

# IRON SHIP.

No. 912 Survey held at Stockton Date, First Survey 3<sup>rd</sup> May Last Survey 3<sup>rd</sup> Dec<sup>r</sup> 1871

On the Screw Steamer "Castello"

Master Hoaro

Built at Stockton

When built 1877 Launched 8 Oct<sup>r</sup> 1877

By whom built Richardson Duck & Co

Owners Clarkson & Co

Port belonging to London

Destined Voyage India

If Surveyed while Building, Afloat, or in Dry Dock.  
while building - also afloat.

**TONNAGE** under  
Tonnage Deck 2164.85  
Tonnage of Third Spar, Bridge, & Awning Deck 5.70  
Tonnage of Poop, or Raised Or. Dk. 17.74  
Tonnage of Houses on Deck 70.68  
Tonnage of Forecastle side houses 3.77  
Tonnage of Engine Room 3.74  
Tonnage as cut on Beam 2266.48  
Tonnage as cut on Beam 58.63  
Tonnage as cut on Beam 2207.85  
Tonnage as cut on Beam 725.27  
Tonnage as cut on Beam 1482.58

**ONE, OR TWO DECKED, THREE DECKED VESSEL.**  
**SPAR, OR AWNING DECKED VESSEL.**  
**HALF BREADTH** (moulded) 17-7 3/4  
**DEPTH** from upper part of Keel to top of Upper Deck Beams 27-9 1/2  
**GIRTH** of Half Midship Frame (as per Rule) 40-1 1/2  
**1st NUMBER** 85-6 3/4  
**1st NUMBER, if a THREE-DECKED VESSEL** 78.56  
[deduct 7 feet]  
**LENGTH** 314.92  
**2nd NUMBER** 24740  
**PROPORTIONS**—Breadths to Length 8.9  
**Depths to Length**—Upper Deck to Keel 11.3  
Main Deck ditto 15.8

**LENGTH** Feet. 314 Inches. 11 **BREADTH** Feet. 35 Inches. 3 1/2 **DEPTH** top of Floors to Upper Deck Beams 25 Feet. 17 Inches. 11 1/2 **Power of Engines** 250 **Horse.** 250 **Nº. of Decks with flat laid** two **Nº. of Tiers of Beams** three  
Dimensions of Ship per Register, length, 316.8 breadth, 35.45 depth, 25.6

**KEEL**, depth and thickness 10 x 2 3/4  
**STEM**, moulding and thickness 10 x 2 3/4  
**STERN-POST** for Rudder do. do. 10 x 5 1/2  
for Propeller 10 x 5 1/2  
Distance of Frames from moulding edge to moulding edge, all fore and aft 24  
**FRAMES**, Angle Iron, for 3/4 length amidships 5 x 3 8/16  
Do. for 1/4 at each end 5 x 3 7/16  
**REVERSED FRAMES**, Angle Iron 3 1/2 x 3 8/16  
**FLOORS**, depth and thickness of Floor Plate at mid line for half length amidships 24 x 10/16  
thickness at the ends of vessel 8/16  
depth at 3/4 the half-bdth. as per Rule 12  
height extended at the Bilges 48  
**BEAMS, Upper, Spar, or Awning Deck** Single or double Angle Iron, Plate or Tee Bulb Iron 7 x 7/16  
Single or double Angle Iron on Upper edge 3 x 3 6/16  
Average space... alternate frames  
**BEAMS, Main, or Middle Deck** Single or double Angle Iron, Plate or Tee Bulb Iron 6 x 3 8/16  
Single or double Angle Iron, on Upper Edge 6 x 3 8/16  
Average space... every frame  
**BEAMS, Lower Deck, Hold, or Orlop** Single or double Angle Iron, Plate or Tee Bulb Iron 9 1/2 x 9/16  
Single or double Angle Iron on Upper Edge 4 x 4 8/16  
Average space... as per profile  
**KEELSONS** Centre line, single or double plate, box, or intercostal, Plates 24 x 13/16  
Rider Plate 13 1/2 x 13/16  
Bulb Plate to Intercostal Keelson 6 x 4 9/16  
Angle Irons 6 x 4 9/16  
Double Angle Iron Side Keelson 6 x 4 9/16  
Side Intercostal Plate 6 x 4 9/16  
do. Angle Irons 6 x 4 9/16  
Attached to outside plating with angle iron 4 1/2 x 4 8/16  
**BILGE** Angle Irons 8 1/2 x 8/16  
do. Bulb Iron 8 1/2 x 8/16  
do. Intercostal plates riveted to plating for 1/2 length with 3 1/2 x 3 1/2 x 8/16  
**BILGE STRINGER** Angle Irons 6 x 4 9/16  
Intercostal plates riveted to plating for 3/5 length with 3 1/2 x 3 1/2 x 8/16  
**SIDE STRINGER** Angle Irons 6 x 4 9/16

