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MAR 1936
-5 MAR 1936
No. 93528

REPORT ON BOILERS.

Received at London Office -5 MAR 1936

Writing Report 3rd March, 1936 When handed in at Local Office 3rd March, 1936 Port of Newcastle-on-Tyne
Size of open Survey held at Newcastle-on-Tyne Date, First Survey 12 Sept 1935 Last Survey 29. 2. 1936
on the S.S. "HOPESTAR" (Number of Visits 49.) Tons { Gross 4885 Net 3152
Built at Wallsend-on-Tyne By whom built Lunn, Hunter & Wig. Road. Yard No. 1513 When built 1936
Boilers made at Wallsend-on-Tyne By whom made Parsons Marine Steam Turbine Co. Ltd. Engine No. 283 When made 1936
Boilers made at Wallsend-on-Tyne By whom made Wallsend Shipway & Eng. Co. Ltd. Boiler No. 919 When made 1936
Horse Power 400 Owners Wallsend Shipping Co. Ltd. Port belonging to Newcastle
(Arthur Stott & Co. Ltd.)

WATER TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland, Ltd. (Letter for Record S)
Heating Surface of Boilers 4238 sq ft Is forced draught fitted yes Coal or Oil fired Coal
Description of Boilers Two Single Ended Working Pressure 285 lbs./sq in
Tested by hydraulic pressure to 478 lbs./sq in Date of test 18.12.35 No. of Certificate 656 Can each boiler be worked separately yes
Area of Firegrate in each Boiler 69 sq ft No. and Description of safety valves to each boiler Two Cockburns Improved High Lift
Pressure to which they are adjusted 290 lbs./sq in Are they fitted with easing gear yes
Distance between boilers 21" Is oil fuel carried in the double bottom under boilers no
Distance between shell of boiler and tank top plating yes Is the bottom of the boiler insulated yes
Internal dia. of boilers 14'-2 1/16" Length 12'-3" Shell plates: Material Steel Tensile strength 31/35 tons/sq in
Thickness 1 3/32" Are the shell plates welded or flanged no Description of riveting: circ. seams { end DR. Lap inter. -
seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 3/4" Pitch of rivets { 5.01"
 { long. seams 1 3/4" { 11 1/2"
Percentage of strength of circ. end seams { plate 65 Percentage of strength of circ. intermediate seam { plate -
 { rivets 42.8 { rivets -
Percentage of strength of longitudinal joint { plate 84.78 Working pressure of shell by Rules 286 lbs./sq in
 { rivets 88
 { combined 87
Thickness of butt straps { outer 1 5/16" No. and Description of Furnaces in each Boiler 3 Beightons 3 of
 { inner 1 7/16" Tensile strength 27/30 tons/sq in Smallest outside diameter 3'-7 1/2"
Material Steel Thickness of plates { crown 1 3/16" Description of longitudinal joint weld
 { bottom 1 1/16" Working pressure of furnace by Rules 286 lbs./sq in
Dimensions of stiffening rings on furnace or c.c. bottom yes Thickness 1 7/16" Pitch of stays 19 1/4" x 17"
Plates in steam space: Material Steel Tensile strength 26/30 tons/sq in Working pressure by Rules 295 lbs./sq in
Are stays secured 9. Nuts Thickness 1 3/32" 7/8"
Front plates: Material { front Steel Tensile strength { 26/30 tons/sq in Thickness { 308 lbs./sq in
 { back Steel { 299 lbs./sq in
Pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 13 1/2" Working pressure { front 308 lbs./sq in
 { back 299 lbs./sq in
Girders to combustion chamber tops: Material Steel Tensile strength 29/38 tons/sq in Depth and thickness of girder
centre 12" x 20 3/4" Length as per Rule 3'-2" Distance apart 8 1/4" No. and pitch of stays
each 3 @ 9" Working pressure by Rules 292 lbs./sq in Combustion chamber plates: Material Steel
Tensile strength 26/30 tons/sq in Thickness: Sides 25/32" Back 25/32" Top 25/32" Bottom 1 1/8"
Pitch of stays to ditto: Sides 9" x 8 1/4" Back 9 7/16" x 7 1/2" Top 9" x 8 1/4" Are stays fitted with nuts or riveted over nuts
Working pressure by Rules 290 lbs./sq in Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq in
Thickness 1 3/32" Lower back plate: Material Steel Tensile strength 26/30 tons/sq in Thickness 1 1/32"
Pitch of stays at wide water space 14 1/4" x 9 7/16" Are stays fitted with nuts or riveted over nuts
Working Pressure 302 lbs./sq in Main stays: Material Steel Tensile strength 28/32 tons/sq in
At body of stay, 3 1/2" No. of threads per inch 6 Area supported by each stay 327 sq in
Over threads 3 1/2" Working pressure by Rules 290 lbs./sq in Screw stays: Material Steel Tensile strength 26/30 tons/sq in
At turned off part, 1 7/8" No. of threads per inch 9 Area supported by each stay 74.25 sq in
Over threads 1 7/8"

