

IRON SHIP. (20813)

No. 11938 Survey held at Sunderland Date, First Survey November 20th 1877 Last Survey April 30th 1878
On the "Effective" Yard No. 86 Master D Cumming

TONNAGE under Tonnage Deck 1742.41
Tonnage Deck 15.18
to of Poop, or Raised Or. Dk. 58.14
Ditto of Houses on Deck 92.04
Ditto of Forecastle 38.34
Gross Tonnage 1936.11
Less Crew Space 52.37
1883.74
Less Engine Room 619.56
Register Tonnage as out on Beam 1264.18

ONE, OR TWO DECKED, THREE DECKED VESSEL.
SPAR, OR AWNING DECKED VESSEL.
HALF BREADTH (moulded) 17.37
DEPTH from upper part of Keel to top of Upper Deck Beams 26.20
GIRTH of Half Midship Frame (as per Rule) 39.25
1st NUMBER 22.83
1st NUMBER, if a THREE-DECKED VESSEL [deduct 7 feet] 7.00
LENGTH 273.50
2nd NUMBER 20740
PROPORTIONS—Breadths to Length under 8.92
Depths to Length—Upper Deck to Keel under 11.11
Main Deck ditto 15.11

Built at Pallion, Sunderland
When built 1878. Launched 30/3/78
By whom built Short Brothers
Owners Anderson, Moran & Co
Port belonging to Sunderland
Destined Voyage Matta
Surveyed while Building, Afloat, or in Dry Dock.

PLANS 352.83

LENGTH on deck as per Rule 273 5 BREADTH—Moulded 34 9 DEPTH top of Floors to Upper Deck Beams 24 2 1/2 Power of Engines 180 Horse. No. of Decks with flat laid Iron No. of Tiers of Beams three
Dimensions of Ship per Register, length, 274.4 breadth, 35. depth, 24.15

	Inches in Ship	Inches per Rule
depth and thickness	9 1/2 x 2 1/2	9 1/2 x 2 1/2
PLATE, moulding and thickness	9 x 2 1/2	9 x 2 1/2
STERN POST for Rudder do. do. for Propeller	9 x 5	9 x 5
Distance of Frames from moulding edge to moulding edge, all fore and aft	24	24
FRAMES, Angle Iron, for 3/4 length amidships Do. for 1/2 at each end	5 3 8	5 3 8
REVERSED FRAMES, Angle Iron	3 3 7	3 3 7
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships thickness at the ends of vessel depth at 3/4 the half-bdth. as per Rule height extended at the Bilges.	23 1/2 9.10 8.7	23 1/2 9.10 8.7
BEAMS, Upper, Spar, or Awning Deck Single or double Angle Iron, Plate or Tee Bulb Iron Angle or double Angle Iron on Upper edge Average space	5 1/2 3 8 24	5 1/2 3 8 24
AMS, Main, or Middle Deck Single or double Angle Iron, Plate or Tee Bulb Iron Angle or double Angle Iron, on Upper Edge Average space	6 3 8 24	6 3 8 24
BEAMS, Lower Deck, Hold, or Orlop Single or double Angle Iron, Plate or Tee Bulb Iron Angle or double Angle Iron on Upper Edge Average space	4 4 8 24	4 4 8 24
KEELSONS Centre line, single or double plate, 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	18 13 12 13 5 1/2 4 9 5 1/2 4 9 3 3 7	18 13 12 13 5 1/2 4 9 5 1/2 4 9 3 3 7
BILGE Angle Irons do. Bulb Iron do. Intercoastal plates riveted to plating for length	5 1/2 4 9 8 1/2 8	5 1/2 4 9 8 1/2 8
BILGE STRINGER Angle Irons Intercoastal plates riveted to plating for half length	5 1/2 4 9 8	5 1/2 4 9 8
MIDDLE STRINGER Angle Irons	5 1/2 4 9	5 1/2 4 9

	Inches in Ship	16ths in Ship	Inches per Rule	16ths per Rule
Flat Keel Plates, breadth and thickness	36	12	36	12
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied	10.11		10.11	
fm up. part of Bilge to lr. edge of Sh'rstrake	10.11		10.11	
Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied from Mn. to Upr. or Spar Dk. Sh'rstrake. Upr. or Spar Dk Sh'rstrake, breadth & thickness	40	13	40	13
Butt Straps to outside plating, breadth & thickness Lengths of Plating	9 1/2 16 1/2 8.14 9 1/2 16 1/2 8.14			
Shifts of Plating, and Stringers	Two		Two	
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	39	9	39	9
Angle Iron on ditto	4.4.9		4.4.9	
Tie Plates fore and aft, outside Hatchways				
Diagonal Tie Plates on Beams No. of Pairs, Planksheer material and scantling				
Waterways do. do. I plates	Iron do fore & aft			
Flat of Upper Deck do. do. I plates	6/16		6	
How fastened to Beams	Rivets			
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	39	10	39	10
Is the Stringer Plate attached to the outside plating?	yes			
Angle Irons on ditto, No. Three	4.4.9		4.4.9	
Tie Plates, outside Hatchways				
Diagonal Tie Plates on Beams, No. of pairs				
Waterways materials and scantlings				
Flat of Middle Deck do. do. I plates	6 5		as section	
How fastened to Beams	Rivets			
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	35	9	35	9
Is the Stringer Plate attached to the outside plating?	yes			
Angle Irons on ditto, No. Three	4.4.9		4.4.9	
Stringer or Tie Plates, outside Hatchways	5 1/2 4 9		5 1/2 4 9	
Flat of Lower Deck				
Ceiling betwixt Decks, thickness and material in hold do. do.	2 R.P. battens & Space 2 1/2 D.S. Solid to Bilges			
Main piece of Rudder, diameter at head do. at heel	6 3/4 3 1/2		6 3/4 3 1/2	
Can the Rudder be unshipped afloat?	yes			
Bulkheads No. 5 Thickness of 5/16 Height up 3 1/2 Upr. Dk. one to Md. Dk. after touches I plating				
How secured to sides of ship	Between double frames			
Size of Vertical Angle Irons	3.3. 7/16 and distance apart 30 ins.			
Are the outside Plates doubled two spaces of Frames in length?	yes			

