

IRON SHIPS.

No. 244 Survey held at Glasgow Date 28th Dec^r Rec 30/12/67
 on the Ship "Bertha" Master Haddock
 Tonnage under tonnage deck 1310.83 Built at Glasgow When built 1867 Launched 12th Dec^r 67
 Ditto of poop 90.08 or spar deck 90.08 By whom built Barclay Curle & Co Owners G. Marshall
 Ditto of engine room 1.22 Port belonging to London Destined Voyage Calcutta
 Total Register tonnage 1458.13
 Gross Tonnage 11
 If Surveyed while Building, Afloat, or in Dry Dock Whilst building and afloat

Length aloft	Feet.	Inches.	Extreme Breadth	Feet.	Inches.	Depth from top of Upper Deck Beam to top of Floor	Feet.	Inches.	Power of Engines	Horse.	N ^o . of Decks	
Length aloft	22	8	34	4		23	3				Two	
(Dimensions of Ship per Register, length <u>22.2</u> breadth <u>34.4</u> depth <u>23.1</u>)												
Keel, if bar iron, depth and thickness	Inches in Ship.		Inches required per Rule.		Plates in Garboard Strakes, breadth and thickness		Inches in Ship.		Inches required per Rule.		Inches required per Rule.	
" if plate iron, breadth and thickness	12 x 3		9 x 3		Ditto from Garboard to upper part of Bilges..		13		13		13	
Stem, if bar iron, moulding and thickness	12 x 3		9 x 3		" from upper part of Bilge to a perpendicular height from upper side of Keel of 3/4ths the entire depth of Hold		12		12		12	
" if plate iron, breadth and thickness	9 x 3 1/2		9 x 3		" from 3/4ths depth of Hold to lower edge of Sheerstrake		10		10		10	
Stern-post, if bar iron, moulding and thickness	9 x 3 1/2		9 x 3		" Sheerstrake, breadth and thickness		30		30		30	
" if plate iron, breadth and thickness	9 x 3 1/2		9 x 3		Butt Straps to outside plating, breadth and thickness		11		11		11	
Distance of Frames from moulding edge to moulding edge, all fore and aft	24		24		Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness		32		32		32	
Frames, Size of Angle Iron, single or double	5 3/4		5 3/4		Angle Iron on ditto		5 1/2		5 1/2		5 1/2	
" Reversed Iron, to every frame	6		6		Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways		14		14		14	
" or every other frame	6		6		Diagonal Tie Plates on ditto		11		11		11	
Floors, depth and thickness of Floor Plate at mid line	2 1/2		2 1/2		Planksheer, materials and scantlings		1 1/2		1 1/2		1 1/2	
" Ditto ditto at Bilge Keelson	1 1/2		1 1/2		Waterway ditto ditto		1 1/2		1 1/2		1 1/2	
" Size of Reversed Angle Iron, and No. 1 3/2 at top of Floor Plate	3 1/2		3 1/2		Flat of Upper Deck, thickness and material		4 x 5		4 x 5		4 x 5	
Beams, Deck (N ^o .) double Angle Iron, Plate, Tee, or Bulb Iron	9		9		" how fastened to Beams		Tut and screw		Tut and screw		Tut and screw	
" double or single Angle Iron, on upper edge	3 1/2		3 1/2		Ceiling betwixt Decks and in Hold, thickness and material		3 1/2		3 1/2		3 1/2	
" average space between	4		4		Clamps or Spirketting ditto		1 1/2		1 1/2		1 1/2	
" Hold, or Lower Deck (N ^o .) double Angle, Tee, Plate, or Bulb Iron	9		9		Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness		2 1/2		2 1/2		2 1/2	
" double or single Angle Iron, on upper edge	3 1/2		3 1/2		Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams		14		14		14	
" average space between	4		4		Stringers in Hold		5 1/2		5 1/2		5 1/2	
" Paddle, sided and moulded, thickness of Plate size of Angle Iron	1		1		Flat of Lower Deck, thickness and material		5 1/2		5 1/2		5 1/2	
" Engine	1		1		Main piece of Rudder, diameter at head		3 1/2		3 1/2		3 1/2	
Keelson, single or double plate, box, or intercostal	Intercostal		Intercostal		" " at heel		3 1/2		3 1/2		3 1/2	
" Size of Plates	30		30		(Can the Rudder be unshipped afloat)		Yes		Yes		Yes	
" Size of Angle Irons	5 1/2		5 1/2		Bulkheads, N ^o . One Thickness of		10		10		10	
" Side, single or double, plate, box, or intercostal	Intercostal		Intercostal		" Height up upper deck		10		10		10	
" Bilge (No.) at each Bilge, single, or double, plate, or box	5 1/2		5 1/2		" how secured to the sides of the ship		rivetted between two		rivetted between two		rivetted between two	
Transoms, material	Plank		Plank		" size of vertical angle irons		3 1/2		3 1/2		3 1/2	
Knight-heads, and Hawse Timbers	Plank		Plank		" rivetted through plates with (3/4 in.) rivets, about (1) apart.		10		10		10	
The Frames extend in one length from	Middle line		Middle line		The reverse angle irons on the floors extend in one length across the middle line from		upper part of Hold Beams to		upper part of Hold Beams to		upper part of Hold Beams to	
	Middle line		Middle line		" " on the frames		from		from		from	
	Middle line		Middle line		Keelson, how are the various lengths of plates or angle irons connected?		by lining pieces		by lining pieces		by lining pieces	
