

Report of Survey for Repairs, &c., of Engines and Boilers.

No. 20042

(Received at London Office) MAR 1 1940

Date of writing Report 29-2-40 When handed in at Local Office 29-2-40 Port of Leith.

Survey held at Leith Date, First Survey 4-12-39 Last Survey 24-2-1940 (No. of Visits 20)

09 on the Machinery of the ~~Wood, Iron or Steel~~ "EMPIRE WARRIOR" ex "BIANCA".

Gross 1306 Vessel built at Hamburg By whom Hamburg Elbe-Schiffbau Year. Month. 1921
 Net 721 Engines made at Oberhausen By whom Gute Hoffnungshütte When 1921
 Main Boilers 2 S.B. 1921 Owners Ministry of Shipping Owners' Address West Hartlepool
 Donkey Boilers 1 Pressure 180 lbs Managers Messrs Smith, Hogg & Co. Ltd. Port London Voyage
 Main Boilers 180 lbs Surveyed Afloat in Dry Dock since of Walls, Edinburgh, The Shore, Particulars of Classification (which must be inserted
 Donkey Boilers 1 (State name of Dock.) West Pier. West Pier. precisely as in Register Book & Supplements).

Report No. Port Particulars of Examination and Repairs (if any) L.M.C.

Medical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly the nature of Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and details being detailed in the body of the report, should be briefly summarised at the end of the report. State also the names and initials of any letters respecting this case.

Where cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined.

Has a damage report made by anyone else? If so, by whom? Yes.

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes.

Did the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? Yes.

Where was not done, state for what reasons? Yes.

What parts of the Boilers could not be thus thoroughly examined? Yes.

What special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler? Yes.

What was the latest date of internal examination of each boiler? 19/12/39 & 4/1/40 Present condition of funnel? Good.

Did the Surveyor examine the Safety Valves of the Main Boiler? Yes. To what pressure were they afterwards adjusted under steam? 180 lbs/sq".

Did the Surveyor examine the Safety Valves of Donkey Boiler? Yes. To what pressure were they afterwards adjusted under steam? Yes.

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes. and of the Donkey Boilers? Yes.

Did the Surveyor examine the drain plugs of the Main Boilers? Yes. and of the Donkey Boilers? Yes.

Did the Surveyor examine all the mountings of the Main Boilers? Yes. and of the Donkey Boilers? Yes.

Has the screw shaft now been drawn and examined? Yes. Is it fitted with continuous liner? Yes. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No.

Has the screw shaft now been changed? No. If so, state reasons. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No.

Has the screw shaft now fitted been previously used? No. Has it a continuous liner? No. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No.

What was the date of examination of Screw Shaft? 5-12-39 State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft? 1/8"

Did the Surveyor examine the generators, motors, switchgear, cables and fuses? Yes. Is electric light and/or power fitted? Yes.

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? Yes.

Where the Survey is not complete, state what arrangements have been made for its completion and what remains to be done. Complete.

Work done: Vessel placed in dry dock, the propeller, stern bush, sea connections and outside fastenings examined. The screw shaft drawn in, examined and found in order.

Main engine, cylinders, pistons, valves & chests, crank, thrust and tunnel shafting, all pumps & other with their valves & connections, condenser (tested), steering engine, windlass, pumping arrangement examined and found on placed in good order.

Electrical equipment and generator has been examined, overhauled, new cables fitted where necessary. Megger tested and found in order. It was afterwards examined under working conditions & found satisfactory. All main and auxiliary steam pipes were removed, tested by hydraulic pressure to 450 lbs/sq", placed in order and replaced.

(See continuation)

General Observations, Opinion, and Recommendation:— The machinery of this vessel is now in a safe working condition and eligible, in my opinion, for the record of L.M.C. 2-40

(State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c.; thus, for example, B.S. 9,11, B.&M.S. 9,11, L.M.C. 9,11, or L.M.C. 149 lb., F.D., &c.)

2-40

L.M.C. £20:0:0 Fees applied for 29/2/40

Repair Fee (if any) £5:5:0 Received by me, 28/5/40

John Houston J. Campbell Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 12 MAR 1940 See det. J.C. Rpt. 20041

Insert Character of Ship and Machinery precisely as in the Register Book

Is a Certificate required? If so, to be sent to



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W 34-0012112

S.S. "EMPIRE WARRIOR" ex "BIANCA"

Both boilers examined internally and externally with mountings, doors etc. and found on placed in a safe working condition. The scantlings of the boilers were checked with the plans and the parts mentioned on the London letter dated 15/12/39 were specially examined and found free from strain. On completion of the repairs the boilers were examined and tested by hydraulic pressure to 250 lbs/sq" and found tight, the Superheater Headers and Elements tested in place under hydraulic pressure of 400 lbs/sq". They were afterwards examined under steam and the safety valves adjusted to 180 lbs/sq".

Repairs: Sea connections cleaned and overhauled.

New piston rings fitted to H.P. cylinder.

Condenser cleaned out, slight corrosion on shell inside reinforced with electric welding, top rest of tubes and all ferrules renewed.

Main engine holding down bolts overhauled & hardened up.

Auxiliary pumps overhauled together with connections.

All pumping arrangement connections overhauled.

Steering engine overhauled, the worm on crankshaft renewed.

Winch overhauled & placed in good order.

Dynamo engine overhauled, the generator cleaned, overhauled and revarnished. The electrical circuits overhauled & renewed as necessary.

Port Boiler: All plain and 3 stay tubes renewed.

Seven combustion chamber stays renewed.

A number of combustion chamber stay nuts renewed.

Small sight holes & lower manholes built up with electric welding.

All mountings & superheater overhauled.

Starboard boiler: All plain and 10 stay tubes renewed.

Three combustion chamber stays renewed.

A number of combustion chamber stay nuts renewed.

Small sight holes & lower manholes built up with electric welding.

All mountings & superheater overhauled.

Customary adjustments made to machinery & minor repairs effected.

The pumping arrangements examined under working conditions.

The main engines examined under working conditions, ahead & astern and found in order.

J.H. / John Houston.



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