

IRON SHIPS.

Recd 18/2/76

No. 11349 Survey held at Newcastle Date, First Survey 27th July 70 Last Survey 27th July 1871

On the S.S. "Cantago Nova" Master Wm Reed

Tonnage under Tonnage Deck 1618.19
 Ditto of Spar Deck, or Awning Deck.
 Ditto of Poop, or Raised Qr. Dk. 12.20
 Ditto of Houses on Deck.
 Ditto of Forecastle
 Gross Tonnage 1630.47
 Crew Space, as per Rule 55.54
 Register Tonnage, cut on Beam 238.51
 Engine Room 238.51
 Register Tonnage, as a cut on Beam 1336.42

ONE, OR TWO DECKED, SPAR, OR AWNING-DECKED VESSELS.
 Half moulded breadth 16.4
 Depth from upper part of Keel to top of Deck Beams 19.3
 Girth of Half Midship Frame (as per Rule) 32.0
 1st Number Length 64.8 263.7
 2nd Number 17, 878
 Depths to Length 15.2

THREE DECKED VESSELS.
 Half Moulded Breadth 16.4
 Total Depth if three or more Decks 26.3
 Total Girth of Half Midship Frame 39.0
 3rd Number Length 81.8 263.7
 4th Number 21,570
 Breadths to Length 7.9

Built at Newcastle
 When built 1870 Launched Nov 25
 By whom built Messrs C. M. Palmer & Co (Lond)
 Owners James Hall
 Port belonging to London
 Destined Voyage East Indies
 If Surveyed while Building, Afloat, or in Dry Dock. while building

PLANS 135

Feet. Inches. Moulded Breadth, 33 2
 Depths from top of Floors to Upper and Main Deck Beams, as per Rule 24 4
 Power of Engines, 120
 N° of Decks, two
 N° of Tiers of Beams, two
 Dimensions of Ship per Register, length 265.6 breadth 33.2 depth 24.3

	Inches in Ship.	Inches required per Rule.	Inches in Ship.	Inches required per Rule.
Stem, if bar iron, depth and thickness	9 1/2 x 2 1/2	9 1/2 x 2 1/2		
Stem, if centre through plate, depth and thickness	9 1/2 x 2 1/2	8 1/2 x 2 1/2		
Stern-post for Rudder do.	9 x 4 3/4	8 1/2 x 5		
Stern-post for Propeller do.	9 x 4 3/4	8 1/2 x 5		
Distance of Frames from moulding edge to moulding edge, all fore and aft	23	(Class 90A)		
Frames, size of Angle Iron, for 1/2 length amidships	4 3 7	4 3 7		
Do. for 1/4 at each end	4 3 7	4 3 7		
Reversed Frames, size of Angle Iron	3 3 7	3 3 7		
Floors, depth and thickness of Floor Plate at mid line for half the length amidships	23 1/2 x 10	23 1/2 x 10		
Do. at the ends	-	-	9 x 8	-
Do. do. do. at Bilge Keelson	see section	-	-	-
Do. height extended at the Bilges	see section	-	-	-
Beams, Upper, Spar or Awning Deck (No. 60) single or double Angle Iron, Plate or Tee Bulb Iron	6 1/2 x 6	6 1/2 x 6		
Single or double Angle Iron on Upper edge	2 1/2 2 1/2 5	2 1/2 2 1/2 5		
Average space	on alternate frames			
Beams, Main or Middle Deck (No. 59) single or double Angle Iron, Plate or Tee Bulb Iron	8 x 8	8 x 8		
Single or double Angle Iron on Upper Edge	3 3 6	3 3 6		
Average space	on alternate frames			
Beams, Lower Deck, Hold or Orlop (No. 14) single or double Angle Iron, Plate or Tee Bulb Iron	8 x 8	8 x 8		
Single or double Angle Iron on Upper Edge	3 3 6	3 3 6		
Average space	see plan approved			
Keelson Centre line, single or double plate, and lower or Intercoastal, size of Plates	32 x 9	16 x 13		
Do. Bulb Plate to Intercoastal Keelson	10 x 7			
Do. Size of Angle Irons	5 1/2 3 1/2 10	5 1/2 4 9		
Do. Side Intercoastal Keelson, size of Plates	not required			
Do. Angle Irons on tops of Floors	see section			
Do. Bilge Keelson, Bulb Iron	see section			
Do. do. Intercoastal plates riveted to plating for length				
Do. do. Angle Irons				
Side Stringers (No. one) size of Angle Irons	5 4 9	5 4 9		
Do. Intercoastal plates riveted to plating for length				

