

# IRON OR STEEL SHIP.

(Received at London Office, 7818)

No. 4818 Survey held at  
On the Steel Screw Steamer "ÆON"

Date of writing Report 27<sup>th</sup> December 89 Port of West Hartlepool  
Date, First Survey 15<sup>th</sup> August 89 Last Survey 22<sup>nd</sup> Decr 1889  
Rig Two Masts, Schooner.

TONNAGE under Tonnage Deck	1652.52
Do. between Tonnage Dk. and 3rd Aft. Spar or Awning Dk. Right and left	10.50
Total under Upper Dk.	
Do. of Poop	74.94
Do. of Raised Or. Dk. or Hatch	134.84
Do. of Bridge House	280.49
Do. of Houses on Deck Chant	4.83
Do. of excess of Hatchways	20.97
Do. of Forecastle	40.34
Gross Tonnage	2219.76
Less Crew Space	80.36
	2139.40
Less Engine Room	710.32
Register Tonnage as cut on Beam	1429.08

ONE, OR TWO DECKED, THREE DECKED VESSEL, SPAR, OR AWNING-DECKED VESSEL.

Half Breadth (moulded)	19.33
Depth from upper part of Keel to top of Upper Deck Beams	22.75
Girth of Half Midship Frame (as per Rule)	37.45
1st Number	49.83
1st Number, if a 3-Decked Vessel deduct 7 feet	
Length	270.75
2nd Number	21613
Proportions—Breadth to Length	6.9
Depth to Length—Upper Deck to Keel	
Main Deck ditto	11.9

Master Sate  
Year of appointment (1) As master in service of owner of present vessel: 1889 (2) As master of this vessel: 1889  
Built at Stockton  
When built 1889 Launched 23<sup>rd</sup> Nov. 89  
By whom built Ropner & Son  
Owners ÆON Steam Ship Co (Ld)  
Managers Muirman & Dale.  
(If desired to be entered in Reg. Book.)  
Residence Newcastle  
Port belonging to London.  
Destined Voyage Alexandria  
If Surveyed while Building, Afloat, or in Dry Dock. White building and afloat.

LENGTH on deck as Rule	Feet.	Inches.	BREADTH Moulded	Feet.	Inches.	DEPTH top of Floors to Upper Deck Beams	Feet.	Inches.	Power of Engines	Horse.	N <sup>o</sup> . of Decks with flat laid	N <sup>o</sup> . of Tiers of Beams
270	9		38	8		19	7		200		One	Two

