

# REPORT ON BOILERS.

No. 82224

9 JAN 1928

Received at London Office

Date of writing Report 1928 When handed in at Local Office 7.1.1928 Port of NEWCASTLE-ON-TYNE

No. in Survey held at SOUTH SHIELDS Date, First Survey 27 April Last Survey 27 Jan 1928

on the S.S. "KIRNWOOD" (Number of Visits —) Tons Gross 3741  
Net 2272

Master — Built at South Shields By whom built John Readhead & Sons Ltd Yard No. 487 When built 1928-1

Engines made at South Shields By whom made John Readhead & Sons Ltd Engine No. 487 When made 1928

Boilers made at South Shields By whom made John Readhead & Sons Ltd. Boiler No. 487 When made 1928

Nominal Horse Power 334 Owners Joseph Constantine Steamship Line Ltd. Port belonging to MIDDLESBROUGH.

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

Manufacturers of Steel The Steel Company of Scotland Lim. (Letter for Record r)

Total Heating Surface of Boilers 1212.9 Sq. Ft. Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers one Single-Ended. Working Pressure 120 lbs.

Tested by hydraulic pressure to 230 lbs. Date of test 13/9/27 No. of Certificate 203 Can each boiler be worked separately —

Area of Firegrate in each Boiler 37.4 sq. ft. No. and Description of safety valves to each boiler pair Spring-loaded

Area of each set of valves per boiler per Rule 11.25 sq. in. Pressure to which they are adjusted 120 lbs Are they fitted with easing gear yes  
as fitted 11.88 sq. in.

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

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-9" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated no

Largest internal dia. of boilers 11'-4 5/8" Length 10'-6" Shell plates: Material Steel Tensile strength 28/32 Tons

Thickness 1/16" Are the shell plates welded or flanged no Description of riveting: circ. seams Double-riveted  
inter. —

long. seams D.R. D.B.S. Diameter of rivet holes in circ. seams 7/8" Pitch of rivets 3"  
long. seams 7/8" 4 23/32"

Percentage of strength of circ. end seams plate 70.7 Percentage of strength of circ. intermediate seam plate —  
rivets 47.8 rivets —

Percentage of strength of longitudinal joint plate 81.5 Working pressure of shell by Rules 121.5 lbs  
rivets 85.7  
combined 91.5

Thickness of butt straps outer 9/16" No. and Description of Furnaces in each Boiler Two plain  
inner 1/16"

Material Steel Tensile strength 26/30 Tons Smallest outside diameter 3'-6 1/2"

Length of plain part top 6'-8 25/32" Thickness of plates crown 21" Description of longitudinal joint Weld  
bottom 7'-3" bottom 32"

Dimensions of stiffening rings on furnace or c.c. bottom none fitted Working pressure of furnace by Rules 121.7 lbs

End plates in steam space: Material Steel Tensile strength 26/30 Tons Thickness 15/16" Pitch of stays 18" x 22 1/4"

How are stays secured Double nuts, Loose washers 9 3/4 dia x 5 3/8" Working pressure by Rules 130.5 lbs

Tube plates: Material front Steel Tensile strength 26/30 Tons Thickness 3/4" x 9/16" Doubling plate  
back steel 26/30 Tons 5/8"

Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14" Working pressure front 133 lbs  
back 148 lbs

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

at centre 6" x 1 5/8" Length as per Rule 26" Distance apart 11 1/2" No. and pitch of stays

in each Two - 8" Working pressure by Rules 129 lbs Combustion chamber plates: Material Steel

Tensile strength 26/30 Tons. Thickness: Sides 19" Back 19" Top 19" Bottom 13"  
32 32 32 16

Pitch of stays to ditto: Sides 10" x 9" Back 10 1/4" x 9" Top 11 1/2" x 8" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 124 lbs Front plate at bottom: Material Steel Tensile strength 26/30 Tons

Thickness 3/4" Lower back plate: Material Steel Tensile strength 26/30 Tons Thickness 21/32"

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

Working Pressure 124 lbs Main stays: Material Steel Tensile strength 28/32 Tons

Diameter At body of stay, 2 3/4" No. of threads per inch six Area supported by each stay 400.50"  
Over threads

Working pressure by Rules 138 lbs Screw stays: Material Iron Tensile strength 2 1/2 Tons

Diameter At turned off part, 1 1/2" No. of threads per inch nine Area supported by each stay 92.250"  
Over threads

Working pressure by Rules 136 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 1 3/4" ✓  
 No. of threads per inch nine ✓ Area supported by each stay 108 sq Working pressure by Rules 168 lbs.  
 Tubes: Material Iron ✓ External diameter { Plain 3 1/4" ✓ Thickness { 10 W.G. No. of threads per inch nine ✓  
 Stay 3 1/4" ✓ 5/16" x 3/8" ✓  
 Pitch of tubes 4 5/8" x 4 1/2" ✓ Working pressure by Rules plain 130 lbs - Stay 223 lbs Manhole compensation: Size of opening in  
 shell plate 20" x 16" ✓ Section of compensating ring 34" x 30" x 1/16" ✓ No. of rivets and diameter of rivet holes 44 - 7/8" ✓  
 Outer row rivet pitch at ends 4 23/32" ✓ Depth of flange if manhole flanged 3 1/4" ✓ Steam Dome: Material None fitted ✓  
 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 None fitted 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, W. P. Curran  
 for JOHN READHEAD & SONS, LIMITED, Manufacturer. W. P. Curran

Dates of Survey { During progress of work in shops - - }  
 while building { During erection on board vessel - - } see Mch. Report  
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
This boiler has been constructed under the usual conditions of survey and testing and found satisfactory. It has been securely fixed in the vessel and its safety valves have been adjusted under steam.

Survey Fee ... Entry on Machinery £ — : — : } When applied for, 192  
 Travelling Expenses (if any) £ — : — : } When received, 192

W. Morrison  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 JAN 1928

Assigned See Supt. attached

