

IRON SHIP.

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

On the Iron Ship "Armstrong"

Master Wm. Dodd

TONNAGE under Tonnage Deck 778.21
 Ditto of Third, Spar, or Awning Deck. -
 Ditto of Scuppern Raised Qr. Dk. 54.37
 Ditto of Houses on Deck 61.29
 Ditto of Removable Hatchings Gross Tonnage 26.46
 Less Gross Space 28.73
 Less Engine Room 294.51
 Register Tonnage as out on Beam 597.09

ONE, OR TWO DECKED, THREE DECKED VESSEL.
~~SPAR, OR AWNING DECKED VESSEL.~~
HALF BREADTH (moulded)... 15.00
DEPTH from upper part of Keel to top of Upper Deck Beams 17.83
GIRTH of Half Midship Frame (as per Rule) 29.33
1st NUMBER ... 62.16
1st NUMBER, if a THREE-DECKED VESSEL (deduct 7 feet) -
LENGTH ... 210.5
2nd NUMBER ... 13084
PROPORTIONS—Breadths to Length ... 7
 Depths to Length—Upper Deck to Keel ... 11
 Main Deck ditto ... -

Built at Sunderland
 When built 1876 Launched 4th Nov 1876
 By whom built James Cairng & Co
 Owners James Mait & Co
 Port belonging to North Shields
 Destined Voyage Coasting
 Surveyed while Building, Afloat, or in Dry Dock. X

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 **N^o. of Decks with flat laid** one **N^o. of Tiers of Beams** two

Dimensions of Ship per Register, length 212.7 breadth 30.1 depth 16.1

	Inches in Ship.	Inches per Rule.
KEEL , depth and thickness ...	8 x 2 3/8	8 x 2 3/8
STEM , moulding and thickness ...	7 x 2 3/8	7 x 2 3/8
STERN-POST for Rudder do. do. ...	7 x 4 3/4	7 x 4 3/4
Distance of Frames from moulding edge to moulding edge, all fore and aft ...	22	22
FRAMES , Angle Iron, for 3/4 length amidships ...	4 x 3 1/2	4 x 3 1/2
Do. for 1/2 at each end ...	4 x 3 1/2	4 x 3 1/2
REVERSED FRAMES , Angle Iron ...	3 x 3 1/2	3 x 3 1/2
FLOORS , depth and thickness of Floor Plate at mid line for half length amidships ...	18	18
thickness at the ends of vessel ...	7	7
depth at 3/4 the half-bdth. as per Rule ...	9	9
height extended at the Bilges ...	twice midship depth	
BEAMS , Upper, Spar, or Awning Deck Single or double Angle Iron, Plate or Tee Bulb Iron ...	7	7
Single or double Angle Iron on Upper edge ...	3 x 3 1/2	3 x 3 1/2
Average space ...	alternate frames	
BEAMS , Main, or Middle Deck Single or double Angle Iron, Plate or Tee Bulb Iron ...	-	-
Single, or double Angle Iron, on Upper Edge ...	-	-
Average space ...	-	-
BEAMS , Lower Deck, Hold, or Outboard Single or double Angle Iron, Plate or Tee Bulb Iron ...	8	8
Single or double Angle Iron on Upper Edge ...	4 x 3 1/2	4 x 3 1/2
Average space ...	on every 10 th frame	
KEELSONS Centre line, single or double plate, box, or intercostal, Plates ...	12	10
" Rider Plate ...	9	10
" Bulb Plate to Intercostal Keelson ...	-	-
" Angle Irons ...	4 1/2 x 3 1/2	4 1/2 x 3 1/2
" Double Angle Iron Side Keelson ...	-	-
" Side Intercostal Plate ...	-	-
" do. Angle Irons ...	-	-
" Attached to outside plating with angle iron ...	-	-
BILGE Angle Irons ...	4 1/2 x 3 1/2	4 1/2 x 3 1/2
" do. Bulb Iron ...	7	7
" do. Intercostal plates riveted to plating for ... length ...	-	-
BILGE STRINGER Angle Irons ...	4 1/2 x 3 1/2	4 1/2 x 3 1/2
Intercostal plates riveted to plating for ... length ...	-	-
SIDE STRINGER Angle Irons ...	-	-

