

IRON SHIPS.

New 28/11/71

No. 11007 Survey held at Newcastle Date, First Survey 27 June Last Survey 16 Nov 71
 On the New Steamer "Grafalgar" Master J. H. Watson
 Built at Newcastle
 When built 1871 Launched Sept 28/71
 By whom built C. Mitchell & Co
 Owners James Watson & Co
 Port belonging to London
 Destined Voyage India
 If Surveyed while Building, Afloat, or in Dry Dock. While building

Age under Tonnage Deck	ONE, OR TWO DECKED, SPAR, OR AWNING DECKED VESSELS.	THREE DECKED VESSELS.
<u>1057.41</u>	Half moulded breadth <u>16.0</u>	Half Moulded Breadth <u>16.0</u>
<u>235.80</u>	Depth from upper part of Keel to top of Upper Deck Beams <u>19.6</u>	Total Depth if three or more Decks <u>19.6</u>
<u>14.22</u>	Girth of Half Midship Frame (as per Rule) <u>32.3</u>	Total Girth of Half Midship Frame <u>32.3</u>
<u>35.23</u>	1st Number <u>67.9</u>	3rd Number <u>67.9</u>
<u>1342.68</u>	Length <u>244.2</u>	Length <u>244.2</u>
<u>61.92</u>	2nd Number <u>165.81</u>	4th Number <u>165.81</u>
<u>429.66</u>	Depths to Length <u>134 under 14</u>	Breadths to Length <u>under 8</u>
<u>857.10</u>		

Feet.	Inches.	Feet.	Inches.	Depths from top of Floors to Upper and Main Deck Beams, as per Rule	Feet.	Inches.	Horse.	Nº. of Decks with flat laid	Nº. of Tiers of Beams
<u>44</u>	<u>3</u>	<u>32</u>	<u>0</u>	<u>17</u>	<u>7</u>	<u>9 1/2</u>	<u>120</u>	<u>one</u>	<u>two</u>

Dimensions of Ship per Register, length, 248.0 breadth, 32.1 depth, 17.7

	Inches in Ship.	Inches required per Rule.
if bar iron, depth and thickness	<u>8 x 2 3/4</u>	<u>9 x 2 1/2</u>
if centre through plate, depth and thickness	<u>8 x 2 3/4</u>	<u>8 x 2 1/2</u>
if bar iron, moulding and thickness	<u>8 x 5 1/2</u>	<u>8 x 5</u>
in-post for Rudder do.	<u>8 x 5 1/2</u>	<u>8 x 5</u>
in-post for Propeller	<u>23</u>	<u>23</u>
Distance of Frames from moulding edge to moulding edge, all fore and aft	<u>23</u>	<u>23</u>

Frames, size of Angle Iron, for $\frac{2}{3}$ length amidships

	Inches in Ship.	Inches required per Rule.
Do. for $\frac{1}{2}$ at each end	<u>4 x 3 7/8</u>	<u>4 x 3 1/2</u>
Reversed Frames, size of Angle Iron	<u>3 x 3 7/8</u>	<u>3 x 3 1/2</u>
Floors, depth and thickness of Floor Plate at mid line for half the length amidships	<u>20 1/2 x 9</u>	<u>20 1/2 x 9</u>
Do. at the ends	<u>20 1/2 x 8</u>	<u>20 1/2 x 8 1/2</u>
Do. do. do. at Bilge Keelson	<u>3 x 5</u>	<u>3 x 5</u>
Do. height extended at the Bilges	<u>7 1/2 x 7</u>	<u>7 1/2 x 7</u>
Beams, Upper, Spar, or Anning Deck (No. 61)	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Single or double Angle Iron, Plate or Tee Bulb Iron	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Single or double Angle Iron on Upper edge	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Average space	<u>3 x 10</u>	<u>3 x 10</u>
Beams, Main or Middle Deck (No. 6) single, or double Angle Iron, Plate or Tee Bulb Iron	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Single or double Angle Iron, on Upper Edge	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Average space	<u>3 x 10</u>	<u>3 x 10</u>
Beams, Lower Deck, Hold or Orlop (No. 15)	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Single or double Angle Iron, Plate or Tee Bulb Iron	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Single or double Angle Iron on Upper Edge	<u>3 x 3 6</u>	<u>3 x 3 6</u>
Average space	<u>3 x 10</u>	<u>3 x 10</u>
Keelson Centre line, single or double plate, box, or Intercoastal, size of Plates	<u>24 x 9</u>	<u>24 x 9</u>
Do. Bulb Plate to Intercoastal Keelson	<u>28 x 8</u>	<u>28 x 8</u>
Do. Size of Angle Irons	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Do. Side Intercoastal Keelson size of Plates	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Do. Angle Irons on tops of Floors	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Do. Bilge Keelson, Bulb Iron	<u>7 1/2 x 7</u>	<u>7 1/2 x 7</u>
Do. do. Intercoastal plates riveted to plating for length	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Do. do. Angle Irons	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Side Stringers (No. 1) size of Angle Irons	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>
Do. Intercoastal plates riveted to plating for length	<u>5 3/2 x 9</u>	<u>5 3/2 x 9</u>

