

IRON SHIP.

16600

Rec 14/7/76

No. 12263 Survey held at Newcastle Date, First Survey 5th Octr 1875 Last Survey 11th July 1876

On the Iron Bn. Rigged Screw Steamer "Arago" Master Lewis Jones

TONNAGE under Tonnage Deck 1557.12
 Ditto of Third, Spar, or Running Deck
 Ditto of Poop, or Raised Or. Dk.
 Ditto of Houses on Deck 68.10
 Ditto of Forecastle 24.77
 Gross Tonnage 1649.99
 Less Crew Space 60.75
 1589.24
 Less Engine Room 528
 Register Tonnage as cut on Beam 1061.24

ONE, OR TWO DECKED, THREE DECKED VESSEL.
 SPAR, OR AWNING DECKED VESSEL.
 HALF BREADTH (moulded) 16.6
 DEPTH from upper part of Keel to top of Upper Deck Beams 26.6
 GIRTH of Half Midship Frame (as per Rule) 38.5
 1st NUMBER 81.4
 1st NUMBER, if a THREE-DECKED VESSEL [deduct 7 feet] 74.4
 LENGTH 280
 2nd NUMBER 20832
 PROPORTIONS—Breadths to Length 8.48
 Depths to Length—Upper Deck to Keel 10.56
 Main Deck ditto 14.38

Built at Newcastle
 When built 1876 Launched 24th Dec 1876
 By whom built A Leslie & Co
 Owners Ellis & Co
 Port belonging to Liverpool
 Destined Voyage
 If Surveyed while Building, Afloat, or in Dry Dock. While building

LENGTH on deck as per Rule 280 Feet. Inches. BREADTH—Moulded 33 Feet. Inches. DEPTH top of Floors to Upper Deck Beams 24 Feet. Inches. Do. do. Main Deck Beams 17 Feet. Inches. Power of Engines 170 Horse. N° of Decks with flat laid Two N° of Tiers of Beams Three

Dimensions of Ship per Register, length, 282 breadth, 33.2 depth, 24.4

KEEL, depth and thickness 9 x 2 1/2
 STEM, moulding and thickness 9 x 2 1/2
 STERN-POST for Rudder do. do. 9 3/4 x 6
 for Propeller 9 3/4 x 6
 Distance of Frames from moulding edge to moulding edge, all fore and aft 24
 FRAMES, Angle Iron, for 3/4 length amidships Do. for 1/4 at each end 5 x 3 1/2
 REVERSED FRAMES, Angle Iron 3 x 3 1/2
 FLOORS, depth and thickness of Floor Plate at mid line for half length amidships 23 1/2 x 9
 thickness at the ends of vessel 8
 depth at 3/4 the half-bdth. as per Rule 11 3/4
 height extended at the Bilges 4 1/2
 BEAMS, Upper, Spar, or Awning Deck Single or d'ble Ang. Iron, Plate or Tee Bulb Iron 6 x 6
 Single or double Angle Iron on Upper edge 2 1/2 x 2 1/2
 Average space 48
 BEAMS, Main, or Middle Deck Single or d'ble Ang. Iron, Plate or Tee Bulb Iron 8 x 8
 Single or double Angle Iron, on Upper Edge 3 x 3 1/2
 Average space 48
 BEAMS, Lower Deck, Hold, or Orlop Single or d'ble Ang. Iron, Plate or Tee Bulb Iron 7 1/2 x 7 1/2
 Single or double Angle Iron on Upper Edge 3 x 3 1/2
 Average space 66 10 frames spaces.
 KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates 18 1/2 x 13
 " Rider Plate 13 x 13
 " Bulb Plate to Intercoastal Keelson 6 x 4 1/2
 " Angle Irons 6 x 4 1/2
 " Double Angle Iron Side Keelson 22 1/2 x 8
 " Side Intercoastal Plate 5 x 4 1/2
 " do. Angle Irons 3 x 3 1/2
 " Attached to outside plating with angle iron 5 x 4 1/2
 BILGE Angle Irons 5 x 4 1/2
 " do. Bulb Iron 8 x 8
 " do. Intercoastal plates riveted to plating for length 10 x 8
 BILGE STRINGER Angle Irons 5 x 4 1/2
 Intercoastal plates riveted to plating for half length 3 x 3 1/2
 SIDE STRINGER Angle Irons 5 x 4 1/2