Plates, Garboard, double or	rivetted to keel, double or		rivetted to keel, double or		at upper edge, with rivets (1 1/2 in.) diameter, averaging (1 1/2 in.) apart.		1 1/2		1 1/2		1 1/2	
" Edges from Garboards to upper part of bilge, worked clencher, double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 1/2 ins.) apart.	double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 1/2 ins.) apart.		double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 1/2 ins.) apart.		Do the butt straps lap over and rivet through the lands of the strake below?		No		No		No	
" Butts from Keel to turn of bilge, worked carvel with butt straps (1/8 x 1/8) thick, double or single rivetted; with rivets (1 1/2 in.) diameter, averaging (3 ins.) apart.	double or single rivetted; with rivets (1 1/2 in.) diameter, averaging (3 ins.) apart.		double or single rivetted; with rivets (1 1/2 in.) diameter, averaging (3 ins.) apart.		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 (3 1/2 in.) apart.		3 1/2		3 1/2		3 1/2	
" 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 (3 1/2 in.) apart.	double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 1/2 in.) apart.		double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 1/2 in.) apart.		Do the butt straps lap over and rivet through the lands of the strake below?		No		No		No	
" Edges of Sheerstrake, double or single rivetted? At upper edge	Single to Bulw.		Single to Bulw.		At lower edge		Double		Double		Double	
" Butts from bilge to planksheers, worked carvel with butt straps (1/8 x 1/8) thick, double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 ins.) apart. Breadth of laps in double rivetting (5 1/2 in.) Breadth of laps in single rivetting (1)	double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 ins.) apart. Breadth of laps in double rivetting (5 1/2 in.) Breadth of laps in single rivetting (1)		double or single rivetted; with rivets (3/4 in.) diameter, averaging (3 ins.) apart. Breadth of laps in double rivetting (5 1/2 in.) Breadth of laps in single rivetting (1)		Butt Straps of Keelsons, Stringer and Tie Plates, double or single rivetted?		Double		Double		Double	
Butt Straps of Keelsons, Stringer and Tie Plates, double or single rivetted?	Double		Double		Planksheer, how secured to the plating of the sides		Explain by sketch		Explain by sketch		Explain by sketch	
Planksheer, how secured to the plating of the sides	Explain by sketch		Explain by sketch		Waterway " planksheer and to the Beams		if necessary.		if necessary.		if necessary.	
Waterway " planksheer and to the Beams	if necessary.		if necessary.		Deck Beams, how secured to the side?		Welded knees rivetted to Frames		Welded knees rivetted to Frames		Welded knees rivetted to Frames	
Deck Beams, how secured to the side?	Welded knees rivetted to Frames		Welded knees rivetted to Frames		Hold or Lower Deck ditto		Welded knees rivetted to Frames		Welded knees rivetted to Frames		Welded knees rivetted to Frames	
Hold or Lower Deck ditto	Welded knees rivetted to Frames		Welded knees rivetted to Frames		Paddle " "		No. of breasthooks		No. of breasthooks		No. of breasthooks	
Paddle " "	No. of breasthooks		No. of breasthooks		What description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.?		Mild and Angle		Mild and Angle		Mild and Angle	
What description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.?	Mild and Angle		Mild and Angle		Manufacturer's name or trade mark		and Consortie Crown Plates		and Consortie Crown Plates		and Consortie Crown Plates	
Manufacturer's name or trade mark	and Consortie Crown Plates		and Consortie Crown Plates		We certify that the above is a correct description of the several particulars therein given.		Builder's Signature		Builder's Signature		Builder's Signature	
We certify that the above is a correct description of the several particulars therein given.	Builder's Signature		Builder's Signature		Surveyor's Signature		Surveyor's Signature		Surveyor's Signature		Surveyor's Signature	
Builder's Signature	Surveyor's Signature		Surveyor's Signature		IRON 44-0378		IRON 44-0378		IRON 44-0378		IRON 44-0378	

IRON 44-0378

5925 Iron

Workmanship. Are the lands or laps of the clenched work in all cases in breadth at least five and a half times the diameter of the rivets in double rivetted edges 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 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?* *Yes*
 Do the holes for rivetting 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 outer plate? *Yes*
 Are there any rivets which either break into or have been put through the seams or butts of the plating? *a few in corners of Butts*

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 rivetting, quality of Materials, and if stamped with Maker's name.)

