

# REPORT ON BOILERS.

No. 110700

Received at London Office MAY 4 1938

Date of writing Report 28th April 1938 When handed in at Local Office 29 APR 1938 Port of LIVERPOOL

No. in Survey held at Lytham Date, First Survey 6th March 1936 Last Survey 19th April 1938

g. Book. 7401. on the SS M BROOMFIELD (Number of Visits 21.) Tons { Gross 659.98 Net 273.66

Master ✓ Built at Lytham By whom built Lytham S.B. & E. Co. Ld. Yard No. 841 When built 1938

Engines made at Lytham By whom made Lytham S.B. & E. Co. Ld. Engine No. 535 When made 1938

Boilers made at do By whom made do Boiler No. 530 When made 1938

Nominal Horse Power 105. Owners Zillah Shipping & Carrying Co. Ld. Port belonging to Liverpool  
(Mngs. W.A. Savage Ld.)

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

Manufacturers of Steel Belvilles Ld. Glasgow. (Letter for Record 5)

Total Heating Surface of Boilers 1637 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One single ended multitubular cylindrical Working Pressure 200 lb sq. in.

Tested by hydraulic pressure to 350 lb sq. in. Date of test 28.9.37. No. of Certificate 6. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 37.7 sq. ft. No. and Description of safety valves to each boiler "Grant's" spring loaded one pair, each 2 1/2" dia.

Area of each set of valves per boiler { per Rule 9.53 sq. inches as fitted 9.82 sq. inches Pressure to which they are adjusted 200 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 7 feet to bunkers

Smallest distance between boilers or uptakes and bunkers or woodwork no woodwork Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating hot tank 12" to top of open floor Is the bottom of the boiler insulated no

Largest internal dia. of boilers 12' - 7 13/16" Length 11' - 0" mean Shell plates: Material Steel Tensile strength 30/34.

Thickness 1 3/32" Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R. zigzag. inter. none

long. seams TR. DBS. Diameter of rivet holes in { circ. seams 1 3/16" long. seams 1 3/16" Pitch of rivets { 3.7" 8 1/8"

Percentage of strength of circ. end seams { plate 68. rivets 48.7. Percentage of strength of circ. intermediate seam { plate 85.4. rivets 89.5

Percentage of strength of longitudinal joint { plate 89.5 rivets 88.4. combined Working pressure of shell by Rules 202 lb sq. in.

Thickness of butt straps { outer 53/64" inner 61/64" No. and Description of Furnaces in each Boiler Two Deighton type corrugated.

Material Steel Tensile strength 26/30 Smallest outside diameter 45 1/16"

Length of plain part { top 17' - 7 1/2" between bottom tube plates Thickness of plates { crown 21 1/32" bottom 21 1/32" Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 213 lb sq. in.

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 3/32" Pitch of stays 18 1/4" x 17 1/2"

How are stays secured Nuts & loose washers. Working pressure by Rules 204 lb sq. in.

Tube plates: Material { front Steel back " Tensile strength { 26/30. Thickness { 23/32"

Mean pitch of stay tubes in nests 7 1/2" x 7 1/2" Pitch across wide water spaces 13 1/2" Working pressure { front 220 lb sq. in. back 245 lb sq. in.

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

at centre 7 3/4" x 27 1/2" Length as per Rule 30 3/32" Distance apart 9 1/2" No. and pitch of stays

in each Two. 9 1/2" Working pressure by Rules 203 lb sq. in. Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 23/32"

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

Working pressure by Rules 212 lb sq. in. Front plate at bottom: Material Steel Tensile strength 26/30.

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 Thickness 7/8"

Pitch of stays at wide water space 13 1/2" x 9" Are stays fitted with nuts or riveted over nuts.

Working Pressure 237 lb sq. in. Main stays: Material Steel Tensile strength 28/32.

Diameter { At body of stay, 3" No. of threads per inch 6. Area supported by each stay 319 sq. inches

Over threads ✓ Working pressure by Rules 210 lb sq. in. Screw stays: Material Steel Tensile strength 28/32.

Diameter { At turned off part, 1 3/4" No. of threads per inch 9. Area supported by each stay 81 sq. inches

Over threads ✓



Working pressure by Rules 224 lb sq Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads 1 7/8" ✓  
No. of threads per inch 9 ✓ Area supported by each stay 101 sq. inches Working pressure by Rules 211 lb sq ✓  
Tubes: Material lap welded steel External diameter { Plain 2 1/2" Thickness { 9 LSG No. of threads per inch 9 ✓  
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 230 plain 214 stay Manhole compensation: Size of opening  
shell plate 16" x 20" Section of compensating ring 1 1/8" No. of rivets and diameter of rivet holes 36 @ 1 3/16" ✓  
Outer row rivet pitch at ends 7 3/4" Depth of flange if manhole flanged 3" ✓ 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  
stays Inner radius of crown Working pressure by Rules  
How connected to shell Size of doubling plate under dome Diameter of rivet holes and p  
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 a  
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 p  
Rules Pressure to which the safety valves are adjusted Hydraulic test pressur  
tubes, castings and after assembly in place Are drain cocks or valves fitt  
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,  
THE LYTHAM SHIPBUILDING and  
R. Friedman Manufacturing

Dates of Survey { During progress of work in shops - - 1936. Mar. 3. Apr. 4. May. 19. July 17. Aug. 4. 27. Sept. 16. Oct. 1. Dec. 3.  
while building { During erection on board vessel - - - 1937. Feb. 12. Mar. 2. 17. April 9. June 17. Aug. 3. Sept. 20. 28.  
Are the approved plans of boiler and superheater forwarded herewith E. 4. 3. 30  
(If not state date of approval.)  
1938. Jan. 1. Feb. 9. 23. Apr. 19. Total No. of visits 21

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "BRACKENFIELD" Lr. Rpt. No.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
This boiler has been constructed under Special Survey in accordance with the approved plan, Secretary's letter and the Rules for Engines & Boilers. The materials and workmanship are satisfactory and the materials have been tested under the supervision of the Society's Surveyors. The boiler has been efficiently fitted on board, examined under working conditions and the safety valves adjusted under steam to the working pressure.  
In my opinion this vessel is eligible to be classed in the Register Book with notation of +LMC 4.38. 158. 200LBS. OG.  
Millsheets in respect of the materials were forwarded with Lr. Rpt No. 1099/5/38. Brackenfild

Survey Fee ... £ See Mach. report When applied for, 19  
Travelling Expenses (if any) £ report When received, 19

John Lennie  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 3 MAY 1938

Assigned See Machinery rpt.

G. L. R.