

IRON 472-0237

IRON SHIP. 1859

No. 11688 Survey held at Sunderland Date, First Survey December 11th 1871 Last Survey June 7th 1871 1871

On the Screw Steamer "Tinden" Master J. M. McEarmid

TONNAGE under Tonnage Deck	899.15	ONE OR TWO DECKED, THREE DECKED VESSEL.
Ditto of <u>Lower Deck</u>	8.68	SPAR, OR AWNING-DECKED VESSEL.
Ditto of <u>Upper Deck</u>	75.88	HALF BREADTH (moulded) 15.41
Ditto of Houses on Deck	67.76	DEPTH from upper part of Keel to top of Upper Deck Beams 19.12
Ditto of Forecastle	16.95	GIRTH of Half Midship Frame (as per Rule) 31.33
Gross Tonnage	1068.42	1st NUMBER 65.86
Less Crew Space	39.46	1st NUMBER, if a THREE-DECKED VESSEL
Less Engine Room	1028.96	[deduct 7 feet]
Register Tonnage as cut on Beam	687.07	LENGTH 216.75
		2nd NUMBER 142.76
		PROPORTIONS—Breadths to Length 7
		Depths to Length—Upper Deck to Keel 11
		Main Deck ditto 11

Built at Sunderland
 When built 1876 Launched May 1877
 By whom built Messrs Short & Co.
 Owners R. B. Avery
 Port belonging to London
 Destined Voyage Cadiz
 If Surveyed while Building, Afloat, or in Dry Dock.

LENGTH on deck as per Rule ...	216	9	BREADTH—Moulded ...	30	10	DEPTH top of Floors to Upper Deck Beams Do. do. Main Deck Beams ...	17	6	Power of Engines ...	99	Horse.	No. of Decks with flat laid	One	No. of Tiers of Beams	Two
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Dimensions of Ship per Register, length 218.3 breadth, 31.1 depth, 17.5

	Inches in Ship.	Inches per Rule.		Inches in Ship.	Inches per Rule.
KEEL, depth and thickness ...	8 x 2 3/8	8 x 2 3/8	STEM, moulding and thickness ...	2 1/4 x 2 3/8	2 1/4 x 2 3/8
STERN-POST for Rudder do. do. for Propeller ...	3 7/4 x 14 3/4	2 1/4 x 4 3/4	Distance of Frames from moulding edge to moulding edge, all fore and aft ...	23 in	23 in
FRAMES, Angle Iron, for 1/2 length amidships Do. for 1/2 at each end ...	4 3 7	4 3 7	REVERSED FRAMES, Angle Iron ...	3 3 6	3 3 6
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships thickness at the ends of vessel depth at 1/2 the half-bdth. as per Rule height extended at the Bilges ...	19 1/2 8	19 1/2 8	BEAMS, Upper, Spar <u>Ang. Iron, Plate or Tee Bulb Iron</u> Single or double Angle Iron on Upper edge Average space ...	5 3 7	5 3 7
BEAMS, Main, or Middle Deck Single or d'ble Ang. Iron, Plate or Tee Bulb Iron Single, or double Angle Iron, on Upper Edge Average space ...	5 3 7	5 3 7	BEAMS, Lower Deck, Hold, or Orlop Single or double Angle Iron on Upper Edge Average space ...	5 3 7	5 3 7
KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates Rider Plate Bulb Plate to Intercoastal Keelson Angle Irons Double Angle Iron Side Keelson Side Intercoastal Plate do. Angle Irons Attached to outside plating with angle iron	14 11	14 11	BILGE Angle Irons do. Bulb Iron do. Intercoastal plates riveted to plating for length	5 3 1/2 7	5 3 1/2 7
BILGE STRINGER Angle Irons Intercoastal plates riveted to plating for length	5 3 1/2 7	5 3 1/2 7	SIDE STRINGER Angle Irons	5 3 1/2 7	5 3 1/2 7

