

REPORT ON BOILERS.

No. 98396.

11 MAR 1931

Received at London Office

Date of writing Report _____ When handed in at Local Office - 9 MAR. 1931 Port of LIVERPOOL

No. in Reg. Book. 89440 Survey held at Birkenhead Date, First Survey 19th March /30 Last Survey 3rd March 1931

on the S.S. 'Athelbeach' (Number of Visits 86) Gross 6450 Tons Net _____

Master _____ Built at Birkenhead By whom built Cammell Laird & Co. Ltd. Yard No. 973 When built 1930

Engines made at Greenock By whom made John Kincaid & Co. Ltd. Engine No. 760 When made 1930

Boilers made at Birkenhead By whom made Cammell Laird & Co. Ltd. Boiler No. 973 When made 1930

Nominal Horse Power 490 Owners United Industral Co. Ltd. Port belonging to Liverpool

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel David Colville & Sons; Earl of Dudley (Letter for Record S. _____) Is forced draught fitted Yes Coal or Oil fired oil

Total Heating Surface of Boilers 1221 sq ft Working Pressure 180 lb sq in

No. and Description of Boilers One Cylindrical Multitubular Tested by hydraulic pressure to 320 lb. Date of test 27.6.30 No. of Certificate 2365 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler _____ No. and Description of safety valves to each boiler Two spring loaded Area of each set of valves per boiler _____ Pressure to which they are adjusted 185 lb sq in 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 or uptakes and bunkers or woodwork 2'3" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating on 2nd deck Is the bottom of the boiler insulated Yes Largest internal dia. of boilers 11'2 1/16" Length 10'7" Shell plates: Material steel Tensile strength 28-32 tons sq in

Thickness 15/16" Are the shell plates welded or flanged No Description of riveting: circ. seams end OR lap inter. _____ long. seams treble Riv. double rivets Diameter of rivet holes in circ. seams 1 1/8" Pitch of rivets 3-786" 7"

Percentage of strength of circ. end seams plate 70 rivets 46 Percentage of strength of circ. intermediate seam plate 85.7 rivets 92 combined 89.8 Working pressure of shell by Rules 183 1/2 lb sq in

Percentage of strength of longitudinal joint plate 23/32" rivets 27/32" combined 89.8 No. and Description of Furnaces in each Boiler Two Corrugated

Material steel Tensile strength 26-30 tons sq in Smallest outside diameter 37" Length of plain part top bottom Thickness of plates crown 15/32" bottom Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 182 1/2 lb sq in

End plates in steam space: Material steel Tensile strength 26-30 tons sq in Thickness 31/32" Pitch of stays 16 1/2" x 16 1/2"

How are stays secured double nuts + plain washers Working pressure by Rules 181 1/2 lb sq in Tube plates: Material front steel back steel Tensile strength 26-30 tons sq in Thickness 31/32" 23/32"

Mean pitch of stay tubes in nests 9.5" Pitch across wide water spaces 14" Working pressure front 243 1/2 lb sq in back 193 1/2 lb sq in

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons sq in Depth and thickness of girder at centre 2 plates 8 1/4" x 3 1/4" Length as per Rule 2'7 5/8" Distance apart 8" No. and pitch of stays in each 2 @ 10" Working pressure by Rules 200 lb sq in

Combustion chamber plates: Material steel Tensile strength 26-30 tons sq in Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 13/16"

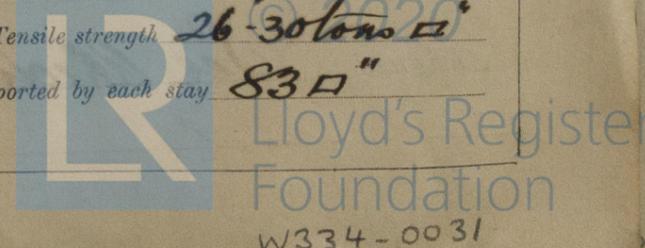
Pitch of stays to ditto: Sides 10" x 8" Back 9 3/16" x 9" Top 10" x 8" Are stays fitted with nuts or riveted over nuts Working pressure by Rules 181 1/2 lb sq in

Front plate at bottom: Material steel Tensile strength 26-30 tons sq in Thickness 31/32" Lower back plate: Material steel Tensile strength 26-30 tons sq in Thickness 31/32"

Pitch of stays at wide water space 13 3/4" x 9" Are stays fitted with nuts or riveted over nuts Working Pressure 240 lb sq in Main stays: Material steel Tensile strength 28-32 tons sq in

Diameter At top of stay 2 7/8" No. of threads per inch 6 Area supported by each stay 272 sq in Over threads Working pressure by Rules 181 1/2 lb sq in Screw stays: Material steel Tensile strength 26-30 tons sq in

Diameter At top of part 1 5/8" No. of threads per inch 9 Area supported by each stay 83 sq in Over threads



Working pressure by Rules **184 lb** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At normal part. **1 1/4"**
 Over threads **1 1/4"**
 No. of threads per inch **9** Area supported by each stay **99 sq"** Working pressure by Rules **182 lb**
 Tubes: Material **Special Iron** External diameter { Plain **3"**
 Stay **3"** Thickness { **1/4"** No. of threads per inch **9**
 Pitch of tubes **4 1/4 x 4 3/16'** Working pressure by Rules **210 lb** Manhole compensation: Size of opening in
 shell plate **21" x 17"** Section of compensating ring **8 7/8" x 1 1/32"** No. of rivets and diameter of rivet holes **38 @ 1 1/8"**
 Outer row rivet pitch at ends **7 1/2"** Depth of flange if manhole flanged **3 1/2"** Steam Dome: Material **Iron**
 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** 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 22 inclusive for boilers been complied with **Yes**

The foregoing is a correct description,
GAMMELL LAIRD AND COMPANY LIMITED
J. B. Laird Manufacturer.

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

Is this Boiler a duplicate of a previous case **Yes** If so, state Vessel's name and Report No. **Whellaird No 96791**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
 This boiler has been constructed under special Survey, and is in accordance with the Rules and the approved plan. It has been examined under steam and found satisfactory, and is in my opinion, eligible for record of 184 lb in Register book.

Survey Fee ... £ **8 : 3 : 0** When applied for, **10 MAR. 1931**
 Travelling Expenses (if any) £ : : When received, **18.3.1931**

J. J. Milton
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL 10 MAR. 1931**

Assigned **See Machy rpt.**

