

IRON SHIP.

No. 3794 Survey held at Glasgow Date, First Survey 15th May 1874 Last Survey 21 March 1874

On the S.S. "BRUCE" Yard Number 175 Master James Macfarlane

TONNAGE under Tonnage Deck 240.31
 Ditto of Third, Spar, or Awning Deck. —
 Ditto of Poop, or Raised Qr. Dk. 61.59
 Ditto of Houses on Deck 9.24
 Ditto of Forecastle 23.80
 Gross Tonnage 334.94
 Less Crew Space 23.16
for fees 311.78
 Less Engine Room 130.34
 Register Tonnage as cut on Beam 204.60

ONE, OR TWO DECKED, THREE DECKED VESSEL.
~~SPAR, OR AWNING-DECKED VESSEL.~~
HALF BREADTH (moulded) 10.94
DEPTH from upper part of Keel to top of Upper Deck Beams 11.30
GIRTH of Half Midship Frame (as per Rule) 19.31
1st NUMBER 41.55
1st NUMBER, if a **THREE-DECKED VESSEL** deduct 7 feet —
LENGTH 168.96
2nd NUMBER 70.20
PROPORTIONS—Breadths to Length 7.72
 Depths to Length—Upper Deck to Keel —
 Main Deck ditto 14.95

Built at Glasgow
 When built 1874. Launched 7 February 74
 By whom built Messrs A. Stephen & Sons
 Owners John Darling and Sons
 Port belonging to Dundee - cargo
 Destined Voyage New Zealand
 If Surveyed while Building, Afloat, or in Dry Dock. While Building

LENGTH on deck as per Rule 168.96 **BREADTH** Moulded 21.10 1/2 **DEPTH** top of Floors to Upper Deck Beams 10.30 **Power of Engines** 90 **Horse.** 90 **No. of Decks with flat laid** One **No. of Tiers of Beams** One

Dimensions of Ship per Register, length, 170.2 breadth, 22. depth, 10.35

	Inches in Ship.	Inches per Rule.
KEEL , depth and thickness	<u>7 1/2 x 1 5/8</u>	<u>7 1/2 x 1 5/8</u>
STEM , moulding and thickness	<u>6 1/4 x 1 5/8</u>	<u>6 1/4 x 1 5/8</u>
STERN-POST for Rudder do. do.	<u>6 1/4 x 3 1/4</u>	<u>6 1/4 x 3 1/4</u>
for Propeller	<u>21</u>	<u>21</u>
Distance of Frames from moulding edge to moulding edge, all fore and aft	<u>21</u>	<u>21</u>
FRAMES , Angle Iron, for 3/4 length amidships	<u>3 1/2 x 5/16</u>	<u>3 1/2 x 5/16</u>
Do. for 1/2 at each end	<u>3 1/2 x 5/16</u>	<u>3 1/2 x 5/16</u>
REVERSED FRAMES , Angle Iron	<u>2 1/4 x 4/16</u>	<u>2 1/4 x 4/16</u>
FLOORS , depth and thickness of Floor Plate at mid line for half length amidships	<u>12 6/16</u>	<u>12 6/16</u>
thickness at the ends of vessel	<u>5 1/16</u>	<u>5 1/16</u>
depth at 3/4 the half-bdth. as per Rule	<u>16</u>	<u>16</u>
height extended at the Bilges	<u>24</u>	<u>24</u>
BEAMS , Upper, Spar, or Awning Deck	<u>4 3 x 7/16</u>	<u>4 3 x 7/16</u>
Single or double Ang. Iron, Plate or Tee Bulb Iron	<u>4 3 x 7/16</u>	<u>4 3 x 7/16</u>
Single or double Angle Iron on Upper edge	<u>4 2</u>	<u>4 2</u>
Average space	<u>4 2</u>	<u>4 2</u>
BEAMS , Main or Middle Deck	<u>6 3 x 8/16</u>	<u>6 3 x 8/16</u>
Single or double Ang. Iron, Plate or Tee Bulb Iron	<u>6 3 x 8/16</u>	<u>6 3 x 8/16</u>
Single, or double Angle Iron, on Upper Edge	<u>4 2</u>	<u>4 2</u>
Average space	<u>4 2</u>	<u>4 2</u>
BEAMS , Lower Deck, Hold or Orlop	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
Single or double Ang. Iron, Plate or Tee Bulb Iron	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
Single or double Angle Iron on Upper Edge	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
Average space	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates	<u>9 3/4 x 8/16</u>	<u>9 3/4 x 8/16</u>
" Rider Plate	<u>6 1/2 x 6/16</u>	<u>6 1/2 x 6/16</u>
" Bulb Plate to Intercoastal Keelson	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
" Angle Irons	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
" Double Angle Iron Side Keelson	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
" Side Intercoastal Plate	<u>5 1/16 thick</u>	<u>5 1/16 thick</u>
" do. Angle Irons	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
" Attached to outside plating with angle iron	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
BILGE Angle Irons	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
" do. Bulb Iron	<u>Intercoastal plate 5 1/2 x 5/16</u>	<u>Intercoastal plate 5 1/2 x 5/16</u>
" do. Intercoastal plates riveted to plating for 3/5 length	<u>6 1/16 thick and 6 1/16 deep</u>	<u>6 1/16 thick and 6 1/16 deep</u>
BILGE STRINGER Angle Irons	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
Intercoastal plates riveted to plating for length.	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>
SIDE STRINGER Angle Irons	<u>3 3 x 6/16</u>	<u>3 3 x 6/16</u>

