

Steel IRON SHIP. 23904

No. 4911 Survey held at Dunbarton Date, First Survey 26th Oct 1878 Last Survey 3rd July 1887
On the SS Rotomahana Master Thos Underwood

TONNAGE under Tonnage Deck <u>1604.29</u>	ONE, OR TWO DECKED, THREE DECKED VESSEL.	Built at <u>Dunbarton</u>
Ditto of Third, Spar, or Awaiting Deck.	SPAR, OR AWNING DECKED VESSEL.	When built <u>1879</u> Launched <u>6</u>
Ditto of Hoop, or Raised Or. Deck.	HALF BREADTH (moulded) <u>17.5</u>	By whom built <u>Wm Dewar & Co</u>
Ditto of Houses on Deck <u>41.30</u>	DEPTH from upper part of Keel to top of Upper Deck Beams <u>26.05</u>	Owners <u>Union S.P. Co</u>
Ditto of Forecastle <u>37.54</u>	GIRTH of Half Midship Frame (as per Rule) <u>39.25</u>	Port belonging to <u>Dunedin</u>
Gross Tonnage <u>1727.17</u>	1st NUMBER <u>82.00</u>	Destined Voyage <u>Dund. Melbourne</u>
Less Crew Space <u>100.07</u>	1st NUMBER, if a THREE-DECKED VESSEL [deduct 7 feet] <u>75.00</u>	If Surveyed while Building, Afloat, or in Dry
Less Engine Room <u>761.76</u>	LENGTH <u>75.0</u>	
Register Tonnage as cut in Beam <u>564.54</u>	2nd NUMBER <u>5670</u>	
	PROPORTIONS—Breadths to Length <u>0.16</u>	
	Depths to Length—Upper Deck to Keel <u>10.97</u>	
	Main Deck ditto <u>15.0</u>	

LENGTH on deck as per Rule <u>296</u>	BREADTH Moulded <u>35</u>	DEPTH top of Floor Deck Beams <u>24</u>	Power of Engines <u>400</u>	No. of Decks with flat laid <u>2</u>	No. of Tiers of Beams <u>2 aft</u>
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Dimensions of Ship per Register, length 296, breadth 35, depth 23.75

