

REPORT ON BOILERS.

Received at London Office 12 SEP 1946

Date of writing Report 6.9.46. 19 When handed in at Lloyd Office 6.9.46. 19 Port of GREENOCK.

No. in Surrey held at GREENOCK. Date, First Survey 1st AUG. Last Survey 31st AUG. 1946.

89217. on the STEEL S.S. "THE EMPEROR" (Number of Visits 5) (Gross 1058. Tons Net 584.)

Built at GREENOCK By whom built GEO. BROWN & CO. (MARINE) LTD. Yard No. 235. When built 1946.

Engines made at GREENOCK By whom made RANKIN & BLACKMORE LTD. Engine No. 511. When made 1946.

Boilers made at GREENOCK By whom made RANKIN & BLACKMORE LTD. Boiler No. 511. When made 1946.

Nominal Horse Power 130. Owners J. HAY & SONS. LTD. Port belonging to GLASGOW.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel (Letter for Record (S) ✓)

Total Heating Surface of Boilers 1953 sq ft ✓ Is forced draught fitted YES ✓ Coal or Oil fired COAL. ✓

No. and Description of Boilers ONE SINGLE ENDED MULTITUBULAR CYLINDRICAL BOILER. Working Pressure 200 lbs. sq. ✓

Tested by hydraulic pressure to 350 lbs. Date of test 24.7.45 No. of Certificate 7179 BY BRITISH CORPORATION Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 44.78 sq ft No. and Description of safety valves to each boiler 2 @ 2" DIA. COCKBURNS. I.H.L. TYPE.

Area of each set of valves per boiler {per Rule 11.35 sq ft = 5.675. as fitted 6.28 sq ft} Pressure to which they are adjusted 200 lbs. sq. Are they fitted with easing gear YES. ✓

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓

Smallest distance between boilers or uptakes and bunkers or woodwork NO BUNKERS IN WAY. Is oil fuel carried in the double bottom under boilers NO.

Smallest distance between shell of boiler and tank top plating BOILER OVER OPEN BILGE. Is the bottom of the boiler insulated YES.

Largest internal dia. of boilers 14'-6 7/16 ✓ Length 9'-7 1/2 ✓ Shell plates: Material S.M. STEEL ✓ Tensile strength 29/33 TONS. ✓

Thickness 1 9/32 ✓ Are the shell plates welded or flanged NO. ✓ Description of riveting: circ. seams {end D.R. ✓ inter. ✓

long. seams TR. ✓ Diameter of rivet holes in {circ. seams 1 3/8 ✓ long. seams 1 3/8 ✓ Pitch of rivets {3.68 ✓ 9 5/16 ✓

Percentage of strength of circ. end seams {plate 62.63%. rivets 49.95%. Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 85.2%. rivets 92.5%. combined 88.9%. ✓

Thickness of butt straps {outer 3/32 ✓ inner 1 9/32 ✓ No. and Description of Furnaces in each Boiler 3. CORRUGATED DEIGHTON SECTION.

Material S.M. STEEL. Tensile strength 26/30 TONS. ✓ Smallest outside diameter 3'-8 3/16.

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 1 9/32 ✓ bottom ✓ Description of longitudinal joint WELDED. ✓

Dimensions of stiffening rings on furnace or c.c. bottom NONE. ✓

End plates in steam space: Material S.M. STEEL. ✓ Tensile strength 26/30 TONS. ✓ Thickness 1 1/4 ✓ Pitch of stays 19 1/4 x 19 1/2 x 15 1/2

How are stays secured DOUBLE NUTS & WASHERS. ✓

Tube plates: Material {front S.M. STEEL. ✓ back S.M. STEEL. ✓ Tensile strength {26/30 TONS. ✓ Thickness {29/32 ✓ 25/32 ✓

Mean pitch of stay tubes in nests 12.07 MAX. Pitch across wide water spaces 14 1/4 x 8 3/4 ✓

