

Rpt. 4b

Date of writing report 20th July, 1962

17 AUG 1962

Survey held at Hiroshima, Japan

Received London

Port SHIMONOSEKI

No. FE-2021

No. of visits In shops 33 On vessel

First date 3rd April, 1962 Last date 26th June, 1962

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. \_\_\_\_\_ Name Steel Twin Screw Motor Coastal Patrol Launch  
"ML(S) 813" Gross tons 110.51  
 Owners M.M. Dept. Government of the Union of Burma Managers \_\_\_\_\_ Port of Registry Rangoon  
 Hull built at Hiroshima, Japan By Kanawa Dockyard Co., Ltd. Yard No. K-129 Year 1962 Month 6  
 Main Engines made at Tokyo, Japan By Isuzu Motor Co., Ltd. and Converted for Marine Used by Tokyo Boat Inc. Eng. No. 500248, 500250 When 1962 2  
 Gearing made at Tokyo, Japan By Tokyo Boat Inc. Gear No. \_\_\_\_\_ When 1962 2  
 Aux./donkey boilers made at \_\_\_\_\_ By \_\_\_\_\_ Blr. Nos. \_\_\_\_\_ When \_\_\_\_\_  
 Machinery installed at Hiroshima, Japan By Kanawa Dockyard Co., Ltd. When 1962 6

Particulars of restricted service of ship, if limited for classification Burma Coastal Service  
 Particulars of vegetable or similar cargo oil notation, if required \_\_\_\_\_  
 If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3 \_\_\_\_\_  
 Is refrigerating machinery fitted? No If so, is it for cargo purposes? \_\_\_\_\_ Type of refrigerant \_\_\_\_\_  
 Is the refrigerating machinery compartment isolated from the propelling machinery space? \_\_\_\_\_ Is the refrigerated cargo installation intended to be classed? \_\_\_\_\_

F.E. FROM ACCTS.	23 AUG 1962
F.E. FROM ADMIN/F	10/9
PLANS RECD.	} 30/9
CERTS. RECD.	
TO RPTS. DEPT.	

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line should be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but all other relevant particulars must be given and the port and report number should be stated.

No. of main engines 2 No. of propellers 2 Brief description of propulsion system 2 sets Reciprocating oil engine coupled to line shaft by means of reverse/reduction gear.  
 MAIN RECIPROCATING ENGINES. Licence Name and Type No. Please see Yokohama Report No. 4273.

No. of cylinders per engine \_\_\_\_\_ Dia. of cylinders \_\_\_\_\_ stroke(s) \_\_\_\_\_ 2 or 4 stroke cycle \_\_\_\_\_ Single or double acting \_\_\_\_\_  
 Maximum BHP per engine approved for this installation \_\_\_\_\_ at \_\_\_\_\_ RPM of engine and \_\_\_\_\_ RPM of propeller.  
 Corresponding MIP \_\_\_\_\_ (For DA engines give MIP top & bottom) Maximum cylinder pressure \_\_\_\_\_ Machinery numeral \_\_\_\_\_  
 Are the cylinders arranged in Vee or other special formation? \_\_\_\_\_ If so, number of crankshafts per engine \_\_\_\_\_

TWO STROKE ENGINES. Is the engine of opposed piston type? \_\_\_\_\_ If so, how are upper pistons connected to crankshaft? \_\_\_\_\_  
 Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? \_\_\_\_\_ No. and type of mechanically driven scavenge pumps or blowers per engine and how driven \_\_\_\_\_  
 No. of exhaust gas driven scavenge blowers per engine \_\_\_\_\_ Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? \_\_\_\_\_  
 If a stand-by or emergency pump or blower is fitted, state how driven \_\_\_\_\_ No. of scavenge air coolers \_\_\_\_\_ Scavenge air pressure at full power \_\_\_\_\_  
 Are scavenge manifold explosion relief valves fitted? \_\_\_\_\_

TWO AND FOUR STROKE ENGINES. Is the engine supercharged? \_\_\_\_\_ Are the undersides of the pistons arranged as supercharge pumps? \_\_\_\_\_ No. of exhaust gas driven blowers per engine \_\_\_\_\_ No. of supercharge air coolers per engine \_\_\_\_\_ Supercharge air pressure \_\_\_\_\_ Can engine operate without supercharger? \_\_\_\_\_  
 No. of valves per cylinder: Fuel \_\_\_\_\_ Inlet \_\_\_\_\_ Exhaust \_\_\_\_\_ Starting \_\_\_\_\_ Safety \_\_\_\_\_  
 Material of cylinder covers \_\_\_\_\_ Material of piston crowns \_\_\_\_\_ Is the engine equipped to operate on heavy fuel oil? \_\_\_\_\_  
 Cooling medium for: Cylinders \_\_\_\_\_ Pistons \_\_\_\_\_ Fuel valves \_\_\_\_\_ Overall diameter of piston rod for double acting engines \_\_\_\_\_

