

IRON SHIP.

No. 11540 Survey held at Sunderland Date, First Survey August 21st Last Survey December 6th 1876

On the Sea SS "Armstrong" Master Wm. Todd

TONNAGE under Tonnage Deck	778.21	ONE, OR TWO DECKED, THREE DECKED VESSEL.
Ditto of Third, Spar, or Awning Deck.	-	SPAR, OR AWNING DECKED VESSEL.
Ditto of Spar Raised Qr. Dk.	54.37	HALF BREADTH (moulded)
Ditto of Houses on Deck	61.29	DEPTH from upper part of Keel to top of Upper Deck Beams
Ditto of Removable Hatchways Gross Tonnage	26.46	GIRTH of Half Midship Frame (as per Rule)
Less Gross Space	920.33	1st NUMBER
Less Engine Room	28.73	1st NUMBER, if a THREE-DECKED VESSEL
Register Tonnage as out on Beam	294.51	LENGTH
	597.09	2nd NUMBER
		PROPORTIONS —Breadths to Length
		Depths to Length—Upper Deck to Keel
		Main Deck ditto

Built at Sunderland
 When built 1876 Launched 4th Nov 1876
 By whom built James Cairngross
 Owners James Watt Esq, Cape Street North Shields
 Port belonging to North Shields
 Destined Voyage Coasting and
 Surveyed while Building, Afloat, or in Dry Dock.

Code Signals Not known

LENGTH on deck as per Rule	210.6	BREADTH Moulded	30	DEPTH top of Floors to Upper Deck Beams	16.4	Power of Engines	99	No. of Decks with flat laid	one
				Do. do. Main Deck Beams				No. of Tiers of Beams	two

	Inches in Ship	Inches per Rule	16ths in Ship	16ths per Rule		Inches in Ship	Inches per Rule	16ths in Ship	16ths per Rule
KEEL , depth and thickness	8 x 2 3/8	8 x 2 3/8	-	-	PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges	38	9	32	9
STEM , moulding and thickness	7 x 2 3/8	7 x 2 3/8	-	-	of doubling at Bilge, or increased thickness, and length applied	-	9	-	9
STERN-POST for Rudder do. do. for Propeller	7 x 4 3/4	7 x 4 3/4	-	-	fm up. part of Bilge to lr. edge of Sh'rstrake	-	8	-	8
Distance of Frames from moulding edge to moulding edge, all fore and aft	22	22	-	-	Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied from Mn. to Up. or Spar Dk. Sh'rstrake.	36	11	36	11
FRAMES , Angle Iron, for 2/3 length amidships	4 3 7	4 3 7	-	-	Up. or Spar Dk Sh'rstrake, breadth & thickness	-	-	-	-
Do. for 1/2 at each end	4 3 6	4 3 6	-	-	Butt Straps to outside plating, breadth & thickness	9 1/2	16 3/4	7 1/2	12 9 1/2
REVERSED FRAMES , Angle Iron	3 3 6	3 3 6	-	-	Lengths of Plating	-	-	-	-
FLOORS , depth and thickness of Floor Plate at mid line for half length amidships	-	18 8	-	18 8	Shifts of Plating, and Stringers	-	-	-	-
thickness at the ends of vessel	-	7	-	7	Gunwale Plate on ends of Awning Spar or Upper Deck Beams, breadth and thickness	30	8	30	9 5/8
depth at 3/4 the half-bdth. as per Rule	-	9	-	9	Angle Iron on ditto	4 1/2	3 1/2	7	4 1/2 x 3 1/2 x 7/16
height extended at the Bilges	-	twice midship depth	-	-	Tie Plates fore and aft, outside Hatchways	-	-	-	-
BEAMS , Upper, Spar, or Awning Deck Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	-	7 7	-	7 7	Diagonal Tie Plates on Beams No. of Pairs,	-	-	-	-
Single or double Angle Iron on Upper edge	3 3 6	3 3 6	-	-	Planksheer material and scantling	-	-	-	-
Average space	-	alternate frames	-	-	Waterways do. do.	-	-	-	-
BEAMS , Main, or Middle Deck Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	-	-	-	-	Flat of Upper Deck do. do.	-	-	-	7/16 Iron deck
Single, or double Angle Iron, on Upper Edge	-	-	-	-	How fastened to Beams	-	-	-	Riveted
Average space	-	-	-	-	Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	-	-	-	-
BEAMS , Lower Deck, Hold, or Outrop Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	-	8 8	-	8 8	Is the Stringer Plate attached to the outside plating?	-	-	-	-
Single or double Angle Iron on Upper Edge	4 3 7	4 3 7	-	-	Angle Irons on ditto, No.	-	-	-	-
Average space	-	on every 10th frame	-	-	Tie Plates, outside Hatchways	-	-	-	-
KEELSONS Centre line, single or double plate, box or intercostal, Plates	-	12 10 10	-	10 10	Diagonal Tie Plates on Beams, No. of pairs	-	-	-	-
" Rider Plate	-	9 10	-	9 10	Waterways materials and scantlings	-	-	-	-
" Bulb Plate to Intercostal Keelson	-	-	-	-	Flat of Middle Deck do. do.	-	-	-	-
" Angle Irons	4 1/2 3 1/2 7	4 1/2 3 1/2 7	-	-	How fastened to Beams	-	-	-	-
" Double Angle Iron Side Keelson	-	-	-	-	Stringer Plates on ends of Lower Deck, Hold or Outrop Beams	28	8	28	8
" Side Intercostal Plate	-	-	-	-	Is the Stringer Plate attached to the outside plating?	-	-	-	-
" do. Angle Irons	-	-	-	-	Angle Irons on ditto, No.	-	-	-	-
" Attached to outside plating with angle iron	-	-	-	-	Stringer or Tie Plates, outside Hatchways	-	-	-	-
BILGE Angle Irons	4 1/2 3 1/2 7	4 1/2 3 1/2 7	-	-	Flat of Lower Deck	-	-	-	-
" do. Bulb Iron	-	7 7	-	7 7	Ceiling betwixt Decks, thickness and material	-	-	-	-
" do. Intercostal plates riveted to plating for length	-	-	-	-	in hold do. do.	2 1/2	5	solid to Bilges	-
BILGE STRINGER Angle Irons	4 1/2 3 1/2 7	4 1/2 3 1/2 7	-	-	Main piece of Rudder, diameter at head	5	5	-	-
Intercostal plates riveted to plating for length	-	-	-	-	do. at heel	3	3	-	-
SIDE STRINGER Angle Irons	-	-	-	-	Can the Rudder be unshipped afloat?	-	-	-	Yes