Flat Keel Plates, breadth and thickness ... 38
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied 1 strake
 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, breadth & thickness
 Butt Straps to outside plating, breadth & thickness 2 1/2 x 16
 Lengths of Plating ... Five spaces of frame
 Shifts of Plating, and Stringers ... Two and three Decks
 Gunwale Plate on ends of Awning Spar or Upper Deck Beams, breadth and thickness ... 30
 Angle Iron on ditto ... 4 1/2 x 3 1/2
 Tie Plates fore and aft, outside Hatchways ... Iron deck
 Diagonal Tie Plates on Beams No. of Pairs, Planksheer material and scantling ... Gutter Gunwale
 Waterways do. do. ... 1/2 Iron deck
 Flat of Upper Deck do. do. ... Riveted
 How fastened to Beams ... -
 Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness ... -
 Is the Stringer Plate attached to the outside plating? -
 Angle Irons on ditto, No. ... -
 Tie Plates, outside Hatchways ... -
 Diagonal Tie Plates on Beams, No. of pairs ... -
 Waterways materials and scantlings ... -
 Flat of Middle Deck do. do. ... -
 How fastened to Beams ... -
 Stringer Plates on ends of Lower Deck, Hold or Outboard Beams ... 28
 Is the Stringer Plate attached to the outside plating? Yes
 Angle Irons on ditto, No. three and four
 Stringer or Tie Plates, outside Hatchways ... 3 1/2 x 3 1/2
 Flat of Lower Deck ... 4 1/2 x 3 1/2
 Ceiling betwixt Decks, thickness and material in hold do. do. 2 1/2 Solid to Bilges
 Main piece of Rudder, diameter at head ... 5
 do. at heel ... 3
 Can the Rudder be unshipped afloat? Yes
 Bulkheads No. 4 Thickness of 6
 Height up Upper deck as per rule except aft having platform
 How secured to sides of ship between double frames
 Size of Vertical Angle Irons 3 x 3 x 9/16 and distance apart 30 ins.
 Are the outside Plates doubled two spaces of Frames in length? Yes

Transoms, material. Knight heads. Heavy Timbers. Iron
 Windlass Emerson's Patent Secured to Garlings & Co
 The **FRAMES** extend in one length from Keel to gunwale
 The **REVERSED ANGLE IRONS** on floors and frames extend near middle line to Hold B^o Stringer A.T. 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.

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

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 & Son Co.

Manufacturer's name or trade mark, Angles & Beams by Schuyback & Co.

The above is a correct description.

Builder's Signature, per pro James Cairng
Philip H. Cairng

Surveyor's Signature, James Libun
Joseph Keen
 Surveyor to Lloyd's Register of British and Foreign Shipping.

IRON 469-0324

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

NUMBER for EQUIPMENT 14392		Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per 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 7/16	240-1 7/16	37 1/2	Bowers	1	18.1.4	19.6.2.7	18.0.0	19.0.0.0
	Fore Sails,	Chain						1	18.0.14	19.2.0.2		
	Fore Top Sails,	Fore Topmast Stay Sails						1	16.0.0	17.2.0.0	15.1.0	16.14.0.0
	Main Sails,	Hmpn Strm Cbl	90	6								
	Main Top Sails,	Hawser chain	60	6								
		Towlines	90	8			Stream		8.0.0		8.0.0	
		Warp	90	8			Kedges		4.2.14		4.0.0	
		quality <i>Good</i>	90	4					2.1.11		2.0.0	

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* *Fore hatch and total length 71 1/2 Quarter hatch 36x15 1/2 feet*

If of extraordinary size, state how framed and secured? *Fitted with permanent Webb Beams as shown on the*

What arrangement for shifting beams? *amended Profile with two strong fore and afters formed of Bulbs and two angles; the Coamings being*

Hatches, If strong and efficient? *Solid and efficient 2 1/2 thick efficiently Pillared & otherwise secured.*

Order for Special Survey No. *2644* *1876* *1st. On the several parts of the frame, when in place, and before the plating was wrought* *Built under S.S. and planked 1876 August 21 23 31 Sept. 18*
Date *22nd August 76* *2d. On the plating during the process of riveting* *11 13 14 15 19 21 26 27 30 October 11 16 19 22 26 30 Nov. 29 16 20 22 23 24 25*
Order for Ordinary Survey No. *2728* *3rd. When the beams were in and fastened, and before the decks were laid....* *Dec 16*
Date *2728* *4th. When the ship was complete, and before the plating was finally coated or cemented..*
No. *221* in builder's yard. *5th. After the ship was launched and equipped*

General Remarks (State quality of workmanship, &c.) *Good; see letters 23rd June and 6th July 76.*

She is a "Self-trimming" Collier, fitted with hatchways 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 working decked; and the lengths of *Monkey* *and Bridge House* *See above* fore, fore, or raised quarter deck, and the length of *double* *part double bottom.*

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, *11/11*

Special ... £ 44 : 12 : - *6th Dec 1876*

Certificate ... : : : -

(Travelling Expenses, if any, £ - - -)

Committee's Minute *15th December 1876*

Character assigned *90 A.I.*

Lloyds M.C. & Co.

100, Cannon Street, London E.C.

Joseph Keen.
James Wilson

1876

Lloyd's Register Foundation