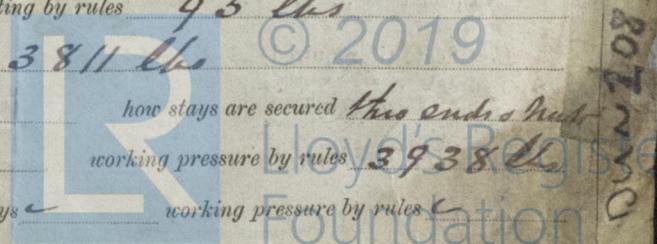


# REPORT ON MACHINERY.

No. 157. (Received in London Office 8/6/82)  
 No. in Survey held at Dundee Date, first Survey 3/11/81 Last Survey 3<sup>rd</sup> June 1882  
 Reg. Book. on the I.S.S. "Cuxhaven" Tons 486.55  
 Master C. Ayre Built at Dundee When built June 1882  
 Engines made at Dundee By whom made W. B. Thompson when made 1882  
 Boilers made at do By whom made " " when made 1882  
 Registered Horse Power 150. Owners Yorkshire Coal & Steam Ship Co. (Lim) Port belonging to Goole

**ENGINES, &c.—**  
 Description of Engines Direct acting Compound 2nd Cy<sup>rs</sup> surface Condensing  
 Diameter of Cylinders 30" x 60" Length of Stroke 33" No. of Rev. per minute 84 Point of Cut off, High Pressure 9/16" Low Pressure 9/16"  
 Diameter of Screw shaft 9 3/4" Diameter of Tunnel shaft 9 1/2" Diameter of Crank shaft journals 9 3/4" Diameter of Crank pin 9 3/4" size of Crank webs 7 x 11"  
 Diameter of screw 12" 0" Pitch of screw 15" 6" No. of blades 4 state whether moveable sol total surface 51.7 feet  
 No. of Feed pumps two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps two diameter of ditto 3 1/2" Stroke 23" Can one be overhauled while the other is at work yes  
 Where do they pump from All compartments  
 No. of Donkey Engines one Ballast one Feed Size of Pumps 7 x 18 x 8" 6 x 8 1/2 x 3 1/2" Where do they pump from sea. Helmet - to boilers  
 Location on Deck (Ballast) sea Compartments & Tanks this condenser & ship side  
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes  
 No. of bilge injections one and sizes 5" Are they connected to condenser, or to circulating pump circulating  
 How are the pumps worked by levers from L.P. piston crosshead  
 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 yes  
 What pipes are carried through the bunkers none How are they protected —  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch 6/5/82  
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Tops of cylinders

**BOILERS, &c.—**  
 Number of Boilers two Description Circular Tubular  
 Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test 2<sup>nd</sup> May 1882  
 Description of ~~superheating apparatus~~ steam chest Horizontal drums  
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately —  
 Area of square feet of fire grate surface in each boiler 35 feet Description of safety valves Direct Spring load W. B. T.  
 No. to each boiler 2 area of each valve 9.61" Are they fitted with easing gear yes  
 No. of safety valves to superheater — area of each valve — are they fitted with easing gear —  
 Smallest distance between boilers and bunkers or woodwork 9"  
 Diameter of boilers 11" 6" Length of boilers 9" 9" description of riveting of shell long. seams lap J-R. circum. seams lap D-R.  
 Thickness of shell plates 2 7/32" diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4 1/2"  
 Thickness of plating 8" x 5 1/2" percentage of strength of longitudinal joint 75 & 70 % working pressure of shell by rules 81 lbs  
 Diameter of manholes in shell 16" x 13" size of compensating rings 4" x 4" x 3/4"  
 No. of Furnaces in each boiler two outside diameter 40" length, top 7" 0" bottom 9" 0"  
 Thickness of plates 1/2" description of joint welded if rings are fitted flanged greatest length between rings 4" 6"  
 Working pressure of furnace by the rules 124 lb whole length 80 lb  
 Thickness of combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"  
 Thickness of stays to ditto sides 9" x 9" back 9" x 9" top 9" x 8"  
 Are stays fitted with nuts or riveted heads Nuts both ends working pressure of plating by rules 95 lbs  
 Diameter of stays at smallest part 1 1/2" working pressure of ditto by rules 3811 lbs  
 Thickness of plates in steam space, thickness 3/8" pitch of stays to ditto 16" x 16" how stays are secured the ends nuts  
 Working pressure by rules 107 lbs diameter of stays at smallest part 2 3/16" working pressure by rules 3938 lbs  
 Thickness of plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays — working pressure by rules —