	Inches in Ship.	16ths in Ship.	Inches required per Rule.	16ths required per Rule.
Flat Keel Plates, breadth and thickness	36	11	36	11
Plates in Garboard Strakes, breadth and thickness	10		10	
Do. from Garboard to upper part of Bilges	12		12	
Do. of doubling at Bilge, or increased thickness, and length applied	10		10	
Do. from up. part of Bilge to lr. edge of Sh'rstrake	36	12	36	12
Do. Main Sheerstrake, breadth and thickness				
Do. of doubling at Sh'rstrake, & length applied	7		7	
Do. from Mn. to Up. or Spar Dk. Sh'rstrake	38	10	36	10
Do. Up. or Spar Dk Sh'rstrake, brdth & thickness	16 3/4	13	16 3/4	13
Butt Straps to outside plating, breadth & thickness				
Lengths of Plating	5 spaces of frames			
Shifts of Plating, and Stringers	2 spaces of frames			
Gunwale Plate on ends of Awning Spar, and Upper Deck Beams, breadth and thickness	37 1/2 x 8		37 1/2	8
Angle Iron on ditto	3 1/2 x 3 x 7		3 1/2 x 3 x 7	
Tie Plates (fore and aft), outside Hatchways	12	8	12	8
Diagonal Tie Plates on Beams (No. of Pairs, 10)	12	8	12	8
Planksheer material and scantling				
Waterways do. do.	Iron & gutter			
Flat of Deck do. do.	3 1/2 4 4			
How fastened to Beams	by nut and screw bolt			
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	37 1/2 10		37 1/2	10
(Is the Stringer Plate attached to the outside plating?)	yes			
Angle Irons on ditto (No. 2)	4 x 4 x 9		4 x 4 x 9	
Tie Plates, outside Hatchways	12 - 10		12 x 10	
Diagonal Tie Plates on Beams (No. of pairs, 10)	12 x 10		12 x 10	
Waterways materials and scantlings	Iron gutter			
Flat of Deck do. do.	4 x 4 P.			
How fastened to Beams	by nut and screw bolts			
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	28 1/2 9		28 1/2 x 9	
(Is the Stringer Plate attached to the outside plating?)	yes			
Angle Irons on ditto (No. 2)	4 x 4 x 9		4 x 4 x 9	
Stringer or Tie Plates, outside Hatchways	4 x 4 x 9		4 x 4 x 9	
Flat of Deck do. do.	Iron & P.			
Ceiling betwixt Decks, thickness and material	3 1/2 Red pine			
Do. in hold do. do.	hard wood			
Main piece of Rudder, diameter at head	6 1/2		6 1/2	
Do. do. at heel	3 1/2		3 1/2	
(Can the Rudder be unshipped afloat?)	yes			
Bulkheads No. 5 Thickness of 6/16				
Do. Height up 4 to main, after one to upper				
Do. How secured to the sides of the ship	double pained			
Do. Size of Vertical Angle Irons, 3 x 3 x 7/16 and their distance apart, 30"				
Do. Are the outside Plates doubled two spaces of Frames in length?	yes			

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 gunwale Riveted through plates with 7/8 3/4 Rivets, about 3 1/2 apart.
 The Reverse Angle Irons on the floors and frames extend across the middle line to M.D.S. Plywood and to the gunwale alternately
 Keelsons. Are the various lengths of Plates and Angle Irons properly connected? yes And are their butts properly shifted? yes.
 Plates, Garboard, double Riveted to Keel, double at upper edge, with Rivets 1 1/8 x 7/16 diameter, averaging (5 3/4 ins.) from centre to centre.
 Do. Edges from Garboards to upper part of Bilge, worked Clencher, double Riveted; with Rivets (7 x 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 (10 x 13/16) thick, double Riveted; with Rivets (7/16 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 () thick, or clencher, double Riveted; with rivets (3/4 in.) diameter, averaging (3 ins.) from centre to centre.
 Do. Edges of Sheerstrake, Main, double 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 (10/16) thick, double Riveted; with Rivets (3/4 in) diameter, averaging (3 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 and treble Riveted for 1/2 length amidships. Breadth of laps of plating in double Riveting (4 1/2 x 5/4) Breadth of laps of plating in single Riveting (none)
 Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? double and treble riveted
 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? welded keel riveted No. of Breasthooks, 5 Crutches, 4
 What description of Iron is used for the Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Palmer & Co's iron.
 Manufacturer's name or trade mark, Palmer & Co's iron.

