

# IRON SHIP.

No. *5948* Survey held at *Dunbarton* Date, First Survey *19 May 1882* Last Survey *29 Dec 1882*

On the *S.S. Waihora* 2 masts, schooner rigged.

TONNAGE under Tonnage Deck	52	ONE, OR TWO DECKED, THREE DECKED VESSEL.	Master <i>J. Orkney</i>
Ditto of Third Spar, or Awning Deck		SPAR, OR AWNING DECKED VESSEL.	Built at <i>Dunbarton</i>
Ditto of Poop, Raised or not	<i>49.89</i>	Half Breadth (moulded) .. .. .	Feet. <i>18.00</i>
Ditto of House on Deck	<i>79.83</i>	Depth from upper part of Keel to top of Upper Deck Beams	<i>25.80</i>
Ditto of Forecastle	<i>45.83</i>	Girth of Half Midship Frame (as per Rule) .. ..	<i>40.30</i>
Gross Tonnage	<i>2003.85</i>	1st Number .. .. .	<i>84.1</i>
Less Crew Space	<i>93.58</i>	1st Number, if a 3-Decked Vessel .. deduct 7 feet	<i>7.0</i>
Less Engine Room	<i>641.88</i>	Length .. .. .	<i>77.1</i>
Register Tonnage as cut on Beam	<i>1268.85</i>	2nd Number .. .. .	<i>2184.2</i>
		Proportions— Breadths to Length .. .. .	<i>7.8</i>
		Depths to Length— Upper Deck to Keel .. .. .	<i>10.98</i>
		Main Deck ditto .. .. .	<i>15.9</i>
		Destined Voyage .. .. .	<i>While Building &amp; afloat</i>

LENGTH on deck as per Rule ..	Feet. <i>283</i> Inches. <i>4</i>	BREADTH— Moulded ..	Feet. <i>36</i> Inches. <i>-</i>	DEPTH top of Floors to Upper Deck Beams ..	Feet. <i>22</i> Inches. <i>6</i>	Power of Engines ..	Horse. <i>253</i>	Nº. of Decks with flat laid	<i>3</i>
Dimensions of Ship per Register, length, <i>285</i> breadth, <i>36.25</i> depth, <i>22.65</i> moulded depth <i>25.12</i>								Nº. of Tiers of Beams	<i>3</i>

