

# IRON SHIP.

No. 14519 Survey held at Newcastle Date, First Survey 4<sup>th</sup> March Last Survey 20<sup>th</sup> August 1879

On the Iron Screw Steamer "Mangerton" Master J. Hogg

**TONNAGE** under Tonnage Deck 1902.90 **ONE, OR TWO DECKED, THREE DECKED VESSEL.**  
**SPAR, OR AWNING-DECKED VESSEL.**  
**HALF BREADTH** (moulded)... .. 17.5 **Feet.**  
**DEPTH** from upper part of Keel to top of Upper Deck Beams 26.46  
**GIRTH** of Half Midship Frame (as per Rule) .. .. 39.0  
**1st NUMBER** .. .. 82.96  
**1st NUMBER, if a 3-DECKED VESSEL, deduct 7 feet** 75.96  
**LENGTH** .. .. 284  
**2nd NUMBER** .. .. 215.72  
**PROPORTIONS**—Breadths to Length .. .. 8.1  
 Depths to Length—Upper Deck to Keel .. .. 10.7  
 Main Deck ditto .. .. 15.2

Built at Newcastle  
 When built 1879 Launched 22<sup>nd</sup> July/79.  
 By whom built A. Leslie & Co.  
 Owners J. D. Milburn  
 Port belonging to London  
 Destined Voyage Baltimore.  
 If Surveyed while Building, Afloat, or in Dry Dock.  
While building

**LENGTH** on deck as per Rule... 284 **Feet.** 0 **BREADTH—** Moulded... 35 **Feet.** 0 **DEPTH** top of Floors to Upper Deck Beams... 24 **Feet.** 6 **Power of Engines** ... 200 **Horse.** 200 **Nº. of Decks with flat laid** Two **Nº. of Tiers of Beams** Three

Dimensions of Ship per Register, length, 285 breadth, 35.3 depth, 24.5

	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.	Inches in Ship.	Inches per Rule.
<b>KEEL</b> , depth and thickness	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2	9 1/2 x 2 1/2
<b>STEM</b> , moulding and thickness	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2	9 x 2 1/2
<b>STERN-POST</b> for Rudder do. do.	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5
" " for Propeller	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5	9 x 5
Distance of Frames from moulding edge to moulding edge, all fore and aft	24	24	24	24	24	24	24	24	24	24	24	24	24	24
<b>FRAMES</b> , Angle Iron, for 1/2 length amidships	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8	5 3 8
Do. for 1/2 at each end	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7	5 3 7
<b>REVERSED FRAMES</b> , Angle Iron	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7
<b>FLOORS</b> , depth and thickness of Floor Plate at mid line for half length amidships	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9	23 1/2 x 9
" thickness at the ends of vessel	10	10	10	10	10	10	10	10	10	10	10	10	10	10
" depth at 1/2 the half-bdth. as per Rule	7	7	7	7	7	7	7	7	7	7	7	7	7	7
" height extended at the Bilges	7	7	7	7	7	7	7	7	7	7	7	7	7	7
<b>BEAMS</b> , Upper, Spar, or Awning Deck Single or double Angle Iron, Plate or Tee Bulb Iron	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7	7 x 7
Single or double Angle Iron on Upper edge	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6	3 3 6
Average space	48	48	48	48	48	48	48	48	48	48	48	48	48	48
<b>BEAMS</b> , Main, or Middle Deck Single or double Angle Iron, Plate or Tee Bulb Iron	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8	6 3 8
Single or double Angle Iron, on Upper Edge	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Average space	48	48	48	48	48	48	48	48	48	48	48	48	48	48
<b>BEAMS</b> , Lower Deck, Hold, or Orlop Single or double Angle Iron, Plate or Tee Bulb Iron	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8
Single or double Angle Iron on Upper Edge	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7
Average space	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan	36 1/2 frame spaces as per plan
<b>KEELSONS</b> Centre line, single or double plate, box, or Intercoastal, Plates H.B. Iron	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10	18 1/2 x 10
" Rider Plate	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11	11 3/4 x 11
" Bulb Plate to Intercoastal Keelson	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4
" Angle Irons	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8	2 1/2 x 8
" Double Angle Iron Side Keelson	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4
" Side Intercoastal Plate	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7
" do. Angle Irons	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4
" Attached to outside plating with angle iron	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7	3 3 7
<b>BILGE</b> Angle Irons	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4
" do. Bulb Iron	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8	8 1/2 x 8
" do. Intercoastal plates riveted to plating for length	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8
<b>BILGE STRINGER</b> Angle Irons	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4	5 1/2 x 4
Intercoastal plates riveted to plating for 1/2 length	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8	10 1/2 x 8
<b>SIDE STRINGER</b> Angle Irons	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7	4 3 7
Transoms, material. Knight-heads. Hawse Timbers.	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron	Iron
Windlass	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent	Harfield's Patent