Transoms, material. Knight-heads. Hawse Timbers. Iron
 Windlass Iron patent Pall Bitt Iron

	Inches in Ship.	16ths in Ship.	Inches required	16ths required
Flat Keel Plates , breadth and thickness	<u>30</u>	<u>7/16</u>	<u>30</u>	<u>7/16</u>
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges	<u>6 1/16</u>	<u>8 5/16</u>	<u>6 1/16</u>	<u>8 5/16</u>
of doubling at Bilge, or increased thickness, and length applied	<u>6 1/16</u>	<u>5/16</u>	<u>6 1/16</u>	<u>5/16</u>
fm up. part of Bilge to l. edge of Sh'rstrake	<u>6 1/16</u>	<u>5/16</u>	<u>6 1/16</u>	<u>5/16</u>
Main Sheerstrake, breadth and thickness	<u>30</u>	<u>11/16</u>	<u>30</u>	<u>8 1/16</u>
of d'bling at Sh'rstrake, & length applied from Mn. to Up. or Spar Dk. Sh'rstrake.	<u>5 1/16</u>	<u>5/16</u>	<u>5 1/16</u>	<u>5/16</u>
Up. or Spar Dk. Sh'rstrake, breadth & thickness	<u>14 1/4</u>	<u>6 8 x 12</u>	<u>16</u>	<u>5/16</u>
Butt Straps to outside plating, breadth & thickness	<u>10 1/2</u>	<u>feet</u>	<u>10 1/2</u>	<u>—</u>
Lengths of Plating	<u>5 1/4</u>	<u>—</u>	<u>5 1/4</u>	<u>—</u>
Shifts of Plating, and Stringers	<u>18</u>	<u>6 1/16</u>	<u>18</u>	<u>6 1/16</u>
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	<u>2 1/2</u>	<u>2 1/2 x 5/16</u>	<u>2 1/2</u>	<u>2 1/2 x 5/16</u>
Angle Iron on ditto	<u>6</u>	<u>6 1/16</u>	<u>6</u>	<u>6 1/16</u>
Tie Plates fore and aft, outside Hatchways	<u>2 1/2</u>	<u>Leak</u>	<u>2 1/2</u>	<u>Leak</u>
Diagonal Tie Plates on Beams No. of Pairs	<u>2 1/4</u>	<u>fine</u>	<u>2 1/4</u>	<u>fine</u>
Planksheer material and scantling	<u>2 1/4</u>	<u>fine</u>	<u>2 1/4</u>	<u>fine</u>
Waterways do. do.	<u>2 1/4</u>	<u>fine</u>	<u>2 1/4</u>	<u>fine</u>
Flat of Upper Deck do. do.	<u>40</u>	<u>7/16</u>	<u>40</u>	<u>7/16</u>
How fastened to Beams	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	<u>3.3</u>	<u>6 1/16</u>	<u>3.3</u>	<u>6 1/16</u>
Is the Stringer Plate attached to the outside plating?	<u>8</u>	<u>6 1/16</u>	<u>8</u>	<u>6 1/16</u>
Angle Irons on ditto, No. one	<u>Iron</u>	<u>Gutter</u>	<u>Iron</u>	<u>Gutter</u>
Tie Plates, outside Hatchways	<u>3" fine</u>	<u>3"</u>	<u>3" fine</u>	<u>3"</u>
Diagonal Tie Plates on Beams, No. of pairs	<u>How fastened to Beams</u>	<u>How fastened to Beams</u>	<u>How fastened to Beams</u>	<u>How fastened to Beams</u>
Waterways materials and scantlings	<u>Stringer Plates on ends of Lower Deck, Hold or Orlop Beams</u>	<u>Stringer Plates on ends of Lower Deck, Hold or Orlop Beams</u>	<u>Stringer Plates on ends of Lower Deck, Hold or Orlop Beams</u>	<u>Stringer Plates on ends of Lower Deck, Hold or Orlop Beams</u>
Flat of Middle Deck do. do.	<u>Is the Stringer Plate attached to the outside plating?</u>	<u>Is the Stringer Plate attached to the outside plating?</u>	<u>Is the Stringer Plate attached to the outside plating?</u>	<u>Is the Stringer Plate attached to the outside plating?</u>
How fastened to Beams	<u>Angle Irons on ditto, No.</u>	<u>Angle Irons on ditto, No.</u>	<u>Angle Irons on ditto, No.</u>	<u>Angle Irons on ditto, No.</u>