KEEL, depth and thickness <i>Side bars</i> ..	Inches in Ship. <i>10x18</i>	Inches per Rule. <i>10x18</i>	PLATES in Garboard Strakes, br'dth & thickness ..	<i>36 20 36 20</i>
STEM, moulding and thickness ..	<i>10x23/4</i>	<i>10x23/4</i>	From Garboard to upper part of Bilges ..	<i>16.13 16.13</i>
STERN-POST for Rudder do. do. ..	<i>10x18x5/8</i>	<i>10x5/2</i>	Of d'bling at Bilge, or increased thickness, and length applied ..	
" " for Propeller ..	<i>10x18x5/8</i>	<i>10x5/2</i>	From up. prt of Bilge to l. edge of Sh'rstrake ..	<i>18.15 18.15</i>
Distance of Frames from moulding edge to moulding edge, all fore and aft ..	<i>24 ins</i>	<i>24 ins</i>	Main Sheerstrake, breadth and thickness ..	<i>50 21.16 50 21.16</i>
FRAMES, Angle <i>Iron</i> , for 1/2 length amidships ..	<i>3 3 12 3 3 12</i>	<i>3 3 12 3 3 12</i>	Of d'bling at Sh'stk. & lng. applied for <i>sidelights</i> ..	<i>21 10 21</i>
Do. for 1/2 at each end ..	<i>6 3 13 6 3 13</i>	<i>6 3 13 6 3 13</i>	From Main to Upper or Spar Dk. Sh'rstrake ..	<i>19 9 1/2 25 13 19 9 1/2 25 13</i>
REVERSED FRAMES, Angle <i>Iron</i> ..	<i>3 3 13 3 3 13</i>	<i>3 3 13 3 3 13</i>	Up. or Spar Dk. Sh'rstrake, breadth & thickness ..	<i>19 9 1/2 25 13 19 9 1/2 25 13</i>
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships ..	<i>Solid brackets with holes as approved on sketch of mid. section</i>	<i>Solid brackets with holes as approved on sketch of mid. section</i>	Butt Straps to outside plating, breadth & thickness ..	<i>7 spaces 5</i>
" thickness at the ends of vessel ..			Lengths of Plating ..	<i>7 spaces</i>
" depth at 3/4 the half-bdth. as per Rule ..			Shifts of Plating, and Stringers ..	<i>2</i>
" height extended at the Bilges ..			Gunwale Plate on ends of <i>Awning, Spar, or</i> Upper Deck Beams, breadth and thickness ..	<i>41 15 41 15</i>
BEAMS, Upper, <i>Spar, or Awning Deck</i> Single or d'ble Ang. <i>Iron</i> , Plate or Tee Bulb <i>Iron</i> ..	<i>7 1/2 3 1/2 12 7 1/2 3 1/2 12</i>	<i>7 1/2 3 1/2 12 7 1/2 3 1/2 12</i>	Angle <i>Iron</i> on ditto ..	<i>4 1/4 x 15 4 1/4 x 15</i>
Single or double Angle Iron on Upper Edge ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Tie Plates fore and aft, outside Hatchways ..	<i>complete steel str 5/16 covered with 3" teak</i>
Average space ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Diagonal Tie Plates on Beams No. of Pairs ..	<i>covered with 3" teak</i>
BEAMS, Main, or Middle Deck ..	<i>8 1/2 13 8 1/2 13</i>	<i>8 1/2 13 8 1/2 13</i>	Flat of Up., Spar, or Awning Dk. ..	
Single or d'ble Ang. <i>Iron</i> , Plate or Tee Bulb <i>Iron</i> ..	<i>3 3 12 3 3 12</i>	<i>3 3 12 3 3 12</i>	How fastened to Beams ..	<i>riveted and nut &amp; screw bolts</i>
Single or double Angle Iron, on Upper Edge ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Stringer Plate on ends of Main or Middle Deck ..	<i>51 18 51 18</i>
Average space ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Beams, breadth and thickness ..	<i>51 18 51 18</i>
BEAMS, Lower Deck— <i>forward</i> ..	<i>7 1/2 3 1/2 12 7 1/2 3 1/2 12</i>	<i>7 1/2 3 1/2 12 7 1/2 3 1/2 12</i>	Is the Stringer Plate attached to the outside plating? ..	<i>Yes</i>
Single or d'ble Ang. <i>Iron</i> , Plate or Tee Bulb <i>Iron</i> ..	<i>6 3 13 6 3 13</i>	<i>6 3 13 6 3 13</i>	Angle <i>Iron</i> on ditto, No. <i>2</i> ..	<i>4 1/4 x 15 4 1/4 x 15</i>
Single or double Angle Iron on Upper Edge ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Tie Plates, outside Hatchways ..	<i>14 16 14 16</i>
Average space ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Diagonal Tie Plates on Beams, No. of pairs ..	<i>14 16 14 16</i>
BEAMS, Hold, or Orlop <i>Lower St. aft</i> ..	<i>6 3 13 6 3 13</i>	<i>6 3 13 6 3 13</i>	Flat of Middle Deck* do. do. ..	<i>3 1/2 P.P. 3 1/2</i>
Single or d'ble Ang. <i>Iron</i> , Plate or Tee Bulb <i>Iron</i> ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	How fastened to Beams ..	<i>nut &amp; screw bolts</i>
Single or double Angle Iron on Upper Edge ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Stringer Plates on ends of Lower Deck, <i>Hold or</i> Orlop Beams ..	<i>37 15 37 15</i>
Average space ..	<i>4 8 ins 4 8 ins</i>	<i>4 8 ins 4 8 ins</i>	Is the Stringer Plate attached to the outside plating? ..	<i>Yes Yes</i>
KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates ..	<i>49 15 49 15</i>	<i>49 15 49 15</i>	Angle <i>Iron</i> on ditto, No. <i>2</i> ..	<i>4 1/4 x 15 4 1/4 x 15</i>
" Rider Plate <i>part of inner bottom</i> ..	<i>36 13 36 13</i>	<i>36 13 36 13</i>	Stringer or Tie Plates, outside Hatchways ..	<i>14 15 14 15</i>
" Bulb Plate to Intercoastal Keelson ..	<i>10 10</i>	<i>10 10</i>	Flat of Lower Deck* ..	<i>2 1/2 Pine 1 1/2</i>
" Angle Irons .. <i>2 girders</i> ..	<i>Cellular double bottom, as app'd</i>	<i>Cellular double bottom, as app'd</i>	Ceiling betwixt Decks, thickness and material ..	<i>spacing -</i>
" Double Angle Iron Side Keelson ..	<i>3 3 12 3 3 12</i>	<i>3 3 12 3 3 12</i>	" in hold do. do. ..	<i>2 1/2 Pine 2 1/2</i>
" Side Intercoastal Plate ..	<i>3 3 12 3 3 12</i>	<i>3 3 12 3 3 12</i>	Main piece of Rudder, diameter at head ..	<i>7 1/2 x 4 3/4 7 1/2 3 3/4</i>
" do. Angle Irons ..	<i>3 3 12 3 3 12</i>	<i>3 3 12 3 3 12</i>	do. at heel ..	<i>7 1/2 x 4 3/4 7 1/2 3 3/4</i>
" Attached to outside plating with angle iron ..	<i>12 12</i>	<i>12 12</i>	Can the Rudder be unshipped afloat? ..	<i>Yes</i>
BILGE Angle <i>Iron</i> <i>margin plate</i> ..	<i>6 4 15 6 4 15</i>	<i>6 4 15 6 4 15</i>	Bulkheads No. <i>4</i> No. per Rule ..	<i>4</i>
" do. Bulb <i>Iron</i> ..	<i>11 15 11 15</i>	<i>11 15 11 15</i>	" Thickness of <i>12-10</i> ..	<i>12-10</i>
" do. Intercoastal plates riveted to plating for <i>length</i> ..	<i>6 4 15 6 4 15</i>	<i>6 4 15 6 4 15</i>	" Height up <i>3 to up 3 1/2</i> & after one to main dk with <i>W.T. flat shaft at midline dk</i> ..	<i>Double frames</i>
BILGE STRINGER Angle Irons ..	<i>11 15 11 15</i>	<i>11 15 11 15</i>	" How secured to sides of ship ..	<i>Double frames</i>
Intercoastal plates riveted to plating for <i>3/5 length</i> ..	<i>11 15 11 15</i>	<i>11 15 11 15</i>	" Size of Vertical Angle Irons <i>3 1/2 x 3 1/2</i> and distance apart <i>30 ins.</i> ..	<i>30 ins.</i>
SIDE STRINGER Angle Irons ..			" Are the outside Plates doubled two spaces of Frames in length? ..	<i>Yes</i>

