

REPORT ON BOILERS.

No. 18605

Date of writing Report 2/12/1944 When handed in at Local Office 5/12/1944 Port of WEST HARTLEPOOLNo. in Survey held at WEST HARTLEPOOLDate, First Survey 27-3-44 Last Survey 25-11-1944on the STEEL SCREW STEAMER "EMPIRE BERMUDA"(Number of Visits 55) Tons { Gross 3538.56
Net 2257.09Master Built at WEST HARTLEPOOL By whom built WM. GRAY & CO. LTD. Yard No. 1173 When built 1944Engines made at WEST HARTLEPOOL By whom made CENTRAL MARINE ENGINE WORKS Engine No. 1173 When made 1944Boilers made at WEST HARTLEPOOL By whom made CENTRAL MARINE ENGINE WORKS Boiler No. 1173 When made 1944Nominal Horse Power 299 ✓ Owners MINISTRY OF WAR TRANSPORT Port belonging to WEST HARTLEPOOL

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs. Colvilles, Ltd. Glasgow. (Letter for Record S.✓)Total Heating Surface of Boilers 4546 sq ft ✓ Is forced draught fitted yes ✓ Coal or Oil fired Both ✓No. and Description of Boilers 2 Single ended, Multitubular ✓ Working Pressure 200 lbs ✓Tested by hydraulic pressure to 350 lbs Date of test 20th Sept 1944 No. of Certificate 4036 Can each boiler be worked separately yes ✓Area of Firegrate in each Boiler 46.2 sq ft No. and Description of safety valves to each boiler 2 Cockburn's High Lift. ✓Area of each set of valves per boiler { per Rule 6.03 sq ft
as fitted 7.95 sq ft } Pressure to which they are adjusted 200 lbs ✓ 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 18" Is oil fuel carried in the double bottom under boilers yes ✓Smallest distance between shell of boiler and tank top plating 3'-4 1/4" Is the bottom of the boiler insulated yes ✓Largest internal dia. of boilers 14'-0" Length 11'-9" Shell plates: Material Steel ✓ Tensile strength 29-33 tons ✓Thickness 1 5/16" Are the shell plates welded or flanged No. ✓ Description of riveting: circ. seams { end DR lap
inter. —long. seams TR Double butt straps Diameter of rivet holes in { circ. seams 1 5/16"
long. seams 1 5/16" } Pitch of rivets 9" ✓Percentage of strength of circ. end seams { plate 67.2
rivets 43.5 } Percentage of strength of circ. intermediate seam { plate —
rivets —Percentage of strength of longitudinal joint { plate 85.42
rivets 90.6 } Working pressure of shell by Rules —combined 88.95Thickness of butt straps { outer 1 5/16"
inner 1 1/16" } No. and Description of Furnaces in each Boiler 3 Corrugated, Dimpled section ✓Material Steel Tensile strength 26-30 tons ✓ Smallest outside diameter 3'-5 3/16" ✓Length of plain part { top —
bottom — } Thickness of plates { crown 1 3/32"
bottom 1 3/32" } Description of longitudinal joint Welded ✓Dimensions of stiffening rings on furnace or c.c. bottom — Working pressure of furnace by Rules —End plates in steam space: Material Steel ✓ Tensile strength 26-30 tons ✓ Thickness 1 3/32" ✓ Pitch of stays 19 3/8" x 19 3/4" ✓How are stays secured Double nut ✓ Working pressure by Rules —Tube plates: Material { front Steel
back Steel } Tensile strength { 26-30 tons
26-30 tons } Thickness { 2 3/32"
1 3/16" } ✓Mean pitch of stay tubes in nests 12 3/8" x 8 1/2" Pitch across wide water spaces 14" ✓ Working pressure { front —
back —Girders to combustion chamber tops: Material Steel ✓ Tensile strength 28-32 tons ✓ Depth and thickness of girderat centre 7 3/4" x 1 3/4" 2-8 plate Length as per Rule 2'-7 1/2" ✓ Distance apart 9" ✓ No. and pitch of staysin each 2 @ 10" ✓ Working pressure by Rules — Combustion chamber plates: Material Steel ✓Tensile strength 26-30 tons ✓ Thickness: Sides 2 3/32" ✓ Back 1 1/16" ✓ Top 2 3/32" ✓ Bottom 2 3/32" ✓Pitch of stays to ditto: Sides 10 3/8" x 8 1/2" Back 9 3/8" x 8 3/4" Top 10" x 9" ✓ Are stays fitted with nuts or riveted over Nuts ✓Working pressure by Rules — Front plate at bottom: Material Steel ✓ Tensile strength 26-30 tons ✓Thickness 2 3/32" ✓ Lower back plate: Material Steel ✓ Tensile strength 26-30 tons ✓ Thickness 7/8" ✓Pitch of stays at wide water space 14 3/8" x 9 3/8" ✓ Are stays fitted with nuts or riveted over Nuts ✓Working Pressure — Main stays: Material Steel ✓ Tensile strength 28-32 tons ✓Diameter { At body of stay, —
or — } No. of threads per inch 6 ✓ Area supported by each stayWorking pressure by Rules — Screw stays: Material Steel ✓ Tensile strength 26-30 tons ✓Diameter { At turned off part, —
or — } No. of threads per inch 9 ✓ Area supported by each stayDiameter { Over threads 1 3/4"
or — } — ✓

