

# REPORT ON BOILERS.

No. 16480

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Date of writing Report 23<sup>rd</sup> April 1927 When handed in at Local Office 2.5.1927 Port of WEST HARTLEPOOL  
 No. in Book 358 Survey held at West Hartlepool Date, First Survey 9<sup>th</sup> April 1927 Last Survey 22<sup>nd</sup> April 1927  
 on the S S "HARTBRIDGE" (Number of Visits 2) Gross Tons 5080 Net Tons 3132  
 Built at West Hartlepool By whom built Wm Gray & Co Ltd Yard No. 983 When built 1927  
 Engines made at West Hartlepool By whom made Central Marine Engine Engine No. 983 When made 1927  
 Boilers made at do By whom made Works Boiler No. 983 When made 1927  
 Indicated Horse Power 27 Owners Crosby Hayes & Co. Port belonging to W Hartlepool

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel D. Colville & Sons (Letter for Record S)  
 Total Heating Surface of Boilers 6828 sq. ft. Is forced draught fitted no Coal or Oil fired coal  
 and Description of Boilers Two, single ended Working Pressure 180  
 Tested by hydraulic pressure to 320 lb Date of test 25.2.27 No. of Certificate 3692 Can each boiler be worked separately yes  
 Area of Firegrate in each Boiler 78.6 sq. ft. No. and Description of safety valves to each boiler 2 Cockburns high lift  
 Area of each set of valves per boiler { per Rule 14.58 as fitted 16.59 } Pressure to which they are adjusted 185 lb 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 20" Is oil fuel carried in the double bottom under boilers no  
 Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated ✓  
 Largest internal dia. of boilers 17'-6" Length 11'-6" Shell plates: Material Steel Tensile strength 29/33  
 Thickness 1 3/8" Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R. Lap. inter. Trieb. R. Lap. }  
 g. seams J.R. D.B.S. Diameter of rivet holes in { circ. seams 1 1/2" dia long. seams 1 7/16" dia } Pitch of rivets { 9 3/4" }  
 Percentage of strength of circ. end seams { plate 68.5 rivets 75 } Percentage of strength of circ. intermediate seam { plate 70 rivets 61.4 }  
 Percentage of strength of longitudinal joint { plate 85.3 rivets 91 combined 88.7 } Working pressure of shell by Rules 180  
 Thickness of butt straps { outer 1 7/16" inner 1 3/16" } No. and Description of Furnaces in each Boiler 4 Deightons  
 Material Steel Tensile strength 26/32 Smallest outside diameter 44 9/16"  
 Length of plain part { top ✓ bottom ✓ } Thickness of plates { crown 1 1/2" bottom 3/2" } Description of longitudinal joint welded  
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 193  
 Plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 1/4" Pitch of stays 24"x18"  
 How are stays secured D. Nuts & washers Working pressure by Rules 185  
 Front plates: Material { front Steel back Steel } Tensile strength { 26/30 } Thickness { 1 1/16" }  
 Pitch of stay tubes in nests 13 1/2"x9" Pitch across wide water spaces 14 1/4"x9" Working pressure { front 212 back 187 }  
 Stays to combustion chamber tops: Material Steel Tensile strength 28/32 Depth and thickness of girder  
 centre 9"x1 1/4" Length as per Rule 32 1/2" Distance apart 9" No. and pitch of stays  
 each 2-10 1/4" Working pressure by Rules 184 Combustion chamber plates: Material Steel  
 Tensile strength 26/30 Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 7/8"  
 Pitch of stays to ditto: Sides 9"x10 3/4" Back 9 1/2"x9 1/2" Top 9"x10 1/4" Are stays fitted with nuts or riveted over nuts  
 Working pressure by Rules 183 Front plate at bottom: Material Steel Tensile strength 26/30  
 Thickness 1" Lower back plate: Material Steel Tensile strength 26/30 Thickness 7/8"  
 Pitch of stays at wide water space 14 1/4"x9 1/2" Are stays fitted with nuts or riveted over nuts  
 Working Pressure 208 Main stays: Material Steel Tensile strength 28/32  
 Diameter { At body of stay 3 1/4" Over threads 3 1/4" } No. of threads per inch 6 Area supported by each stay 24"x18"  
 Working pressure by Rules 186 Screw stays: Material Steel Tensile strength 26/30  
 Diameter { At turned off part 1 3/4" Over threads 1 3/4" } No. of threads per inch 9 Area supported by each stay 9"x10 3/4"



Working pressure by Rules 188 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads 1 7/8"  
No. of threads per inch 9 Area supported by each stay 11 7/8" x 9 1/2" Working pressure by Rules 189  
Tubes: Material Iron External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 9 V V G No. of threads per inch 9  
Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 180 lb Manhole compensation: Size of opening in  
end shell plate 16" x 12" Section of compensating ring flanged No. of rivets and diameter of rivet holes ✓  
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 3 7/8" Steam Dome: Material none  
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  
How connected to shell Inner radius of crown Working pressure by Rules  
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 none 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 23 inclusive for boilers been complied with

yes FOR THE CENTRAL MARINE ENGINE WORKS,  
(W. Gray & Co. Ltd.)  
The foregoing is a correct description.

MANAGING DIRECTOR, C.M.E.W.

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 (If not state date of approval.)  
Total No. of visits ✓

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

See accompanying machinery report

Survey Fee ... .. £ : : When applied for, 192  
Travelling Expenses (if any) £ : : When received, 192

R.D. Shilston & Robert Rae

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 6 MAY 1927

Assigned see minute on 4th Rpt  
16480 attached



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