Is the rod fitted with a sleeve? \_\_\_\_\_ Is welded construction employed for: Bedplate? \_\_\_\_\_ Frames? \_\_\_\_\_ Entablature? \_\_\_\_\_ Is the crankcase separated from the underside of pistons? \_\_\_\_\_ Is the engine of crosshead or trunk piston type? \_\_\_\_\_ Total internal volume of crankcase \_\_\_\_\_ No. and total area of explosion relief devices \_\_\_\_\_ Are flame guards or traps fitted to relief devices? \_\_\_\_\_ Is the crankcase readily accessible? \_\_\_\_\_ If not, must the engine be removed for overhaul of bearings, etc? \_\_\_\_\_ Is the engine secured directly to the tank top or to a built-up seating? Built up seating How is the engine started? \_\_\_\_\_  
 Can the engine be reversed? \_\_\_\_\_ If not, how is reversing obtained? \_\_\_\_\_  
 Has the engine been tested working in the shop? \_\_\_\_\_ How long at full power? \_\_\_\_\_

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 2-4-62 (London) Date barred speed range(s), if imposed for working propeller Not yet approved For spare propeller None Is a governor fitted? Yes Is a torsional vibration damper or detuner fitted to the shafting? No  
 Where positioned? \_\_\_\_\_ Type \_\_\_\_\_ No. of main bearings \_\_\_\_\_ Are main bearings of ball or roller type? \_\_\_\_\_ Distance between inner edges of bearings in way of crank(s) \_\_\_\_\_ Distance between centre lines of side cranks or eccentrics of opposed piston engines \_\_\_\_\_  
 Crankshaft type: Built, semi-built, solid. (State which) \_\_\_\_\_

Diameter of journals \_\_\_\_\_ Diameter of crankpins \_\_\_\_\_ Centre \_\_\_\_\_ Breadth of webs at mid-throw \_\_\_\_\_ Axial thickness of webs \_\_\_\_\_ Side \_\_\_\_\_ Pins \_\_\_\_\_ Minimum \_\_\_\_\_  
 Shrunken, radial thickness around eyeholes \_\_\_\_\_ Are dowel pins fitted? \_\_\_\_\_ Crankshaft material: Journals \_\_\_\_\_ Approved \_\_\_\_\_ Webs \_\_\_\_\_ Tensile strength \_\_\_\_\_  
 Diameter of flywheel \_\_\_\_\_ Weight \_\_\_\_\_ Are balance weights fitted? \_\_\_\_\_ Total weight \_\_\_\_\_ Radius of gyration \_\_\_\_\_  
 Diameter of flywheel shaft \_\_\_\_\_ Material \_\_\_\_\_ Minimum approved tensile strength \_\_\_\_\_  
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) \_\_\_\_\_



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**MAIN GAS TURBINES.** Name and Type No. \_\_\_\_\_

No. of sets of turbines \_\_\_\_\_ Open or closed cycle \_\_\_\_\_ BHP per set \_\_\_\_\_ at \_\_\_\_\_ RPM of output shaft \_\_\_\_\_

How is drive transmitted to propeller shaft? \_\_\_\_\_

ARRANGEMENT OF TURBINES. HP drives \_\_\_\_\_ at \_\_\_\_\_ RPM HP gas inlet temperature \_\_\_\_\_ pressure \_\_\_\_\_  
 (A small diagram should be attached showing gas cycle.)  
 IP drives \_\_\_\_\_ at \_\_\_\_\_ RPM IP gas inlet temperature \_\_\_\_\_ pressure \_\_\_\_\_  
 LP drives \_\_\_\_\_ at \_\_\_\_\_ RPM LP gas inlet temperature \_\_\_\_\_ pressure \_\_\_\_\_

No. of air compressors per set \_\_\_\_\_ Centrifugal or axial flow type? \_\_\_\_\_ Material of turbine blades \_\_\_\_\_ Material of compressor blades \_\_\_\_\_  
 No. of air coolers per set \_\_\_\_\_ No. of heat exchangers per set \_\_\_\_\_ How are turbines started? \_\_\_\_\_

How is reversing effected? \_\_\_\_\_ Are the turbines operated in conjunction with free piston gas generators? \_\_\_\_\_

Total No. of free piston gas generators \_\_\_\_\_ Diameter of working pistons \_\_\_\_\_ Diameter of compressor pistons \_\_\_\_\_ No. of double strokes per minute at full power \_\_\_\_\_ Gas delivery pressure \_\_\_\_\_ Gas delivery temperature \_\_\_\_\_ Have the turbines and attached equipment been tested working in the shop? \_\_\_\_\_ How long at full power? \_\_\_\_\_