Flat Keel Plates, breadth and thickness ...	34	10	34	10
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied ...	9	10	9	10
fm up. part of Bilge to lr. edge of Sh'rstrake Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied from Mn. to Up. or Spar Dk. Sh'rstrake. Up. or Spar Dk Sh'rstrake, brdth & thickness	9	12	9	12
Butt Straps to outside plating, breadth & thickness	10 1/2	8 1/2	13 1/2	8 1/2
Lengths of Plating	5 spaces	8 frames	5 spaces	8 frames
Shifts of Plating, and Stringers	2 spaces	8 frames	2 spaces	8 frames
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness ...	31	9	31	9
Angle Iron on ditto	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7
Tie Plates fore and aft, outside Hatchways	2 in	6 1/6	2 in	6 1/6
Diagonal Tie Plates on Beams No. of Pairs, Planksheer material and scantling	2 in	6 1/6	2 in	6 1/6
Waterways do. do.	2 in	6 1/6	2 in	6 1/6
Flat of Upper Deck do. do.	2 in	6 1/6	2 in	6 1/6
How fastened to Beams	2 in	6 1/6	2 in	6 1/6
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	2 in	6 1/6	2 in	6 1/6
Is the Stringer Plate attached to the outside plating?	Yes		Yes	
Angle Irons on ditto, No. Tie Plates, outside Hatchways	3	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8
Diagonal Tie Plates on Beams, No. of pairs	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7
Waterways materials and scantlings	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7
Flat of Middle Deck do. do.	29	8	29	8
How fastened to Beams	29	8	29	8
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	29	8	29	8
Is the Stringer Plate attached to the outside plating?	Yes		Yes	
Angle Irons on ditto, No. Stringer or Tie Plates, outside Hatchways	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8
Flat of Lower Deck	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7	5 x 3 1/2 x 7
Ceiling betwixt Decks, thickness and material in hold do. do.	2 1/2	2 1/2	2 1/2	2 1/2
Main piece of Rudder, diameter at head do. at heel	5 1/4	5 1/4	5 1/4	5 1/4
Can the Rudder be unshipped afloat?	Yes		Yes	
Bulkheads No. 11 Thickness of 6 1/2 x 5 1/6	6 1/2	5 1/6	6 1/2	5 1/6
Height up Upper deck, after one to Hold Beams	6 1/2	5 1/6	6 1/2	5 1/6
How secured to sides of ship	Between double frames	Between double frames	Between double frames	Between double frames
Size of Vertical Angle Irons 3 x 3 x 5 1/6 and distance apart 30 ins.	3 x 3 x 5 1/6	30 ins.	3 x 3 x 5 1/6	30 ins.
Are the outside Plates doubled two spaces of Frames in length?	Yes		Yes	

Transoms, material. Knights heads. Hawse Timbers. Iron
 Windlass Hawfield's path Pall Bitt Iron

The FRAMES extend in one length from Keel to gunwale Riveted through plates with 3/4 in. Rivets, about 6 apart.

The REVERSED ANGLE IRONS on floors and frames extend near middle line to Hold Beam Stringer 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 1/6 in. diameter, averaging 5 ins. from centre to centre.

Edges of Garboards and to upper part of Bilge, worked clencher, double riveted; with rivets 3/4 in. diameter, averaging 3 1/2 ins. from centre to centre.

Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 3/4 in. diameter averaging 3 1/2 ins. from centre to centre.

Butts of 3 Strakes at Bilge for 1/2 length, treble riveted with Butt Straps 1 1/6 thicker than the plates they connect.

Edges from bilge to Main Sheerstrake, worked clencher, double single riveted; with rivets 3/4 in. diameter, averaging 3 1/2 ins. from cr. to cr.

Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 3/4 in. diameter, averaging 3 1/2 ins. from cr. to cr.

Edges of Main Sheerstrake, double 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 length amidships.

Butts of Main Stringer Plate, treble riveted for 1/2 length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for length.

Breadth of laps of plating in double riveting 4 3/4 Breadth of laps of plating in single riveting 4 1/2

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double & treble throughout

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

Beams of the various Decks, how secured to the sides? Bulbs with turned down ends No. of Breasthooks, 30 Crutches, 39 thomson

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

Manufacturer's name or trade mark, W. & A. Smith, Glasgow & Co.; Plate, Stockton N. S. Co.; Sherrin & Co. of Bolton, Lancashire.

The above is a correct description.

Builder's Signature, Short Brothers Surveyor's Signature, James Gibson

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 very well*
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.*

Masts, Bowsprit, Yards, &c., are *of wood &* 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

Pumps, This is a sister ship to the "Walton" report 11600 and the pumping arrangement the same as set forth upon the tracing attached to the report of the above ship.

