

REPORT ON BOILERS.

No. 80141

Received at London Office

23 FEB 1926 JUN 1926

Date of writing Report 16/2/26 When handed in at Local Office 20/2/26 Port of Newcastle-on-Tyne

No. in Survey held at Hebburn Date, First Survey 21st Decr 1925 Last Survey 9th Feb 1926

on the Dredger No. 248 - Iron Propelling Barge Loading Bucket (Number of Visits 6) Gross 459.35 Tons Net 386.94

Master Built at Port Glasgow By whom built Ferguson Bros. Ltd. Yard No. 248 When built 1926

Engines made at By whom made Engine No. When made

Boilers made at Hebburn By whom made Palmers, S. B. and Son Co Ltd Boiler No. 1061/2 When made 1926

Nominal Horse Power Owners L. M. & S. Railway Co. Ltd Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland Ltd. (Letter for Record 7)

Total Heating Surface of Boilers 900 sq. ft. each Is forced draught fitted Coal or Oil fired

No. and Description of Boilers Two single ended, multitubular Working Pressure 180 lbs. sq.

Tested by hydraulic pressure to 320 lbs. sq. Date of test 9-2-26 No. of Certificate 9971-2 Can each boiler be worked separately

Area of Firegrate in each Boiler 35 sq. ft. No. and Description of safety valves to each boiler

Area of each set of valves per boiler per Rule Pressure to which they are adjusted Are they fitted with easing gear

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 Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated

Largest internal dia. of boilers 10' 6" Length 10' Shell plates: Material Steel Tensile strength 28-32

Thickness 7/8" Are the shell plates welded or flanged No Description of riveting: circ. seams Double end inter.

Long. seams T.R. D.B.S. Diameter of rivet holes in circ. seams 1 1/8" Pitch of rivets 3 1/2" long. seams 1 5/16" 6 3/4"

Percentage of strength of circ. end seams plate 69.7 rivets 46.4 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 86.1 rivets 89.8 combined 73.9 Working pressure of shell by Rules 181 lbs. sq.

Thickness of butt straps outer 7/8" inner 7/8" No. and Description of Furnaces in each Boiler Two, corrugated

Material Steel Tensile strength 26-30 Smallest outside diameter 36.625"

Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates coron 1 5/16" bottom 1 5/32" Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 185 lbs. sq.

End plates in steam space: Material Steel Tensile strength 26-30 Thickness 1" Pitch of stays 24" x 13"

How are stays secured all Nuts, double washers. Working pressure by Rules 184 lbs. sq.

Tube plates: Material front Steel back Steel Tensile strength 26-30 Thickness 3/4"

Lean pitch of stay tubes in nests 9" x 9" Pitch across wide water spaces 14" Working pressure front 365 lbs. sq. back 200 lbs. sq.

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Depth and thickness of girder

Centre 8" x 3 1/4" Length as per Rule 2' 4 5/8" Distance apart 9" No. and pitch of stays

Each 2 @ 8 1/4" Working pressure by Rules 194 lbs. sq. Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 2 1/32" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 9" x 8 1/2" Back 8 1/2" x 9" Top 9" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 182 lbs. sq. Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 1" Lower back plate: Material Steel Tensile strength 26-30 Thickness 1"

Pitch of stays at wide water space 14" x 9" Are stays fitted with nuts or riveted over Nuts

Working Pressure 280 lbs. sq. Main stays: Material Steel Tensile strength 28-32

Diameter At body of stay, 2 3/8" No. of threads per inch 6 Area supported by each stay 260 sq. in. Over threads 2 3/8"

Working pressure by Rules 211 lbs. sq. Screw stays: Material Iron Tensile strength 21.5 tons

Diameter At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 76.5 sq. in. Over threads 1 5/8"

Working pressure by Rules *194 lbs* Are the stays drilled at the outer ends *7/16* ✓ Margin stays: Diameter { At turned off part. *1 7/8"*
 No. of threads per inch *9* ✓ Area supported by each stay *63 sq"* Working pressure by Rules *294 lbs* ✓
 Tubes: Material *Iron* ✓ External diameter { Plain *3 1/2"* Thickness { *8 W.G.* No. of threads per inch *9* ✓
 Pitch of tubes *9" x 9"* Working pressure by Rules *180 lbs* ✓ Manhole compensation: Size of opening in
 shell plate *20" x 16"* ✓ Section of compensating ring *2' 9 1/2" x 2' 5 1/2"* No. of rivets and diameter of rivet holes *32 @ 1 3/4"* ✓
 Outer row rivet pitch at ends *7.65"* ✓ Depth of flange if manhole flanged *3 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
 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
 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

For *Palmer's Shipbuilding & Iron Co., Ltd.*
 The foregoing is a correct description,
A. Cameron
 Manager, Hebburn Boiler Shed Manufacturer.

Dates { During progress of *1925* *1926*
 of Survey { work in shops - - *Dec. 21 Jan. 5. 25 Feb. 2. 4. 9.* Are the approved plans of boiler and superheater forwarded herewith
 while { During erection on (If not state date of approval.)
 building { board vessel - - - Total No. of visits *6.*

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

These boilers were built under special survey, the workmanship and material are good.

Survey Fee £ *12* : 0 : 0 When applied for, *22 FEB. 1926*
 Travelling Expenses (if any) £ : : When received, *26. 3. 192*

Thomas Napier
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 15 JUN 1926*

Assigned *See G.R.K. Rpt. No. 18567*