**ELECTRIC PROPULSION** (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d. State Port and report No.)

No. of generators \_\_\_\_\_ KW per generator \_\_\_\_\_ at \_\_\_\_\_ RPM AC or DC? \_\_\_\_\_ Position \_\_\_\_\_

No. of propulsion motors \_\_\_\_\_ SHP per motor \_\_\_\_\_ at \_\_\_\_\_ RPM Position \_\_\_\_\_

How is power obtained for excitation of generators? \_\_\_\_\_ Motors? \_\_\_\_\_

**REDUCTION GEARING** (Reciprocating engines or gas turbines. Full particulars to be reported on Form 4e.) Port \_\_\_\_\_

Report No. \_\_\_\_\_

**CLUTCHES, FLEXIBLE COUPLINGS, ETC.** If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give brief description and, for clutches, state how operated \_\_\_\_\_

Cone and Multi Disc Clutch Operated by Hand.

Can the main engine be used for purposes other than propulsion when declutched? Yes If so, what? Charging of battery by main engine driven generator bilge suction by main engine driven bilge pump

**STRAIGHT SHAFTING.** Diameter of thrustshaft \_\_\_\_\_ Material \_\_\_\_\_ Minimum approved tensile strength \_\_\_\_\_

Shaft separate or integral with crank or wheel shaft? Integral Diameter of intermediate shaft 75 mm Material Forged steel

Minimum approved tensile strength 45 kg/cm<sup>2</sup> Diameter of screwshaft cone at large end 85 mm Is screwshaft fitted with a continuous liner? No

Diameter of tube shaft. (If these are separate shafts) \_\_\_\_\_ Is tube shaft fitted with a continuous liner in way of stern tube? No Thickness of screw/tube shaft liner at bearings \_\_\_\_\_ Thickness between bearings \_\_\_\_\_ How is the after end of the liner made watertight in the propeller boss? \_\_\_\_\_

Material of screw/tube shaft Stainless Steel Minimum approved tensile strength 52 kg/cm<sup>2</sup> Is an approved oil gland fitted? No If so, state type \_\_\_\_\_

Length of bearing next to and supporting propeller 340 mm Material of bearing Cutless Rubber In multiple screw vessels is the liner between stern tube and "A" bracket continuous? No If not, is the exposed length of shafting between liners readily visible in dry dock? Yes

**PROPELLER.** If of special design, state type \_\_\_\_\_ No Is it of reversible pitch type? \_\_\_\_\_ No

If so, is it of approved design? \_\_\_\_\_ State method of control \_\_\_\_\_

Propeller	Diameter	Pitch	Built or solid	Total developed surface	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry)	For Class 1 or 2 ice strengthening only			
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade
Working	840 mm	620 mm	Solid	0.3048 m <sup>2</sup>	4	28.9 mm	Mn BC	54.2 kg/mm <sup>2</sup>	16 kg/cm <sup>2</sup>				
Spare				NONE									

**AIR COMPRESSORS & RECEIVERS.** No. of main engine driven compressors per engine \_\_\_\_\_ None Can they be declutched? \_\_\_\_\_

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) \_\_\_\_\_ None

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) \_\_\_\_\_ None

How are receivers first charged? \_\_\_\_\_ Maximum working pressure of starting air system \_\_\_\_\_ Are the safety devices in accordance with the Rules? \_\_\_\_\_ Has the starting of the main engines been tested and found satisfactory? Yes 'by Battery)

**COOLERS.** No. of main engine fresh water coolers \_\_\_\_\_ No. of main engine lubricating oil coolers \_\_\_\_\_

**OIL FUEL TANKS.** No. and position of oil fuel settling or service tanks not forming part of hull structure \_\_\_\_\_ 1 - 720 Litre oil fuel settling tank, engine room top aft centre.

**MAIN ENGINE DRIVEN PUMPS** (No. and Purpose) SEE YOKOHAMA RPT No 4273

Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	Service for which each pump is connected to be marked thus X														
	SUCTION					DELIVERY									
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling
1 - G.S. Pump Ford in E.R. (Elect) 15 T/H x 30H	X	X				X									
F.O. transfer hand pump Port in E.R.				X									X		
Bilge hand pump port in E.R.		X										X			

**BILGE SUCTIONS.** No. and size in each hold, deep tank or pump room. Forward compartment 1-2", Aft compartment 2-2", Aft shower room (starboard side) 1-1 1/2"

No. and size connected to main bilge line in main engine room 1-2" In aux. engine room \_\_\_\_\_ In tunnel \_\_\_\_\_

1-1 1/2" (hand pump) Size and position of direct bilge suction in machinery spaces 1-2" forward in E.R.

Size and position of emergency bilge suction in machinery spaces 1-2" centre in E.R.

