

## REPORT ON BOILERS.

FRL 6 APL 1906

Mtl No. 4452  
Ld No. 22700  
FRL 6 APL 1906

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office

No. in Survey held at StockholmDate, first Survey 20<sup>th</sup> Dec<sup>r</sup> 1905 Last Survey 21<sup>st</sup> March 1906

Reg. Book.

(Number of Visits 27)on the Donkey Boiler of S.S. "Trafalgar"Tons { Gross 2205.78  
Net 1401.99Master Nans Thorsen Built at Andalsnes By whom built J. Brown & SonWhen built 1906Engines made at StockholmBy whom made Blair & Co. Ltdwhen made 1906Boilers made at StockholmBy whom made Blair & Co. Ltdwhen made 1906

Registered Horse Power

Owners Wilk WilhelmsenPort belonging to LonsbergMULTITUBULAR BOILERS ~~MAIN, AUXILIARY OR DONKEY.~~ <sup>FITTED ON MAIN DECK</sup> Manufacturers of Steel John Brown & Son Ltd(Letter for record 7) Total Heating Surface of Boilers 6534 Is forced draft fitted No No. and Description ofBoilers One cyl Tubular Working Pressure 90 lb Tested by hydraulic pressure to 180 lb Date of test 22.1.06No. of Certificate 3590 Can each boiler be worked separately ✓ Area of fire grate in each boiler 234 No. and Description ofsafety valves to each boiler Two spring Area of each valve 4.92 Pressure to which they are adjusted 90 lbAre they fitted with easing gear Yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler NoSmallest distance between boilers or uptakes and bunkers or woodwork 8 ft. Dia. of boilers 9'-0" Length 8'-6"Material of shell plates Steel Thickness 1/2" Range of tensile strength 28/32 Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams 20 in long. seams 2 Batt Straps Diameter of rivet holes in long. seams 7/8" Pitch of rivets One row 5 1/2"  
Two rows 2 3/4"Lap of plates or width of butt straps 9 1/2" Per centages of strength of longitudinal joint rivets 96.9 Working pressure of shell by plate 84rules 98.4 lb Size of manhole in shell 16 x 12 Size of compensating ring 30 x 26 x 1/2" No. and Description of Furnaces in eachboiler 2 Plain Material Steel Outside diameter 2'-7" Length of plain part top 5'-8" Thickness of plates crown 1/2"  
bottom 7'-3 1/2" bottom 1/2 1/32"Description of longitudinal joint 2 Batt Straps No. of strengthening rings ✓ Working pressure of furnace by the rules 111 lb Combustion chamberplates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2 1/32" Pitch of stays to ditto: Sides 7 1/2 x 8 1/2" Back 9 1/2 x 8 1/2"Top 9 x 6 1/2" If stays are fitted with nuts or riveted heads Back & top riveted Working pressure by rules 98.5 lb Material of stays Iron pipe Diameter atsmallest part 1 5/16" Area supported by each stay 77.1 Working pressure by rules 105 lb End plates in steam space: Material Steel Thickness 3/4"Pitch of stays 17 x 16" How are stays secured 2 x 16" Working pressure by rules 97 lb Material of stays Steel Diameter at smallest part 2"Area supported by each stay 272 Working pressure by rules 115 lb Material of Front plates at bottom Steel Thickness 3/4" Material ofLower back plate Steel Thickness 3/4" Greatest pitch of stays 19 x 6 1/4" Working pressure of plate by rules 97.2 lb Diameter of tubes 5"Pitch of tubes 4 1/4 x 4 1/4" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 11 1/4" Pitch across widewater spaces 12 1/2" Working pressures by rules 138 lb Girders to Chamber tops: Material Steel Depth and thickness ofgirder at centre 5 1/2 x 1" Length as per rule 18" Distance apart 9" Number and pitch of Stays in each One 6 1/2"Working pressure by rules 107 lb Superheater or Steam chest: how connected to boiler None Can the superheater be shut off and the boiler workedseparately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivetholes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

VERTICAL DONKEY BOILER— No. Description Manufacturers of steel

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can

enter the donkey boiler Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile

strength Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Working pressure of shell by rules Thickness of shell crown plates

Radius of do. No. of Stays to do. Dia. of stays Diameter of furnace Top Bottom Length of furnace

Thickness of furnace plates Description of joint Working pressure of furnace by rules Thickness of furnace crown

plates Stayed by Diameter of uptake Thickness of uptake plates Thickness of water tubes

The foregoing is a correct description,  
FOR BLAIR & CO., LIMITED.Manufacturer. J. Brown & Son LtdDates of Survey { During progress of work in shops - -  
while building { During erection on board vessel - - -  
Total No. of visits1905 Dec<sup>r</sup> 20-24 1906 Jan. 8.12.13.22.25.29 Feb. 13.  
1906 Feb. 28.

Is the approved plan of main boiler forwarded herewith

" " " donkey " " " " " " " "



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

This boiler has been constructed under special survey  
the materials and workmanship are good & efficient  
and when tested with hydraulic pressure was found  
tight & satisfactory.  
Fitted on board & tested under steam

*Sunderland*

Certificate (if required) to be sent to

The amount of Entry Fee...	£	:	:	When applied for.
Special ...	£	:	:	8. 3 1906
Donkey Boiler Fee ...	£	2	2 : 0	When received.
Travelling Expenses (if any) £	:	:	:	19.

Committee's Minute

TUES. 10 APR 1906

Assigned

*See Minute  
on attached report*

*Geo. A. Milner & E. J. Stoddart.*  
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.



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Foundation