Dimensions of Ship per Register, length, 272.5 breadth, 38.9 depth, 18.6

KEEL, depth and thickness	Inches in ship.	Inches per Rule.	PLATES in Garboard Strakes, br'dth & thickness	Inches in ship.	Inches per Rule.
STEM, moulding and thickness	9 x 1 1/2	9 x 1 1/2	From Garboard to upper part of Bilges	36	12
STERN-POST for Rudder do. do.	9 x 2 1/2	9 x 2 1/2	Of d'bling at Bilge, or increased thickness, and length applied	10 and 12	10 and 12
for Propeller	9 x 5 1/2	9 x 5 1/2	From up. prt of Bilge to l. edge of Sh'rstrake	Two strakes increased 30	
Distance of Frames from moulding edge to moulding edge, all fore and aft	9 x 5 1/2	9 x 5 1/2	Main Sheerstrake, breadth and thickness	10 and 12	10 and 12
	24	24	Of d'bling at Sh'rk. & lng. applied at Bilge	40	13
			From M'n. to Up. or Spar Dk. Sh'rstrake	Bridge R. 9. 8's 20-0	
FRAMES, Angle Iron, for 1/2 length amidships	5 3 8	5 3 8	Up. or Spar Dk Sh'rstrake, br'dth & thicken'ss	19. 16 1/4, 14 1/2, 11 1/4 9 1/2	
Do. for 1/2 at each end	5 3 7	5 3 7	Butt Straps to outside plating, breadth & thickness	16. 15, 14, 13, 12 1/2	
REVERSED FRAMES, Angle Iron	3 1/2 3 8	3 1/2 3 8	Lengths of Plating	Eighteen feet	
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	38 Iron 5/16	38 5/16	Shifts of Plating, and Stringers	Two and three from space	
thickness at the ends of vessel	Cellular Double Bottom		Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness		
depth at 1/2 the half-b'ldth. as per Rule	all fore & aft (see plans)		Angle Iron on ditto		
height extended at the Bilges			Tie Plates fore and aft, outside Hatchways		
AMS, Upper, Spar, or Awning Deck			Diagonal Tie Plates on Beams No. of Pairs		
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron or double Angle Iron on Upper edge			Flat of Up., Spar, or Awning Dk.		
Average space			How fastened to Beams		
AMS, Main, or Middle Deck	6 1/2 3 9	6 1/2 3 9	Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	39 10	39 10
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron or double Angle Iron on Upper edge			Is the Stringer Plate attached to the outside plating?	Yes	
Average space	24		Angle Irons on ditto, No. Two	One 5 1/2 x 4	9. One 4 x 4 x 9.
AMS, Lower Deck—Off only	9 9 9	9 9 9	Tie Plates, outside Hatchways		
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron or double Angle Iron on Upper edge	3 1/2 3 7	3 1/2 3 7	Diagonal Tie Plates on Beams, No. of pairs		
Average space	See plans		Flat of Middle Deck do. do.		
BEAMS, Hold, or Orlop—			How fastened to Beams		
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron or double Angle Iron on Upper edge			Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	37 9	37 9
Average space			Is the Stringer Plate attached to the outside plating?	Yes	
KEELSONS Centre line, single or double plate, box, or Intercoastal Plates	38 Iron 10	38 10	Angle Irons on ditto, No. Two	4 x 4 x 9	4 x 4 x 9
Rider Plate Centre, Strake of P. D.	50 Iron 9/16	9/16	Stringer or Tie Plates, outside Hatchways		
Bulb Plate to Intercoastal Keelson			Flat of Lower Deck	Not laid	
Angle Irons	4 x 4 x 9	4 4 9	Ceiling betwixt Decks, thickness and material	2 1/2 Pine	
Double Angle Iron Side Keelson			in hold do. do.	2 1/2	2 1/2
Side Intercoastal Plate	3 1/2 3 7/16	3 1/2 3 7/16	Main piece of Rudder, diameter at head	7	7
do. Angle Irons	3 1/2 3 7/16	3 1/2 3 7/16	do. at heel	3 1/2	3 1/2
Attached to outside plating with angle iron			Can the Rudder be unshipped afloat?	Yes	
BILGE Angle Irons			Bulkheads No. Four No. per Rule Four		
do. Bulb Iron			Thickness of 7/16 to 6/16		
do. Intercoastal plates riveted to plating for length			Height up All to uppermast 8 1/2		
BILGE STRINGER Angle Irons			How secured to sides of ship	Between double frames	
Intercoastal plates riveted to plating for length			Size of Vertical Angle Irons	5 x 3 x 7/16 and distance apart 30 ins.	
SIDE STRINGER Angle Irons			Are the outside Plates doubled two spaces of Frames in length?	Yes	

The FRAMES extend in one length from Middle line to Tankside and from S.S. to Gunwale Riveted through plates with 7/8 in. Rivets, about 7 apart.  
The REVERSED ANGLE IRONS on floors and frames extend from middle line to Tankside and from S.S. to Gunwale Riveted through plates with 7/8 in. Rivets, about 7 apart.  
KEELSONS. Are the various lengths of Plates and Angle Irons properly connected? Yes And butts properly shifted? Yes

PLATING. Garboard, double riveted to Keel, with rivets 1 1/2 in. diameter, averaging 5 3/4 ins. from centre to centre.  
Edges of Garboards and to upper part of Bilge, worked clench, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from centre to centre.  
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 1/2 ins. from centre to centre.  
Butts of All Strakes at Bilge for 1/2 length, treble riveted with Butt Straps 3/16 thicker than the plates they connect.  
Edges from Bilge to Main Sheerstrake, worked clench, double or single riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from cr. to cr.  
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from cr. to cr.  
Edges of Main Sheerstrake, double or single riveted. Upper Sheerstrake, double or single riveted.  
Butts of Main Sheerstrake, treble riveted for 1/2 length amidships. Butts of Upper or Spar Sheerstrake, treble riveted 1/2 length amidships.  
Butts of Main Stringer Plate, treble riveted for 1/2 length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for 1/2 length.  
Breadth of laps of plating in double riveting 5 1/2. Breadth of laps of plating in single riveting 5

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? 3 1/2 in. D'ble No. of Breasthooks, 3 1/2 Dk. Crutches, 2 1/2 Dk.  
What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Good Malleable quality.  
Manufacturer's name or trade mark, Stockton Malleable I & C, West-Hartlepool. J & S. C. Consett. Steel Co of Scotland. Dorman, Lang. & Co.  
The above is a correct description.

