

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

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Date of writing Report 3<sup>rd</sup> Sept 1945 When handed in at Local Office 3<sup>rd</sup> Sept 1945 Port of Leith  
 No. in Survey held at Burntisland Date, First Survey 3-5-45 Last Survey 27<sup>th</sup> August 1945  
 Reg. Book 23498 on the S.S. "EMPIRE PACIFIC." (Number of Visits 18) Tons {Gross 984  
 Net 380  
 Built at Burntisland By whom built Burntisland S. B. Co. Ltd. Yard No. 298 When built 1945  
 Engines made at Sunderland By whom made J. Clark (1938) Ltd. Engine No. 1374 When made 1945  
 Boilers made at Sunderland By whom made J. Clark (1938) Ltd. Boiler No. 1374 When made 1945  
 Registered Horse Power \_\_\_\_\_ Owners Ministry of War Transport Port belonging to Burntisland  
 Nom. Horse Power as per Rule 162 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes  
 Trade for which vessel is intended Ocean-going

## ENGINES, &c.—Description of Engines

Dia. of Cylinders \_\_\_\_\_ Length of Stroke \_\_\_\_\_ No. of Cylinders \_\_\_\_\_ No. of Cranks \_\_\_\_\_ Revs. per minute \_\_\_\_\_  
 as per Rule \_\_\_\_\_ Crank pin dia. \_\_\_\_\_ Crank webs \_\_\_\_\_ Thickness parallel to axis \_\_\_\_\_  
 Crank shaft, dia. of journals \_\_\_\_\_ as fitted \_\_\_\_\_ Mid. length breadth \_\_\_\_\_ shrunk \_\_\_\_\_  
 as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Mid. length thickness \_\_\_\_\_ Thickness around eye-hole \_\_\_\_\_  
 Intermediate Shafts, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ Thrust shaft, diameter at collars \_\_\_\_\_ as per Rule \_\_\_\_\_  
 as fitted \_\_\_\_\_ as fitted \_\_\_\_\_  
 Tube Shafts, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ Screw Shaft, diameter \_\_\_\_\_ as per Rule \_\_\_\_\_ Is the { tube } shaft fitted with a continuous liner { \_\_\_\_\_  
 as fitted \_\_\_\_\_ as fitted \_\_\_\_\_ { screw }  
 Bronze Liners, thickness in way of bushes \_\_\_\_\_ as per Rule \_\_\_\_\_ Thickness between bushes \_\_\_\_\_ as per Rule \_\_\_\_\_ Is the after end of the liner made watertight in the  
 as fitted \_\_\_\_\_ as fitted \_\_\_\_\_ propeller boss \_\_\_\_\_  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner \_\_\_\_\_  
 If the 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 \_\_\_\_\_  
 If two 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  
 at \_\_\_\_\_ If so, state type \_\_\_\_\_ Length of Bearing in Stern Bush next to and supporting propeller \_\_\_\_\_  
 Propeller, dia. \_\_\_\_\_ Pitch \_\_\_\_\_ No. of Blades \_\_\_\_\_ Material \_\_\_\_\_ whether Moveable \_\_\_\_\_ Total Developed Surface \_\_\_\_\_ sq. feet  
 Feed Pumps worked from the Main Engines, No. \_\_\_\_\_ Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work \_\_\_\_\_  
 Bilge Pumps worked from the Main Engines, No. \_\_\_\_\_ Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work \_\_\_\_\_  
 Feed Pumps { No. and size \_\_\_\_\_ Pumps connected to the { No. and size Two - 7" x 8" x 10" ✓  
 { How driven \_\_\_\_\_ Main Bilge Line { How driven Steam ✓  
 Ballast Pumps, No. and size \_\_\_\_\_ Lubricating Oil Pumps, including Spare Pump, No. and size \_\_\_\_\_  
 Are two independent means arranged for circulating water through the Oil Cooler \_\_\_\_\_ ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary  
 Bilge Pumps: —In Engine and Boiler Room IP & IS = 2" dia. ✓ 1 - 2 1/2" aft end of engine room. ✓  
 In Pump Room \_\_\_\_\_ In Holds, &c. N=1 Hold IP & IS = 2 1/2" dia. ✓ N=2 Hold IP & IS = 3" dia. ✓  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size one at 6" dia. ✓ Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 No. and size one at 4 1/2" dia. ✓ Are all the Bilge Suction Pipes in holds \_\_\_\_\_ fitted with strum-boxes Yes ✓  
 Are the 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 ✓  
 Are all Sea Connections fitted direct on the skin of the ship Yes, except main injection overboard. ✓ Are they fitted with Valves or Cocks Both ✓  
 Are they 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 Below ✓  
 Are they 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 ✓  
 What Pipes pass through the bunkers \_\_\_\_\_ How are they protected \_\_\_\_\_  
 What pipes pass through the deep tanks \_\_\_\_\_ Have they been tested as per Rule \_\_\_\_\_  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes ✓  
 Is the 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 spaces, or from one compartment to another Yes ✓ Is the Shaft Tunnel watertight \_\_\_\_\_ Is it fitted with a watertight door \_\_\_\_\_ worked from \_\_\_\_\_

