

Rpt. 4b

Date of writing report 25.5.57. Received London Port MANCHESTER. No. 17913  
 Survey held at MANCHESTER. No. of visits 5. In shop 10.4.57. 16.5.57  
 On vessel First date Last date 31 JUL 1957

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name High Commissioner Western Pacific. British Solomon Island Protectorate. Gross tons  
 Owners Managers Port of Registry Co. Year Month  
 Hull built at Hong Kong. By The Hong Kong Transportation Co. 168. When  
 Main Engines made at Patricroft. By L.Gardner & Sons Limited. P.113188. When 57. 5.  
 Order No. M.643/4. Eng. No. S.113189.  
 Gearing made at By  
 Donkey boilers made at By Blr. Nos. When  
 Machinery installed at By When

Particulars of restricted service of ship, if limited for classification  
 Particulars of vegetable or similar cargo oil notation, if required  
 Is ship to be classed for navigation in ice? Is ship intended to carry petroleum in bulk?  
 Is refrigerating machinery fitted? 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?

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 may 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 the port and report number should be stated.

No. of main engines 2. No. of propellers 2. Brief description of propulsion system 1.962:1 Reduction/Reverse Gear.  
 MAIN RECIPROCATING ENGINES. Licence Name and Type No. Gardner 8L3 Type Solid Injection Heavy Oil.  
 No. of cylinders per engine 8. Dia. of cylinders 5.1/2". stroke(s) 7.3/4". 2 or 4 stroke cycle 4. Single or double acting Single.  
 Maximum approved BHP per engine 144. at 900. RPM of engine and 458. RPM of propeller.  
 Corresponding MIP 120 psi. (For DA engines give MIP top & bottom) Maximum cylinder pressure 850 psi. Machinery numeral 29.  
 Are the cylinders arranged in Vee or other special formation? Vertical in Line. 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?  
 Is a stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full  
 Are scavenge manifold explosion relief valves fitted?

FOUR STROKE ENGINES. Is the engine supercharged? No. Are the undersides of the pistons arranged as supercharge pumps? No. No. of exhaust gas driven blowers per engine  
 None. No. of supercharge air coolers per engine None. Supercharge air pressure None. Can engine operate without supercharger?  
 One

SIX & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel Injector 1. Exhaust 1. Starting - Safety None.  
 Material of cylinder covers Cast Iron. Material of piston crowns Aluminium Alloy. Is the engine equipped to operate on heavy fuel oil? No.  
 Lubricating medium for: Cylinders Fresh Water. Pistons None. Fuel valves None. Overall diameter of piston rod for double acting engines  
 Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? No. Frames? No. Entablature? No. Is the crankcase separated from the  
 Underside of pistons? No. Is the engine of crosshead or trunk piston type? Trunk Piston. Total internal volume of crankcase No. and total area of explosion relief

Are flame guards or traps fitted to relief devices? Is the crankcase readily accessible? Yes. If not, must the engine be removed for  
 Removal of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? How is the engine started? Compressed Air.  
 Can the engine be directly reversed? No. If not, how is reversing obtained? Friction Clutches.

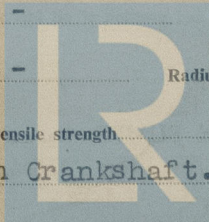
Has the engine been tested working in the shop? Yes. How long at full power? 4 Hours.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system State barred speed range(s), if imposed  
 Working propeller For spare propeller Is a governor fitted? Yes. Is a torsional vibration damper or detuner fitted to the shafting? Yes.  
 Are positioned? Forward End of Crankshaft. Spring Loaded. No. of main bearings 9 Are main bearings of ball or roller

? Plain. Distance between inner edges of bearings in way of crank(s) 6.15/16". Distance between centre lines of side cranks or eccentrics of opposed piston engines  
 Crankshaft type: Built, semi-built, solid. (State which) Solid.

Diameter of journals 4.1/8". Diameter of crankpins 3.5/8". Breadth of webs at mid-throw 5.1/2". Axial thickness of webs 1.11/16".  
 Pins Minimum  
 Crank, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Approved  
 Webs Tensile strength  
 Diameter of flywheel 29.1/2". Weight 586 lbs. Are balance weights fitted? No. Total weight Radius of gyration 12.35".

Diameter of flywheel shaft Material Minimum approved tensile strength  
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Flywheel Mounted on Crankshaft.



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MAIN GAS TURBINES.		Name and Type No.
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367		

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? .....

[illegible]



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.

This Main Propelling Machinery has been constructed under Special Survey of tested materials in accordance with the Secretary's letters, approved plans and requirements of the Rules, except that the torsional vibration characteristics have not been submitted for consideration. Materials and workmanship are good, and the engines when tested in the shop under full load conditions coupled through their respective 1.962 : 1 Reduction/Reverse Gear to a hydraulic dynamometer, showed satisfactory results. Crankcase explosion devices are not fitted.

In my opinion this main machinery is suitable for the purpose intended.

Attached hereto:-

Extract copy of Birmingham Report 10 Nos. C.12897, C.9687 & C.8681.

" " Sheff. Report A.R. Co. C.17936.  
 " " " " 6 No. F.67162 and F.67833.  
 " Barrow " Cert. Pump No. D.1848/9.  
 " Manchester Report 10 No. C.1088.

*R. J. Y.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

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

T = 7 off 17.4.57. R.J.Y. B'ham. Report 10 No. D.12897  
 R = 3 off " " " " No. C.9687.  
 N = 6 off " " " " No. C.8681.

CRANKSHAFT ~~ON REPORT~~ LLOYD'S 2403E. 20.3.57. R.J.Y. Sheff. Report 6 No. F.67833.  
 " 2154E. 10.4.57. R.J.Y. " " 6 No. F.67162.

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

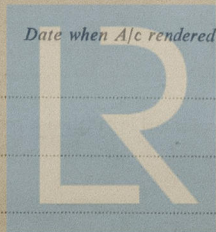
PROPELLERS

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? Yes. If so, state name of vessel M.S. "MELANESIAN" Hong Kong & Whampoa Ya No.930 Eng.No.106828/9, Manchester Repo No.17057.  
 Date of approval of plans for crankshaft 10.4.57. Straight shafting Gearing 10.4.57. Clutch 10.4.57.  
 Separate oil fuel tanks Pumping arrangements Oil fuel arrangements  
 Cargo oil pumping arrangements Air receivers Donkey boilers  
 Dates of examination of principal parts:-  
 Fitting of stern tube Fitting of propeller Completion of sea connections Alignment of crankshaft in main bearings  
 Engine checks & bolts Alignment of gearing Alignment of straight shafting Testing of pumping arrangements  
 Oil fuel lines Donkey boiler supports Steering machinery Windlass  
 Date of Committee TUESDAY 30 SEP 1958 + 50% £48 :15 :0d.  
 Decision See Rpt. 1 Special Survey Fee

Expenses

Date when A/c rendered



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