**Flat Keel Plates**, breadth and thickness 36 x 1 1/2  
**PLATES** in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied 4/6  
from main part of Bilge to l.r. edge of Sh'rstrake 4/6  
**Main Sheerstrake**, breadth and thickness of doubling at Sh'rstrake, & length applied from Main to Upper or Spar Dk. Sh'rstrake 40 x 1 1/2  
Upper or Spar Dk Sh'rstrake, breadth and thickness 40 x 1 1/2  
Butt Straps to outside plating, breadth & thickness 17 x 1/2  
Lengths of Plating 120  
Shifts of Plating, and Stringers 48  
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness 51 x 9/16  
Angle Iron on ditto 4 x 4 x 9/16  
Tie Plates fore and aft, outside Hatchways 15 x 9/16  
Diagonal Tie Plates on Beams No. of Pairs, one 15 x 9/16  
Planksheer material and scantling 16 3/4 x 1 1/2  
Waterways do. do. 16 3/4 x 1 1/2  
Flat of Upper Deck do. 4" y. p.  
How fastened to Beams 8/16 g. i. n. b.  
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness 45 x 9/16  
Is the Stringer Plate attached to the outside plating? yes  
Angle Irons on ditto, No. 2 of 4 x 4 x 9/16  
Tie Plates, outside Hatchways 4 x 4 x 9/16  
Diagonal Tie Plates on Beams, No. of pairs 4 x 4 x 9/16  
Waterways materials and scantlings iron 6/16  
Flat of Middle Deck do. do. riveted  
How fastened to Beams riveted  
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams 40 x 9/16  
Is the Stringer Plate attached to the outside plating? yes  
Angle Irons on ditto, No. 2 of 4 x 4 x 9/16  
Stringer or Tie Plates, outside Hatchways 4 x 4 x 9/16  
Flat of Lower Deck 2" pine  
Ceiling betwixt Decks, thickness and material 2 1/2" pine  
Main piece of Rudder, diameter at head 7 1/2  
do. at heel 3 3/4  
Can the Rudder be unshipped afloat? yes  
Bulkheads No. 5 Thickness of 7/16  
Height up collision bulkhead to upper deck - remainder to middle deck  
How secured to sides of ship between double frames  
Size of Vertical Angle Irons 3 1/2 x 3 x 8/16 and distance apart 30 ins.  
Are the outside Plates doubled two spaces of Frames in length? yes

Transoms, material. Knight-heads. Hawse Timbers. iron  
Windlass iron - Harfield's Patent Pall Bitt iron

The **FRAMES** extend in one length from keel to gunwale Riveted through plates with 7/8 in. Rivets, about 6" apart.  
The **REVERSED ANGLE IRONS** on floors and frames extend across middle line to middle deck stringer 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 1/2 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 1/2 ins. from centre to centre.  
**Butts from Keel to turn of Bilge**, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 3/4 ins. from centre to centre.  
**Butts of Three Strakes at Bilge** for 1/2 length, treble riveted with Butt Straps 1/6 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 1/2 ins. from cr. to cr.  
**Butts from Bilge to Main Sheerstrake**, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from cr. to cr.  
**Main Sheerstrake**, double or single riveted, Upper Sheerstrake, double or single riveted.  
**Main Sheerstrake**, treble riveted for 1/2 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 1/2 length.  
Breadth of laps of plating in double riveting 5 1/2 Breadth of laps of plating in single riveting 5 1/2

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? treble & double  
Waterway, how secured to Beams iron gutter - riveted (Explain by Sketch, if necessary.) yes  
Beams of the various Decks, how secured to the sides? ends turned, knees welded; also by brackets No. of Breasthooks, 6 Crutches, 6  
What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? good  
Manufacturer's name or trade mark, F. A. & Co.; D. L. & Co. West Marsh; Bowesfield.

The above is a correct description.  
Builder's Signature, Richardson Duck & Co Surveyor's Signature, J. H. Russell

Surveyor in the Register of British and Foreign Shipping

IRON 476-0577



inship. Are the butts of plating planed or otherwise fitted? *planed*

the edges of the carvel work and of the butts lay close together through out 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*

19687

Masts, Bowsprit, Yards, &c., are *iron - pitch pine & pine* 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 *Free mast of iron - length 78'-9" - diameter at deck 25" - Main mast of iron - length 70'-4" - diameter at deck 23" - 3 plates in the round - seams single riveted - butts double riveted except at partners where they are treble riveted - 3 longitudinal angle irons running the whole length of each mast 3"x3"x6 1/16" to main mast - iron tested by cold bending - brand "Barnesfield" - Mizzen mast of pitch pine - length 68 feet - diam at deck 20"*