Working pressure by Rules 287 lbs./sq. in. Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 2 1/8" ✓
Over threads 2 1/8" ✓
No. of threads per inch 9 ✓ Area supported by each stay 100 sq. in. ✓ Working pressure by Rules 285 lbs./sq. in. ✓
Tubes: Material Iron ✓ External diameter { Plain 2 1/2" ✓ Thickness { 3/8" x 5/16" ✓ No. of threads per inch 9 ✓
Stay 2 1/2" ✓
Pitch of tubes 4" x 3 5/8" ✓ Working pressure by Rules 300 lbs./sq. in. ✓ Manhole compensation: Size of opening in
shell plate 16" x 12" ✓ Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 3/16" ✓ 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 - 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 Combustion Chamber Manufacturers of { Tubes Dukes, Ltd.
Steel castings Bradford Iron Works Ltd.
Number of elements 38 Material of tubes 90 Steel Internal diameter and thickness of tubes 1 3/32" x 9 w.g. ✓
Material of headers Forged Steel Tensile strength 26/30 tons/sq. in. Thickness 1 1/4" 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 1.77 sq. in. ✓ Are the safety valves fitted with easing gear yes ✓ Working pressure as per
Rules 285 lbs./sq. in. ✓ Pressure to which the safety valves are adjusted 290 lbs./sq. in. ✓ Hydraulic test pressure:
tubes 1000 lbs./sq. in. ✓ Headers 865 lbs./sq. in. and after assembly in place 570 lbs./sq. in. ✓ Are drain cocks or 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 WALLSEND STEEL & ENGINEERING CO. LIMITED.
J. H. THORSON, DIRECTOR, Manufacturer.

Dates of Survey { During progress of work in shops - - { 1935
5.11.14.18.20.21.25.29. Dec. 4.5. 9.11.13.
while building { During erection on board vessel - - - { 18.19.20.24.27.30.1936 Jan. 2.7.10.15.
22.23.24.27.28.29.30.31. Feb. 5.6.7.
11.13.17.19.22.26.29.
Are the approved plans of boiler and superheater forwarded herewith yes ✓
(If not state date of approval.)
Total No. of visits 49 ✓

Is this Boiler a duplicate of a previous case no ✓ If so, state Vessel's name and Report No. ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey in accordance with the Rules and approved Plan; the materials and workmanship are good. De-Superheaters are fitted in the boilers and these have been tested by hydraulic pressure to 570 lbs./sq. in. after assembly in place with satisfactory results. Boilers examined under working conditions and found satisfactory.

Survey Fee ... See Rpt. on Machinery When applied for, 19
Travelling Expenses (if any) £ When received, 19
Committee's Minute FRI. 13 MAR 1936
Assigned See minute on J.E. Rpt.
S.H. Forster.
Engineer Surveyor to Lloyd's Register of Shipping.