The **FRAMES** extend in one length from Keel to Gunwale Riveted through plates with 7/8 in. Rivets, about 6 1/2 apart.

The **REVERSED ANGLE IRONS** on floors and frames extend from transom middle line to M. D. R. S. A. I. and to Gunwale alternately

**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 6 ins. from centre to centre.

" **Edges of Garboards** and to upper part of Bilge, worked clencher, double riveted; with rivets 7/8 in. diameter, averaging 4 ins. from centre to centre.

" **Butts from Keel to turn of Bilge**, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 3/4 ins. from centre to centre.

" **Butts of** Three Strakes at Bilge for half length, treble riveted with Butt Straps 7/8 thicker than the plates they connect.

" **Edges from bilge to Main Sheerstrake**, worked clencher, double or single riveted; with rivets 7/8 in. diameter, averaging 4 ins. from cr. to cr.

" **Butts from Bilge to Main Sheerstrake**, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 3/4 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 length amidships. **Butts of Upper or Spar Sheerstrake**, treble riveted half length amidships.

" **Butts of Main Stringer Plate**, treble riveted for half length amidships. **Butts of Upper or Spar Stringer Plate**, treble riveted for half 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? Treble and Double riveted.

Waterway, how secured to Beams (Explain by Sketch, if necessary)

Beams of the various Decks, how secured to the sides? Welded knees, and knee plates No. of Breasthooks, 6 Crutches, 4

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angles and bulbs from

Manufacturer's name or trade mark, Thos. Fox & Co. Plates Fox Head & Co.

The above is a correct description.

Builder's Signature, Andrew Leslie & Co. Surveyor's Signature, J. H. Cooke.

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.* **24523. Iron**

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 *Fore mast length extreme 80 feet. Main mast length extreme 76 feet. Diameter of masts at the partners 24". Two plates in the round 7/16 to 6/16 in thickness. Edges joggled pointed with 7/16" edge straps single riveted, and the butts treble riveted. Two longitudinal Angle irons 3" x 3/4" 6/16 fitted. Makers of Iron Fore Head &c.*

NUMBER for EQUIPMENT 25/30		Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprntd.t.	ANCHORS.	N <sup>o</sup> .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Machine where Tested & Suprntd.		
N <sup>o</sup> .	SAILS.	CABLES, &c.												
		Chain .....	270	1 1/2	59 1/2	270-1 1/2	59 1/2	Bower Anchors	1	32.3.0	30 1/2	32.0.0	30 2/20	
	Fore Sails,	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)	L.P.H. L.W. R.Burrell. Supt. 18.7.79.							1	32.2.0	30 1/2	32.0.0	30 2/20
	Fore Top Sails,	Iron Str'm Chain	75	1 1/2	22 3/4	75-1 1/2	22 3/4		1	28.0.7	27.3.1.21	27.1.0	26 1/20	
	Fore Topmast Stay Sails,	Ditto do.	L.P.H. L.W. R.Burrell. Supt. 18.7.79.							L.P.H. L.W. R.Burrell. Supt. 19.7.79 & 18.8.79.				
		Str'm Cbl	120	3 1/2	34 1/8	34 1/8		Stream	...	1	10.2.12	12.10.3.21	10.2.0	12 1/20
		Hawser ...	90	9	Manilla	90-12.		Kedge	...	1	5.1.0	7.11.3.14	5.1.0	7 1/20
	Main Sails,	Towlines ...	90	7	do	90-11		Ditto	...	1	2.2.0	5.0.0.0	2.2.0	5
	Main Top Sails,	Warp ...	180	6	do	90-7			L.P.H. L.W. R.Burrell. Supt. 18.8.79.					
	and	quality	180	5	do									

