

## REPORT ON BOILERS.

No. 12605

Received at London Office

Date of writing Report **2/3/1926** When handed in at Local Office **2/3/1926** Port of **Middlesbrough**  
 No. in Survey held at **Stockton-on-Tees** Date, First Survey **5<sup>th</sup> Nov. 1925** Last Survey **2/3/1926**  
 Reg. Book. **19714** on the **s/s "Karakara"** (Number of Visits **17 incl.**) Gross **530**  
 Tons Net **245**  
 Master  Built at **Chester** By whom built **J. Crichton & Co. Ltd** Yard No. **414** When built **1926**  
 Engines made at **Kewbury** By whom made **Plenty & Son, Ltd.** Engine No. **2540** When made **1926**  
 Boilers made at **Stockton** By whom made **Messrs Riley Bros Ltd.** Boiler No. **(5641) (5642)** When made **1926**  
 Nominal Horse Power **145** Owners **Sydney Ferris, Ltd.** Port belonging to **Sydney, L. & N.**

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

Manufacturers of Steel **David Colville & Sons, Ltd. South Durham Steel & Iron Coy. Ltd. Cargo Fleet Iron Coy.** (Letter for Record **(S)**)  
 Total Heating Surface of Boilers **1480**  $\square$  Is forced draught fitted  Coal or Oil fired **Coal**  
 No. and Description of Boilers **(2) Single End Navy type** Working Pressure **180 lbs**  
 Tested by hydraulic pressure to **320 lbs** Date of test **2-3-26** No. of Certificate **6503** Can each boiler be worked separately   
 Area of Firegrate in each Boiler **47.6**  $\square$  No. and Description of safety valves to each boiler **Two direct spring.**  
 Area of each set of valves per boiler **per Rule 9.48**  $\square$  as fitted **9.82**  $\square$  Pressure to which they are adjusted **185 lbs** 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 **7'6"** 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   
 Smallest internal dia. of boilers **9'7"** Length **19'9"** Shell plates: Material **Steel** Tensile strength **28-32 tons**  
 Thickness **29/32"** Are the shell plates welded or flanged **NO** Description of riveting: circ. seams **LAP. OR.**  
 long. seams **DOUBLE BUTT STRAPS** Diameter of rivet holes in **1 3/64"** Pitch of rivets **3 1/4"**  
**TREBLE RIVETED** **5 RIVETS IN PITCH** **67.8**  $\square$  **1"** **7 1/8"**  
 Percentage of strength of circ. end seams **47.9** Percentage of strength of circ. intermediate seam   
 Percentage of strength of longitudinal joint **plate 86.8** **rivets 95.0** **combined 90.6** Working pressure of shell by Rules **205 lbs**  
 Thickness of butt straps **outer 14 7/8" x 23/32"** **inner 14 7/8" x 27/32"** No. and Description of Furnaces in each Boiler **Two, Reighton's.**  
 Material **Steel** Tensile strength **26-30 tons** Smallest outside diameter **45.187"**  
 Length of plain part **top 19/32"** Thickness of plates **bottom 19/32"** Description of longitudinal joint **weld**  
 Dimensions of stiffening rings on furnace or c.c. bottom  Working pressure of furnace by Rules **191 lbs**  
 End plates in steam space: Material **Steel** Tensile strength **26-30 tons** Thickness **15/16" (double)** Pitch of stays **17" (19 1/2" TO TUBES)**  
 How are stays secured **Double Nuts** Working pressure by Rules **239 lbs**  
 Tube plates: Material **front Steel** Tensile strength **26-30 tons** Thickness **30/32"** **24/32"**  
**back Steel** Tensile strength **26-30 tons** Working pressure **front 229 lbs** **back 256 lbs**  
 Mean pitch of stay tubes in nests **11.56"** Pitch across wide water spaces **13" x 4 7/8"**  
 Girders to combustion chamber tops: Material **Steel** Tensile strength **28-32 tons** Depth and thickness of girder  
 at centre **10 1/4" x 1 3/16"** Length as per Rule **48.064"** Distance apart **7 1/4"** No. and pitch of stays  
 in each **4 C 9 1/4"** Working pressure by Rules **189 lbs & (one hanging stay fitted)** Combustion chamber plates: Material **Steel**  
 Tensile strength **26-30 tons** Thickness: Sides **21/32"** Back  Top **21/32"** Bottom **15/16"**  
 Pitch of stays to ditto: Sides **9 1/4" x 8 3/4"** Back  Top **7 1/4" x 9 1/4"** Are stays fitted with nuts or riveted over **nuts**  
 Working pressure by Rules **185 lbs** Front plate **bottom: Material Steel (0010)** Tensile strength **26-30 tons**  
 Thickness **15/16"** **Lower back plate: Material Steel (0010)** Tensile strength **26-30 tons** Thickness **15/16"**  
 Pitch of stays at wide water space  Are stays fitted with nuts or riveted over   
 Working Pressure  Main stays: Material **Steel** Tensile strength **28-32 tons**  
 Diameter **At body of stay, 3 1/8"** **Over threads 3 1/8"** No. of threads per inch **6** Area supported by each stay **327**  $\square$   
 Working pressure by Rules **225 lbs** Screw stays: Material **Steel** Tensile strength **26-30 tons**  
 Diameter **At turned off part, 1 5/8"** **Over threads 1 5/8"** No. of threads per inch **9** Area supported by each stay **80.94**  $\square$

Working pressure by Rules *188 lbs* Are the stays drilled at the outer ends *NO* Margin stays: Diameter { At turned off part, *✓*  
or *✓*  
Over threads *✓*  
No. of threads per inch *✓* Area supported by each stay *✓* Working pressure by Rules *✓*  
Tubes: Material *S.D. steel* External diameter { Plain *3 1/2"* Thickness *3/16"* No. of threads per inch *9*  
Stay *3 1/2"* Pitch of tubes *4 5/8" x 4 5/8"* Working pressure by Rules *(308 lbs)* Manhole compensation: Size of opening in  
shell plate *20" x 16"* Section of compensating ring *8" x 1" (McNeil)* No. of rivets and diameter of rivet holes *42 - 1 1/16"* *✓*  
Outer row rivet pitch at ends *8"* 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 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  
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 *FOR*  
The foregoing is a correct description,  
*J. H. Shields* Manufacturer.  
*SECRETARY,*

Dates of Survey { During progress of work in shops - - - *Jan. 5. 12. 19. 27. Dec 8. 18. 24. 31. Jan 7. 14.* Are the approved plans of boiler and superheater forwarded herewith *NO with*  
while building { During erection on board vessel - - - *20. 29. Feb. 5. 12. 19. 26. Mar 2* (If not state date of approval.) *no 12580.*  
Total No. of visits *17 each.*

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

*These boilers are duplicate of Builders nos 5639 & 40  
our Rpt No 12580. have been constructed under Special  
Survey: are of good material and workmanship and  
on completion were tested by hydraulic pressure  
with satisfactory results.*

Survey Fee ... .. £ *19 : 16 : -* When applied for, *MONTHLY A/c.*  
Travelling Expenses (if any) £ : : When received, *192*

*W. H. Roberts*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned *See Machinery rpt*