

Built by Rules 1871 and 2.

IRON SHIP.

11874
1874/10/13

No. 3216 Survey held at Penfrew Date, 18th June/72 Last Survey 3rd Oct^r 1873

On the S. S. "Vasco de Gama" Yard Number 133 Master Price

TONNAGE under Deck } 2096.58
 Ditto of Third, Spar, or Awning Deck. } 467.78
 Ditto of Poop, or Raised Or. Dk. } 48.07
 Ditto of Houses on Deck } 48.07
 Ditto of Forecastle } 48.07
 Gross Tonnage 2912.43
 Less Crew Space } 2864.36
 Less Fuel Room } 931.98
 Registered Tonnage as cut on Regd } 1980.45

~~ONE, OR TWO DECKED~~ **THREE DECKED VESSEL.**
 with ~~SPAR, OR AWNING-DECKED VESSEL.~~
 HALF BREADTH (moulded) 18.37 Feet.
 DEPTH from upper part of Keel to top of Upper Deck Beams 25.90
 GIRTH of Half Midship Frame (as per Rule) 38.58
 1st NUMBER 82.85
 1st NUMBER, if a **THREE-DECKED VESSEL** deduct 7 feet 75.85
 LENGTH 348
 2nd NUMBER 26.395
 PROPORTIONS—Breadths to Length 9.47
 Depths to Length—Upper Deck to Keel 18.81
 Main Deck ditto 13.43

Built at Penfrew
 When built 1873 Launched 29th May 1873
 By whom built Henderson, Coulborn & Co
China Trade
 Port belonging to London
 Destined Voyage London to China
 If Surveyed while Building, Afloat, or in Dry Dock.

Official Number 221

LENGTH on deck as per Rule ... 348 Feet. Inches. 0 BREADTH—Moulded... 36 Feet. Inches. 9 DEPTH top of Floors to Upper Deck Beams ... 24 Feet. Inches. 1 1/2 Do. do. Main Deck Beams... 31 Feet. Inches. 5 Power of Engines ... 530 Horse. N° of Decks with flat laid Three N° of Tiers of Beams Four

Dimensions of Ship per Register, length, 348.4 breadth, 37.0 depth, 24.4

	Inches in Ship.	Inches per Rule.
KEEL, depth and thickness	10 x 2 3/4	10 x 2 3/4
STEM, moulding and thickness	10 x 2 3/4	10 x 2 3/4
STERN-POST for Rudder do. do. for Propeller	10 x 5 1/2	10 1/2 x 5 1/2
Distance of Frames from moulding edge to moulding edge, all fore and aft	24	24 (Class 100 A)
FRAMES, Angle Iron, for 1/2 length amidships	4 1/2 x 3	7/16 x 3
Do. for 1/4 at each end	4 1/2 x 3	7/16 x 3
REVERSED FRAMES, Angle Iron	3 x 3	7/16 x 3
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	2 1/2 x 9/16	2 1/2 x 9/16
thickness at the ends of vessel	under Engines 8/16	under Engines 10/16
depth at 1/2 the half-bdth. as per Rule	10 1/2	8 1/4
height extended at the Bilges	Twice depth	Twice depth
BEAMS, Upper, Spar, or Awning Deck Single or double Angle Iron, Plate or Tee Bulb Iron	7 x 5	7/16 x 5
Average space	48	48
BEAMS, Main or Middle Deck Single or double Angle Iron, Plate or Tee Bulb Iron	9 x 5 1/2	9/16 x 5 1/2
Average space	48	48
BEAMS, Lower Deck, Hold or Orlop Single or double Angle Iron, Plate or Tee Bulb Iron	7 x 5	7/16 x 5
Average space	every 2 nd frame or 48"	9 x 9/16 or 2 x 3 1/4"
KEELSONS Centre line, single or double plate, box, or Intercostal, Plates	10 x 13/16	10 x 13/16
Rider Plate	9 x 10/16	9 x 10/16
Bulb Plate to Intercostal Keelson	6 x 4	9/16 x 4
Angle Irons	6 x 4	9/16 x 4
Double Angle Iron Side Keelson	9/16 plate	9/16
Side Intercostal Plate	6 x 4	9/16 x 4
do. Angle Irons	3 1/2 x 3 1/2	8/16 x 3 1/2
Attached to outside plating with angle iron	6 x 4	9/16 x 4
BILGE Angle Irons	10 x 9/16	10 x 9/16
do. Bulb Iron	9/16 plate	9/16
do. Intercostal plates riveted to plating for half length	6 x 4	9/16 x 4
BILGE STRINGER Angle Irons	9/16 plate	9/16
Intercostal plates riveted to plating for 3/5 length.		
SIDE STRINGER Angle Irons		
Transoms, material. Knight-heads. Hawse Timbers.	Iron	
Windlass Patent Iron Pall Bitt	Iron	