Standing and Running Rigging *Manilla* sufficient in size and *good* in quality. She has *2 Life Long* Boats and *2 others*.

The Windlass is *Good* Capstan *Good* and Rudder *Good* Pumps *Good*.

Engine Room Skylights.—How constructed? *Iron trunk 7 ft high & wood top* How secured in ordinary weather? *Bolted to angles*

What arrangements for deadlights in bad weather? *Solid shutters and bulls eyes*

Coal Bunker Openings.—How constructed? *Cast-iron comings* How are lids secured? *By iron straps* Height above deck? *13"*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Eight ports each side besides mooring pipes*

Cargo Hatchways.—How formed? *Iron comings and headledges riveted together*

State size Main Hatch *24 ft. x 12 ft.* Fore hatch *8 ft. x 10 ft.* Quarter hatch *16 ft. x 12 ft. & 8 ft. x 10 ft.*

If of extraordinary size, state how framed and secured? *Ordinary size*

What arrangement for shifting beams? *Two deep web plates in main hatch, one web plate in large after hatch, and wood fore*

Hatches, If strong and efficient? *Yes. Solid hatches*

Order for Special Survey No. <i>2516</i>	DATES of Surveys held while building as per Section 18.	1st. On the several parts of the frame, when in place, and before the plating was wrought	<i>1879 March 4. 6. 10. 17. 20. 26. 31. April 2. 10. 21.</i>
Date <i>5-22-79</i>		2nd. On the plating during the process of riveting	<i>23. 28. May 2. 6. 13. 20. 23. 29. June 2. 6. 9. 13. 17.</i>
Order for Ordinary Survey No. —		3rd. When the beams were in and fastened, and before the decks were laid....	<i>21. July 2. 4. 11. 16. 18. 21. 23. Aug 1. 4. 9. 13.</i>
Date —		4th. When the ship was complete, and before the plating was finally coated or cemented..	<i>15. 20. 22.</i>
No. <i>203</i> in builder's yard.		5th. After the ship was launched and equipped	

General Remarks (State quality of workmanship, &c.) *This is a three decked vessel built in accordance with the plans hereto attached, and otherwise in accordance with the Rules. The upper deck beams are plated over between the stringer plates and the fore and aft tie plates with 6/16 plates. The plating extends from the second beam before the main hatchway to the second beam abaft the large after hatchway, and the plating extends from side to side where practicable in the way of the engine & boiler space. She has a Foregallant fore-castle 37 feet long, and open bridge amidships 12 feet long. Water ballast tanks are fitted in the main hold, in the engine & boiler space and in the after hold of the united lengths of 180 feet. Tanks tested with a head of water to the height of the load line & found satisfactory. The general quality of the workmanship is good throughout.*

State if one, two, or three decked vessel, or if spar, or awning decked; and the lengths of poop, fore-castle, or raised quarter deck, and the length of double, or part double bottom.

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

I am of opinion this Vessel should be Classed *100 A1. Two decks, and three tiers of beams.*

The amount of the Entry Fee ... £ 5 : : : is received by me, *T. Young*

Special Certificate *100 A1. 24523. 19: 6 10 Sep 1879*

(Travelling Expenses, if any, £ — )

Committee's Minute *12th September, 1879*

Character assigned *100 A1*

Surveyor to Lloyd's Register of British and Foreign Shipping.

This vessel appears eligible to be classed as recommended by 100 A1.

"Iron Sk"

"28K 23 tons of Bms"

"Double bottom 180 ft"

"3 for Bm abt 180 ft"

Lloyd's Register Foundation