

IRON SHIP.

No. 3914 Survey held at Hartlepool Date, First Survey 16th May Last Survey 22nd November 1877

On the S.S. "Helenheim" Master

TONNAGE under Tonnage Deck 904.95
Ditto of Stern Spar, or of Aft Deck 116.93
Ditto of Fore or Raised Or. Dk. 83.65
Ditto of Houses on Deck 25.19
Ditto of Forecastle Hatchways 25.81
Gross Tonnage 1163.14
Less Crew Space 56.24
Less Engine Room 1106.87
Register Tonnage as cut on Beam 734.67

ONE, OR TWO DECKED, THREE DECKED VESSEL.
SPAR, OR AWNING DECKED VESSEL.
HALF BREADTH (moulded) 16 Feet 1/2
DEPTH from upper part of Keel to top of Upper Deck Beams 18 8 1/2
GIRTH of Half Midship Frame (as per Rule) 29.9
1st NUMBER 63.10 1/2
1st NUMBER, if a THREE-DECKED VESSEL [deduct 7 feet] 223.9
2nd NUMBER 142.01
PROPORTIONS Breadths to Length within 1/2
Depths to Length—Upper Deck to Keel within 1/2
Main Deck ditto

Built at Hartlepool
When built 1877 Launched 6 October
By whom built E. Withy & Co.
Owners Steel Young & Co.
Port belonging to London
Destined Voyage West Indies
If Surveyed while Building, Afloat, or in Dry Dock.

LENGTH on deck as per Rule 223 9 BREADTH—Moulded 30 10 DEPTH top of Floors to Upper Deck Beams 17 2 Power of Engines 99 Horse. N° of Decks with flat laid One N° of Tiers of Beams Two

Dimensions of Ship per Register, length, 225 breadth, 31 depth, 16-9

	Inches in Ship.	Inches per Rule.
KEEL, depth and thickness	8 x 2 3/8	8 x 2 3/8
STEM, moulding and thickness	8 x 2 3/8	8 x 2 3/8
STERN-POST for Rudder do. do.	8 1/2 x 4 1/8	8 x 4 3/4
for Propeller	8 3/4 x 4	8 x 4 3/4
Distance of Frames from moulding edge to moulding edge, all fore and aft	23	23
FRAMES, Angle Iron, for 1/2 length amidships	4 x 3 7/16	4 x 3 7/16
Do. for 1/2 at each end	4 x 3 7/16	4 x 3 7/16
REVERSED FRAMES, Angle Iron	3 x 3 7/16	3 x 3 7/16
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	10 1/2 x 9 1/2	10 1/2 x 9 1/2
thickness at the ends of vessel	7 1/16	7 1/16
depth at 3/4 the half-bdth. as per Rule	12	12
height extended at the Bilges	37	37
BEAMS, Upper, Spar, or Awning Deck Single or double Ang. Iron, Plate or Tee Bulb Iron	15 x 3 7/16	15 x 3 7/16
Single or double Angle Iron on Upper edge	23	23
Average space	23	23
BEAMS, Main, or Middle Deck Single or double Ang. Iron, Plate or Tee Bulb Iron	10 1/2 x 9 1/2	10 1/2 x 9 1/2
Single or double Angle Iron, on Upper Edge	4 x 3 7/16	4 x 3 7/16
Average space	10 x 10 paces	10 x 10 paces
BEAMS, Lower Deck, Hold, or Orlop Single or double Ang. Iron, Plate or Tee Bulb Iron	14 x 11 1/6	14 x 11 1/6
Single or double Angle Iron on Upper Edge	4 x 3 7/16	4 x 3 7/16
Average space	10 x 10 paces	10 x 10 paces
KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates	11 x 11 1/6	10 3/4 x 11 1/6
Rider Plate	11 x 11 1/6	10 3/4 x 11 1/6
Bulb Plate to Intercoastal Keelson	5 x 3 1/2	5 x 3 1/2
Angle Irons	5 x 3 1/2	5 x 3 1/2
Double Angle Iron Side Keelson	5 x 3 1/2	5 x 3 1/2
Side Intercoastal Plate	5 x 3 1/2	5 x 3 1/2
do. Angle Irons	5 x 3 1/2	5 x 3 1/2
Attached to outside plating with angle iron	5 x 3 1/2	5 x 3 1/2
BILGE Angle Irons	5 x 3 1/2	5 x 3 1/2
do. Bulb Iron	7 x 7 1/6	7 x 7 1/6
do. Intercoastal plates riveted to plating for length	5 x 3 1/2	5 x 3 1/2
BILGE STRINGER Angle Irons	5 x 3 1/2	5 x 3 1/2
Intercoastal plates riveted to plating for length	5 x 3 1/2	5 x 3 1/2
SIDE STRINGER Angle Irons	5 x 3 1/2	5 x 3 1/2

