

IRON SHIPS.

Survey held at Stockton Date 24th October 1869 to 30th May 1870
 LLO Iron Steamer "Menzaleh" Master Staples
 Tonnage deck 894.80 Built at Stockton When built 1869-70 Launched April 5th 1870
 By whom built Grange & Co Owners Nelson, Donkin & Co
 The less 1243.49 Port belonging to London Destined Voyage
 ENCLOSURE 851.19 If Surveyed while Building, Afloat, or in Dry Dock While Building
 Space 46.85

Length aloft <u>232</u>		Extreme Breadth <u>23</u>		Depth from top of Upper Deck Beam to top of Floor <u>24</u>		Power of Engines <u>130</u>		Horse.		N ^o . of Decks <u>Two</u>	
Dimensions of Ship per Register, length <u>232</u> breadth <u>23</u> depth <u>24</u>		Inches in Ship.		Inches in Ship.		Inches in Ship.		Inches in Ship.		Inches in Ship.	
if bar iron, depth and thickness	<u>9 x 3</u>	for 1000 tons Scale.	<u>9 x 3</u>	Plates in Garboard Strakes, breadth and thickness	<u>30</u>	16ths. In Ship.	<u>11/16</u>	required per Rule.	<u>30</u>	trans required per Rule.	<u>11/16</u>
if plate iron, breadth and thickness	<u>9 x 3</u>		<u>9 x 3</u>	Ditto from Garboard to upper part of Bilges	<u>10</u>		<u>10/16</u>		<u>10</u>		<u>10/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	from upper part of Bilge to a perpendicular height from upper side of Keel of 1/3 the entire depth of Hold	<u>9</u>		<u>9/16</u>		<u>9</u>		<u>9/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	from 1/3 the depth of Hold to lower edge of Sheerstrake	<u>8</u>		<u>8/16</u>		<u>8</u>		<u>8/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Sheerstrake, breadth and thickness	<u>36</u>		<u>12/16</u>		<u>30</u>		<u>12/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Butt Straps to outside plating, breadth and thickness	<u>9 1/2</u>		<u>8 1/2/16</u>		<u>8 1/2</u>		<u>8 1/2/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness	<u>3 1/2</u>		<u>13/16</u>		<u>3 3/4</u>		<u>13/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Angle Iron on ditto	<u>5 x 4</u>		<u>8/16</u>		<u>5 x 4</u>		<u>8/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways	<u>12 1/2</u>		<u>11/16</u>		<u>12</u>		<u>9/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Diagonal Tie Plates on ditto	<u>10 1/2</u>		<u>11/16</u>		<u>12</u>		<u>9/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Planksheer, materials and scantlings	<u>1 1/2</u>		<u>11/16</u>		<u>1 1/2</u>		<u>9/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Waterway ditto	<u>1 1/2</u>		<u>11/16</u>		<u>1 1/2</u>		<u>9/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Flat of Upper Deck, thickness and material	<u>3 1/2</u>		<u>11/16</u>		<u>3 1/2</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	how fastened to Beams	<u>3 1/2</u>		<u>11/16</u>		<u>3 1/2</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Ceiling betwixt Decks and in Hold, thickness and material	<u>2 1/2</u>		<u>11/16</u>		<u>2 1/2</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Clamps or Spirketting ditto	<u>2 1/2</u>		<u>11/16</u>		<u>2 1/2</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness	<u>2 1/2</u>		<u>11/16</u>		<u>2 1/2</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams	<u>2 1/2</u>		<u>11/16</u>		<u>2 1/2</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Stringers in Hold	<u>5 1/2</u>		<u>11/16</u>		<u>5 1/2</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Flat of Lower Deck, thickness and material	<u>5 1/2</u>		<u>11/16</u>		<u>5 1/2</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Main piece of Rudder, diameter at head	<u>6</u>		<u>11/16</u>		<u>6</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	" " " at heel	<u>3</u>		<u>11/16</u>		<u>3</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	(Can the Rudder be unshipped afloat) <u>Yes</u>	<u>3</u>		<u>11/16</u>		<u>3</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	Bulkheads, N ^o . <u>1</u> Thickness of	<u>6</u>		<u>11/16</u>		<u>6</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	" Height up <u>Main Deck</u>	<u>6</u>		<u>11/16</u>		<u>6</u>		<u>11/16</u>
if plate iron, breadth and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	" how secured to the sides of the ship <u>By double frames & brackets</u>	<u>6</u>		<u>11/16</u>		<u>6</u>		<u>11/16</u>
if bar iron, moulding and thickness	<u>1 1/2 x 3</u>		<u>1 1/2 x 3</u>	" size of vertical angle irons <u>3 x 3</u> and their distance apart <u>2 feet 6 in</u>	<u>6</u>		<u>11/16</u>		<u>6</u>		<u>11/16</u>