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	<u>Stringer or Tie Plates, outside Hatchways</u>	<u>Stringer or Tie Plates, outside Hatchways</u>	<u>Stringer or Tie Plates, outside Hatchways</u>	<u>Stringer or Tie Plates, outside Hatchways</u>
Is the Stringer Plate attached to the outside plating?	<u>Flat of Lower Deck</u>	<u>Flat of Lower Deck</u>	<u>Flat of Lower Deck</u>	<u>Flat of Lower Deck</u>
Angle Irons on ditto, No.	<u>Ceiling betwixt Decks, thickness and material</u>	<u>Ceiling betwixt Decks, thickness and material</u>	<u>Ceiling betwixt Decks, thickness and material</u>	<u>Ceiling betwixt Decks, thickness and material</u>
Stringer or Tie Plates, outside Hatchways	<u>in hold do. do.</u>	<u>in hold do. do.</u>	<u>in hold do. do.</u>	<u>in hold do. do.</u>
Flat of Lower Deck	<u>Main piece of Rudder, diameter at head</u>	<u>Main piece of Rudder, diameter at head</u>	<u>Main piece of Rudder, diameter at head</u>	<u>Main piece of Rudder, diameter at head</u>
Ceiling betwixt Decks, thickness and material	<u>do. at heel</u>	<u>do. at heel</u>	<u>do. at heel</u>	<u>do. at heel</u>
in hold do. do.	<u>Can the Rudder be unshipped afloat?</u>	<u>Can the Rudder be unshipped afloat?</u>	<u>Can the Rudder be unshipped afloat?</u>	<u>Can the Rudder be unshipped afloat?</u>
Main piece of Rudder, diameter at head	<u>Bulkheads No. 14</u>	<u>Bulkheads No. 14</u>	<u>Bulkheads No. 14</u>	<u>Bulkheads No. 14</u>
do. at heel	<u>Thickness of</u>	<u>Thickness of</u>	<u>Thickness of</u>	<u>Thickness of</u>
Can the Rudder be unshipped afloat?	<u>Height up</u>	<u>Height up</u>	<u>Height up</u>	<u>Height up</u>
Bulkheads No. 14	<u>To Main Deck</u>	<u>To Main Deck</u>	<u>To Main Deck</u>	<u>To Main Deck</u>
Thickness of	<u>How secured to sides of ship</u>	<u>How secured to sides of ship</u>	<u>How secured to sides of ship</u>	<u>How secured to sides of ship</u>
Height up	<u>Between double frames</u>	<u>Between double frames</u>	<u>Between double frames</u>	<u>Between double frames</u>
To Main Deck	<u>Size of Vertical Angle Irons 2 1/4, 2 1/4, 4/16 and distance apart 30 ins.</u>	<u>Size of Vertical Angle Irons 2 1/4, 2 1/4, 4/16 and distance apart 30 ins.</u>	<u>Size of Vertical Angle Irons 2 1/4, 2 1/4, 4/16 and distance apart 30 ins.</u>	<u>Size of Vertical Angle Irons 2 1/4, 2 1/4, 4/16 and distance apart 30 ins.</u>
How secured to sides of ship	<u>Are the outside Plates doubled two spaces of Frames in length?</u>	<u>Are the outside Plates doubled two spaces of Frames in length?</u>	<u>Are the outside Plates doubled two spaces of Frames in length?</u>	<u>Are the outside Plates doubled two spaces of Frames in length?</u>
Between double frames	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
Size of Vertical Angle Irons 2 1/4, 2 1/4, 4/16 and distance apart 30 ins.	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
Are the outside Plates doubled two spaces of Frames in length?	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