NUMBER for EQUIPMENT 29638		Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per Rule.	Test req'd per Rule.	ANCHORS.	N <sup>o</sup> .	Weight. Ex. Stock.	Test per Certificate	W'ght req'd per Rule.	Test req'd per Rule.
N <sup>o</sup> .	SAILS.	CABLES, &c.	Chain									
One	Fore Sails,	<i>D. G. Lewis Netherton</i>					Bowers	3	34-1-22	32-0-0-0	34	31
Suit	Fore Top Sails,	<i>25 &amp; 28 Sept 1877</i>							34-1-13	31-18-0-14	34	31
good	Fore Topmast Stay Sails								29-2-26	28-8-3-0	29	27
	Main Sails,	<i>Hemp-Strm Cbl</i>										
and	Main Top Sails,	<i>60-1 1/16 iron</i>										
		<i>30-3 1/4 iron</i>										
		<i>90-12"</i>										
		<i>90-12"</i>										
		<i>220-16"</i>										
		<i>320-16"</i>										
		<i>quality good</i>										

Standing and Running Rigging *wire & hemp* sufficient in size and *good* in quality. She has *4 Long Boats* and *good*

The Windlass is *good* Capstan *good* and Rudder *good* Pumps *2 patent pumps with connections to each hold on both sides of vessel - the pumps worked either by steam or by hand.*

Engine Room Skylights.—How constructed? *1/4" casing to height of bridge - tank above* How secured in ordinary weather? *hull's eyes*

What arrangements for deadlights in bad weather? *hull's eyes.*

Coal Bunker Openings.—How constructed? *iron plates* How are lids secured? *by bars* Height above deck? *14"*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Side ports and scuppers.*

Cargo Hatchways.—How formed? *1/16" plates*

State size Main Hatch *24' x 12' x 2'-1" above deck* Forehatch *12' x 10' x 2'-1" above deck* Quarterhatch *18' x 10' x 2'-1" above deck.*

If of extraordinary size, state how framed and secured?

What arrangement for shifting beams? *2 deep web plates 1/2" thick at main hatch; one d° at after hatch.*

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

Order for Special Survey No. *638*

Date *26 May 1877*

Order for Ordinary Survey No.

Date

No. *238* in builder's yard.

DATES of Surveys held while building as per Section 18.

- 1st. On the several parts of the frame, when in place, and before the plating was wrought
- 2nd. On the plating during the process of riveting
- 3rd. When the beams were in and fastened, and before the decks were laid...
- 4th. When the ship was complete, and before the plating was finally coated or cemented...
- 5th. After the ship was launched and equipped

*May 3, 24, 28, 31; June 6, 9, 13, 14, 19, 25, 28; July 2, 11, 13, 17, 19, 23, 24, 26; August 2, 6, 9, 23, 27, 29, 31; Sept. 1, 10, 11, 14, 19, 24, 26, 27. Oct 1, 2, 5, 9, 11, 15, 18, 22, 26, 30. Nov 1; Dec 3.*

General Remarks (State quality of workmanship, &c.) *General quality of workmanship &c — good.*

*Has Poop — all frames extend to top height — beams of angle iron 6"x3"x7/16 spaced at alternate frames — stringer plates on ends of beams 24"x7/16 — angles on d° 4"x3"x7/16 — tie plates on beams 10"x6/16 — plating outside 6/16 — waterways tank — deck 3"y.p.*

*Has Forecastle — all frames extend to top height — beams of hull 6"x6/16 with angles on d° 2 1/2"x2 1/2"x5/16 — spaced 4 feet; stringer plates on ends of beams 25"x6/16 — angles on d° 4"x3"x7/16 — tie plates on beams 9"x7/16 — plating outside 6/16 — waterways tank — deck 3"y.p.*

*Has Ballast tanks — frames cut — connection made by knee plates — side plates 7/16 — angles on d° 3 1/2"x3 1/2"x7/16 — web plates 6/16 — angles on d° 3"x3"x6/16 — top plating 6/16 — tested by head of water to height of load line.*

State if *one, two, or three*, decked vessel, or if *open*, or *awning decked*; and the lengths of *40 feet* poop, *27 feet* forecastle, or *raised* quarter deck, and the length of *Tank in fore part of Engine Room 40 feet after tank 70 feet.* double, or part double bottom.

How are the surfaces preserved from oxidation? Inside *Portland cement* Outside *paint.*

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

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

Special ... £ *80* : 3 : 6 *3<sup>rd</sup> December 1877.*

Certificate ...

(Travelling Expenses, if any, £ ...)

Committee's Minute *4<sup>th</sup> December 1877*

Character assigned *100 A.1*

*MC 12.74*

*1877*

*J. H. Truscott*  
*Richardson & Co*  
*Lloyd's Register*  
*Foundations*