

# IRON SHIPS.

No. 3743 Survey held at Dundee Date, First Survey 23 June Last Survey 30 Dec 1891  
 On the Screw Steamer Rainbow Master Dundee  
 Page under 904.6 ONE, OR TWO DECKED VESSELS. THREE DECKED VESSELS.  
 of Spar Deck, 109.78 Half moulded breadth 15.00 Half Moulded Breadth 15.00  
 of Poop, or 21.24 Depth from upper part of 19.00 Total Depth if three or 19.00  
 of Houses 47.82 Keel to top of Upper 19.00 more Decks 19.00  
 Deck 1083.44 Deck Beams (or as per 19.00 Total Girth of Half Mid- 19.00  
 of Forecastle 637.78 Rule, Section 11) 19.00 ship Frame 19.00  
 Tonnage 897.98 Girth of Half Midship 19.00 3rd Number 19.00  
 Space, 50.73 Frame (as per Rule) 19.00 Length 19.00  
 per Rule 637.78 1st Number 19.00 4th Number 19.00  
 Water Tonnage, 897.98 Length 233.54  
 on Beam 897.98 2nd Number 19.00  
 Engine Room 897.98 Depths to Length over 12  
 Register Tonnage, as a 897.98 Breadths to Length over 7  
 Steamer, put on the Beam

Dimensions of Ship per Register, length, 233.54 breadth, 30.00 depth, 18.233  
 Keel, if bar iron, depth and thickness 7 1/2 - 3 Inches in Ship. 9 x 2 1/2 Inches required per Rule.  
 Do. if centre through plate, depth and thickness 7 1/2 - 3 Inches in Ship. 8 x 2 1/2 Inches required per Rule.  
 Stem, if bar iron, moulding and thickness 7 1/2 - 3 Inches in Ship. 8 x 2 1/2 Inches required per Rule.  
 Stern-post do. do. do. 7 1/2 - 3 Inches in Ship. 8 x 2 1/2 Inches required per Rule.  
 Distance of Frames from moulding edge to moulding edge, all fore and aft 23 (Class 100 A)  
 Frames, size of Angle Iron, for 1/2 length amidships 4 3/8 Inches in Ship. 4 3/8 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Do. for 1/2 at each end 4 3/8 Inches in Ship. 4 3/8 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Reversed Frames, size of Angle Iron 3 3/8 Inches in Ship. 3 3/8 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Floors, depth and thickness of Floor Plate at mid line for half the length amidships 20 Inches in Ship. 20 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. at the ends 4 Inches in Ship. 4 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. do. do. at Bilge Keelson 16 Inches in Ship. 16 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. height extended at the Bilges 2 Inches in Ship. 2 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Beams, Three-Decked, Spar, or Awning Decked (No. 39) single or double Angle Iron, Plate or Tee Bulb Iron 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Single or double Angle Iron on Upper edge 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Average space 3.10 Inches in Ship. 3.10 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Beams, Upper or Middle Deck (No. 39) single or double Angle Iron, Plate or Tee Bulb Iron 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Single or double Angle Iron on Upper Edge 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Average space 3.10 Inches in Ship. 3.10 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Beams, Lower Deck or Orlop (No. 39) single or double Angle Iron, Plate or Tee Bulb Iron 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Single or double Angle Iron on Upper Edge 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Average space 3.10 Inches in Ship. 3.10 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Keelson Centre line, single or double plate, box, or Intercoastal, size of Plates 25 Inches in Ship. 25 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. Bulb Plate to Intercoastal Keelson 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Do. Size of Angle Irons 5 3/8 Inches in Ship. 5 3/8 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. Side Intercoastal Keelson, size of Plates 5 3/8 Inches in Ship. 5 3/8 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. Angle Irons on tops of Floors 5 3/8 Inches in Ship. 5 3/8 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. Bilge Keelson, Bulb Iron 7 1/2 Inches in Ship. 7 1/2 Inches in Ship. 16ths required per Rule. 7/16 Inches required per Rule.  
 Do. do. Angle Irons 5 3/8 Inches in Ship. 5 3/8 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Do. Side Stringers (No. 9) size of Angle Irons 5 3/8 Inches in Ship. 5 3/8 Inches in Ship. 16ths required per Rule. 9/16 Inches required per Rule.  
 Transoms, material plate or, if none, in what manner compensated for.  
 Night-heads Hawse Timbers  
 Windlass Hawfield's patent Pall Bitt none  
 The Frames extend in one length from Centre line to Strangers of main and foremast  
 The Reverse Angle Irons on the floors extend across the middle line to the main and foremast  
 On all the Frames to the main and foremast  
 Keelsons. Are the various lengths of Plates and Angle Irons properly connected? well connected And are their butts properly shifted? well shifted  
 Plates, Garboard, double and Riveted to Keel, double or chain at upper edge, with Rivets ( 3/4 in.) diameter, averaging ( 3 1/4 ins.) from centre to centre.  
 Do. Edges from Garboards to upper part of Bilge, worked Clencher, double or single Riveted; with Rivets ( 3/4 in.) diameter, averaging ( 3 1/4 ins.) from centre to centre.  
 Do. Butts from Keel to turn of Bilge, worked carvel with butt straps to the strakes ( 1 1/16 ) thick, treble, double or single Riveted; with Rivets ( 3/4 in.) diameter averaging ( 3 1/4 ins.) from centre to centre. Do the Butt Straps lay over and Rivet through the lands of the strakes above or below? on under  
 Do. Edges from bilge to sheerstrake, worked carvel with a lining piece ( 1 1/16 ) thick, or clencher, double or single riveted; with rivets ( 3/4 in.) diameter, averaging ( 3 1/4 ins.) from centre to centre.  
 Do. Edges of Sheerstrake, double or single Riveted. At upper edge single to Bulwarks At lower edge double chain  
 Do. Butts from Bilge to Planksheers, worked Carvel with Butt Straps ( 1 1/16 ) thick, double or single Riveted; with Rivets ( 3/4 in.) diameter, averaging ( 3 1/4 ins.) from centre to centre. Breadth of laps in double Riveting ( 1 1/2 ) Breadth of laps in single Riveting ( 1 1/2 )  
 Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? treble & double  
 Planksheer, how secured to the plating of the sides, Explain by Sketch,  
 Waterway planksheer and to the Beams, if necessary. See Mid Section  
 Beams of the various Decks, how secured to the sides? Brackets, incl. 20" deep with 5 rivets No. of Breasthooks, 5 Crutches, 4  
 What description of Iron is used for the Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angle Iron, Tee, Plate, C.  
 Manufacturer's name or trade mark, Bulby = Gray & Myke Plate = Glasgow Iron = C. Gateshead  
 We certify that the above is a correct description of the several particulars therein given.  
 Builder's Signature, Gourlay Brothers & Co. Surveyor's Signature, Thomas Alexander