Flat Keel Plates, breadth and thickness 36 12 36 12
 PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied 104 11 104 11
 fin up. part of Bilge to l. edge of Sh'rstrake Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied from Min. to Up. or Spar Dk. Sh'rstrake Up. or Spar Dk Sh'rstrake, brdth & thickness 4 1/2 11 40 11
 Butt Straps to outside plating, breadth & thickness 9 1/2 x 6 1/2 10 1/2 12 9 1/2 x 6 1/2 10 1/2 12
 Lengths of Plating 10 feet 10 feet
 Shifts of Plating, and Stringers Two frame spaces.
 Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness 5 1/2 8 5 1/2 8
 Angle Iron on ditto 4 x 4 x 9 4 x 4 x 9
 Tie Plates fore and aft, outside Hatchways 12 1/2 2 12 1/2 2
 Diagonal Tie Plates on Beams No. of Pairs Planksheer material and scantling
 Waterways do. do. Iron Gutter 6
 Flat of Upper Deck do. 3
 How fastened to Beams 4 x 4 x 9
 Stringer Plate on ends of Main or Middle Deck Rooms, breadth and thickness 42 10 42 10
 Is the Stringer Plate attached to the outside plating? Yes
 Angle Irons on ditto, No. Two 4 x 4 x 9 4 x 4 x 9
 Tie Plates, outside Hatchways 14 10 14 10
 Diagonal Tie Plates on Beams, No. of pairs 5
 Waterways materials and scantlings Pitch Pine 3 1/2
 Flat of Middle Deck do. do. Pitch Pine 3 1/2
 How fastened to Beams screw bolts & nuts
 Stringer Plates on ends of Lower Deck, Hold or Orlop Beams 35 9 35 9
 Is the Stringer Plate attached to the outside plating? Yes
 Angle Irons on ditto, No. Two 4 x 4 x 9 4 x 4 x 9
 Stringer or Tie Plates, outside Hatchways
 Flat of Lower Deck
 Ceiling betwixt Decks, thickness and material in hold 2 1/2 2 1/2
 Main piece of Rudder, diameter at head 7 6 3/4
 do. at heel 3 1/2 3 1/2
 Can the Rudder be unshipped afloat? Yes
 Bulkheads No. 5 Thickness of 7 6
 Height up from to upper & two to middle deck
 How secured to sides of ship Double frames
 Size of Vertical Angle Irons 5 1/2 x 3 1/2 x 5/16 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 Harfield's Patent Pall Bitt

The FRAMES extend in one length from Keel to Gunwale Riveted through plates with 7/8 x 3/4 in. Rivets, about 7 1/2 apart.
 The REVERSED ANGLE IRONS on floors and frames extend from middle line to M. Dk. S. A. I. 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 6 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 1/2 ins. from centre to centre.
 Butts of three Strakes at Bilge for half length, treble riveted with Butt Straps to 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.
 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, treble riveted for half length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for half length.
 Breadth of laps of plating in double riveting 5 1/4 Breadth of laps of plating in single riveting none

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble and double riveted
 Waterway, how secured to Beams Iron Gutter (Explain by Sketch, if necessary.)
 Beams of the various Decks, how secured to the sides? Welded knees riveted 6 frames No. of Breasthooks, 5 Crutches, 4
 What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angles and bulbs from
 Manufacturer's name or trade mark, Hawk's Crawshaw & Sons Gateshead; Plates Palmer & Co. Farrow

The above is a correct description.
 Builder's Signature, J. P. Andrew Leslie & Co. Surveyor's Signature, J. H. Cooke
 J. R. Ritchie. Surveyor to Lloyd's Register of British and Foreign Shipping.

