

To Lloyd's requirements for a working pressure of 130 lbs per  $\square$   
 All plates, webs, rivets & girders of Steel      Tubes of Wrought Iron.  
 Scale 1" = 100'      F.B.I.

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W. DICKINSON & SONS, LIMITED  
ENGINEERS  
TRACING NO. 5445  
DATE 6.11.01.  
SUNDERLAND  
Heating Surface  
in 2 Boilers 5500#

STAYS			
Dia.	THREADS	EFF DIA	EFF. AN
	PER. INCH		
1 $\frac{1}{2}$ "	9	1.6078	2.031
1 $\frac{3}{8}$ "	9	1.7328	2.35
2 $\frac{1}{2}$ "	6	2.2868	4.13
3"	6	2.78	6.1

ENGINE N<sup>o</sup>  
570 2OFF

Intended for Messrs Bartram & Sons. P.P. N<sup>o</sup> 187

DATE \_\_\_\_\_

Oct 30<sup>th</sup> 1901

Longitudinal seams fitted with Double Butt Straps  
Straps  $1\frac{1}{2}$ " thick Rust Bolts  $1\frac{1}{2}$ " dia  
Tensile Strength of Shell Plates & Butt Straps 28 to 32 tons per  $\square$ "

Riveting				
Front & Back Beams	Double riveted	$1\frac{1}{2}$ " rivets	$3\frac{1}{2}$ " Pitch	$5\frac{3}{8}$ " Lap.
Com. Sbr. Bot. Longitudinal	"	$\frac{5}{8}$ "	$2\frac{1}{2}$ "	" "
" " + Furnaces	Single	$\frac{7}{8}$ "	$2\frac{1}{2}$ "	$2\frac{1}{2}$ "

Manhole 16" x 12"  
Stiffening Ring 8 $\frac{7}{8}$ " x 1 $\frac{3}{8}$ "  
Rivet Holes. 1 $\frac{7}{16}$ " dia

3" Rays. (27 Tons Tensile.)  
11'-0" Mean Length.

244 Plain Tubes  $3\frac{1}{2}$ " ex dia.  $\sqrt{7}$  WG.  
126 Stay " " "  $\frac{5}{16}$ " thick, marked "S"  
370 Tubes in 1 Boiler.  $3\frac{1}{2}$ " ex. dia.

7'-3" Over Tube Plates

Working plates dispersed with  
back end plates made  $\frac{29}{32}$  thick see  
appended tracing.



John. Dickinson & Sons Ltd  
Plan of Boilers 180 lbs wt

Contract No 570

for.

J. Barham & Sons  
Sept 187

S. S. "Benarty"

Hunderland.

No 21030.



Lloyd's Register  
Foundation

W654-0127