	Inches in Ship.	16ths in Ship.	Inches required	16ths required
Flat Keel Plates, breadth and thickness	38	12/16	36	12/16
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied	11/16		11/16	
fin up. part of Bilge to l. edge of Sh'rstrake	one Strake 2/16 and two Strakes 1/16 as 1/16 for 1/2 length per Section			
Main Sheerstrake, breadth and thickness of doubling at Sh'rstrake, & length applied from Mn. to Up. or Spar Dk. Sh'rstrake.	36	12/16	36	15/16 or as
Up. or Spar Dk Sh'rstrake, brdth & thckns	48	13/16	36	11/16 Section
Butt Straps to outside plating, breadth & thickness	19 to 14 1/2	14/16	14/16	to 7/16 thick
Lengths of Plating	12 feet			10 feet
Shifts of Plating, and Stringers	4			4
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	87	8/16	87	8/16
Angle Iron on ditto	4.4	9/16	4.4	9/16
Tie Plates fore and aft, outside Hatchways	16 1/2	8/16	16	8/16
Diagonal Tie Plates on Beams No. of Pairs,	None		None	
Planksheer material and scantling	14 x 7		pine	crossing deck 3' beam
Waterways do. do.	4		pine	4
Flat of Upper Deck do. do.	nut and screw bolts			
How fastened to Beams	42	10/16	49	10/16 or as
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	42	10/16	49	10/16 or as
Is the Stringer Plate attached to the outside plating?	Yes		Yes	per Abt 11
Angle Irons on ditto, No. 2	4.4	9/16	4.4	9/16 Section
Tie Plates, outside Hatchways	12 1/2	9/16	12 1/2	9/16
Diagonal Tie Plates on Beams, No. of pairs	Iron deck			
Waterways materials and scantlings	Iron			
Flat of Middle Deck do. do.	4 1/2		Iron, riveted	Iron 6/16
How fastened to Beams	to Beams			
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	42	9/16	42	9/16
Is the Stringer Plate attached to the outside plating?	Yes		Yes	
Angle Irons on ditto, No. 2	4.4	9/16	4.4	9/16
Stringer or Tie Plates, outside Hatchways	12 1/2	9/16	12 1/2	9/16
Flat of Lower Deck	1 1/2		pine	
Ceiling betwixt Decks, thickness and material in hold do. do.	2 1/4		A. Elm & pine	
Main piece of Rudder, diameter at head do. at heel	2 1/4		7/4	
Can the Rudder be unshipped afloat?	Yes		3 3/4	
Bulkheads No. 5 Thickness of			6/16	
Height up <u>20 1/2</u> and after one to upper deck				
How secured to sides of ship	riveted 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			

The FRAMES extend in one length from Keel to Awning deck string Riveted through plates with 3/4 in. Rivets, about 6 apart.

The REVERSED ANGLE IRONS on floors and frames extend from middle line to Main deck stringer and to Upper deck 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 1/8 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 Lead 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 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, double riveted for all length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for half length.
 Breadth of laps of plating in double riveting 6 times dia. Breadth of laps of plating in single riveting 3 1/2 times dia.

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble & Double

Waterway, how secured to Beams by rivets & Nut & screw bolts (Explain by Sketch, if necessary.)

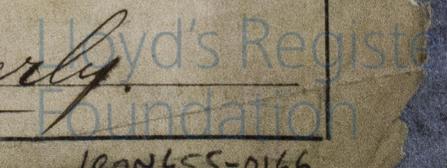
Beams of the various Decks, how secured to the sides? by knees riveted to frame & stringer plate No. of Breasthooks, 6 Crutches, 6

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? B. Boiler

Manufacturer's name or trade mark, Glasgow, Blackburn & Napend.

The above is a correct description.

Builder's Signature, Henderson, Coulborn & Co Surveyor's Signature, T. Moverly



IRON 455-0166

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 in butts **1874 Iron**

Masts, Bowsprit, Yards, &c., are 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 Masts of Iron. Mizen of Oregon

Date of Contract 6th May 1872.

Tested at Rotherham Dec^r 9th 1872 } Tested at Rotherham Dec^r 19th 1872
 by M. K. Peade. } by M. K. Peade.