	Inches in Ship	Inches per Rule	Inches in Ship	Inches per Rule	Inches in Ship	Inches per Rule	Inches in Ship	Inches per Rule
KEEL, depth and thickness <u>See Keel plate</u>								
STEM, moulding and thickness <u>Iron</u>	<u>9 x 2 1/2</u>	<u>9 x 2 1/2</u>						
STERN-POST for Rudder do. do. for Propeller <u>as per sketch</u>	<u>11</u>	<u>9 x 5</u>						
Distance of Frames from moulding edge to moulding edge, all fore and aft <u>24</u>								
FRAMES, Angle <u>5</u> for 1/2 length amidships <u>5</u>	<u>3</u>	<u>5 1/2</u>	<u>5</u>	<u>3</u>	<u>5 1/2</u>			
Do. for 1/4 at each end <u>3</u>	<u>3</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>7 1/6</u>			
REVERSED FRAMES, Angle <u>5</u> <u>3</u>	<u>3</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>7 1/6</u>			
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships <u>2 1/2</u>	<u>1 1/2</u>	<u>2 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>2 1/2</u>			
thickness at the ends of vessel <u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>			
depth at 1/4 the half-bdth. as per Rule <u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>	<u>1 1/2</u>			
height extended at the Bilges <u>4 1/2</u>	<u>4 1/2</u>	<u>4 1/2</u>	<u>4 1/2</u>	<u>4 1/2</u>	<u>4 1/2</u>			
BEAMS, Upper, Spar, or Awaiting Deck Single or double Angle Iron, Plate or Tee Bulb <u>as per sketch</u>	<u>7</u>	<u>4 1/2</u>	<u>6</u>	<u>7</u>	<u>6 1/6</u>			
Single or double Angle Iron on Upper edge <u>7</u>	<u>4 1/2</u>	<u>6</u>	<u>7</u>	<u>6 1/6</u>	<u>6 1/6</u>			
Average space <u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>			
BEAMS, Main or Middle Deck Single or double Angle Iron, Plate or Tee Bulb <u>as per sketch</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>5</u>	<u>6 1/6</u>			
Single or double Angle Iron on Upper edge <u>3</u>	<u>3</u>	<u>6</u>	<u>5</u>	<u>6 1/6</u>	<u>6 1/6</u>			
Average space <u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>			
BEAMS, Lower Deck, Hold or Orlop Single or double Angle Iron, Plate or Tee Bulb <u>as per sketch</u>	<u>3</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>6 1/6</u>			
Single or double Angle Iron on Upper edge <u>3</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>6 1/6</u>	<u>6 1/6</u>			
Average space <u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>	<u>40</u>			
KEELSONS Centre line, single or double plate, <u>as per sketch</u> Intercostal, Plates <u>17</u>	<u>17</u>	<u>17</u>	<u>17</u>	<u>17</u>	<u>17</u>			
Rider Plate <u>11 1/2</u>	<u>11 1/2</u>	<u>9</u>	<u>11 1/2</u>	<u>9</u>	<u>11 1/2</u>			
Bull Plate to Intercostal Keelson <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Angle Iron <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Double Angle Iron Side Keelson <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Side Intercostal Plate <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
do. Angle <u>5 1/2</u> <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Attached to outside plating with angle iron <u>3</u>	<u>3</u>	<u>6</u>	<u>3</u>	<u>6</u>	<u>3</u>			
BILGE Angle Iron <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
do. Bulb Iron <u>as per sketch</u> <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
do. Intercostal plates riveted to plating for 1/2 length <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
BILGE STRINGER Angle Iron <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Intercostal plates riveted to plating for 1/2 length <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
SIDE STRINGER Angle Iron <u>in after body as per sketch</u> <u>5 1/2</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>	<u>4</u>	<u>5 1/2</u>			
Transoms, material. Knight-heads. Hawse Timbers. <u>Steel</u>								
Windlass <u>Sam. Patent</u> Pall Bitt <u>as per sketch</u>								
The FRAMES extend in one length from <u>margin plate of double bottom</u> to <u>upper deck stringer</u>								
The REVERSED ANGLE IRONS on floors and frames extend from <u>middle line to above M.D. stringer plate</u> and to <u>upper D stringer</u> alternately								
KEELSONS. Are the various lengths of Plates and Angle Irons properly connected? <u>Yes</u>								
And butts properly shifted? <u>Yes</u>								
PLATING. Garboard, double riveted to Keel, with rivets <u>1/2</u> in. diameter, averaging <u>4</u> ins. from centre to centre.								
Edges of Garboards and to upper part of Bilge, worked clencher, double riveted; with rivets <u>3/4</u> in. diameter, averaging <u>3</u> ins. from centre to centre.								
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets <u>3/4</u> in. diameter averaging <u>3</u> ins. from centre to centre.								
Butts of <u>3</u> Strakes at Bilge for <u>1/2</u> length, treble riveted with Butt Straps <u>7/16</u> thicker than the plates they connect.								
Edges from bilge to Main Sheerstrake, worked clencher, double <u>single</u> riveted; with rivets <u>3/4</u> in. diameter, averaging <u>3</u> ins. from cr. to cr.								
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets <u>3/4</u> in. diameter, averaging <u>3</u> ins. from cr. to cr.								
Lower Edges of Main Sheerstrake, double <u>single</u> riveted.								
Butts of Main Sheerstrake, treble riveted for <u>1/2</u> length amidships. Butts of Upper or Spar Sheerstrake, treble riveted <u>length amidships</u> .								
Butts of Main Stringer Plate, treble riveted for <u>1/2</u> length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for <u>1/2</u> length.								
Breadth of laps of plating in double riveting <u>5 1/2</u> Breadth of laps of plating in single riveting <u>5 1/2</u>								
Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? <u>part treble the rest double</u>								
Waterway, how secured to Beams <u>Gutter Waterway</u> (Explain by Sketch, if necessary.)								
Beams of the various Decks, how secured to the sides? <u>lapped bracket knees</u>								
No. of Breasthooks, <u>5</u> Crutches, <u>3</u>								
What description of <u>Steel</u> is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? <u>Steel Co. of Scotland</u>								
Manufacturer's name or trade mark. <u>Steel Co. of Scotland</u> The beam bulks, added at <u>Moscow</u> have the <u>Moscow</u> roll mark also.								

The above is a correct description.
Builder's Signature, Wm Dewar & Co Surveyor's Signature, Wm Dewar & Co
Surveyed in London'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 these and all ships generally are of iron*
 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? *Very few*

23904 Iron

Masts, Yards, &c., are *Iron* in *good* condition, and sufficient in size and length. *1/2 of Iron-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.