Transoms, material Plating or, if none, in what manner compensated for.
 Night-heads, and Hawse Timbers Make mous & Plating
 The Frames extend in one length from Keel to Gunwale rivetted through plates with (1/8 in.) rivets, about (1/2 in.) apart.
 The angle irons on the floors extend in one length across the middle line from turn of bilge to turn of bilge
 " " on the frames " " " from turn of bilge to Main & Span Decks alternately
 How are the various lengths of plates or angle irons connected? By Butt straps and angle mous shifted
 Garboard, double or rivetted to keel, double or at upper edge, with rivets (1/8 in.) diameter, averaging (1/2 in.) apart.
 Edges from Garboards to upper part of bilge, worked clencher, double or single rivetted; with rivets (3/4 in.) diameter, averaging (1/2 in.) apart.
 Butts from Keel to turn of bilge, worked carvel with butt straps (1/16 in.) thick, double or single rivetted; with rivets (1/8 in.) diameter, averaging (1/2 in.) apart.
 Do the butt straps lap over and rivet through the lands of the strake below? No
 Edges from bilge to sheerstrake, worked carvel with a lining piece () thick, or clencher, double or single rivetted; with rivets (3/4 in.) diameter, averaging (1/2 in.) apart.
 Do the butt straps lap over and rivet through the lands of the strake below? No
 Edges of Sheerstrake, double or single rivetted? At upper edge Make at bulwarks At lower edge double
 Butts from bilge to planksheers, worked carvel with butt straps (1/16 in.) thick, double or single rivetted; with rivets (3/4 in.) diameter, averaging (1/2 in.) apart. Breadth of laps in double rivetting (1 1/2 in.) Breadth of laps in single rivetting (2 1/2 in.)
 Straps of Keelsons, Stringer and Tie Plates, double or single rivetted? Double rivetted
 Planksheer, how secured to the plating of the sides Explain by sketch
 Waterway " " planksheer and to the Beams if necessary
 How secured to the side? By Beam ends turned and welded
 Upper Deck ditto ditto
 No. of breasthooks Four crutches Four
 Description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.? good
 Manufacturer's name or trade mark Stockton Malleable Co. Hartlepool Malleable Co. Skelme & Fox Head & Co.
 I certify that the above is a correct description of the several particulars therein given.
 Signature James M. Mawell Surveyor's Signature James M. Mawell

IRONING 0233

7991. Iron

ship. Are the lands or laps of the clenchwork in all cases in breadth at least five and a half times the diameter of the rivets and butts, and at least three and a quarter times the diameter of the rivets where single rivetting is admitted? Yes
Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiency? Yes
Do the fillings between the ribs and plates fill in solid with single pieces? or are they in short lengths of various thicknesses? Yes
Do the rivetting plate to frames, butt straps, or plate to plate, &c., conform well to each other? Yes and are the rivets well countersunk in the outer plate? Yes
Are there any rivets which either break into or have been put through the seams or butts of the plating? Some on Butts