Working pressure by Rules Are the stays drilled at the outer ends ☒ No Margin stays: Diameter { At turned off part, or Over threads 2" ✓
No. of threads per inch 9 ✓ Area supported by each stay Working pressure by Rules
Tubes: Material HRWS ✓ External diameter { Plain 3" ✓ Stay 3" ✓ Thickness { 3/16" 1/4" 5/16" No. of threads per inch 9. ✓
Pitch of tubes 4 1/4" x 4 1/8" ✓ Working pressure by Rules Manhole compensation: Size of opening in
shell plate None. Section of compensating ring No. of rivets and diameter of rivet holes
Outer row rivet pitch at ends Depth of flange if manhole flanged 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 Working pressure by Rules Thickness of crown No. and diameter of
stays Inner radius of crown Working pressure by Rules
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 Superheater 2nd. ✓ Manufacturers of { Tubes Steel forgings Steel castings
Number of elements 43 per boiler Material of tubes SD. Steel ✓ Internal diameter and thickness of tubes 17 1/4" x 2 1/2" ✓
Material of headers Tensile strength Thickness Can the superheater be shut off and
the boiler be worked separately ☒ No. ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ☒ Yes. ✓
Area of each safety valve 1.767 sq. in. ✓ Are the safety valves fitted with easing gear ☒ Yes. ✓ Working pressure as per
Rules Pressure to which the safety valves are adjusted 210 lbs. ✓ Hydraulic test pressure
tubes 1000 lbs. ✓ forgings and castings 600 lbs. ✓ and after assembly in place 600 lbs. ✓ Are drain cocks o.
valves fitted to free the superheater from water where necessary ☒ Yes. ✓

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with ☒ Yes. ✓

The foregoing is a correct description,
FOR THE CENTRAL MARINE ENGINE WORKS

(W. G. & Co. Ltd.)

Manufacturers

Dates of Survey { During progress of work in shops - - }
while building { During erection on board vessel - - - }

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 16-9-43

Total No. of visits

Is this Boiler a duplicate of a previous case ☒ Yes. ✓ If so, state Vessel's name and Report No. SS EM. LABRADOR RPTN° 18,594.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey and in accordance with the approved plans and specification for a working pressure of 200 lbs per square inch. The materials and workmanship have been found good. Upon completion the boilers were tested in the presence of the undersigned by a hydraulic pressure of 350 lbs per square inch showed no signs of weakness and were found tight and sound in every respect at that pressure.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

Arthur W. Oxford

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 15 DEC 1944

Assigned

See J. E. Machey r/b



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