Builder's Signature, ROPNER & SON. Surveyor's Signature, Allison B. Wilson.  
Surveyor to Lloyd's Register of British and Foreign Shipping.



Workmanship. Are the butts of plating planed or otherwise fitted? Planed  
Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiencies? Yes  
Are the fillings between the ribs and plates solid single pieces? Yes Do the holes for riveting plate to frames, butt straps, or plate to plate, &c., conform well to each other? Yes Are the rivet holes well and sufficiently countersunk in the plate and punched from the faying surfaces? Yes Do any rivets break into or through the seams or butts of the plating? A few through butts.

Masts, Bowsprit, Yards, &c., are Iron in Good condition, and sufficient in size and length. If of Iron or Steel give Scantlings of Plating, Angle Irons, &c., and further explain by a Sketch showing how the lower Masts and Bowsprit are constructed, showing the number of Plates and Angle Irons, mode of riveting, quality of Materials, and if stamped with Maker's name.

State also Length and Diameter of Lower Masts and Bowsprit These masts which are intended for auxiliary purposes only, have been constructed by the Cleveland Bridge & Engineering Co. in accordance with the tracing approved by the Committee (Secretary's letter 22.11.88) and the material which is of good malleable quality was manufactured by the West Hartlepool S & I Co. and has been tested as per Rule requirements.

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Number for Equip- ment 24045.	CABLES, &c.			Test per Certificate. Tons.	Fathoms & Inches per Rule.	Machine where Tested and Superintendent, also Name of Chain Maker.	ANCHORS.		Weight. Ex. Stock.	Test per Certificate	W'ght req'd per Rule.	Machine where Tested and Superintendent, also Name of Anchor Maker.
	Number of Certificate.	Fathoms.	Inches.				Number of Certificate (State if any and which Anchors are Stockless.)					
Letter for do. <u>Y.</u>	<u>9110</u>	<u>240</u>	<u>1 3/4</u>	<u>47 1/2</u> <u>55 1/2</u>	<u>240</u> <u>1 3/4</u>	<u>R.W. Commission</u>	<u>19780</u>	<u>34-2-0</u>	<u>34-2-2-0</u>	<u>37-2-0</u>	<u>37-2-0</u>	<u>R.W. Commission</u>
N <sup>o</sup> . <u>1</u> One complete set.	Chains caliped and found in order.						<u>19242</u>	<u>34-1-14</u>	<u>34-0-2-14</u>	<u>37-2-0</u>	<u>37-2-0</u>	<u>J. Hartman, Sup.</u>
							<u>19781</u>	<u>32-2-17</u>	<u>30-13-3-0 3/4</u>	<u>37-2-0</u>	<u>37-2-0</u>	<u>Makers.</u>
							These smaller Stockless Steel Anchors have been tested for a separate certificate by H. Boulds					
							Collective Weight					
	Fore Sails,	<u>Iron Steam Chain</u> <u>on Steel Wire</u>	<u>45</u>	<u>1 1/2</u>	<u>30 3/4</u> <u>20 3/4</u>	<u>45</u> <u>1 1/2</u>	<u>O. Taylor &amp; Son</u>	<u>104-2-3</u>	<u>106-3-11</u>	<u>106-3-11</u>	<u>106-3-11</u>	<u>R.W. Commission</u>
	Fore Topmast Stay Sails,	<u>Hempen 8" x 11" Cable</u>	<u>90</u>	<u>3 1/2</u>	<u>26</u>	<u>90 x 3 1/2</u>	<u>Test</u>	<u>Stream 19871</u>	<u>9-2-7</u>	<u>11-13-1-21</u>	<u>9-2-0</u>	<u>J. Hartman, Sup.</u>
	Main Sails,	<u>TOWLINE—</u> <u>Hemp or Steel Wire</u>	<u>90</u>	<u>3</u>	<u>15</u>	<u>90 x 3</u>	<u>Certificate</u>	<u>Kedge 19873</u>	<u>4-3-0</u>	<u>7-2-2-0</u>	<u>4-3-0</u>	<u>Makers</u>
Main Top Sails, and quality	<u>Hawser</u>	<u>90</u>	<u>2 1/2</u>	<u>12</u>	<u>90 x 2 1/2</u>	<u>Proved and</u>	<u>2nd Kedge 19873</u>	<u>2-2-0</u>	<u>5-0-0-0</u>	<u>2-2-0</u>	<u>2-2-0</u>	<u>O. Taylor &amp; Son</u>
<u>Good</u>	<u>Warp</u>	<u>Two</u>	<u>40</u>	<u>6</u>								