One full
Sail
with
Spare
and

NUMBER for EQUIPMENT		Fathoms.	Inches.	Test per Certificate.	In. req'd per Rule.	Test req'd per Rule.	ANCHORS, &c.	N ^o .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.
No.	SAILS.	CABLES, &c.	150	2	72 ton	2"	Bowers	6482	30.0.0	35.2.2.0	3 8	34 ¹⁰ / ₂₀
	Fore Sails,	Chain ...	150	2	72		(Machine where Tested, date, and name of Superintendent.)	6484	38.3.0	34.19.1.14		
	Fore Top Sails,	Hempen Stream	90	1 3/16	25 1/2	1 3/16	Stream	39	14.2.0	13.9.2.0	14 1/2	
	Fore Topmast Stay Sails	Chain-Cable	90	12		12	Kedges	1	7.1.2	7.18.1.0	7 1/4	
	Main Sails,	Hawser ...	180	8		8			3.1.16	5.9.0.0	3 1/2	
	Main Top Sails,	Towlines ...	180	6								
		Warp ...	90	5 1/2	90.4.4.90.4.3.							
		quality <u>good</u>										

Standing and Running Rigging Wire & hemp sufficient in size and good in quality. She has four Life Boats and four others
 The Windlass is Good Capstan Good and Rudder Good Pumps Good and Efficient

Engine Room Skylights.—How constructed? Iron. Leak Skiplighters How secured in ordinary weather? Bolts and bars

What arrangements for deadlights in bad weather? Board guards and Deadlights

Coal Bunker Openings.—How constructed? of Iron How are lids secured? by buttons Height above deck? Flush

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? Flush Awning Deck
Ports & Scuppers not cut between Upper & Awning Deck as per letter of 9th May 1873.

Cargo Hatchways.—How formed? of Iron

State size Main Hatch 11'-0" x 11 1/2 feet Forehatch 7'-6" x 8'-0" Quarterhatch ✓

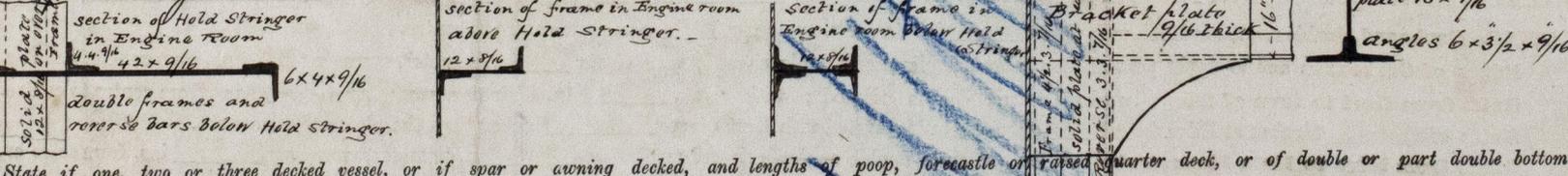
If of extraordinary size, state how framed and secured? ✓

What arrangement for shifting beams? ✓

Hatches, If strong and efficient? Yes

Order for Special Survey No. 861 DATES of Surveys held while building as per Section 18.
 Date 2nd July 1872 1st. On the several parts of the frame, when in place, and before the plating was wrought
 Order for Ordinary Survey No. 133 in builder's yard. 2nd. On the plating during the process of riveting
 Date 3rd Oct 1873 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

General Remarks, This vessel has been built in conformity with the appended approved Midship Section, in accordance with your letter of Instruction 6th June 1872, with a view to Class 100 & Three decks (with Awning Deck). Every frame is carried up to the Awning deck stringer plate, the upper deck Sheerstrake is 1 3/16" thick, hook it and the main deck Sheerstrakes are treble riveted in the Butts for 1/2 length Amidships, the thickness of the plating between the Upper, and Awning deck is 8/16" and 7/16" as shown on Section on account of this construction above the main deck, and the proposition of the Builders to limit the load draft to 22 feet Amidships the Committee were pleased to sanction in their letter of 9th May 1873 that the ports & Scuppers required by Rule need not be cut in this case. Every frame in the Engine space is formed with a solid plate 12" x 8/16" as shown in red on Mid Section, the Boiler space is 38 feet in length divided into three equal spaces by two very strong Beams as shown in Section below.



State if one, two or three decked vessel, or if spar or awning decked, and lengths of poop, forecabin or raised quarter deck, or of double or part double bottom.

How are the surfaces preserved from oxidation? Inside Cement and paint Outside red lead & paint

I am of opinion this Vessel should be Classed 100 A. 1 Three deck, with Awning Deck over.

The amount of the Entry Fee ... £ 5 : : : is received by me,
 Special ... £ 96 : 12 : accounted for in
 Certificate ... note: Sept. Fee list

(Travelling Expenses) (if any) £ 6.6/2

Committee's Minute 17th Oct 1873 Three Decks
and Jan^r 1873. 8-15-23-27-31. Feb^r 5-10-19-27. March 5-10-15

Character assigned 100 A. 1 Awning Deck
Loadline 22 feet.
M.C. A.P.P. Decks
June 3-11-16-19-25 July 1-7-15-17-20-29
Aug^t 1-7-14-19-28 Sep^r 5-8-11-18-26

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