1010-05340011



Workmanship. Are the butts of plating planed or otherwise fitted? planed 9655 Len  
Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiencies? lay close  
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? Conform and are the rivet holes well and sufficiently countersunk in the plate and punched from the faying surfaces? well Countersunk  
Are there any rivets which either break into or have been put through the seams or butts of the plating? none

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 Main Mast above deck 56.6 Diam 17 1/2 ft. 12 1/2 ft Cap  
Fore Mast 52 ft 10 ft 10 ft

Plates 3/8 to 5/16 inch formed in 2 in round single riveted laps - Butt straps same as plates  
double & treble riveted also doubled in way of webbing &c

Number for equipment <u>17/158</u>		Fathoms.	Inches.	Test as per Certificate.	In. req'd per Rule.	Test req'd per Rule.	ANCHORS, &c.	N <sup>o</sup> .	Weight. Ex. Stock.	Test as per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.
N <sup>o</sup> 1	SAILS.	CABLES, &c.					Bowers ....	9945	23. 2. 0	23. 10. 0	23. 2. 0	23 1/2 ft
	Fore Sails,	Chain .....	340	1 1/16	24 1/2 Ins	1 9/16		9971	23. 3. 2 1/2	23. 17. 2 0	23. 2. 0	23 1/2 ft
	Fore Top Sails,	(State Machine where Tested, and name of Superintendent).						9969	20. 0. 0	20. 19. 1. 14	19. 3. 2. 5	
	Fore Topmast Stay Sails	Tompon Stream Cable	90	1"	private test	1"		9970	20. 6. 0	20. 17. 0. 21	19. 3. 2. 5	
	Main Sails,	Hawser .....	90	10		10		9970	20. 6. 0	20. 17. 0. 21	19. 3. 2. 5	
	Main Top Sails,	Towlines ...	90	9		9 1/2		9970	20. 6. 0	20. 17. 0. 21	19. 3. 2. 5	
	and other in all	Warp .....	80	1 1/8		1 1/8		9970	20. 6. 0	20. 17. 0. 21	19. 3. 2. 5	
		All of <u>2d</u> quality.	80	1 1/8		1 1/8	Kedges ....		5. 0. 24		5. 0. 0	
									2. 2. 0		2. 2. 0	

