

Rpt. 5a.

## REPORT ON BOILERS.

No.

89215

Received at London Office 24 OCT 1925

Date of writing Report 15.10.1925 When handed in at Local Office 19 OCT 1925 Port of LIVERPOOL

No. in Reg. Book. 38857 on the S.S. 'Elmfield' Survey held at Lytham Date, First Survey 6<sup>th</sup> March Last Survey 12<sup>th</sup> Dec 1925

(Number of Visits 13) Gross 449 Tons Net 175

Master Built at Lytham By whom built Lytham S.B. & C. Ltd. Yard No. 674 When built 1925

Engines made at D<sup>o</sup> By whom made D<sup>o</sup> Engine No. 483 When made 1925

Boilers made at D<sup>o</sup> By whom made D<sup>o</sup> Boiler No. 483 When made 1925

Nominal Horse Power 82 Owners Zillah Shpg. & Carrying Co. Ltd. Port belonging to Liverpool

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

Manufacturers of Steel W. Beardmore & Co. (Letter for Record S)

Total Heating Surface of Boilers 1496 sq. ft. Is forced draught fitted No Coal or Oil fired Yes

No. and Description of Boilers 1, cylindrical single ended, multitubular Working Pressure 140 lbs

Tested by hydraulic pressure to 260 lbs Date of test 30.7.25 No. of Certificate 2255 Can each boiler be worked separately

Area of Firegrate in each Boiler 52 sq. ft. No. and Description of safety valves to each boiler 2, spring loaded

Area of each set of valves per boiler {per Rule 12.10" as fitted 14.10" Pressure to which they are adjusted 145 lbs Are they fitted with easing gear Yes

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 18" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated no

Largest internal dia. of boilers 13'-6" Length 10'-6" Shell plates: Material M.S. Tensile strength 28-32

Thickness 7/8" Are the shell plates welded or flanged No Description of riveting: circ. seams {end 2.R. lap inter. 37/8

long. seams treble riv. butt Diameter of rivet holes in {circ. seams 1 1/16 long. seams 15/16 Pitch of rivets {6/8

Percentage of strength of circ. end seams {plate 71 rivets 54 Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 86.3 rivets 88.4 combined 94.8 Working pressure of shell by Rules 141 lbs

Thickness of butt straps {outer 13/16 inner 13/16 No. and Description of Furnaces in each Boiler 3, plain

Material M.S. Tensile strength 26-30 Smallest outside diameter 3'-5"

Length of plain part {top 7'-1 1/2 bottom 7'-8 3/4 Thickness of plates {crown 45/64 bottom 45/64 Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 140 lbs

End plates in steam space: Material M.S. Tensile strength 26-30 Thickness 1" Pitch of stays 1'-7"

How are stays secured double nuts & washers Working pressure by Rules 142 lbs

Tube plates: Material {front 25/32 mild steel back 3/4 M.S. Tensile strength {26-30 Thickness {25/32 3/4

Mean pitch of stay tubes in nests 10x12" Pitch across wide water spaces 1'-2" Working pressure {front 164 lbs back 166 lbs

Girders to combustion chamber tops: Material M.S. Tensile strength 28-32 Depth and thickness of girder

at centre 7 1/4 x 5/8, double Length as per Rule 2-5 Distance apart 9 1/2 No. and pitch of stays

in each 2, 9 1/4 Working pressure by Rules 143 lbs Combustion chamber plates: Material M.S.

Tensile strength 26-30 Thickness: Sides 5/8 Back 9/16 Top 5/8 Bottom 5/8

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

Working pressure by Rules 149 lbs Front plate at bottom: Material M.S. Tensile strength 26-30

Thickness 25/32 Lower back plate: Material M.S. Tensile strength 26-30 Thickness 3/4

Pitch of stays at wide water space 1'-2" Are stays fitted with nuts or riveted over Yes

Working Pressure 164 lbs Main stays: Material M.S. Tensile strength 28-32

Diameter {At body of stay, 2 3/4" No. of threads per inch 6 Area supported by each stay 361 sq. in

Working pressure by Rules 152 lbs Screw stays: Material M.S. Tensile strength 26-30

Diameter {At turned off part, 1 1/2", 1 5/8" No. of threads per inch 9 Area supported by each stay 72 sq. in, 90.2 sq. in



Working pressure by Rules 174, 165 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 5/8 or Over threads 1 5/8 ✓  
 No. of threads per inch 9 Area supported by each stay 126 sq Working pressure by Rules 153 lb  
 Tubes: Material W. I. External diameter { Plain 3 1/2 Stay 3 1/2 Thickness { 9. B. W. G. 5/16 No. of threads per inch 9 ✓  
 Pitch of tubes 5" Working pressure by Rules 165 lb Manhole compensation: Size of opening in shell plate 19 1/2 x 15 1/2 Section of compensating ring 8" x 7/8" No. of rivets and diameter of rivet holes 21, 15/16 ✓  
 Outer row rivet pitch at ends 6 1/2 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 yes ✓

The foregoing is a correct description.

Manufacturer.

Dates { During progress of work in shops - - }  
 of Survey { During erection on board vessel - - }  
 while building { }  
See machy report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes ✓

Total No. of visits \_\_\_\_\_

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey, and the materials & workmanship are good. On completion according to approved plans, the boiler has been tested under water pressure to 200 lbs, and afterwards fitted on board in an efficient manner, & its safety valves adjusted under steam as above.

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

P. Townend.  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 2 OCT 1925

Assigned See Machy report. EBR