

IRON SHIPS.

Rev 21/11/67

No. 10454 Survey held at Newcastle Date 26th Nov^r 1866 to 18th Nov^r 1867
 on the Paddle Boat "Achilles" Master Cunningham
 Tonnage under tonnage deck 114.15 Built at Newcastle When built 1864 Launched 18th May/64
 Ditto of poop or spar deck
 Ditto of engine room 81.65 By whom built Richardson & Co. Owners Laws, Clough & Co.
 Total Register tonnage 35.50
 Gross Tonnage 114.15 Port belonging to Newcastle Destined Voyage Constantinople
 If Surveyed while Building, Afloat, or in Dry Dock While building

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
105.3	0		18.6			10.0			52		one

(Dimensions of Ship per Register, length 105.3 breadth 18.4 depth 9.4)

	Inches in Ship.	Inches required per Rule.	Inches in Ship.	Inches required per Rule.	Inches in Ship.	Inches required per Rule.	Inches in Ship.	Inches required per Rule.
Keel, if bar iron, depth and thickness...	6 x 1 1/4	6 x 1 1/4						
Stem, if bar iron, moulding and thickness...	6 x 1 1/4	6 x 1 1/4						
Stern-post, if bar iron, moulding and thickness...	6 x 1 1/4	6 x 1 1/4						
Distance of Frames from moulding edge to moulding edge, all fore and aft	18	21						
Frames, Size of Angle Iron, single or double...	3	2 1/2	9/16	2 1/2	2 1/2	9/16		
Floors, depth and thickness of Floor Plate at mid line	10	9/16		12	9/16			
Beams, Deck (N ^o . 32) double Angle Iron, Plate, Tee, or Bulb Iron	4	3	9/16	4	3	9/16		
Keelson, single or double plate, box, or intercostal	3	2 1/2	9/16					
Side, single or double plate, box, or intercostal	3	2 1/2	9/16	3	3	9/16		
Bilge (No. 1) at each Bilge, single or double plate, or box	2 1/2	2 1/2	9/16	3	3	9/16		

Plates in Garboard Strakes, breadth and thickness 31 9/16 24 9/16
 Ditto from Garboard to upper part of Bilges.. 9/16 9/16
 " from upper part of Bilge to a perpendicular height from upper side of Keel of 3/4ths the entire depth of Hold 4/16 4/16
 " from 3/4ths depth of Hold to lower edge of Sheerstrake 4/16 4/16
 " Sheerstrake, breadth and thickness 35 9/16 24 9/16
 Butt Straps to outside plating, breadth and thickness 7 x 9/16 to 4/16
 Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness 15 9/16 15 9/16
 Angle Iron on ditto 2 1/2 x 2 1/2 x 9/16 3 x 3 x 9/16
 Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways .. 7 9/16 7 9/16
 Diagonal Tie Plates on ditto - - -
 Planksheer, materials and scantlings 9 x 2 1/2 R. Pine
 Waterway ditto ditto 2 1/2 9/16 2 1/2
 Flat of Upper Deck, thickness and material.. 2 1/2 9/16 2 1/2
 " how fastened to Beams.. Nut & screw bolts
 Ceiling betwixt Decks and in Hold, thickness and material..... 2 1/2 Red Pine
 Clamps or Spirketting ditto..... - - -
 Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness .. - - -
 Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams - - -
 Stringers in Hold - - -
 Flat of Lower Deck, thickness and material.. - - -
 Main piece of Rudder, diameter at head 3 - 3
 " " " at heel 2 - 2
 (Can the Rudder be unshipped afloat Yes)
 Bulkheads, N^o. 3 Thickness of 4/16
 " Height up to upper deck
 " how secured to the sides of the ship to double frames
 " size of vertical angle irons 2 1/2 x 2 1/2 and their distance apart 30 in.