The **FRAMES** extend in one length from Keel to Main Dk & Poop and Forecastle Stringer
 The **REVERSED ANGLE IRONS** on floors and frames extend across middle line to upper part of Bilge and to — 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 in. diameter, averaging 5 ins. from centre to centre.
 Edges of Garboards, and to upper part of Bilge, worked clencher, double riveted; with rivets 5/8 in. diameter, averaging 2 7/8 ins. from centre to centre.
 Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 5/8 in. diameter averaging 2 7/8 ins. from centre to centre.
 Butts of one Strakes at Bilge for half length, double 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 5/8 in. diameter, averaging 2 7/8 ins. from cr. to cr.
 Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 5/8 in. diameter, averaging 2 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 — length amidships.
 Butts of Main Stringer Plate, treble riveted for half length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for — length.
 Breadth of laps of plating in double riveting 6 times Breadth of laps of plating in single riveting 3 1/2 times
 Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble and Double
 Waterway, how secured to Beams rievts & bolts (Explain by Sketch, if necessary.)
 Beams of the various Decks, how secured to the sides? Keels riveted to frame No. of Breasthooks, 4 Crutches, 3
 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, Consell

The above is a correct description.
 Builder's Signature, Al. Stephen & Sons Surveyor's Signature, J. M. Mowbray

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

12468 Lm

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

12468 Lm

Tested at Lipton 29th Nov^r 1873
by Samuel Trefenna

Tested at Lipton 4th Dec^r 1873
by Sam^l Trefenna.

NUMBER for EQUIPMENT

No.	SAILS.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Lngh. & Size req'd pr Rule	Test req'd per Rule.	ANCHORS, &c.	No.	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.
	Fore Sails,	Chain ...	90	1 1/16	20 2/20			Bowers	976	8.1.17	10.11.1.0	8 1/4	10 7/20
	Fore Top Sails,	(State Machine where Tested, Date, & name of Superintendent.)	75	1 1/16	20 2/20	16 5	20 2/20		977	8.1.1.0	10.7.2.0	7.0.2	9 5/20
	Fore Topmast Stay Sails	Heavy Strm Cbl				1 1/16			978	7.0.23	9.9.1.14		
	Main Sails,	Hawser ...	90	1 1/16		11/16		Stream		3.0.13		3	
	Main Top Sails,	Towlines ...	90	6		7 1/2		Kedges		1.2.0		1 1/2	
	and	Warp ...				6							
		quality good											

Standing and Running Rigging More than sufficient in size and good in quality. She has one Long Boat and two others

The Windlass is Starboard Patent. Capstan and Rudder good Pumps in each hold.

Engine Room Skylights. How constructed? Iron casing but above How secured in ordinary weather? Bolted down

What arrangements for deadlights in bad weather? Shuts glass with iron gratings

Coal Bunker Openings. How constructed? Cast iron How are lids secured? Locking lids Height above deck? 12 inch

Scuppers, &c. What arrangements for clearing upper deck of water, in case of shipping a sea? Two square ports on each side

Cargo Hatchways. How formed? Iron casing

State size Main Hatch 7 x 6 Fore hatch 9 x 6 Quarter hatch

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

What arrangement for shifting beams?

Hatches, If strong and efficient? Yes

Order for Special Survey No.	Date	Order for Ordinary Survey No.	Date	No.	in builder's yard.	DATES of Surveys held while building as per Section 18	1st.	2nd.	3rd.	4th.	5th.
905	9 th Jan 1873			175			On the several parts of the frame, when in place, and before the plating was wrought	On the plating during the process 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 cemented...	After the ship was launched and equipped
							1873. May 15. 29. June 2. 6. 17. 23. 26. 30. July 4. 8. 28.	Aug st 5. 8. 11. 15. 20. 22. 27. Sep ^r 1. 5. 15. 17. 22. 25. 30.	Oct ^r 2. 7. 10. 15. 22. 28. Nov ^r 3. 6. 11. 17. 20. 26.	Dec ^r 2. 9. 16. 19. 29, 1874 Jan ^y 8. 12. 13. 16. 22. 30.	Feb 4. 12 and 21 March 1874.

General Remarks, Workmanship. Good.

This vessel has been built in accordance with the appended approved Midship Section, and your Letter of 7th May 1873. The Forecastle is 28 ft long. Poop 46 ft. and Hurricane deck amidships 45 feet in length. Below the main deck forward panting beams are fitted on alternate frames to twenty eight feet abaft the fore Bulkhead. At the break of Poop the stringer plate is increased 2 1/16 in thickness for 21 feet, and a plate 17 x 9 1/16 riveted on double reverse bars for 19.9 in length.

Part of outfit completed under my survey. 12 March 74
James Jones

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

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

I am of opinion this Vessel should be Classed * 90 A 1 One deck with Poop. Forecastle & part Awning deck.

The amount of the Entry Fee ... £ 4 : 0 : 0 is received by me,

Special ... £ 15 : 12 : 0 24th March 1874

Certificate ... Gratia

(Travelling Expenses)

(if any) £

Committee's Minute 27th March 1874

Character assigned 90 A 1

One Deck & part Awning Deck 1874
Mc. J. W.

This vessel appears to be eligible to be classed 90 A 1 as recommended by the Committee.
Lloyd's Register
Foundation