

# REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

(Received at London Office 27 FEB 1942)

Date of writing Report 23<sup>rd</sup> February 1942 When handed in at Local Office 23<sup>rd</sup> February 1942 Port of London

No. in Reg. Book 3641Y on the Machinery of the ~~SS Empire Explorer~~ Steel SS EMPIRE EXPLORER ex INANDA Date. First Survey 26/5/41 Last Survey 2<sup>nd</sup> February 1942 (No. of Visits forty)

Tonnage { Gross 4958 Net 3171 Vessel built at Newcastle By whom Swan Hunter & Wigham Richardson When 1925-5

Nominal Horse Power 606 Engines made at Newcastle By whom Walbroed Slipway 6<sup>th</sup> When 1925

No. of Main Boilers 2 DE Owners Ministry of War Transport Owners' Address (if not already recorded in Appendix to Register Book.)

No. of Aux Boilers 1 Managers J and I. Harrison Port London Voyage

Steam Pressure in Main Boilers 220lb Surveyed Afloat in Dry Dock Royal Albert Dock (State name of Dock.) King Geo. V. Dry Dock

in Aux Boilers 220lb

Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

CHARACTER for Special Survey Date of last Survey and of Periodical Surveys.	Years assigned or expired.	Machinery and Boiler Surveys (including date of N.B., if any).
*100A.1	3.40	* L.M.C. 7.37
		B.S. 7.39
		T.S.C.L. N. 7.37

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

(Periodical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly the cause 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 besides being detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case.)

In damage 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. Yes not required.

Was a damage report made by anyone else? If so, by whom? Yes Underwritten Surveyor

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 Aux Boiler separately and make a thorough examination at this time? Yes

If this was not done, state for what reasons

And what parts of the Boilers could not be thus thoroughly examined?

Also 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?

State latest date of internal examination of each boiler. All boilers 9<sup>th</sup> December 1941 Present condition of funnel(s) Good

Did the Surveyor examine the Safety Valves of the Main Boiler? Yes To what pressure were they afterwards adjusted under steam? 220lb/10"

Did the Surveyor examine the Safety Valves of the Aux Boiler? Yes To what pressure were they afterwards adjusted under steam? 220lb/10"

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

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

Did the Surveyor examine all the mountings of the Main Boilers? Yes and of the Aux 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 shaft now been changed? No If so, state reasons. Has the shaft now fitted been previously used? Yes Has it a continuous liner? Yes Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? Yes

State date of examination of Screw Shaft 15/8/41 State the distance between lignum vite or bearing metal of stern bush and top of after bearing of screw shaft 1/8"

Engine parts, when referred to by numbers, should be counted from forward. Is electric light and/or power fitted? Yes

If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? Yes

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? Yes - see Cont<sup>th</sup> sheet 2 & 3

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

Damage stated to have been sustained through enemy action on 7<sup>th</sup> September 1940 whilst in the Victoria Dock, London.

How done: Vessel placed in dry dock. Propeller, screw shaft (drawn in) sea connections, outside fastenings opened out, examined and found satisfactory.

Main engine cylinders, pistons, rods, slide valves, steam chests, crank, thrust and intermediate shafting, main and auxiliary condensers, pumps, pumping arrangement opened out, working parts examined and found in satisfactory condition. Main and auxiliary steam pipes tested to Rule requirements and found satisfactory.

Main and auxiliary boilers examined internally and externally, safety valves, mountings. (See following sheets)

General Observations, Opinion, and Recommendation: The machinery of this vessel is in good

(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. 140 lb., F.D., &c.)

and efficient condition and eligible in our opinion, to remain as classed with a fresh record of \*L.M.C. 2.42 and T.S.C.L. 5.41.

Survey Fee (per Section 29) L.M.C. £14.0.0 Fees applied for 27 FEB 1942

Special Damage Fee (if any) £15.15.0 Received by me, E. G. Davis, P. Miller, E. Crossley, R. Danyan

(per Section 29) See L.C. £26.5.0 Travelling expenses (if chargeable) £

Committee's Minute TUE. 28 APR 1942 Assigned + done 2.42

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation

W32-0005

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

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

3/5 "EMPIRE EXPLORER" ex "INANDA"

manhole doors and placed in order. All boilers later examined under steam and safety valves adjusted to 220 lbs/10".

On completion of repairs the main and auxiliary machinery examined under working conditions and found satisfactory.

Damage Repairs: Main engine cylinders and steam chests tested hydraulically and found satisfactory. All piston rods and slide valve spindles found pitted by water, skimmed up and rebushed. Crank, thrust and intermediate shafting lifted, bearings cleaned out and readjusted; spare screw shaft journal pitted, skimmed up. Main and auxiliary condensers tested and found satisfactory. Feed pump suction valve chest flange broken off, valve chest renewed, "T" piece in feed water line found defective renewed. Feed water heater supports and branch piece broken off shell, new cast iron supports and branch piece tap bolted to shell. Holding down bolts hardened up and renewed where broken. Various castings in main and auxiliary steam and water lines tested hydraulically and found satisfactory.

The Owners desire that the foregoing examination on account of damage be accepted as the L.M.C. due 7.41.

Wear and Tear Repairs: Toward and after (Weir) feed pump bucket rods found undersize and renewed. Ballast pump piston rod found worn and renewed. Main and auxiliary circulating pump impeller shafts found worn in way of bearings and renewed. General service pump piston rods found worn and renewed, glands rebushed, water end liners found worn, skimmed out and new buckets fitted. Feed water heater tubes found porous in way of internal manifold, tubes cropped and reexpanded; external manifold found patched on tube plate, patch removed, fracture cut out and oxy acetylene welded, tested hydraulically and found satisfactory, on reassembling the heater shell was tested hydraulically with satisfactory results.

When the main steam pipes were being tested hydraulically in place and the pressure about 350 lbs/10" the back end plate of the auxiliary boiler in way of the port combustion chamber failed in the knuckle and opened about 2", the port c.c. back plate set in about 3".

Repair: Back end plate cropped horizontally and vertically (5 feet by 6 feet from seam). A new plate being welded in internally and externally at butts. The c.c. back plate cropped and lower portion renewed together with 34 back stays and 1 lower main stay. On completion of repairs the boiler was again hydraulically tested to 220 lbs/10" with satisfactory results. (See attached blue print).

ELECTRICAL INSTALLATION. The electrical installation has been completely renewed, or overhauled, was examined and tested on completion and found to be satisfactory. A separate Fish Entry Electric light report (attached) has accordingly been completed.