The two joined and two Anchor spare Shackles, Weight 2.2.13 for 178 Stud Chain have been tested to 13 1/2 Tons by R. Burrell. Dec. 18th/67; Sample of 12 Rivets taken from Chain Cables to 2408 & 2409 broke at 9 1/2 Tons
Tested by R. Burrell at *Tested by R. Burrell at*

N ^o	She has SAILS.	CABLES, &c.	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.	Weight req'd per Rule.	Test req'd per Rule.
	Fore Sails,	Chain	300	1 1/2	13 1/2	1 1/2	13 1/2	Bowers	3	34.0.3	31.13.12	34	31 1/2
	Fore Top Sails,												
	Fore Topmast Stay Sails	Hempen Stream Cable	90	12		10							
	Main Sails,	Hawser	90	1	18	1		Stream	1	34.0.10	31.12.2	34	31 1/2
	Main Top Sails,	Towlines	90	10		10							
	and	Warp	90	1		8		Kedges	1	34.2.4	31.15.3	34	31 1/2
		All of <i>Good</i> quality.	90	1									

Her Standing and Running Riggings *Good* sufficient in size and *Good* in quality.

She has *Two 20 ft* Long Boat and *Two Life Boats 20 ft each, one Copper 24 ft*

The present state of the Windlass is *New* Capstan *New* and Rudder *New* Pumps *New* and efficient
Chief to call Com's attention to the fact of the third Power being 7.5.13 by the Com's consideration
 Order for Special Survey DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought
 No. *492* Surveys held 2nd. On the plating during the progress of rivetting *Butt under special survey*
 Date *June 9/67* while building 3rd. When the beams were in and fastened, and before the decks were laid *from the 3rd July*
 Order for Ordinary Survey as per 4th. When the ship was complete, and before the plating was finally coated *to the 28th Dec/67*
 No. *✓* Section 18. 5th. After the ship was launched

State if she has a Spar Deck *No* Poop *Yes* or Forecastle *Yes*

General Remarks, *Fitted with a Side Intercostal Keelson midway between Middle line and Bilge Keelson 2 1/2 x 7/8, with two Angle Bars on top 5 1/2 x 4 1/2 x 9/8 and extended as far forward and aft as practicable. Frames spaced 24 ins apart and doubled with Angle Bars same size as Frames, extending to the upper part of Bilges. Bulb Bar fitted to middle line Intercostal Keelson 10 x 7/8. let down between Floors and rivetted to Intercostal Plate. Bilge Keelson and two side Stringers formed of double Angle Bars back to back 5 1/2 x 4 1/2 x 9/8 extending fore and aft. Spunketing plate to Hold Beams 1 1/2 x 7/8 and fitted with Gutter Waterway fore and aft. Butts of Gunwale Plate and Sheers-traverse are treble rivetted. Hold Beam Stantions to each Beam 3 1/2 ins. The Fore Mast and Bowsprit of iron, formed of four plates 7/8 and 5/8 thick, the latter doubled at Bed and fitted with a 7/8 centric plate in way of Wedging. The lands double clenched and Butts treble carvel rivetted. Fore and Main Yards of iron, lower Topsail Yards of Steel 7/8, 5/8, 3/4 thick. Lands single clenched and butts treble carvel rivetted.*

In what manner are the surfaces preserved from oxidation? Inside *Flat of Bottom with Portland Cement*
 Ditto ditto Outside *and extended to the upper part of Floors*
Red Lead Oil and patent paints

I am of opinion this Vessel should be Classed *A*
 The amount of the Fee£ 5 : : : is received by me,
Dec 18/67 Special£ 72 : 19 : :
 Certificate (if required)£ *£ 10 : 10 : 0*

Committee's Minute *31st December 1867*

Character assigned *A* *ambs*

B. Darling
The Hull of this Sailing Ship (built of Iron) appears eligible for Classing A, and the ship to be subject to Committee's consideration of the light weight of 3-1/2 Power Anchor as recommended above. 30/12/67 J.A.