Her Standing and Running Rigging Wye & Hump sufficient in size and in quality. She has 5 Boats and 2 of 25 & 2 of 24 1/2 ft

The present state of the Windlass is Good Capstan Good and Rudder Good Pumps 4 - and one 1 1/2 ft

Engine Room Skylights. How constructed? Plate Glazing & Lead How secured in ordinary weather? Quadrants & Screws

What arrangements are there for deadlights in such for bad weather? None Gratings on top & Larboard in Coops

Coal Bunker Openings. How constructed? Cast Iron How are lids secured? Turned bay How high above deck? flush under

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

Cargo Hatchways. How formed? Iron plate Glazing & framework State size two of 11 1/2 ft by 8 & one 7 1/2 by 5 1/2

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

What arrangement for shifting beams? None required

Hatches, themselves, whether strong and efficient? Strong & efficient Main Hatchways. State size as above

Order for Special Survey No. 270 DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought July & August

Date 29-6-71 Surveys held 2nd. On the plating during the progress of riveting August September October

Order for Ordinary Survey No. while building 3rd. When the beams were in and fastened, and before the decks were laid put up with frames

Date as per 4th. When the ship was complete, and before the plating was finally coated or cemented October

No. 53 in builder's yard. Section 18. 5th. After the ship was launched and equipped November & December

General Remarks, This vessel is round sterned with full poop 62 feet from front of Stern post in length has also amidships for about 61 feet long a full awning deck carried over trunk

Bulkheads of Engine & Boiler spaces & Central range of deck Houses in line of same continued to fore end of said deck

Has also a top gallant Forecastle about 5 1/2 ft in length of deck

Poop & Awning deck formed with rounded Gunwally side plating of all

these 5/16 inch full Poop & Forecastle decks 3" & Awning deck 2 1/2 inch Galv Plate

Is fitted with Bilge Keels - plates 11" x 1/2" have been run along each Bilge for about

96 feet inserted between two A's 4 x 4 x 9/16 all rivetted together & thro shell plating

Also fitted with Water Ballast Tank in after Hold about 46 feet in length & 24 ft

above top of floor for aft girders 5 in No 1/2 inch to 3/8 thick plated on top with

3/8 inch plates & flanged plates 7/16 inch

4/5/71 Builders submitted and section tracing with funding proposals Secretary

reply of 5/71 deputates 1st Lower deck stringer to be as required by rule

2nd Floor plates to extend up on frames as per rule 3rd an Angle iron to be applied

inside the frame on upper deck stringers 4th admit 3 strake Bilge plates to have

the Butt straps treble rivetted in place of three strakes in rules on account of

Bilge Keel outside 5th arrangements & sizes marked in Black & Red ink

on tracing to be carried out to satisfaction

In what manner are the surfaces preserved from oxidation? Inside 3 coats Red Lead & Painted Iron Outside 4 coats Red Lead Painted Iron

I am of opinion this Vessel should be Classed 100 A 1 & Cement in bottom out to Bilge & other colors

The amount of the Entry Fee .....£ 5 : - : - is received by me, Thomas Alexander

Travelling Expenses Special 1000 : £ 50 : 74 : 6

(if any). Certificate 55 : £ 55 : 17 : 6

Committee's Minute 2nd January 1872

Character assigned 100 A 1

I concur in the opinion that this vessel should be classed as recommended 100 A 1 2019 Rules 1870 2/4/72

Lloyd's Register