MAIN BOILERS, &c.—(Letter for record \_\_\_\_\_) Total Heating Surface of Boilers \_\_\_\_\_  
 Which Boilers are fitted with Forced Draft \_\_\_\_\_ Which Boilers are fitted with Superheaters \_\_\_\_\_  
 No. and Description of Boilers \_\_\_\_\_ Working Pressure \_\_\_\_\_

IS A REPORT ON MAIN BOILERS NOW FORWARDED? \_\_\_\_\_  
 IS A DONKEY BOILER FITTED? \_\_\_\_\_  
 Can the donkey boiler be used for domestic purposes only See Sunderland Rpt N=34201. \_\_\_\_\_

PLANS. Are approved plans forwarded herewith for Shafting \_\_\_\_\_ Main Boilers \_\_\_\_\_ Auxiliary Boilers \_\_\_\_\_ Donkey Boilers \_\_\_\_\_  
 (If not state date of approval) \_\_\_\_\_  
 Superheaters \_\_\_\_\_ General Pumping Arrangements \_\_\_\_\_ Oil fuel Burning Piping Arrangements \_\_\_\_\_

## SPARE GEAR.

Has the spare gear required by the Rules been supplied See Gen Rpt N=34201 \_\_\_\_\_  
 State the principal additional spare gear supplied \_\_\_\_\_

The foregoing is a correct description.

Manufacturer.



During progress of work in shops - -  
 Dates of Survey while building  
 During erection on board vessel - - -  
 Total No. of visits 18

2/5/45, 11/5/45, 22/5/45, <sup>25/5/45</sup>, 31/5/45, 5/6/45, 12/6/45, 22/6/45, 25/6/45, 3/7/45, 9/7/45, 11/7/45, 24/7/45  
 30/7/45, 1/8/45, 14/8/45, 26/8/45, 27/8/45

Dates of Examination of principal parts - Cylinders \_\_\_\_\_ Slides \_\_\_\_\_ Covers \_\_\_\_\_  
 Pistons \_\_\_\_\_ Piston Rods \_\_\_\_\_ Connecting rods \_\_\_\_\_  
 Crank shaft \_\_\_\_\_ Thrust shaft \_\_\_\_\_ Intermediate shafts \_\_\_\_\_  
 Tube shaft \_\_\_\_\_ Screw shaft in place 11-5-45 Propeller in place 11-5-45  
 Stern tube in place 11-5-45 Engine and boiler seatings 3-5-45 Engines holding down bolts 5-6-45  
 Completion of fitting sea connections 11-5-45 Boilers fixed 22-6-45 Engines tried under steam In dock 1-8-45 At Sea 26-8-45  
 Completion of pumping arrangements 1-8-45 Main boiler safety valves adjusted 1-8-45 Thickness of adjusting washers Port 13/16" P.V. 3/8" S.V. 3/8" Star 13/16" P.V. 13/32" S.V. 3/8"  
 Crank shaft material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Thrust shaft material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Intermediate shafts, material \_\_\_\_\_ Identification Marks \_\_\_\_\_ Tube shaft, material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Screw shaft, material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Steam Pipes, material Steel ✓ Test pressure 600 lbs ✓ Date of Test June 1945  
 Is an installation fitted for burning oil fuel yes ✓ Is the flash point of the oil to be used over 150° F. yes ✓  
 Have the requirements of the Rules for the use of oil as fuel been complied with yes ✓  
 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 yes ✓ If so, state name of vessel Empire Pallin

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery - Sunderland Report 71-34-20 has been efficiently fitted on board, the materials and workmanship being sound and good. On completion of the installing of the machinery, the safety valves of both boilers were adjusted under steam to 206 lbs, + the Main & Auxiliary machinery was tried out under working conditions, in dock + at sea, + it was found to function satisfactorily. This machinery, in our opinion, is in a safe working condition, + is eligible to be classed in the Register Book with the notation + L.M.C. 8-45, + the records of T.S.O.G. 2 S.B.(F.D), "fitted to burn Oil fuel 8-45"

Certificate to be sent to  
 (The Surveymen are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee	£	:	:	When applied for,
<sup>1/2</sup> Special	£	8	2	0
<sup>1/2</sup> Specification	£	2	0	6
Donkey Boiler Fee	£			
Travelling Expenses (if any)	£	1	9	3
				19

For J. F. Campbell & Self, John Houston  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_  
 Assigned \_\_\_\_\_  
 21 SEP 1945  
 + L.M.C. 8.45 J.D. 09