Transoms, material. Knight-heads. Hawse Timbers. Iron plates &c
Windlass Emerson & Walker Pall Bill secured to plates &c
The FRAMES extend in one length from Keel to gunwale Riveted through plates with 7/8 in. Rivets, about 7/8 apart.
The REVERSED ANGLE IRONS on floors and frames extend from middle line to Middle D^o St^o angle and to gunwale alternately

EELSONS. 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 1/8 in. diameter, averaging 5 1/2 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 3 7/8 ins. from centre to centre.
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 7/8 ins. from centre to centre.
Butts of three Strakes at Bilge for half length, treble riveted with Butt Straps 7/16 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 3 7/8 ins. from cr. to cr.
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 7/8 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 half 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 5/4 Breadth of laps of plating in single riveting Nil
Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double and treble riveted.
Waterway, how secured to Beams Nil (Explain by Sketch, if necessary.)
Beams of the various Decks, how secured to the sides Angle Brs. & Brackets knees No. of Breasthooks, Six Crutches, three
What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angle Bulbs, Tysack & Stockton Malleable. Plates. Stockton Malleable. Bolckers, Bayhams & as Bonefield
Is the above a correct description? yes
Signature, James Denton Surveyor's Signature, Joseph Keen
Surveyor to Lloyd's Register of British and Foreign Shipping.

IRON 477-0460

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? *at the butts in a few cases only*

Masts, Bowsprit, Yards, &c., are *of 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 *please see sketch attached*
As Mast plate 9/16" thick and 3" wide bent cold with grain about 140°
Do Do Do across grain 85° and also
see letter 8th March 78. Referring to masts

N ^o	SAILS.	CABLES, &c.	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.	
	Fore Sails,	Chain Breaking Strains	240	1 1/16	59/8	270.576	59/8	Bowers	1	33.0.14	30.19.1.24	32.0.0	30/10
	Fore Top Sails,	Steam Chain							1	32.3.0	30.13.3.0	32.0.0	30/10
	Fore Topmast Stay Sails	Chain							1	27.3.0	26.18.3.0	27.1.0	26/12
	Main Sails,	Iron Strm Cbl	75	1/8	22 3/4	75.176	22 3/4	Stream	with 4/8	13.0.7	12.10.3.21	13.0.0	12.10.3.21
	Main Top Sails,	Hawser Rope	90	1/2	34 1/8	90.12	34 1/8	do	do	6.2.14	7.16.1.0	6.2.0	7.1.0
	and	Towlines	80	9/8		90.11		Kedges	do	3.2.0	5.5.0.0	3.1.0	5.5.0
		Warp				90.7							

Standing and Running Rigging *SI. H and Rope* sufficient in size and *good* in quality. She has *2 Life Long Boats* and *2 others*
 The Windlass is *Cumson & Walker's*; *good* Capstan *4* Winches and Rudder *good* Pumps *5* Hand in addition to *Steam*

Engine Room Skylights.—How constructed? *Iron Coamings Wood* How secured in ordinary weather? *hand 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? *9" 12" & 33"*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Scuppers and Ports fitted in the Bulwarks*

Cargo Hatchways.—How formed? *Iron plates fitted in the usual manner*

State size Main Hatch *20 ft by 12 ft* Forehatch *12 ft by 10 ft* Quarterhatches *20 ft by 12 ft & 16 ft x 12 ft*

If of extraordinary size, state how framed and secured? *Beams and Web plate Beams, also Single, and in*

What arrangement for shifting beams? *Some cases double fore and aft Carlings all shifting*

Hatches, If strong and efficient? *Solid and efficient*

Order for Special Survey No. *2412* Date *4th Decr 77*

Order for Ordinary Survey No. *86* Date *1878*

General Remarks (State quality of workmanship, &c.) *Good. See Letter 14th Novr 1877.*

This vessel has a Topgallant Forecastle 30 ft long a Bridge House 49 ft long, and a Full Poop 20 ft long.

The Conditions contained in the above mention letter are fully complied with and the Owners Sanction obtained agreeing to the same

She has two Water Ballast Tanks that in the fore Hold is 50 feet long, that in the after Hold is 92 feet long; instead of fitting three fore and aft Girders as shown in the Section there are four in the Main body of the Vessel; throughout the Tanks the are about 2 ft 10" apart and none fitted transversely, each Tank has been pressed with a head of Water up to the upper Deck and proved very efficient.

See above

How are the surfaces preserved from oxidation? Inside *Cement to Bilges paint ab* Outside *Dunnets Comps on Bottom*

I am of opinion this Vessel should be Classed *100 A. 1. Three Decked.*

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

Special ... £ *72 : 2 : 0* *20th April 1878*

Certificate ... *wanted*

Committee's Minute *3rd, May. 1878.*

Character assigned *100 A*

2 Dks 300 Bms 2 Iron Deck

Double Bottom 42 ft

3/5/78

Joseph Keen
This vessel has been built in accor with the approved tracings appended and appears eligible to be classed 100 A as recommended