

# REPORT ON BOILERS.

No. 13398

Received at London Office

16 AUG 1928

13. 8. 1928 When handed in at Local Office

13. 8. 1928 Port of MIDDLESBROUGH.

See Machinery Report

Last Survey 192

(Number of Visits 1) Gross 10848.

Tons Net 6370.

333. on the donkey boilers of m.v. "GULFHAWK"

Built at Hawtorn Hill on Tees. By whom built Furness S.B. Co. Ltd. Yard No. 123 When built 1928.

Middlesbrough By whom made Richardsons, Wetgast & Co. Engine No. 2674 When made 1928.

Boilers made at do. By whom made do. Boiler No. 2575 When made 1928.

Indicated Horse Power 785. Owners Gulf Refining Co. Port belonging to Middlesbrough

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel David Colville & Sons Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 4938 sq ft Is forced draught fitted Yes. Coal or Oil fired oil

No. and Description of Boilers 2 S.B. Working Pressure 150 lbs.

Tested by hydraulic pressure to 275 lbs Date of test P. 29.3.28 No. of Certificate P. 6624. S. 6632. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 18.9 sq ft No. and Description of safety valves to each boiler Pair spring loaded.

Area of each set of valves per boiler as fitted 25.1 sq ft Pressure to which they are adjusted 155 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 and bunkers 2'-0" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 14'-6 15/16" Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 14'-6 15/16" Length 11'-6" Shell plates: Material Steel Tensile strength 28 1/2/32

Thickness 1 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. inter. Yes

Long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 1/16" Pitch of rivets 3 1/4" 7 1/4"

Percentage of strength of circ. end seams plate 67.3. rivets 42.9. Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.3. rivets 89.7. combined 91.4. Working pressure of shell by Rules 156.8.

Thickness of butt straps outer 13/16" inner 15/16" No. and Description of Furnaces in each Boiler 3 Corrugated

Material Steel Tensile strength 26/30. Smallest outside diameter 3'-8 1/2"

Length of plain part top bottom Thickness of plates crown 1/2" bottom Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 161 lbs.

End plates in steam space: Material Steel Tensile strength 26/30. Thickness 1 1/32" Pitch of stays 18 1/2" x 16"

How are stays secured D.N.s Working pressure by Rules 164 lbs.

Tube plates: Material front back Steel Tensile strength 26/30. Thickness 3/4" 1/16"

Mean pitch of stay tubes in nests 9 5/16" Pitch across wide water spaces 13 1/2" Working pressure front back 161 lbs. 193

Girders to combustion chamber tops: Material Steel Tensile strength 26/30. Depth and thickness of girder

at centre 8 5/8" x 3/4" (double) Length as per Rule 2'-9 1/4" Distance apart 8 1/4" No. and pitch of stays

in each 3'-8" Working pressure by Rules 177 lbs. Combustion chamber plates: Material Steel

Tensile strength 26/30. Thickness: Sides 3/4" Back 3/4" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 8" x 8 1/8" Back 9 1/2" x 7 3/4" Top 8" x 8 1/4" Are stays fitted with nuts or riveted over Top Back Riveted

Working pressure by Rules 164 lbs. Front plate at bottom: Material Steel Tensile strength 26/30. Thickness 3/4"

Thickness 3/4" Lower back plate: Material Steel Tensile strength 26/30. Thickness 3/4"

Pitch of stays at wide water space 13 1/4" x 8" Are stays fitted with nuts or riveted over nuts

Working Pressure 190 lbs. Main stays: Material Steel Tensile strength 28/32

Diameter At body of stay, or Over threads 2 1/2" No. of threads per inch 6. Area supported by each stay 246 sq in

Working pressure by Rules 179 lbs. Screw stays: Material Steel Tensile strength 26/30.

Diameter At turned off part, or Over threads 1 1/2" No. of threads per inch 9. Area supported by each stay 72 sq in



Working pressure by Rules 173 lbs. Are the stays drilled at the outer ends Yes. Margin stays: Diameter { At turned off part, 1 1/2" / Over threads 1 1/2" /

No. of threads per inch 9. Area supported by each stay 84 sq Working pressure by Rules 150 lbs.

Tubes: Material iron External diameter { Plain 2 1/2" / Stay 2 1/2" Thickness { 1 1/4" / 5/16" / 7/16" / No. of threads per inch 9.

Pitch of tubes 3 3/4" x 3 1/16" Working pressure by Rules p. 145 lbs. S. 14 1/2 lbs. Manhole compensation: Size of opening in shell plate 13" x 16 1/2" Section of compensating ring 6 3/4" x 1 1/2" No. of rivets and diameter of rivet holes 34 - 1 1/16"

Outer row rivet pitch at ends 7 1/4" Depth of flange if manhole flanged ✓ 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

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 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.

The foregoing is a correct description,  
For RICHARD WESTGARTH & Co. LIMITED. Manufacturer.

Dates of Survey { During progress of work in shops - - } See Machinery Are the approved plans of boiler and superheater forwarded Yes (If not state date of approval.)

while building { During erection on board vessel - - } Repat. Total No. of visits 1

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

The materials and workmanship are good.  
These boilers have been built under special survey in accordance with the Rules and approved Plan, securely fitted aboard and their safety valves have been adjusted and tested under steam with satisfactory results.

Survey Fee ... £ 28-9-0 When applied for, 15-8-1928

Travelling Expenses (if any) £ : : When received, 17-8-1928

P. J. Man.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 21 AUG 1928

Assigned see Minute on  
Mat. Rpt 13398



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