The FRAMES extend in one length from *Bilge to Bilge & Bilge* to *gunwale* Riveted through plates with *7/8* in. Rivets, about *6 1/2* apart.

The REVERSED ANGLE IRONS on floors and frames extend *from middle line to Bilge in short lengths & from Bilge to turn up dk* 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 *5/16* in. diameter, averaging *4 1/2* 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 *all* Strakes at Bilge for *160 ft.* length, treble riveted with Butt Straps *1/8* 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 *length* amidships Butts of Upper or Spar Sheerstrake, treble riveted *1/2* length amidships.

" Butts of Main Stringer Plate, treble riveted for *1/2* length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for *1/2* length.

" Breadth of laps of plating in double riveting *5 1/4* Breadth of laps of plating in single riveting ..

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? *Yes & don.* No. of Breasthooks, *4* Crutches, *13 1/2* from

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? *"Dalziel," "Hallands"*

Manufacturer's name or trade mark, *and "Pighead"*

The above is a correct description.

Builder's Signature, *J. Denny & Prother* Surveyor's Signature, *J. Dodd*

Surveyor to Lloyd's Register of British and Foreign Shipping.



Workmanship. Are the butts of plating planed or otherwise fitted? *Planed* 5978 g/s.  
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 very few*

Masts, Bowsprit, Yards, &c., are *steel* 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 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 *The two masts are built in accordance with the approved sketch, attached to Report on "Haurato", Glasgow N<sup>o</sup> 5871, see Secretary's letter of the 13<sup>th</sup> April 1882.*

Reference made to any correspondence connected with the case.