We certify that the above is a correct description of the several particulars therein given.
 Builder's Signature, Wm M. Palmer Surveyor's Signature, Wm Reed

IRON 48 - 0043

Lloyd's Register Foundation

Workmanship. Are the butts of plating planed or otherwise fitted? planed. 8693 Iron
 Do the edges of the barrel 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 pieces
 Do the holes for riveting plate to frames, butt straps, or plate to plate, &c., conform well to each other? fairly so 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? a 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



plates 11.10 long and 1/8 thick Foremast 25 feet long
Angle iron 4 x 3 x 7/16 Mainmast 24 "
Lands single riveted
Butts double riveted, but treble in way of partens

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.	W'tt req'd per Rule.	Test req'd per Rule.
SAILS.		300	15/8	47.10.0-0	15/8	47 1/2	Bowers	3	25.2.7	25.5.0.0	25.2.0	25.2.0
CABLES, &c.		90	10 1/2		10 1/2		(State Machine where Tested, and name of Superintendent).		25.2.0	25.3.3.0	25.2.0	25.2.0
Fore Sails,	Chain	90	10 1/2		10 1/2				21.3.21	22.6.0.7	21.2.20	21.2.20
Fore Top Sails,	(State Machine where Tested, and name of Superintendent).											
Fore Topmast Stay Sails	Hempen Stream Cable	90	8 1/2		6 1/2							
Main Sails,	Hawser	90	8 1/2		6 1/2							
Main Top Sails,	Towlines	140	4 1/2									
	Warp											
	All of <u>g</u> quality.											

Her Standing and Running Rigging hemp sufficient in size and good in quality. She has 2 life Boats, and 3 others
 The present state of the Windlass is good Capstan good and Rudder good Pumps good and sufficient
Engine Room Skylights.—How constructed? solid oak & lullages How secured in ordinary weather? lotted down
 What arrangements are there for deadlights in such for bad weather? Jarpanius
Coal Bunker Openings.—How constructed? cast iron How are lids secured? studs & bolts How high above deck? 5 1/2
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? none required
Cargo Hatchways.—How formed? as usual State size Fore 9 x 7. Mizzen 16.6 x 10.0
 If of extraordinary size, state how framed and secured? ordinary size
 What arrangement for shifting beams? plate casting depth of comings, with half round iron below & double a. s. a.
Hatches, themselves, whether strong and efficient? yes - of iron Main Hatchways.—State size 22.6 x 10.0 do

Order for Special Survey No.	DATES of	1st.	2nd.	3rd.	4th.	5th.
702	26 July 1880	On the several parts of the frame, when in place, and before the plating was wrought	On the plating during the progress of riveting	When the beams were in and fastened, and before the decks were laid	When the ship was complete, and before the plating was finally coated or completed	After the ship was launched and equipped

General Remarks,
 This vessel is fitted with a double bottom extending for a length of 17 1/3 feet amidships, top plating 1/8, and efficiently connected to the frames &c. on the plan usually adopted by Messrs Palmer & Co. of London. Hold beams arranged as per plan attached, submitted and approved.
 The Owners approve the arrangements as to thickness of upper and main decks.

In what manner are the surfaces preserved from oxidation? Inside by Portland cement Outside by paint and copper

I am of opinion this Vessel should be Classed 90A.1.
 The amount of the Entry Fee £ 5 : : is received by me,
 Special £ 64 : : 6
 Certificate

(Travelling Expenses) (if any) £ —
 Committee's Minute 14th February 1880
 Character assigned 90A.1
 This vessel has been built under special survey from plans previously submitted, and will be observed that the thickness of the plating &c. which have been secured on the arrangements submitted, all of which are in accordance with the rules of the Lloyd's Register Foundation.