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No Do the piping arrangements comply with the Rules ~~Yes~~ Yes

**STEAM & OIL ENGINE AUXILIARIES**

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Port Forward in E.R.	Isuzu Model DL201-F4	Isuzu Motor Co., Ltd., Converted for Marine use by Tokyo Boat Inc.	Yokohama M-7879-A	7.5 KW D.C. Generator

Is electric current used for essential services at sea? No If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea \_\_\_\_\_

Is an electric generator driven by Main Engine? Yes (Battery Charging Generator)

**STEAM INSTALLATION.** No. of aux/donkey boilers burning oil fuel \_\_\_\_\_ None W.P. \_\_\_\_\_ Type \_\_\_\_\_

Is a superheater fitted? \_\_\_\_\_ Are these boilers also heated by exhaust gas? \_\_\_\_\_ No. of aux./donkey boilers heated by exhaust gas only? \_\_\_\_\_ W.P. \_\_\_\_\_

Type \_\_\_\_\_ Position \_\_\_\_\_ Can the exhaust heated boilers deliver steam directly to the steam range or do they operate only as economisers in conjunction with oil fired boilers? \_\_\_\_\_ Port and No. of report on aux./donkey boilers \_\_\_\_\_

Is steam essential for operation of the ship at sea? \_\_\_\_\_ Are any steam pipes over 3 ins. bore? \_\_\_\_\_ If so, what is their material? \_\_\_\_\_ For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? \_\_\_\_\_ No. of oil burning pressure units \_\_\_\_\_ No. of steam condensers \_\_\_\_\_ No. of Evaporators \_\_\_\_\_

**STEERING GEAR.** (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars including particulars of alternative means of steering) \_\_\_\_\_ One (1) set - cylinders, 2 plungers oil hydraulic hand operated type.

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements Water service comprizing 1 power pump in E.R., 1-10 gallon foam extinguisher, 2-2 gallon foam extinguishers, 3-carbon tetrachloride fire extinguisher and 2-36 liter san box in E.R.

Is the spare gear required by the Rules been supplied? Yes Has all the machinery been tried under full working conditions and found satisfactory? Yes Date and duration of full-over sea trials of main engines 5-6-62 4 hours

Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) \_\_\_\_\_ No

The foregoing description of the main engine and installation is correct and approved for use on this vessel (Strike out words not applicable.)

A. Yamase  
Kanawa Dockyard Co., Ltd.

GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The machinery of this ship has been installed in accordance with the requirements of the Society's Rules, approved plans and the Secretary's letters.

The materials and workmanship are sound and good.

The machinery was examined under working conditions during comprehensive sea trials and found satisfactory.

In our opinion this vessel's machinery is worthy to have record of LMC 6,62 and TSb 6,62 subject to the torsional vibration characteristics of dynamic system being approved and after the vessel has been unloaded in Burma the machinery installation to be submitted for General Examination and dock trial witnessed in order to ascertain that no damage has been sustained since delivery from Builders Yard.

NOTE: - Gear hammer or rough running was not observed during sea trial.

*J. Nonomura*  
*W.A. Cook*  
 Engineer Surveyor to Lloyd's Register of Shipping.  
 W.A. Cook, J. Nonomura

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS LLOYD'S SMK No. 11865-2 JN IR 22-5-62 LLOYD'S SMK No. 11874-4 JN IR 22-5-62

SCREW AND TUBE SHAFTS LLOYD'S SMK NO. 12125 JN IR 22-5-62 LLOYD'S SMK No. 12126 JN IR 22-5-62

PROPELLERS YOKOHAMA NO. K-5128 & 5129 RT 22-2-62

OTHER IMPORTANT ITEMS

SEE YOKOHAMA RPT No 4273

Is the installation a duplicate of a previous case? No If so, state name of vessel -

Date of approval of plans for crankshaft 12-2-62 Straight shafting 12-3-62 Gearing 19-3-62 Clutch 19-3-62

Separate oil fuel tanks 17-3-62 Pumping arrangements 23-2-62 Oil fuel arrangements 23-2-62

Cargo oil pumping arrangements None Air receivers None Aux./donkey boilers -

Dates of examination of principal parts:-

Fitting of stern tube 17-5-62 Fitting of propeller 30-5-62 Completion of sea connections 7-6-62 Alignment of crankshaft in main bearings -

Engine chocks & bolts 8-6-62 Alignment of gearing - Alignment of straight shafting 8-6-62 Testing of pumping arrangements 20-6-62

Oil fuel lines 5-6-62 Donkey boiler supports - Steering machinery 9-6-62 Windlass 9-6-62

Date of Committee FRIDAY 28 SEP 1962 Special Survey Fee

Decision LMC ES } 7.62  
 TS B }  
 Machinery & Elect. Installation £56-0-0  
 (Please refer to Kobe letter dated 1/8/62)  
 Expenses

