end of the liner made watertight in the

Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner no

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-

If two liners are fitted, is the shaft lapped or protected between the liners yes Is an approved Oil Gland or other appliance fitted at the after

shaft no If so, state type - Length of bearing in Stern Bush next to and supporting propeller 500 mm

dia. 1400 mm Pitch 1030 mm No. of blades 4 Material MnBC whether moveable Solid Total developed surface 233.5 sq. feet

inertia of propeller 22.5 X 10⁴ Kind of damper, if fitted -

reversing Engines Clutch and Reverse Gear Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of

Thickness of cylinder liners - Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled

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

engine - Cooling Water Pumps, No. 4 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Pumps worked from the Main Engines, No. 1 each Eng. Diameter 80 mm Stroke 3.0 mm Can one be overhauled while the other is at work -

connected to the Main Bilge Line No. and size 2 X 2.5" x 80" 2 X 2.45" x 70" How driven by main engines 5 HP D.C. motors

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

Pumps, No. and size 1 X 5 HP motor (24.5") Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 X plunger pump X 1" driven by

dependent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both main bilge pumps and auxiliary

No. and size: In machinery spaces 4, 1 X 100", 1 X 70", 2 X 50" In pump room -

2 X 70" Direct Suctions to the engine room bilges, No. and size 3, 1 X 100", 1 X 50", 1 X 50" (hand pump)

bilge suction pipes in holds and tunnel well fitted with strum-boxes yes Are the bilge suction in the machinery spaces led from easily

strum-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Connections fitted direct on the skin of the Ship yes Are they fitted with valves or cocks yes Are they fixed

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

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 -

pass through the bunkers - How are they protected -

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

Accessories, 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

from one compartment to another yes Is the shaft tunnel watertight - Is it fitted with a watertight door - worked from -

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

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

auxiliary Air Compressors, No. 1 No. of stages 2 diameters 1.5", 4.25" stroke 3" driven by 50 HP Diesel Engine

Small Auxiliary Air Compressor provision is made for first charging the air receivers

Driving Air Pumps, No. - diameter - stroke - driven by -

auxiliary Engines crank shafts, diameter as per Rule 86.24" (50 HP) 101.2" (100 HP) No. 2, 1 X 50 HP, 1 X 100 HP Diesel Engines

as fitted 100" (50 HP) 115" (100 HP) Position 50 HP D.E. Port side, 100 HP D.E. Starboard side

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

003181-003190-0117

**AIR RECEIVERS:**—Have they been made under survey yes State No. of report or certificate M-3609, M

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 250 ltr x 2 Internal diameter 400 mm thickness 12

Seamless, welded or riveted longitudinal joint riveted Material steel plate Range of tensile strength 28-35 1/2" Working pressure —

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

Is the donkey boiler intended to be used for domestic purposes only —

**PLANS.** Are approved plans forwarded herewith for shafting 15-5-51 Receivers 8-6-51 Kobe Separate —

Donkey boilers — General pumping arrangements 15-9-51 Pumping arrangements in machinery space 15-5-51

Oil fuel burning arrangements — Have Torsional Vibration characteristics been approved yes Date of approval 15-5-51

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied yes

State the principal additional spare gear supplied 1 set cylinder cover complete, 1 cylinder, 1 set piston complete, gear lining with set screw, 2 sets main bearing metals & studs, 2 pinion gears for reversing 1 stern bevel gear, 1 bevel gear for governor.

Hanshin Internal Combustion Engine Mfg. Co., Ltd.

The foregoing is a correct description, S. Kawasaki (Technical Director) Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1951 - JAN. 27. FEB. 14. MAR. 3. 12. 13. 20. 23. 30 APR. 3. 9. 13. 17. 18. 20. 24. 26. 27. 28 MAY. 2. 7. 8. 9. 10. 14.  
{ During erection on board vessel -- } 1951 - July. 11, 12, Aug. 2, Sep. 9, 10, 11, 12, 13, 14, 15, 16, Oct. 17, 18, 19, 20, 21, 24, 25, 26, 27.  
Total No. of visits 26 (Kobe) 22 (Yokohama)

Dates of examination of principal parts — Cylinders 20-4-51 Covers 27-4-51 pistons 28-4-51 Rods — Connecting rods —

Crank shaft 3-4-51 Flywheel shaft — Thrust shaft — Intermediate shafts 12-7-51 Tube shaft —

Screw shaft 17-5-51 Propeller 17-5-51 Stern tube 8-5-51 Engine seatings 10-9-51 Engine holding down bolts 10-9-51

Completion of fitting sea connections 12-7-51 Completion of pumping arrangements 10-9-51 Engines tried under working conditions 15-5-51

Crank shaft, material O.H. Steel Identification mark 01-CK105 Flywheel shaft, material, — Identification mark —

Thrust shaft, material — Identification mark — Intermediate shafts, material O.H. Steel Identification marks HN-01-

Tube shaft, material — Identification mark — Screw shaft, material O.H. Steel Identification mark HN-01-

Identification marks on air receivers NO. AR226 LLOYD'S TEST WTP 48.5 KGS MS & 26-6-51 NO. AR227 LLOYD'S TEST WTP 48.5 KGS WP 30 KGS MS & 26-6-51 K.W.T. 70 LLOYD'S TEST WTP 14 KGS/CM<sup>2</sup> WP 7 KGS/CM<sup>2</sup> MH & 10-8-51

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 2 sets of portable foam type fire extinguisher in engine room.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo no 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 has been constructed in accordance with the Rules, Approved plans and Secretary's letter. The materials and workmanship are sound and good.

These Engines are intended for installation in Ship NO. NG 30 being built East Japan Heavy Industries, Ltd., Nanao Shipbuilding Works, Japan.

It is submitted that this machinery is eligible to be classed with this notation of + L.M.C when satisfactorily installed in the vessel.

These Engines have been satisfactorily installed in the vessel and tried under working conditions.

It is submitted that the machinery of this vessel is eligible to be classed with the notation of + L.M.C 10-51, TS 10-51 subject to the pumps on the bilge service being fitted with selfpriming device.

The amount of Entry Fee ... (£/39 : 4 s) charged £ 139.200.- When applied for 19  
Special ... £ : : When received 19  
Donkey Boiler Fee... £ : :  
Travelling Expenses (if any) (£ 8 : 4) charged £ 8,200.-

Committee's Minute TUES. 13 MAY 1952

Assigned + L.M.C 10.51 Oil Eng. Subject (with torsional endorsement)



Certificate (if required) to be sent to the Surveyors or requested not to write on or below the space for Committee's Minute.