Girders to combustion chamber tops: Material S.M. STEEL. ✓ Tensile strength 28/32 TONS. ✓ Depth and thickness of girder

at centre 8 3/8 by 7 1/8 x 2 ✓ Length as per Rule 2'-7 1/32 ✓ Distance apart 9 1/2 ✓ No. and pitch of stays

in each 3 @ 7 1/2 ✓ Combustion chamber plates: Material S.M. STEEL. ✓

Tensile strength 26/30 TONS. ✓ Thickness: Sides 23/32 ✓ Back 1 1/16 ✓ Top 23/32 ✓ Bottom 23/32 ✓

Pitch of stays to ditto: Sides 8 3/4 x 10 1/8 ✓ Back 9 1/4 x 8 1/4 ✓ Top 9 1/2 x 7 1/2 ✓ Are stays fitted with nuts or riveted over NUTS. ✓

Front plate at bottom: Material S.M. STEEL. ✓ Tensile strength 26/30 TONS. ✓

Thickness 29/32 ✓ Lower back plate: Material S.M. STEEL. ✓ Tensile strength 26/30 TONS. ✓ Thickness 3/64 ✓

Pitch of stays at wide water space 13 1/2 x 8 1/4 ✓ Are stays fitted with nuts or riveted over NUTS. ✓

Main stays: Material S.M. STEEL. ✓ Tensile strength 28/32 TONS. ✓

Diameter {At body of stay, 3/4 ✓ or Over threads ✓ No. of threads per inch 6. ✓

Screw stays: Material S.M. STEEL. ✓ Tensile strength 26/30 TONS. ✓

Diameter {At forward end, TOP & BACK 1 5/8 SIDES 1 3/4 ✓ or Over threads ✓ No. of threads per inch 9. ✓

Are the stays drilled at the outer ends No.

Margin stays: Diameter { At turned off part, Over threads 1 7/8 at corners 2"

No. of threads per inch 9.

Tubes: Material IRON LAP WELDED External diameter { Plain 3 1/4 Stay 3 1/4 Thickness { 8 W.G. INNER 1/4 MARGINAL 5/16 TOP CORNERS 3/8 No. of threads per inch 9.

Pitch of tubes 9" x 8 3/4"

Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 2' 10 1/2" x 2' 6 1/2" x 1 9/32 No. of rivets and diameter of rivet holes 32 - HOLES - 1 3/8"

Outer row rivet pitch at ends 9 5/16 Depth of flange if manhole flanged McNEIL TYPE DOOR Steam Dome: Material ✓

Tensile strength _____ Thickness of shell _____ Description of longitudinal joint _____

Diameter of rivet holes _____ Pitch of rivets _____ Percentage of strength of joint { Plate Rivets _____

Internal diameter _____ Thickness of crown _____ No. and diameter of stays _____ Inner radius of crown _____

How connected to shell _____ Size of doubling plate under dome _____ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell _____

Type of Superheater

Manufacturers of { Tubes Steel forgings Steel castings

Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____

Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and the boiler be worked separately _____

Area of each safety valve _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____

Pressure to which the safety valves are adjusted _____ Are the safety valves fitted with easing gear _____ Hydraulic test pressure: tubes _____ forgings and castings _____ and after assembly in place _____ Are drain cocks or valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

The foregoing is a correct description,

Manufacturer _____

Dates of Survey { During progress of work in shops - - - } No VISITS MADE DURING CONSTRUCTION Are the approved plans of boiler and superheater forwarded herewith ✓ (If not state date of approval.)

while building { During erection on board vessel - - - } 1ST AUG - 19 - 30 & 2 ON 31ST AUG. 1946 Total No. of visits 5.

Is this Boiler a duplicate of a previous case YES If so, state Vessel's name and Report No. "THE MONARCH" BUILT TO B.C. CLASS.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under the Survey of the British Corporation Register. Please refer to Machinery Report for recommendations. The foregoing particulars are submitted for the information of the Committee.

Survey Fee 9 Fee. Please inform To be charged later £ _____ When applied for, _____ 19 _____

Travelling Expenses (if any) £ _____ When received, _____ 19 _____

P. Stechmann
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 11 SEP 1946

Assigned SEE ACCOMPANYING MACHINERY REPORT