Transoms, material Iron or, if none, in what manner compensated for.

Knight-heads Iron Hawse Timbers Iron

Windlass Iron Patent Pall Bitt Iron

The Frames extend in one length from Keel to Foremast

The Reverse Angle Irons on the floors and frames extend across the middle line to Foremast and to Foremast alternately

Keelsons. Are the various lengths of Plates and Angle Irons properly connected? Yes And are their butts properly shifted? Yes

Plates, Garboard, double at Riveted to Keel, double at at upper edge, with Rivets (1/2 in.) diameter, averaging (5 1/2 ins.) from centre to centre.

Do. Edges from Garboards to upper part of Bilge, worked Clencher, double or single Riveted; with Rivets (3/4 in.) diameter, averaging (3 1/2 ins.) from centre to centre.

Do. Butts from Keel to turn of Bilge, worked carvel with butt straps to strakes (9/16) thick, double or single Riveted; with Rivets (3/4 in.) diameter averaging (3 1/2 ins.) from centre to centre. Do the Butt Straps lay over and Rivet through the lands of the strakes above or below? No

Do. of 3 Strakes at Bilge for half length, treble riveted with Butt Straps 1/16 thicker than their plates.

Do. Edges from bilge to Main Sheerstrake, worked carvel with a lining piece (1/16) thick, or clencher, double or single riveted; with rivets (3/4 in.) diameter, averaging (3 1/2 ins.) from centre to centre.

Do. Edges of Sheerstrake, Main, double or single Riveted. Upper, double or single Riveted. At upper edge single At lower edge double

Do. Butts from Bilge to Main Sheerstrake, worked Carvel with Butt Straps (9/16) thick, double or single Riveted; with Rivets (3/4 in.) diameter, averaging (3 1/2 ins.) from centre to centre.

Do. Butts of Main Sheerstrake, double or treble Riveted. Butts of Upper or Spar Sheerstrake, and Upper Deck Stringer Plate, double or treble Riveted for 1/2 length amidships. Breadth of laps of plating in double Riveting (4 1/4) Breadth of laps of plating in single Riveting (2 1/4)

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double treble as per rule

Planksheer, how secured to the plating of the sides. Waterway, how secured to the planksheer and to the Beams. (Explain by Sketch, if necessary.)

Beams of the various Decks, how secured to the sides? secured down No. of Breasthooks, 4 Crutches, 24

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

Manufacturer's name or trade mark, Plates, Gurnett and Bolton & Co. Glasgow

We certify that the above is a correct description of the several particulars therein given.

Builder's Signature, J. L. Mitchell & Co. Surveyor's Signature, G. J. P. P. P.

2600-0062

Lloyd's Register

9592 *Len* *Hand*
Workmanship. Are the butts of plating planed or otherwise fitted? *Hand*
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*
Do the fillings between the ribs and plates fill in solid with single pieces? or are they in short lengths of various thicknesses? *Solid single pieces*
Do the holes for riveting plate to frames, butt straps, or plate to plate, &c., conform well to each other? *Yes* and are the rivet holes well and sufficiently countersunk in the plate and punched from the faying surfaces? *Yes*
Are there any rivets which either break into or have been put through the seams or butts of the plating? *Very few*

Her Masts, ~~Bowsprit~~, Yards, &c., are in *good* condition, and sufficient in size and length. If they are of Iron or Steel give the 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 *Length 60 feet Diam 20 1/2 in*

The Fore and Main masts are of iron. Thickness of plates 7/16" Edges double riveted. Butts double and triple riveted. See by Council Co.

