

# REPORT ON BOILERS.

No. 79795

Received at London Office

17 NOV. 1925

Date of writing Report 6th Nov 1925 When handed in at Local Office 6th Nov 1925 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Chenick & Walker on Tyne Date, First Survey 13 July 1923 Last Survey 5th Nov 1925

202 on the Iron Screw Motor Vessel Gripsholm (Number of Visits 17000) Tons 10500

Master Li H. E. Armstrong Built at Newcastle By whom built Whitworth & Co Yard No. 999 When built 1925

Engines made at Copenhagen By whom made Burmester & Hain Engine No. 1001 When made 1925

Boilers made at Chenick on Tyne By whom made Li H. E. Armstrong Whitworth & Co Boiler No. 50 When made 1925

Nominal Horse Power per rule 2510 Owners Rederi A/B Sverige Nordamerika Port belonging to Gothenburg

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

Manufacturers of Steel J. Spence & Sons Ltd & D Colville & Sons Ltd (Letter for Record Yes)

Total Heating Surface of Boilers 2470 sq ft Is forced draught fitted Yes Coal or Oil fired oil

No. and Description of Boilers 2. Single Ended Scotch Type Working Pressure 120 lb per sq in

Tested by hydraulic pressure to 230 lb Date of test 3/10/24 No. of Certificate 9867 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler oil No. and Description of safety valves to each boiler 2. direct spring

Area of each set of valves per boiler per Rule 13.7 sq in Pressure to which they are adjusted 123 lb Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No main boilers

Smallest distance between boilers or uptakes and bunkers or woodwork 20" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 24" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 11'-6" Length 8'-6" Shell plates: Material Steel Tensile strength 28/32 tons

Thickness 11/16" Are the shell plates welded or flanged No Description of riveting: circ. seams 2 R Lap

Long. seams Double straps, 3 rivets Diameter of rivet holes in circ. seams 7/8" Pitch of rivets 3 3/8"

Percentage of strength of circ. end seams plate 74% Percentage of strength of circ. intermediate seam plate 42.5%

Percentage of strength of longitudinal joint plate 51.5% Working pressure of shell by Rules 120 lb per sq in

Thickness of butt straps outer 9/16" No. and Description of Furnaces in each Boiler Iron, Monsons

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 35 3/4"

Length of plain part top 3/8" Thickness of plates bottom 3/8" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 147 lb per sq in

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 25/32" Pitch of stays 9" x 13 1/2"

How are stays secured Double nuts & washers 7 1/2" x 2 3/32" Working pressure by Rules 120 lb per sq in

Tube plates: Material Steel Tensile strength 26/30 tons Thickness 25/32"

Mean pitch of stay tubes in nests 11 1/4" Pitch across wide water spaces 13 1/2" Working pressure front 126 lb per sq in

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder back 120

at centre 6 1/4" x 1 1/2" Length as per Rule 26 7/32" Distance apart 9 1/2" No. and pitch of stays

in each Iron, 8 1/2" Working pressure by Rules 139 lb per sq in Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 10" x 8 3/4" Top 9 1/2" x 8 1/2" Are stays fitted with nuts or riveted over Nuts inside

Working pressure by Rules 139 lb Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 25/32" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 25/32"

Pitch of stays at wide water space 14" x 8 3/4" Are stays fitted with nuts or riveted over Nuts at wide spaces

Working Pressure 183 lb per sq in Main stays: Material Steel Tensile strength 28/32 tons

Diameter At body of stay, 2 1/8" No. of threads per inch 6 Area supported by each stay 257 sq in

Working pressure by Rules 121 lb per sq in Screw stays: Material Iron Tensile strength 21 1/2 tons to 33

Diameter At turned off part, 1 1/2" - 1 9/8" No. of threads per inch 9 Area supported by each stay 20 - 220 sq in



Working pressure by Rules 120 lb Are the stays drilled at the outer ends No Margin stays: Diameter 1 7/8"  
 No. of threads per inch 9 Area supported by each stay 126 sq" Working pressure by Rules 120 lb  
 Tubes: Material Iron External diameter 2 1/2" Thickness 7.25 No. of threads per inch 9  
 Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 123 lb Manhole compensation: Size of opening in  
 shell plate 20" x 16" Section of compensating ring flange 32" x 28" x 1 1/8" No. of rivets and diameter of rivet holes 22. 7/8"  
 Outer row rivet pitch at ends 4 3/4" Depth of flange if manhole flanged 3 3/8" 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 ✓  
 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 None Manufacturers of ✓  
 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  
SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED.  
 The foregoing is a correct description,  
George Murdoch Manufacturer.

Dates of Survey During progress of work in shops - - See Machinery Report Are the approved plans of boiler forwarded herewith yes  
while building During erection on board vessel - - (If not state date of approval.)  
 Total No. of visits ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These two donkey boilers  
have been built under special survey, the materials and  
workmanship are of good quality. They have been securely  
fitted on board and their safety valves adjusted.  
They are fitted for oil burning.  
For recommendations please see report on machinery.

Survey Fee 20.00 20.00 ✓ When applied for, 192  
 Travelling Expenses (if any) ✓ When received, 192  
 Committee's Minute FRI. 20 NOV 1925  
 Assigned See Nwc 26 79795  
George Murdoch  
 Engineer Surveyor to Lloyd's Register of Shipping.  
FRI. 4 DEC 1925