

# REPORT ON MACHINERY.

Inbr No. 1113

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Port of **MIDDLESBROUGH-ON-TEES.**

Received at London Office 18

No. in Survey held at Stockton-on-Tees Date, first Survey 12<sup>th</sup> Sept. Last Survey 30<sup>th</sup> Nov. 1893  
 Reg. Book. Supplement (Number of Visits 7)  
19 on the Steam Tug "Search Light" (late "Acton")  
 Master Heming Built at Glasgow By whom built J. Fletcher & Co.  
 Engines made at Greenock By whom made Kincaid & Co. (Lim<sup>d</sup>) when made 1894  
 Boilers made at Stockton-on-Tees By whom made J. S. Aaron & Co. Lim<sup>d</sup> when made 1893  
 Registered Horse Power 35 Owners C. Hammond Port belonging to Swansea  
 Nom. Horse Power as per Section 28 —

**ENGINES, &c.—** Description of Engines No. of Cylinders  
 Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule as fitted  
 Diameter of Tunnel shaft as per rule as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs  
 Diameter of screw Pitch of screw No. of blades State whether moveable Total surface  
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
 No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work  
 No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room In Holds, &c.

No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size  
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible  
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate  
 What pipes are carried through the bunkers How are they protected  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight  
 Is it fitted with a watertight door worked from

**BOILERS, &c.—** (Letter for record A) Total Heating Surface of Boilers 670 sq. ft.  
 No. and Description of Boilers One: cylindrical multitubular Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs  
 Date of test 30/11/93 Can each boiler be worked separately — Area of fire grate in each boiler 29 1/2 sq. ft. No. and Description of safety valves to each boiler Two Direct spring Area of each valve 7.06 sq. in. Pressure to which they are adjusted 100 lbs Are they fitted with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean diameter of boilers 9'0"  
 Length 9'6" Material of shell plates Steel Thickness 9/16" Description of riveting: circum. seams Lap Double long. seams D. Butt Shaps.  
 Diameter of rivet holes in long. seams 13/16" Pitch of rivets 4 1/4" 2 1/8" Lap of plates or width of butt straps 8 3/4"  
 Per centages of strength of longitudinal joint rivets 97 plate 80.8 Working pressure of shell by rules 104.7 lbs Size of manhole in shell 12" x 15"  
 Size of compensating ring 8" index No. and Description of Furnaces in each boiler Two: plain Material Steel Outside diameter 2'11"  
 Length of plain part top 6'3" bottom 8'1 1/2" Thickness of plates crown 3/4" bottom 5/16" Description of longitudinal joint D. B. Shaps. No. of strengthening rings none  
 Working pressure of furnace by the rules 102 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 1/8" Top 9/16" Bottom 3/4"  
 Pitch of stays to ditto: Sides 9" Back 9 x 9" Top 10 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 102 lbs  
 Material of stays Iron Diameter at smallest part 1 3/8" Area supported by each stay 81 sq. in. Working pressure by rules 111 lbs End plates in steam space: Material Steel Thickness 13/16" Pitch of stays 17 x 12" How are stays secured D. B. nuts Working pressure by rules 103 lbs Material of stays Iron  
 Diameter at smallest part 2" Area supported by each stay 204 sq. in. Working pressure by rules 117 lbs Material of Front plates at bottom Steel Thickness 9/16" Material of Lower back plate Steel Thickness 3/32" Greatest pitch of stays 12" Working pressure of plate by rules 103 lbs  
 Diameter of tubes 3" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates Steel Thickness: Front 3/32" Back 1/16" Mean pitch of stays 12 3/4"  
 Pitch across wide water spaces 13" Working pressures by rules 160 lbs 104 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 6 1/2 x 1 1/4" Length as per rule 24" Distance apart 10 3/8" Number and pitch of Stays in each one  
 Working pressure by rules 100 lbs Superheater on Steam chest; how connected to boiler By pipe Can the superheater be shut off and the boiler worked separately — Diameter 2'3" Length 4'0" Thickness of shell plates 3/8" Material Steel Description of longitudinal joint Lap Double rivet  
 holes 13/16" Pitch of rivets 2 3/4" Working pressure of shell by rules 192 lbs Diameter of flue — Material of flue plates — Thickness —  
 If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness 7/16" How stayed Dished & one two Stay  
 Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —



12249 gls

DONKEY BOILER— Description

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 \_\_\_\_\_ Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_  
Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

THOMAS HUDRON & Co., LIMITED Manufacturer of main Boilers.

Thomas Hudron

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Boiler of this vessel has been built under special  
Survey and the workmanship is good. The steam dome and  
Boiler were tested by hydraulic pressure to 200 lbs per sq. inch  
separately, and should be riveted together when fitted in the  
ship.

Wm. R. Austin  
Middlebrook-on-Tees.

The steam receiver neck flange riveted to boiler shell & caulked and the boiler re-  
tested by hydraulic pressure to 200 lbs per sq. inch. Test satisfactory.

A. Vernon

Certificate (if required) to be sent to

The amount of Entry Fee..	£	:	:	When applied for,
Special .. .. .	£	:	:	<del>11. 94</del>
MAIN Donkey Boiler Fee .. .. .	£	3:	":	6. 1. 94
Travelling Expenses (if any) £	:	:	:	When received, 9. 1. 94

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

Committee's Minute TUES. 8 MAY 1894

Assigned



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Foundation