Number for equipment		Fathoms.	Inches.	Test as per Certificate.	In. req'd per Rule.	Test req'd per Rule.	ANCHORS, &c.	N ^o .	Weight. Ex. Stock.	Test as per Certificate.	Wght req'd per Rule.	Test req'd per Rule.							
N ^o .	SAILS.	CABLES, &c.	270	1 1/2	40.100.0	1 1/2	40 1/2	1	21.2.0	27.0.0.0	21.0.0	\$ 21.0							
The Ship	Fore Sails,	Chain	Length 4 1/2	4 1/2	40.100.0	1 1/2	40 1/2	Bowers	1	21.0.14	21.14.1.14	21.0.0	18.15						
	Fore Top Sails,	(State Machine where Tested, and name of Superintendent).						1	18.3.14	19.15.1.7	17.3.11	20							
	Fore Topmast Stay Sails	Hempen Stream Cable						90	9 1/2	(State Machine where Tested, and name of Superintendent).	Length 4 1/2	4 1/2	40.100.0	1 1/2	40 1/2	Stream	1	9.3.7	9.0.0
	Main Sails,	Hawser						90	17 1/2										
	Main Top Sails,	Towlines						90	7										
		Warp	90	7 1/2	Kedges	1	4.2.14	4.2.0											
and		All of good quality.	120	4 1/2					2.1.0	2.1.0									

Her Standing and Running Rigging *Spice* sufficient in size and *good* in quality. She has *four* Long Boats and *3* others
The present state of the Windlass is *Secure* Capstan *Winch* and Rudder *and* Pumps *good*

Engine Room Skylights.—How constructed? *Iron coverings* How secured in ordinary weather? *Solid shutters of plate*
What arrangements are there for deadlights in such for bad weather? *Solid Oak shutters & puttles eyes*

Coal Bunker Openings.—How constructed? *Iron pipes* How are lids secured? *Shuts* How high above deck? *Eight inches*
Scuppers, &c.—What arrangements are there beyond the scuppers on deck, for clearing upper deck of water, in case of a sea coming on board? *Five ports on each side.*

Cargo Hatchways.—How formed? *Iron Corners plates* State size *27' 8" x 13'*
If of extraordinary size, state how framed and secured? *Properly framed with Shifting and half beams*
What arrangement for shifting beams? *Two shifting beams and three fore and afters*
Hatches, themselves, whether strong and efficient? *yes* **Main Hatchways.**—State size *19 x 10*

Order for Special Survey No. *790* DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought
Date *22 Nov 1870* Surveys held 2nd. On the plating during the progress of riveting
Order for Ordinary Survey No. — while building 3rd. When the beams were in and fastened, and before the decks were laid
Date — as per 4th. When the ship was complete, and before the plating was finally coated or cemented
No. *251* in builder's yard. Section 18. 5th. After the ship was launched and equipped

General Remarks,
This vessel has been plated except the sheer strakes; and Struts, tie & diagonal plates, bulwark stringers fitted under the special survey of the underigned
This vessel is similar in all respects to the "Bohemia," (No. 11542)
There is a double bottom extending throughout the length of the fore and after holds. The united length of which is 136 feet. The plating plates are 7/16 thick and remainder of plating Rinner bottom 9/16 thick
Length 132 feet
Breadth 25

This is a two decked vessel slightly sheered in the keel. Part double bottom

State if one, two or three decked vessel, or if spar or awning decked, and lengths of poop, fore-castle or raised quarter deck, or of double or part double bottom.
In what manner are the surfaces preserved from oxidation? Inside *Painted cement paint* Outside *Paint*

I am of opinion this Vessel should be Classed *90 A 1*
The amount of the Entry Fee£ *5* : : is received by me,
For M Special£ *5* : : 0 : 6
Certificate : : :
(Travelling Expenses)
(if any) £

Committee's Minute *1st December 1871*
Character assigned *90 A 1*
1870 Rules
Lloyd's Register of Shipping
Foundation

11. Mace & Mitchell & Co., Newcastle-on-Tyne