NUMBER for EQUIPMENT 26207		Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprtd.	ANCHORS.	N <sup>o</sup> .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Machine where Tested & Suprtd.
SAILES.												
CABLES, &c.												
N <sup>o</sup> .	Chain	135-7	1 1/3	82.75	270		Bower Anchors	14069	32-3-2	30-15-2-14	32cwt.	
	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)	135	1 1/3	59.125	1 1/3		(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)		6-2-19			
Fore Sails,	Iron Stream Chain	h <sup>o</sup> 9514 & 9519, 23 <sup>rd</sup> & 19 <sup>th</sup> Oct 1882									total	
Fore Top Sails,	or Steel Wire	75	1 1/8	12.75	75-1 1/8		17 Nov. /82	14026	32-1-14	30-2-0-14	9 1/4	
Fore Topmast Stay Sails,	or Hempen Strm Cable	h <sup>o</sup> 11226 - 29 Oct 1882					18 Nov. /82	14073	27-1-17	26-15-0-0		
	Towline, Hemp.	90	4	82	90-12		20 Nov. /82		5-3-7			
	or Steel Wire	Cert. produced on 4 <sup>th</sup> Dec 1882							92-2-5			
Main Sails,	Hawser	90	9 1/2	manila	90-9 1/2		Stream Anchor	14113	10-0-3	12-2-0-21	10 1/2	
Main Top Sails,	Warp	90	7 1/2				Kedge	14112	5-2-15	8-0-2-14	5 1/4	
and spare	quality	120	7 1/2		90-7 1/2		2nd Kedge	14099	2-3-20	5-10-0-0	2 1/2	
		120	5						3-24			
Standing and Running Rigging		wire thmgs	sufficient in size and g <sup>d</sup> in quality.				She has	3	Long Boat and	3	Others	
The Windlass is		Pauls Patent	Capstan	good	and Rudder	good	Pumps	good				
Engine Room Skylights.		How constructed? Take on Iron Comings on Bridge										
What arrangements for deadlights in bad weather?		patings and tarpaulins										
Coal Bunker Openings.		How constructed? Cast Iron										
How are lids secured?		Bayonet fixing										
Height above deck?		Flush										
Scuppers, &c.		What arrangements for clearing upper deck of water, in case of shipping a sea?										
		7 water ports, 5 scuppers, 3 cargo ports, 2 gangway ports & 2 mooring ports.										
Cargo Hatchways.		How formed? Iron plate & angle iron										
State size Main Hatch		11' 9" x 11'										
Forehatch		9' 9" x 9 ft										
Quarterhatch		10' 6" x 10 ft										
If of extraordinary size, state how framed and secured?		not of extraordinary size										
What arrangement for shifting beams?		none										
Hatches, If strong and efficient?		Yes, Solid.										

W. Kerton  
D. G. Lewis

Order for Special Survey No. 1715	DATE 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	<i>Specially Surveyed: - 1882 May 19, 24, 26, 30, June 2, 7, 9, 13, 16, 19, 23, 27, 30; July 25, 28; Aug 1, 3, 7, 11, 16, 18, 29, 31; Sep. 5, 8, 12, 15, 19, 22, 26; Oct 3, 10, 13, 17, 20, 24, 27, 31; Nov. 7, 10, 13, 14, 17, 21, 24, 28; Dec 1, 5, 8, 12, 14, 18, 19, 27, 29 &amp; 9<sup>th</sup> Jan 1883.</i>
Date 6 <sup>th</sup> January 1883		2nd. On the plating during the process of riveting	
Order for Ordinary Survey No. 1715		3rd. When the beams were in and fastened, and before the decks were laid...	
Date		4th. When the ship was complete, and before the plating was finally coated or cemented...	
No. 264 in builder's yard.		5th. After the ship was launched and equipped	

General Remarks (State quality of workmanship, &c.)  
*The workmanship in this vessel is good, and she has been built in accordance with the tracings, & in number, herewith attached; and in accordance with the instructions contained in the Secy's letters of the 5<sup>th</sup> Jan, 19<sup>th</sup> Mar, 13 April and 29<sup>th</sup> April 1882. The steel of which this vessel has been built, was tested at the Manufacturer's Works, as set forth in the Circulars issued by the Committee. She is built on the cellular system, all fore & aft. No 1 Tank from fore to aft is 98 ft long containing 113.3 tons of water; No 2 is 30 ft & 68.2 tons; No 3 is 26 ft & 53.5 tons; No 4 is 28 ft & 52.8 tons and No 5 is 50 ft & 52.4 tons. Each of these tanks has been tested as required by the Rules and found satisfactory.*

*The poop is 60 ft long with 4 ft wings for stairs; Open Bridge lower 72 ft and house abaft 15' 9" x 12 ft broad. Forecastle 46 ft long.*

State if one, two, or three decked vessel, or if spar, or awning decked; and the lengths of poop, bridge, forecabin, or raised quarter deck. (If double bottom, state particulars on separate form.)

How are the surfaces preserved from oxidation? Inside *Cement Paint* Outside *Paint*  
I am of opinion this Vessel should be Classed *100A.1. Steel*  
The amount of the Entry Fee ... £ *5:0:0* is received by me, *J. J. Dodd*  
Special ... £ *42:15:0*  
Certificate ... *Gratis*  
(Travelling Expenses, if any, £ ... )  
Committee's Minute *Friday, 19th January, 1883.*

Character assigned *100A.1. Steel*  
*3 Decks 1 Steel Deck*  
*3 Decks 1 Steel Deck*  
*19/1/83*