NUMBER for EQUIPMENT		15400	Fathoms.	Inches.	Test per Certificate.	Length & size req'd pr Rule.	Test req'd per Rule.	ANCHORS.	N ^o .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.
N ^o .	SAILS.	CABLES, &c.	240	1 1/2	40 10/20	240-1 1/4	40 5/16	Bowers	1	21-3.0	22-3.10	21.0.0	21 1/2.
	Fore Sails,	Chain	three links						1	21-1.0	21-1.05		
	Fore Top Sails,	marked R.W.C.P.T. signed J. Hartness	80						1	18-1.14	19-6.27	18.0.0	19
	Fore Topmast Stay Sails	Hmpn Strm Cbl	80										
	Main Sails,	Hawser Chain	80										
	Main Top Sails,	Towlines	160										
	and	Warp	120										
		quality	good										

Standing and Running Rigging *wire & hemp* sufficient in size and *good* in quality. She has *one* Long Boat and *2* Others

The Windlass is *good* Capstan *good* and Rudder *good* Pumps *Metal & good*

Engine Room Skylights.—How constructed? *iron casing 2 ft above* How secured in ordinary weather? *thumb screws*

What arrangements for deadlights in bad weather? *Solid Oak shutters & thick circular glass*

Coal Bunker Openings.—How constructed? *Cast Iron* How are lids secured? *Patent* Height above deck? *9 ins*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *6 Scuppers and 5 ports on each side.*

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

State size Main Hatch *19.2 X 12.0* Forehatch *9.7 X 9.0* Quarterhatch *17.3 X 12.0 & 9.7 X 9.0*

If of extraordinary size, state how framed and secured?

What arrangement for shifting beams? *Nil* *A shifting earling in each of the long Hatches*

Hatches, If strong and efficient? *Yes Solid Hatches 2 1/2 ins*

Order for Special Survey No. <i>2646</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>Built under S.S. and Surveying 1876 Dec 11 12 14 19 22 28 31 Jan 3 6</i>
Date <i>22nd Nov 76</i>		2nd. On the plating during the process of riveting	<i>9 12 16 20 23 30 Feb 6 9 12 15 20 22 27 March 1 8 12 13 16 20 24 27 29 April 4 10 14 17</i>
Order for Ordinary Survey No. <i>—</i>		3rd. When the beams were in and fastened, and before the decks were laid....	<i>15 21 24 26 May 1 14 15 17 22 25 28 30 June 2 11 7</i>
Date <i>—</i>		4th. When the ship was complete, and before the plating was finally coated or cemented..	
No. <i>81</i> in builder's yard.		5th. After the ship was launched and equipped	

General Remarks (State quality of workmanship, &c.) *This vessel has been constructed in accordance with the rules, & the Scantlings set forth upon the tracing of Midship Section attached. She has a raised quarter deck about 84 feet in length, and a sunk forecastle about 25 feet in length. The fore peak is constructed as a Ballast tank with an iron platform at the height of the Hold Beams, the flat of forecastle and the deck above are also of iron. A Ballast tank is fitted in the fore hold, extending from the fore Bulkhead of Engine-room, forward about 59 feet, and one in the after hold extending from the After Bulkhead of Engine-room, aft to within 2 frame spaces of the After peak Bulkhead, about 63 feet in length; the after compartment is fitted with an iron platform at the height of the Hold Beams & is intended to be used as a Ballast tank. Each of the Ballast tanks have been tested to a head of water equal to the load line of the vessel, and the materials and workmanship are of a good description*

State if *one, two, or three*, decked vessel, or *if open, or awning decked*; and the lengths of *peak, forecastle, or raised quarter deck*, and the length of *double, or part double bottom*.

How are the surfaces preserved from oxidation? Inside *Portland Cement to upper* Outside *3 coats of paint*

I am of opinion this Vessel should be Classed **100 A.T.* *Turn of Bilge & frame above*

The amount of the Entry Fee ... £ 5 : 0 : 0 is received by me,

Special ... £ 50 : 14 : 6 *5th June 1877*

Certificate ...

(Travelling Expenses, if any, £ —).

Committee's Minute 12th June, 1877.

Character assigned *100 A* *Loep*

Wm Lloyd *Double bottom 22 ft*

James Gibbon
The vessel appears to be classed 100 A as recommended by the Lloyd's Register
2nd Dec 1877
Foundation