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Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{1}{2}$ " thickness of tube plates, front  $\frac{4}{16}$ " back  $\frac{4}{16}$ "  
 How stayed *tubes & nuts* pitch of stays  $9" \times 9"$  width of water spaces  $1"$   
 Diameter of ~~superheater~~ Steam chest  $3' 6"$  length  $8' 0"$   
 Thickness of plates  $\frac{3}{8}$ " description of longitudinal joint *lap D.R.* diameter of rivet holes  $\frac{7}{8}$ " pitch of rivets  $3\frac{1}{2}$ "  
 Working pressure of shell by rules  $102$  lb Diameter of flue  $\leftarrow$  thickness of plates  $\leftarrow$   
 If stiffened with rings  $\leftarrow$  distance between rings  $\leftarrow$  Working pressure by rules  $\leftarrow$   
 End plates of ~~superheater~~ steam chest; thickness  $\frac{3}{4}$ " How stayed *by 4 =  $2\frac{1}{8}$ " bolts through ends & nuts*  
~~Superheater~~ steam chest; how connected to boiler *by malleable necks riveted to shells*

DONKEY BOILER—

Description *one Round vertical*  
 Made at *Dundee* By whom made *W.B. Thompson* when made *June 1882*  
 Where fixed *Stockholm* working pressure  $50$  lb Tested by hydraulic pressure to  $100$  lb No. of Certificate  $175$   
 Fire grate area  $15$  feet Description of safety valves *direct sp. lead* No. of safety valves *one* area of each  $9.62$  ft<sup>2</sup>  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no (no return)*  
 Diameter of donkey boiler  $5' 0"$  length  $9' 0"$  description of riveting *lap double riveted*  
 thickness of shell plates  $\frac{3}{8}$ " diameter of rivet holes  $\frac{3}{4}$ " whether punched or drilled *punched*  
 pitch of rivets  $3"$  lap of plating  $4\frac{1}{2}"$  per centage of strength of joint  $75\%$   
 thickness of crown plates  $\frac{7}{16}$ " stayed by *8 bolt stays  $1\frac{3}{8}$ " thro tops & nuts*  
 Diameter of furnace, top  $3' 11"$  bottom  $4' 5\frac{1}{2}"$  length of furnace  $5' 2"$   
 thickness of plates  $\frac{7}{16}$ " description of joint *lap single riveted*  
 thickness of furnace crown plates  $\frac{1}{2}"$  stayed by *bolt stays to crown of boiler*  
 Working pressure of shell by rules  $71$  lbs working pressure of furnace by rules  $66$  lbs  
 diameter of uptake  $13\frac{1}{2}"$  thickness of plates  $\frac{1}{2}"$  thickness of water tubes  $\frac{3}{8}"$

The foregoing is a correct description,

Manufacturer.

*W.B. Thompson*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Boilers and Machinery*

*of this vessel have been fitted in accordance with the requirements of the Rules and to plans of boilers submitted for the Committee's approval dated 5/11/81. The material and workmanship are of a good description the safety valves have been tested by steam and set to a working pressure of 80 lbs per square inch and the machinery seen at work - and in my opinion are in good and safe working order - and eligible to be entered into the Register Book with the distinctive mark + Lloyd's M.C. in red 3.6.82*

The amount of Entry Fee  $\pounds 3 : 0 : 0$  received by me,  
 Special  $\pounds 22 : 10 : 0$   
 Certificate (if required)  $\pounds - : 5 : 0$  2-6-1882  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ )

Committee's Minute

Friday, 2<sup>d</sup> June, 18 82.

*John Sturrock*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Dundee District*

Lloyd's Register  
 Foundation