Transoms, material. Knight heads. Howe Timbers. Iron
 Windlass Emerson's Patent Secured to Carlings by Iron Patent
 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 B.M. Stringer 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 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 1/4 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 2 Strakes at Bilge for 1/2 length, treble riveted with Butt Straps 1/16 thicker than the plates they connect.
 Edges from bilge to Main Sheerstrake, worked clencher, double or single riveted; with rivets 3/4 in. diameter, averaging 3 1/4 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 or single riveted. Upper Sheerstrake, double or single riveted. Double and Single
 Butts of Main Sheerstrake, treble riveted for half 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 amidships.
 Breadth of laps of plating in double riveting 4 1/2 Breadth of laps of plating in single riveting 2 5/8
 Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double & treble throughout
 Waterway, how secured to Beams Gutter Gunwale (Explain by Sketch, if necessary.)
 Beams of the various Decks, how secured to the sides? Ends turned down and riveted to frames &c No. of Breasthooks, four Crutches, three
 What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Plates by Corbett Iron Co.
 Manufacturer's name or trade mark, Angles & Beams by Schuyback & Co.

The above is a correct description.
 Builder's Signature, per pro James Cairngross Philip St. Cairngross Surveyor's Signature, James Liban Joseph Keen
 Surveyor to Lloyd's Register of British and Foreign Shipping.

