

WASTE HEAT REPORT ON BOILERS

No. 94275

Received at London Office 12 OCT 1936

9.10.36 Port of NEWCASTLE-ON-TYNE

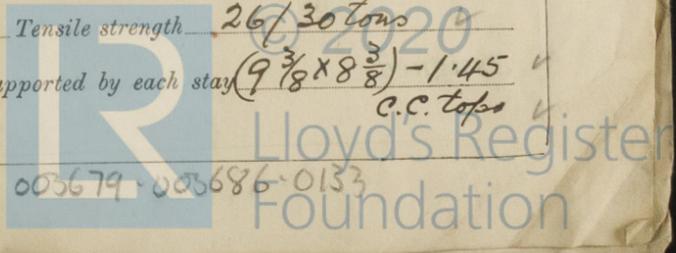
of writing Report 10 When handed in at Local Office Newcastle Date, First Survey 16 Jan 1936 Last Survey 8th Oct 1936
on the Steel Screw Motor Tanker BRITISH ENDURANCE Tons Gross 8303 Net 4939
Built at Newcastle By whom built Swan Hunter & Wigham Richardson & Co Yard No 1500 When built 1936
Sunderland By whom made W. Daxford & Sons Ltd Engine No. 190 When made 1936
Newcastle By whom made Swan Hunter & Wigham Richardson & Co Boiler No. 1500 When made 1936
Owners British Tanker Co Ltd Port belonging to London

WASTE HEAT OIL FIRED MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Coy of Scotland (Letter for Record)
Total Heating Surface of Boilers 2595 sq ft Is forced draught fitted Yes Coal or Oil fired Oil fired + waste gas
One S. Ended Cylindrical Multitubular Working Pressure 150 lbs/sq in
Date of test 7/8/36 No. of Certificate 67 Can each boiler be worked separately Yes
Area of Firegrate in each Boiler Oil fired No. and Description of safety valves to each boiler 2 - 2 3/4" Improved High Lift Spring loaded
Area of each set of valves per boiler 9.85 sq ft Pressure to which they are adjusted 150 lbs Are they fitted with easing gear Yes
No main boilers are fitted.
Smallest distance between boilers or uptakes and bunkers or woodwork 16" Is oil fuel carried in the bunker double bottom under boilers Yes
Smallest distance between shell of boiler and tank top plating 16" Is the bottom of the boiler insulated Yes
Largest internal dia. of boilers 13' 4 1/4" Length 11' 6" Shell plates: Material Steel Tensile strength 30/34 tons
Thickness 7/8" Are the shell plates welded or flanged No Description of riveting: circ. seams DR. Lap
Pitch of rivets 3.24"
Percentage of strength of circ. end seams 69.18 Percentage of strength of circ. intermediate seam 42.41
Percentage of strength of longitudinal joint 85.84 Working pressure of shell by Rules 151 lbs.
Combined 88.80 Two at wings - Deighton Corrugated

No. and Description of Furnaces in each Boiler
Material Steel Tensile strength 26/30 tons Smallest outside diameter 37 3/16"
Length of plain part 2' 4" c.c. bottom Thickness of plates 13/32" crown 5/8" c.c. bottom Description of longitudinal joint Furnaces fire welded.
Working pressure of furnace by Rules 155 lbs.
End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 1/2" Pitch of stays 18 x 18"
How are stays secured Dble nuts & washers Working pressure by Rules 151.5 lbs.
Tube plates: Material Steel Tensile strength 26/30 tons Thickness 7/8"
Mean pitch of stay tubes in nests 9.375 lbs. Pitch across wide water spaces 13 1/2" x 7 3/8" Working pressure front 159 lbs. back 156 lbs.
Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder
at centre 7 5/8" x 1 1/4" Length as per Rule 30 21/32" Distance apart 8 3/4" (max at cr.) No. and pitch of stays
in each 2 of 9 3/8" Working pressure by Rules 151 lbs. Combustion chamber plates: Material Steel
Tensile strength 26/30 tons Thickness: Sides 5/8" Back 3/4" Top 5/8" Bottom 5/8"
Pitch of stays to ditto: Sides 9 5/8" x 9 3/8" Back 9 x 9" c.c. Top 9 3/8" x 8 3/4" Are stays fitted with nuts or riveted over c.c. margins side stays are riveted both ends.
Working pressure by Rules 152 lbs. Front plate at bottom: Material Steel Tensile strength 26/30 tons Thickness 3/4"
Lower back plate: Material Steel Tensile strength 26/30 Thickness 3/4"
Pitch of stays at wide water space 13 1/2" x 9" Are stays fitted with nuts or riveted over nuts

Shipping Working Pressure 172 lbs Main stays: Material Steel Tensile strength 28/32 tons
Diameter Two top stays 2 3/4" No. of threads per inch 6 Area supported by each stay (18x18) - 4.57 sq in
Others 2 7/8"
Working pressure by Rules 155 lbs Screw stays: Material Steel Tensile strength 26/30 tons
Diameter At turned off part 1 1/2" & 1 5/8" No. of threads per inch 9 Area supported by each stay (9 3/8" x 8 3/8") - 1.45 sq in c.c. tops



Working pressure by Rules 155 lbs Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 5/8" or Over threads. 1 5/8"

No. of threads per inch 9 Area supported by each stay (11 1/4 x 9) - 1.73 Working pressure by Rules 152 lbs

Tubes: Material IRON External diameter { Plain 2 1/2 Stay 2 1/2 Thickness { 10 W.G. 3/8" + 5/16" No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 229 lbs Manhole compensation: Size of opening

shell plate 20 x 16" Section of compensating ring 8 x 7/8 x 2 No. of rivets and diameter of rivet holes 32 - 1 1/4"

Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged 2 1/2" 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 Manufacturers of { Tubes 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

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

Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules

Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, 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 Yes

FOR The foregoing is a correct description, G.F. Shewin Manufacturer.

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

See Machinery Report Are the approved plans of boiler and superheater forwarded herewith 23/11/35 (If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. British Fame. Nav. Rpt. 94124

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The Boiler has been built under Special Survey in accordance with the approved plans, and the materials and workmanship are good.

The Boiler is fitted on top of the Oil fuel bunker in the Boiler Space forward of Engine Room, having access from the top platform of the Engine Room.

The Boiler is fitted for burning oil fuel 10.36, flash point above 150°F, under forced draft, and also for waste exhaust gases.

The Safety Valves have been adjusted under steam to 150 lbs per sq inch

Survey Fee £ 17. 6.: When applied for, See Machinery Report 19

Travelling Expenses (if any) £ See Machinery Report When received, 19

A. Watt.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 13 OCT 1938

Assigned See Machinery Report