Standing and Running Rigging Iron Wire & Hemp sufficient in size and Good in quality. She has 2 Life Long Boats and 2 Others  
The Windlass is Iron, Good Capstan ✓ and Rudder Good Pumps Good

Engine Room Skylights. How constructed? Plates and Angles How secured in ordinary weather? Riveted to Casings.  
What arrangements for deadlights in bad weather? Bullsseyes and Deadlights

Coal Bunker Openings. How constructed? Plates & Angles How are lids secured? Battened down Height above deck? 21" above Bridge Dk.

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? On each side. Forward. Two scuppers, and two freeing ports 33" x 24", and aft. Four scuppers and four freeing ports 24" x 18".

Cargo Hatchways. How formed? Plates and Angles. Hatches, If strong and efficient? Yes. 3" solid.

State size Main Hatch 22-0" x 14-0" Fore Hatch 16-0" x 13-0" Quarterhatches 21-0" x 14-0" and 24-0" x 14-0".

If of extraordinary size, state how framed and secured.... ✓ What arrangement for shifting beams? As per Rules.

Order for Special Survey No. 1341  
Date 26<sup>th</sup> March 89  
Order for Ordinary Survey No. 242  
Date 24<sup>th</sup> March 89  
No. 242 in builder's yard.  
State dates of letters respecting this case 13<sup>th</sup> 21<sup>st</sup> Sept, 6<sup>th</sup> Oct, 22<sup>nd</sup> Nov, 4<sup>th</sup> Dec 88, 9<sup>th</sup> March 89.

General Remarks (State quality of workmanship, &c.) This vessel which is a sister ship to the S.S. "Rainbow" by the same Builders, has been built in accordance with the Rules, and the plans submitted to, and approved by the Committee. The whole of the material in the hull is of good malleable quality, and has been tested as per Rule requirements. The punching, countersinking, and riveting have been well executed, and the cement which is portland well laid, firmly adhering to the several surfaces.

The freeboard assigned by the Committee (Secretary's letter 14.11.89) have been marked on the vessels sides and are as follows. Summer 1' 10", Winter 2' 2", Fresh Water 2' 2" less. They should be recorded in the Register Book.

How are the surfaces preserved from oxidation? Inside Portland Cement & Paint Outside Paint.

Particulars for Record in R.B.—Length of Poop 26-7 1/2 ft., R.Q.D. 86-0 ft., Bridge Dk. 106-0 ft., Forecastle 24-5 ft.; No. of Dks. (excluding spar, awn., &c.) ✓  
Material of dks. Iron If spar, awn. dk., &c. ✓ Material of spar, awn. dk., &c. ✓ No. of tiers of beams (with and without dks. laid) ✓  
Official No. 9660; Signal Letters ✓ If double bottom, state particulars on separate form.

I am of opinion this Vessel should be Classed 100 A1 STEEL  
The amount of the Entry Fee 5 : : is received by me, ✓  
Special 49 : : 25.12.18 89 ✓

(to be sent as per margin). Certificate ...  
(Travelling Expenses, if any, £ ...).  
Committee's Minute TUES 31 DEC 1889  
Character assigned 100 A1 STEEL  
as per  
tdmb 12/89  
Record Freeboard  
well sk  
12th Iron & web Frames  
18th (Iron) & web Frames  
Call D.B. (particulars appended)  
Hull Dk.

Allison B. Wilson.  
Surveyor to Lloyd's Register of British and Foreign Shipping.  
It is submitted that this vessel appears eligible to be Classed 100 A1 (Steel) as recommended.  
18th (Iron) & web Frames  
Call D.B. (particulars appended)  
Hull Dk.