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*

Masts, Bowsprit, Yards, &c., are *Iron* in *Good* condition, and sufficient in size and length. If of Iron or Steel give Scanlings 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 *Fore mast 82 feet, and main mast 76 feet in length. diameter at partners 24" heels 18" head 16" each mast formed with two plates in the round 1/16 & 1/16 in thickness & two angle irons in each 3" x 3" 1/16. Edges jump-jointed edge straps inside and single riveted. Butts treble riveted. Makers of iron Palmer & Co. Glasgow.*

NUMBER for EQUIPMENT 22790

N ^o .	SAILS.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per Rule.	Test req'd per Rule.	ANCHORS.	N ^o .	Weight. Ex. Stock.	Test per Certificate.	Wt req'd per Rule.	Test req'd per Rule.
	Fore Sails,	Chain	140+2 1/2	1 3/4	55 5/8	270-1 1/2	55 5/8	Bowers	1	30.3.0	29.3.3.0	30.0.0	28 1/2
	Fore Top Sails,		140+2 1/2	1 3/4	55 5/8	B. S.	55 5/8		1	28.0.21	27.5.3.7	30.0.0	28 1/2
	Fore Topmast Stay Sails				77 5/8		77 5/8			26.2.0	26.0.0.0	25.2.0	25 3/4
	Main Sails,	Hmpn Strm Cbl	90	10		90-11							
	Main Top Sails,	Hawser ...	30	8		11							
		Towlines ...	30	7		11							
		Warp ...	30	6		11							
		quality <i>Good</i>	360	3 1/2									

Standing and Running Rigging *Hemp & manilla* sufficient in size and *Good* in quality. She has *2 Life Long* Boats and *Two others*.

The Windlass is *Good* Capstan *Good* and Rudder *Good* Pumps *Good*

Engine Room Skylights.—How constructed? *Iron Cornings Wood frame* How secured in ordinary weather? *Bolted to angles*

What arrangements for deadlights in bad weather? *Wood shutters & tarpaulines*

Coal Bunker Openings.—How constructed? *Wrought iron Cornings* How are lids secured? *By hatch bars* Height above deck? *9"*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *No bulwarks, Iron stanchions & iron and wood rails.*

Cargo Hatchways.—How formed? *Iron Cornings & headlogs riveted together*

State size Main Hatch *20 ft x 10 ft 6"* Fore hatch *12 ft x 9 ft.* Quarter hatch *12 ft x 10 ft 6"*

If of extraordinary size, state how framed and secured? *Ordinary size*

What arrangement for shifting beams? *Iron shifting beams and wood fore and afters.*

Hatches, If strong and efficient? *Yes*

Order for Special Survey No. 1104

Date 16 Nov 1876

Order for Ordinary Survey No. —

Date —

No. 170 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 *Built under Special Survey*
2nd. On the plating during the process of riveting *1875 Oct 5. 27. Nov 4. 9. 16. 17. 26. 29. Dec 5. 8.*
3rd. When the beams were in and fastened, and before the decks were laid... *12. 21. 23. 29. 31. 1876 Jan 10. 11. 17. 19. 21. 27. 28.*
4th. When the ship was complete, and before the plating was finally coated or cemented... *July 8. 11. 17. 22. 28. March 2. 6. 10. 15. 20. 22. 24.*
5th. After the ship was launched and equipped *April 3. 5. 7. 11. 13. 21. 25. May 1. 4. 10. 15. 22. 25. 31. June 7. 12. 24. 30. July 6. 11.*

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

This is a three decked vessel built in accordance with the approved tracings attached and the Secretary's letters of the 18th September 1875 and 25th January 1876.

She has an iron upper deck 1/16 thick extending from side to side for 148 feet and terminating at 200 feet at the edge of stringer plate. The butts of the two outside strakes are treble riveted and the others double. The edges are jump-jointed with edge straps below and single riveted. A wood flat-3" thick of Teak is laid upon the iron deck.

The strake of topside plating below the sheerstrake is doubled for 120 feet amidships with 1/16 plates.

The material and workmanship are good throughout.

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

How are the surfaces preserved from oxidation? Inside *Cement & Paint* Outside *Paint*

I am of opinion this Vessel should be Classed *100A1 Two decks & Three tiers of beams.*

The amount of the Entry Fee ... £ 5 : : : is received by me, *T. Young.*

Special Certificate ... £ 64 : 14 : 6 12 July 1876 *J. H. Cooke.*

(Travelling Expenses, if any, £ ...)

Committee's Minute *14th July 1876*

Character assigned *100A1*

JRF-2 Dks & 3 tiers Beams Lloyd's Regd.

This vessel has been built in accordance with approved plans appended, and it is submitted appears eligible to be classed 100A1 as recommended.