Length and Diameter of Lower Masts and Bowsprit
Foremast 3' x 24 1/2" 6 1/2" Steel. 3 plates in section Butts broken edges dulled riveted
Mizzenmast 7 1/2' x 23" 4 1/2"
Mopmast 24' 0" x 10" 2 plates in section
 Approved. Per Secretary's letter dated 25.2.79

NUMBER for EQUIPMENT		Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per Rule.	Test req'd per Rule.	Rodgers ANCHORS.	No.	Weight. Ex. Stock.	Test per Certificate.	Weight req'd per Rule.	Test req'd per Rule.
SAILS.	CABLES, &c.	135	1 1/2	34.2.2	970 1 1/2	82.2	Bowers	7961	32.1.16	30 1/2	52	30 1/2
Fore Sails,	Chain	135		59.2.2		59.2	LPHN	7954	32.0.2	30.4.114		
Fore Top Sails,	LPHN	4792	4029	signed	D 9 Lewis	30.5.79	D 9 Lewis	7731	27.1.21	26.5.79	27.0.23	26.10.20
Fore Topmast Stay Sails	Stem Cbl	75	1 1/2	34.2.2	75 1 1/2		Stream	7962	10.2.5	12.10.3.21	10 1/2	12 1/2
Main Sails,	Hawser	4789	292	34.2.2	90 1 1/2		Kedges	7967	5.2.11	7.10.1.21	5 1/2	7 1/2
Main Top Sails,	Towlines	90	1 1/2	34.2.2	90 1 1/2							
and	Warp		1 1/2	34.2.2	90 7							
	quality			34.2.2								

Standing and Running Rigging *Wire Sheeps* sufficient in size and *good* in quality. She has *3* Boats and *3* Stuns

The Windlass is *Iron Steam* Capstan *good* and Rudder *good* Pumps *good*

Engine Room Skylights.—How constructed? *in top of deck house* How secured in ordinary weather? *by bolts*

What arrangements for deadlights in bad weather? *Gratings & expansions*

Coal Bunker Openings.—How constructed? *in upper deck* How are lids secured? *by lockings* Height above deck? *flush*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea?
11 ports 6 scuppers & 4 mowing pipes on each side

Cargo Hatchways.—How formed? *Iron Cornings*

State size Main Hatch *12' x 10' 6"* Forehatch *Companion* Quarterhatch *10' x 10' 6"*

If of extraordinary size, state h. w framed and secured? *Fore & afters in hatches*

What arrangement for shifting beams?

Hatches, if strong and efficient? *Yes*

Order for Special Survey No. *1587*
 Date *Sept 23/79*

Order for Ordinary Survey No. *224*
 Date *Sept 23/79*

No. *224* 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 } *26th Dec 1878? Jan 8. 13. 16. 20. 23. 27. 30. Feb 3. 6. 10.*

2nd. On the plating during the process of riveting } *13. 17. 20. 24. 27. Mar 3. 10. 13. 17. 24. 27. 31. Apr 4. 10. 14.*

3rd. When the beams were in and fastened, and before the decks were laid... } *17. 21. 24. 28. May 1. 5. 8. 12. 15. 19. 26. 29. June 2. 5. 9.*

4th. When the ship was complete, and before the plating was finally coated or cemented... } *12. 16. 18. 23. 26. 30. July 3. 10. 79.*

5th. After the ship was launched and equipped

General Remarks (State quality of workmanship, &c.) *The Workmanship is good and she is built of steel in accordance with the appended and approved sections and plans. The plates of the sheerstrake and all buttsheeps of 7/8 and over in thickness have been annealed, the rivets are of steel and close spaced, she is fitted with kidgalleys for the length of 77 feet. The plates of which are of steel secured to shell plates with low iron rivets tapped through shell nutted & clenched inside. The plates forming the keelstrake are lap luted and treble riveted and the completions aft made with outside angle bars (as per appended plan) are of Barking Iron 5' x 4' x 1 1/2".*

She is fitted with part double bottom in 2 compartments, 40 feet under Engines and Bunkers, 40 ft aft of head. The girders and top are of steel as appended, except that under the engines the top plating is 1 inch iron. These compartments were separately tested according to rule and before launching. The remaining parts that are of iron are the coal bunker, bulkheads, engine and boiler casings, the side base plating 2" above the main rail, the forecette beams and stringers and the hatch casings, the stem, stemframe and rudderframe, the rudder plating is of steel. The first temper tests of the steel were made at Newton.

The rest at Messrs Demays Yard. all the tensile tests were made at the Glasgow public testing machine.

Length of bridge base at sides 87 feet. Boiler casing 8' x 16' 9" Engine casing 32' x 13' 3"

Companion house 36' x 11' 0". Smoking house 11' 6" x 10' 8" 2 1/2"

State if one, two, or three decked vessel, or if open or covering deck; and the lengths of poop, forecabin, main deck, and the length of double, or part double bottom.

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

I am of opinion this Vessel should be Classed *100 A 1*

The amount of the Entry Fee ... £ 5: : : is received by me, *July 1879*

Special ... £ 65: 13: : *July 1879*

Certificate ... *Printed*

Committee's Minute *8th July 1879.*

Character assigned *100 A 1 Steel 2 1/2" part double bottom*

Surveyor to Lloyd's Register of British and Foreign Shipping.
 This vessel appears eligible to be classed as recommended viz - 100 A. 1.
Steel 2 1/2" part double bottom

LR-F&F-783-263