Transoms, material plate or, if none, in what manner compensated for.
 Knight-heads, and Hawse Timbers Plate
 The Frames extend in one length from Keel to Gunwale rivetted through plates with (9/16 in.) rivets, about (5 in.) apart.
 The reverse angle irons on the floors extend in one length across the middle line from Keel to above the bilges and on
 " " " on the frames " " " from Keel to alternate frames to upper deck.
 Keelson, how are the various lengths of plates or angle irons connected? by butt straps
 Plates, Garboard, double or rivetted to keel, double or single at upper edge, with rivets (9/16 in.) diameter, averaging (3 1/4 in.) apart.
 " Edges from Garboards to upper part of bilge, worked clencher, double or single rivetted; with rivets (9/16 in.) diameter, averaging (2 in.) apart.
 " Butts from Keel to turn of bilge, worked carvel with butt straps (9/16 x 9/16) thick, double or single rivetted; with rivets (9/16 in.) diameter, averaging (2 in.) apart.
 Do the butt straps lap over and rivet through the lands of the strake below? no
 " Edges from bilge to sheerstrake, worked carvel with a lining piece () thick, or clencher, double or single rivetted; with rivets (9/16 in.) diameter, averaging (2 in.) apart.
 Do the butt straps lap over and rivet through the lands of the strake below? no
 " Edges of Sheerstrake, double or single rivetted? At upper edge single At lower edge single
 " Butts from bilge to planksheers, worked carvel with butt straps (9/16 x 4/16) thick, double or single rivetted; with rivets (9/16 in.) diameter, averaging (2 in.) apart. Breadth of laps in double rivetting () Breadth of laps in single rivetting (2 1/8)
 Butt Straps of Keelsons, Stringer and Tie Plates, double or single rivetted? double rivetted
 Planksheer, how secured to the plating of the sides { Explain by sketch } Bolted to stringer & side.
 Waterway " " planksheer and to the Beams { if necessary. }
 Beams, how secured to the side? Bracket ends, rivetted to beams and frames.
 " Lower Deck ditto
 " " Knee plates inside, hanging knees outside No. of breasthooks 2 crutches 2
 at description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.?
 Manufacturer's name or trade mark James & Beams, L. W. & B. Walker Plates A.C. & Co.
 We certify that the above is a correct description of the several particulars therein given.
 Builder's Signature William Richardson & Co. Surveyor's Signature A. Harding

IRON 44-0331

5869 Iron

Workmanship. Are the lands or laps of the clenchwork 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? long lengths
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

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.

Chains and Anchors, tested at "Lloyd's" proving house, signed Robt. Bunell Esq.

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.	W'ght req'd per Rule.	Test req'd per Rule.
	Fore Sails,	Chain	120	3/4	10.2.2.0	3/4	10.2.0.0	Bowers	1	2.3.11	5.7.2.0	2.3.0	5.5.0.0
	Fore Top Sails,								1	2.3.0	5.5.0.0	2.3.0	5.5.0.0
	Fore Topmast Stay Sails	Hempen Stream Cable	60	8/16	---	7/16							
	Main Sails,	Hawser	70	1 1/4	---	5		Stream	1	1.2.8		In stock	
	Main Top Sails,	Towlines	25	7/8	---	3							
	and	Warp	25	1/2	---			Kedges	1	0.3.18			
		All of <u>good</u> quality.	36	2									

Her Standing and Running Rigging is sufficient in size and good in quality.
She has one Long Boat and
The present state of the Windlass is good Capstan and Rudder good Pumps two hand.

Order for Special Survey DATES of
No. 588 Surveys held
Date 24 Nov 1868 while building
Order for Ordinary Survey as per
No. --- Section 18.
Date ---
1st. On the several parts of the frame, when in place, and before the plating was wrought
2nd. On the plating during the progress of rivetting
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
5th. After the ship was launched
Special Survey

State if she has a Spar Deck --- Poop --- or Forecastle ---

General Remarks,
This vessel has been built in accordance with the Midship ^{Section} and per Secretary's letter 14th Decr 1866.

In what manner are the surfaces preserved from oxidation? Inside Portland Cement and Paint
Ditto ditto Outside Paint

I am of opinion this Vessel should be Classed A 1
The amount of the Fee£ 2 : 0 : 0 is received by me,
* Wm W Special£ 8 : 10 : 0
Certificate (if required)£ : : :
Committee's Minute 22nd Nov 18 68

Character assigned A 1
On reference to accompanying Midship Section it will be observed the Angle Irons for Bilge Keelsons have not been increased in size as Thomson recommended, and in Feb^y Letter of Dec^r 14/66, and it appears she has no diagonal struts or beams, but in the absence of Rules for this class sought, the Committee may be induced to consider her eligible for A 1 as recommended above.
Ward
21/11/68
Lloyd's Register

Wm W. Richardson Esq, Surveyor on Ship