

REPORT ON BOILERS.

No. 88955

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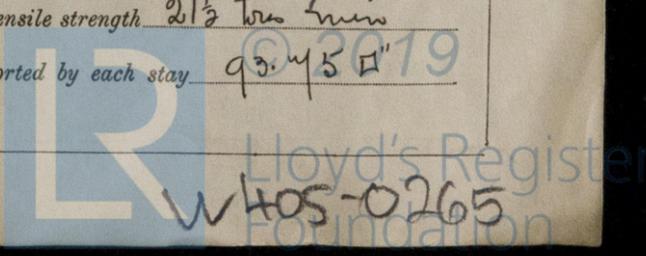
Date of writing Report 19 When handed in at Local Office 27/7/32 Port of Newcastle-on-Tyne.

No. in Reg. Book. Survey held at Wallsend-on-Tyne Date, First Survey 30 Dec/31 Last Survey 26 July 1932 on the New Steel S.S. "Charlesden" (Number of Visits ---) Gross 5483 Tons Net 3220

Master Built at Hebburn By whom built Hawthorn Leslie & Co. Ltd. Yard No. 586 When built 1932 Engines made at Wallsend By whom made North Eastern Iron Works Ltd. Engine No. 2488 When made 1932 Boilers made at Wallsend By whom made North Eastern Iron Works Ltd. Boiler No. 2488 When made 1932 Nominal Horse Power 487 Owners National S.S. Co. Ltd. Port belonging to London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record $\text{P} \times$)
 Total Heating Surface of Boilers 1924 sq ft Is forced draught fitted Yes Coal or Oil fired Coal
 No. and Description of Boilers one single ended. Working Pressure 220 lbs
 Tested by hydraulic pressure to 380 Date of test 29-11-32 No. of Certificate 544 Can each boiler be worked separately Yes
 Area of Firegrate in each Boiler 45.6 sq ft No. and Description of safety valves to each boiler Two spring loaded.
 Area of each set of valves per boiler {per Rule 10.3 as fitted 11.88 Pressure to which they are adjusted 225 lbs Are they fitted with easing gear Yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 2'-8" Is oil fuel carried in the double bottom under boilers No
 Smallest distance between shell of boiler and tank top plating 2'-8" Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 13'-3 1/16" Length 11'-6" Shell plates: Material Steel Tensile strength 29 to 33 tons
 Thickness 1 3/8" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. inter. 3 3/4" long. seams T.R.D. B.S. Diameter of rivet holes in {circ. seams 1 5/16" long. seams Pitch of rivets { 9 3/16"
 Percentage of strength of circ. end seams {plate 68.3 rivets 44.6 Percentage of strength of circ. intermediate seam {plate 85.4 rivets 85.4 Working pressure of shell by Rules 220.6 lbs
 Percentage of strength of longitudinal joint {plate 85.4 rivets 85.4 combined 88.6
 Thickness of butt straps {outer 1" inner 1 1/8" No. and Description of Furnaces in each Boiler Three corrugated
 Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 3'-1"
 Length of plain part {top bottom Thickness of plates {crown 5/8" bottom Description of longitudinal joint weld.
 Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 259 lbs
 End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 1/32" Pitch of stays 16 3/4 x 1 1/4"
 How are stays secured double nuts Working pressure by Rules 222 lbs
 Tube plates: Material {front back Steel Tensile strength { 26 to 30 tons Thickness { 3/4" Working pressure {front 240 lbs back 228.4 lbs
 Mean pitch of stay tubes in nests 9 3/8" Pitch across wide water spaces 14" x 7 1/2" Working pressure {front 240 lbs back 228.4 lbs
 Girders to combustion chamber tops: Material Steel Tensile strength 29 to 33 tons Depth and thickness of girder at centre 2 @ 9 1/2" x 3 1/4" Length as per Rule 2'-9" Distance apart 9 1/2" No. and pitch of stays in each 2 @ 9 1/8" Working pressure by Rules 229 lbs
 Tensile strength 26 to 30 tons Thickness: Sides 25/32" Back 25/32" Top 25/32" Bottom 25/32" Combustion chamber plates: Material Steel
 Pitch of stays to ditto: Sides 9 1/2" x 9 1/8" Back 11 1/4" x 8 1/4" Top 9 1/2" x 9 1/8" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 222 lbs Front plate at bottom: Material Steel Tensile strength 26 to 30 tons
 Thickness 15/16" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 29/32"
 Pitch of stays at wide water space 15" x 8 1/4" Are stays fitted with nuts or riveted over nuts
 Working Pressure 230 lbs Main stays: Material Steel Tensile strength 28 to 32 tons
 Diameter {At body of stay, 3" No. of threads per inch 6 Area supported by each stay 310 sq in
 {Over threads 3 1/4"
 Working pressure by Rules 254 lbs Screw stays: Material wrought iron Tensile strength 21 1/2 tons min
 Diameter {At turned off part, 2" No. of threads per inch 9 Area supported by each stay 93.45 sq in
 {Over threads



Working pressure by Rules 227 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter At turned off part, Over threads 2 3/8"
 No. of threads per inch 9 Area supported by each stay 104" Working pressure by Rules 237 lbs
 Tubes: Material S.D. Steel External diameter Plain 2 1/2" Thickness 9 L.S. 9 / 3/8" + 1/16" No. of threads per inch 9
 Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 230 lbs Manhole compensation: Size of opening in shell plate 1-8 5/8" x 1-4 5/8" Section of compensating ring 24" x 1 5/16" No. of rivets and diameter of rivet holes 34 @ 1 1/2"
 Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 3" Steam Dome: Material Wue
 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 Wue 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.

The foregoing is a correct description,
W. Campbell Manufacturer.

Dates of Survey During progress of work in shops - - During erection on board vessel - - See inquiry report
 Are the approved plans of boiler and superheater forwarded herewith Yes. (If not state date of approval.)
 Total No. of visits _____

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been built under special survey, materials & workmanship good hydraulic test satisfactory

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

William Butler
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED. AUG 3 1932

Assigned See F.C. Rpt.