Her Masts, Bowsprit, Yards, &c., are in good condition, and sufficient in size and length. (If they are of Iron or Steel the number of Plates, 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 rivetting, quality of Materials, and if stamped with Maker's name.)
2 Main Masts are of Iron, plates 1/16 thick, two at head 3/16, three more running the full length 3/16 x 1/2, doubling plates 1/2 x 1/16, edges single and double rivetted

She has SAILS.	CABLES, &c.	Fathoms.	Inches.	Test as per Certificate.	In. req'd per Rule.	Test req'd per Rule.	ANCHORS, &c.	No.	Weight, Ex. Stock.	Test as per Certificate.	Weight req'd per Rule.	Test as per Rule.
Fore Sails,	Chain	300	1 1/2	4 1/2	1 1/2	4 1/2	Bowers	3	26-2-0	26-0-0	25 1/2	20
Fore Top Sails,									26-1-0	25-6-1	25 1/2	16
Fore Topmast Stay Sails	Heaven Stream Cable	90	1		1				22-1-0	22-11-1	21-2-2	6
Main Sails,	Hawser	90	6		9 1/2		Stream	1	10-2-11		10 1/2	
Main Top Sails,	Towlines	90	9 1/2		10							
	Warp	90	4		6		Kedges	2	5-1-8		5 1/2	
	All of <u>good</u> quality.	160	4						2-8-4		2	
Her Standing and Running Rigging <u>Done at ship</u> sufficient in size and <u>good</u> in quality.												
She has <u>Two Sigs</u> Long Boat and <u>three others</u>												
The present state of the Windlass is <u>good</u> Capstan <u>good</u> and Rudder <u>good</u> Pumps (5 of Metal) <u>good</u>												

Order for Special Survey DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought
No. 531 Surveys held 2nd. On the plating during the progress of rivetting Seen twice
Date Nov 8 1869 while building 3rd. When the beams were in and fastened, and before the decks were laid each week
Order for Ordinary Survey as per 4th. When the ship was complete, and before the plating was finally coated during building
No. Section 18. 5th. After the ship was launched
Date

State if she has a Spar Deck Peep or Forecastle

General Remarks,
Has a Spar Deck frames to Main and Spar Decks alternately. Beam
bulb plate 1/16 x 1/16 double angles in upper edge 2 1/2 x 2 1/2 x 1/16, space 1 1/2, stringer
beams 3 1/2 x 1/16, angles iron on ditto 1 1/2 x 3 1/2 x 1/16 & 3 1/4 x 3 x 1/16. Tie plates 1 1/2 x 1/16
diagonal tie plates (4 sets) 1 1/2 x 1/16. Plating 3/16 & 1/16. Rivets 5/8. Space 2 1/2
Deck 3/16 of iron & fastened with 3/16 h.s. n. ss.
Fitted with Water Ballast Tanks in Fore & After Holds. Side flange 1/16
1/16 angle at bottom 3 1/2 x 3 1/2 x 1/16, three plates 1/16, grooved plates 1/16, angles top and bottom 3 1/2 x 1/16
top of tanks 1/16, ceiling 2 1/2 x 1/16.
Bilge Keels 1 1/2 x 1/16 bulb & double angles 5 x 4 1/2 x 1/16
Anchors & Chain cables tested at the Sunderland Public Chain & Anchor Test
Feb 8 1870 John Hartness, Superintendent.
A portion of the chain cable has been proved at the above works to
breaking strain and that it showed a margin of Thirty per cent beyond
Admiralty test for 1 1/2 inch chain

In what manner are the surfaces preserved from oxidation? Inside With Cement & Paint
Ditto ditto Outside With Paint

I am of opinion this Vessel should be Classed B-1
The amount of the Fee£ 5 : 0 : 0 is received by me,
John Hartness Special£ 63 : 13 : 0
Certificate (if required)£ : : :
Committee's Minute 3 June 1870
Character assigned Spar Deck