IRON 69-0224

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* **17402 Iron**

Masts, Bowsprit, Yards, &c., are *Wood and* 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 ~~the~~ Length and Diameter of Lower Masts and Bowsprit

No.	SAILS.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per Rule.	Test req'd per Rule.	ANCHORS.					
								No.	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.	
		Chain	240	1 7/16	240-1 7/16	240-1 7/16	37 1/8	Bowers	1	18.1.4	19.6.2.7	18.0.0	19.0.0.0
		Breaking strain			55 5/8		55 5/8		1	18.0.14	19.2.0.25		
		Tested at R.W.C.P.T. by J. Hartness			55 5/8		55 5/8		1	16.0.0	17.7.2.0	15.1.0	16.14.0.0
		Certificate dated 3 Oct. 1876.											
	Fore Sails,	Hmpn Strm Cbl	90	6				Stream		8.0.0		8.0.0	
	Fore Top Sails,	Hawser chain	60	6				Kedges		4.2.14		4.0.0	
	Fore Topmast Stay Sails	Towlines	90	8 1/2						2.1.11		2.0.0	
	Main Sails,	Warp	90	8 1/2									
	Main Top Sails,	quality	90	8 1/2									

Standing and Running Rigging *G.I. Wand Rope* sufficient in size and *good* in quality. She has *one* Long Boat and *two* others
 The Windlass is *Emerson & Walker's* Capstan and Rudder *good* Pumps *in addition to Steam* *one hand Pump* in each hold *fully*
Engine Room Skylights.—How constructed? *Iron Coamings Wood Skys* How secured in ordinary weather? *Thumb Screws*
 What arrangements for deadlights in bad weather? *Solid Shutters fitted with Bulls Eyes*
Coal Bunker Openings.—How constructed? *Iron Coamings* How are lids secured? *hatch bars* Height above deck? *15 ins.*
Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Scuppers and Ports in the Bulwarks.*
Cargo Hatchways.—How formed? *Iron plates 7/16 thick strengthened with angles and rubbing bars*
 State size **Main Hatch** *15x12 42x16 1/2* Forehatch and total length *7 1/2* Quarterhatch *36 x 15 1/2 feet*
 If of extraordinary size, state how framed and secured? *Fitted with permanent Webb Beams as shown on the amended Profile with two strong fore and afters formed of Bulbs and two angles; the Coamings being efficiently Pillared & otherwise secured.*
 What arrangement for shifting beams? *---*

Order for Special Survey No.	Date	Order for Ordinary Survey No.	Date	No.	DATES of Survey held while building as per Section 18.	1st.	2nd.	3rd.	4th.	5th.				
2644	22 nd August 76.			221		On the several parts of the frame, when in place, and before the plating was wrought		When the beams were in and fastened, and before the decks were laid....	When the ship was complete, and before the plating was finally coated or cemented..	After the ship was launched and equipped	Built under J.S. and planked 1876 August 21 23 31 Sept 1 8	11 13 14 15 19 21 26 27 30 October 11 16 19 22 26 30	Nov. 2 9 16 20 22 23 24 25	27 28 Dec 1 6

General Remarks (State quality of workmanship, &c.) *Good; see letters 23rd June and 6th July 76.*
She is a "Self-trimming" Collier, fitted with hatch-ways as shown on the amended Profile, having efficient wing boards in each Hold.

She has a Monkey Forecastle 19 ft long, a Raised Quarter Deck 66 feet long at the front of which the Sheerstrake and topside plating is increased in thickness as shown on Profile A immediately before the above is a Bridge House 35 ft long. The Fore Ballast Tank is 55 feet long, that in the after Hold being 50 feet long, has two fore and aft webbs with transverse webbs at every fifth frame and otherwise conforms to Rule, having been pressed with a head of water, in each case, to the height of Load line, and proved efficient. No cargo battens fitted above close ceiling see letter 30th Nov 76

State if one, two, or three, decked vessel, or if open, or awning decked; and the lengths of *Monkey* fore-castle, or raised quarter deck, and the length of *and Bridge House* double, or part double bottom. *See above*

How are the surfaces preserved from oxidation? Inside *Cement to Bilges, Paint above* Outside *Paint &c*
 I am of opinion this Vessel should be Classed ** 90 A.I.*

The amount of the Entry Fee ... £ 5 : - : - is received by me, *JNK*
 Special ... £ 44 : 12 : - *6th Dec 1876*
 Certificate ... : : :
 (Travelling Expenses, if any, £ -)

Committee's Minute *15th December 1876*
 Character assigned *90 A.I.*
Lloyds Register
James Wilson
 Lloyd's Register Foundation