

# REPORT ON MACHINERY.

Std. No. 17398

N. Whl. 94401

Port of Sunderland

Received at London Office ON MAY 1894

No. in Survey held at Sunderland

Date, first Survey 10 May 92 Last Survey 24 Apr. 1894

Reg. Book.

(Number of Visits 38)

on the S/S. "Wraggoe"

Master W. Rowe Built at Hartlepool By whom built Furness & Witherby & Co.

Tons { Gross 2845  
Net 1838

When built 1894

Engines made at Sunderland By whom made W. Allan & Co. Lim.

when made 1894

Boilers made at Sunderland By whom made W. Allan & Co. Lim.

when made 1894

Registered Horse Power 245 Owners Bennetts & Co.

Port belonging to Grimsby

Nom. Horse Power as per Section 28 242

ENGINES, &c.— Description of Engines Tri compound 3 crank S. No. of Cylinders 3  
Diameter of Cylinders 23" 34" 61" Length of Stroke 42" Revolutions per minute 70 Diameter of Screw shaft 11"  
Diameter of Tunnel shaft 11" Diameter of Crank shaft journals 11 1/2" Diameter of Crank pin 11 1/2" Size of Crank webs 17" x 7 1/8"  
Diameter of screw 15 ft Pitch of screw 16" - 6" No. of blades 4 State whether moveable f Total surface 68 sq  
No. of Feed pumps 2 Diameter of ditto 3" Stroke 2 1/2" Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 3" Stroke 2 1/2" Can one be overhauled while the other is at work yes  
No. of Donkey Engines 2 Sizes of Pumps 8" x 9" 7 1/2" x 3 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room P. 3" C 3 1/2" S 3" D 8" 3 1/2" In Holds, &c. Five. One 3 1/2" in Fore Hold. One 1 1/2" in Fore Main Hold. One 3 1/2" in After Main Hold. One 3 1/2" in After Hold. One 2 1/2" in Tunnel  
No. of bilge injections 1 sizes 5" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size yes 3 1/2"  
Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible  
Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above  
Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate  
What pipes are carried through the bunkers none How are they protected  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes  
When were stern tube, propeller, screw shaft, and all connections examined before launching 4.4.94 Is the screw shaft tunnel watertight yes  
Is it fitted with a watertight door yes worked from top platform engine room

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 3650 sq  
No. and Description of Boilers 2. Cyl. Multitubular single ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
Date of test 3/2/94 Can each boiler be worked separately yes Area of fire grate in each boiler 54 sq No. and Description of safety valves to  
each boiler 2 direct Spring Area of each valve 4.04 Pressure to which they are adjusted 165 lbs Are they fitted  
with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean diameter of boilers 13' 6"  
Length 10' 6" Material of shell plates S. Thickness 1 1/2" Description of riveting: circum. seams d. r. lap long. seams z. r. butt  
Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 15" Straps  
Per centages of strength of longitudinal joint 85 Working pressure of shell by rules 160 Size of manhole in shell 16" x 12"  
Size of compensating ring 25" x 28" x 1 1/4" No. and Description of Furnaces in each boiler 3 plain Material S. Outside diameter 39"  
Length of plain part 6-9" Thickness of plates 3 1/32" Description of longitudinal joint welded No. of strengthening rings 2 ring  
Working pressure of furnace by the rules 162 Combustion chamber plates: Material S. Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"  
Pitch of stays to ditto: Sides 8 3/8" x 8 1/2" Back 8 3/8" x 8 1/2" Top 8 3/8" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182  
Material of stays S. Diameter at smallest part 1 3/8" Area supported by each stay 75 sq Working pressure by rules 162 End plates in steam space:  
Material S. Thickness 3/4" Pitch of stays 16 x 15" How are stays secured d. nuts Working pressure by rules 164 lbs Material of stays S.  
Diameter at smallest part 2 1/2" Area supported by each stay 240 lbs Working pressure by rules 184 Material of Front plates at bottom 3/4"  
Thickness 3/4" Material of Lower back plate S. Thickness 3/4" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 215 lbs  
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S. Thickness: Front 3/4" Back 3/4" Mean pitch of stays 11"  
Pitch across wide water spaces 13 1/2" Working pressures by rules 222 lbs Girders in Chamber tops: Material S. Depth and  
thickness of girder at centre 7 1/2" x 1 1/2" Length as per rule 29 1/2" Distance apart 8 Number and pitch of Stays in each 2 of 8 3/8"  
Working pressure by rules 164 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
separately  
Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet  
holes — 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 —



**DONKEY BOILER**— Description *Vertical 4 cross tubes.*  
 Made at *Stockton.* By whom made *T. Sudron & Co.* When made *26/1/94* Where fixed *Stoke hole*  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *776.* Fire grate area *28* Description of safety valves *Spring*  
 No. of safety valves *1* Area of each *14.19* Pressure to which they are adjusted *85* If fitted with easing gear *Yes* If steam from main boilers enter the donkey boiler *No* Diameter of donkey boiler *7 ft.* Length *15 feet* Material of shell plates *S.* Thickness *15/32*  
 Description of riveting long. seams *Lap double* Diameter of rivet holes *13/16* Whether punched or drilled *punch* Pitch of rivets *2*  
 Lap of plating *1 1/4* Per centage of strength of joint *68.8* Rivets *68.8* Thickness of shell crown plates *9/16* Radius of do. *5' 9"* No. of Stays to do. *7*  
 Dia. of stays *1 1/4* Diameter of furnace Top *5' 8"* Bottom *6' 4"* Length of furnace *6' 3"* Thickness of furnace plates *2 1/32* Description joint *Lap single* Thickness of furnace crown plates *5/8* Stayed by *Same as shell crown* Working pressure of shell by rules *83.3*  
 Working pressure of furnace by rules *80 lbs.* Diameter of uptake *16"* Thickness of uptake plates *7/16* Thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *Two connecting rod bolts each top & bottom ends. Two main bearing bolts. One set coupling bolts. One set each feed & bilge pump valves. Bolts and nuts assorted. Bar iron.*

The foregoing is a correct description,  
**WILLIAM ALLAN & CO., LIMITED.** Manufacturers *main engines, boilers*  
*per Henry Barnes* SECRETARY.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *Machinery and boilers*  
*constructed under special survey; materials and workman good and efficient. main steam pipe tested by hydraulic 320 lbs. Engines and main boilers examined under steam engines found to work satisfactorily. Safety valves adjusted to 165 lbs. The following work to be completed at the Builders Yard viz. pumping arrangement completed as per approved plan. tunnel fitted with door & made watertight. donkey boiler stayed place mounted & its valves adjusted to the working pressure & sp. valve gear to be examined. In my opinion when the above detailed work is completed the vessel will be eligible for the record in the Register Book of L.C.M.C. 5/94.*

*The above mentioned work has been completed at this port and the spare gear supplied*

It is submitted that  
 this vessel is eligible for  
 THE RECORD + L.M.C. 5/94

*ARRR*

*21-5-94*

MACHINERY CERTIFICATE  
 WRITTEN

Certificate (if required) to be sent to

The amount of Entry Fee.. £ *2* : *0* : *0* When applied for, *18 May 1894*  
 Special .. £ *32* : *2* : *0*  
 Donkey Boiler Fee .. £ *-* : *-* : *-*  
 Travelling Expenses (if any) £ *-* : *-* : *-* When received, *23/5/94*

*S. S. Findlay & A. R. Paton*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 22 MAY 1894**

Assigned

*+ L.M.C. 5/94*



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 Foundation