Transoms, material. Knight-heads. Hawse Timbers. Plate
Windlass Emerson & Walpole Pall Bitt

Flat Keel Plates, breadth and thickness
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of doubling at Bilge, or increased thickness, and length applied
fm up. part of Bilge to lr. edge of Sh'rstrake
Main Sheerstrake, breadth and thickness of doubling at Sh'rstrake, & length applied from Mn. to Up. or Spar Dk. Sh'rstrake.
Up. or Spar Dk Sh'rstrake, breadth & thickness
Butt Straps to outside plating, breadth & thickness
Lengths of Plating
Shifts of Plating, and Stringers
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness
Angle Iron on ditto
Tie Plates fore and aft, outside Hatchways
Diagonal Tie Plates on Beams No. of Pairs
Planksheer material and scantling
Waterways do. do.
Flat of Upper Deck do. do.
How fastened to Beams
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness
Is the Stringer Plate attached to the outside plating?
Angle Irons on ditto, No.
Tie Plates, outside Hatchways
Diagonal Tie Plates on Beams, No. of pairs
Waterways materials and scantlings
Flat of Middle Deck do. do.
How fastened to Beams
Stringer Plates on ends of Lower Deck, Hold or Orlop Beams
Is the Stringer Plate attached to the outside plating?
Angle Irons on ditto, No.
Stringer or Tie Plates, outside Hatchways
Flat of Lower Deck
Ceiling betwixt Decks, thickness and material in hold do. do.
Main piece of Rudder, diameter at head do. at heel
Can the Rudder be unshipped afloat?
Bulkheads No. 4 Thickness of
Height up main deck after me to cabin deck head over
How secured to sides of ship to double frames
Size of Vertical Angle Irons 3 x 3 x 6/16 and distance apart 30 ins.
Are the outside Plates doubled two spaces of Frames in length?

The FRAMES extend in one length from Keel to Gunwale Riveted through plates with 3/4 in. Rivets, about 6 in. apart.

The REVERSED ANGLE IRONS on floors and frames extend across middle line to above hold beam stringer 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 in. diameter, averaging 5 ins. from centre to centre.

Edges of Garboards and to upper part of Bilge, worked clencher, double riveted; with rivets 3/4 in. diameter, averaging 3 1/4 ins. from centre to centre.

Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 3/4 in. diameter averaging 3 3/8 ins. from centre to centre.

Butts of Three Strakes at Bilge for half length, treble 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 3/4 in. diameter, averaging 3 1/4 ins. from cr. to cr.

Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 3/4 in. diameter, averaging 3 1/4 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 5 1/4 x 9 1/4 Breadth of laps of plating in single riveting

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double & Treble.

Waterway, how secured to Beams (Explain by Sketch, if necessary.)

Beams of the various Decks, how secured to the sides? End turned & pieces welded to bulkhead No. of Breasthooks, 2 Crutches, 2

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

Manufacturer's name or trade mark, Stone, Hopson & Co. Newcastle.

The above is a correct description.

Builder's Signature, E. Withy & Co. Surveyor's Signature, S. P. Gladstone

IRON 474-0565

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? *Solid pieces*

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? *They are*

Do any rivets break into or through the seams or butts of the plating? *A few in butts.*

Masts, Bowsprit, Yards, &c., are *10 Pine* 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 *Main Mast 70 ft. 3 Dia 10 inches Fore Mast 73 ft. 6 in Dia 10 in*

NUMBER for EQUIPMENT		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	W'ght req'd per Rule.	Test req'd per Rule.
One Set of good Sails	SAILS.	240		40 5/10	240 5/16	40 5/10	Bowers	3	21-1-14	21-10-0-14	21-0-0	21-12-0-0
	Fore Sails,	240		40 5/10	240 5/16	40 5/10			21-1-21	21-10-0-7	21-0-0	21-12-0-0
	Fore Top Sails,	240		40 5/10	240 5/16	40 5/10			10-2-14	10-10-3-21	17-3-11	10-10-0-0
	Fore Topmast Stay Sails	60		15 1/16								
	Main Sails,	80		7								
	Main Top Sails,	80		7								
CABLES, &c.		240		40 5/10	240 5/16	40 5/10	Stream	1	9-0-14		9-0-0	
Chain		240		40 5/10	240 5/16	40 5/10	Kedges	2	4-2-21		4-2-0	
Hawser		80		7								
Towlines		80		7								
Warp		80		7								
quality		80		7								

Standing and Running Rigging *Wire & Hemp* sufficient in size and *Good* in quality. She has *Run* Long Boat and *Good*

The Windlass is *Good* Capstan *Good* and Rudder *Good* Pumps *Four of inch Metal*

Engine Room Skylights.—How constructed? *3 in Pine 5/16 plate below* How secured in ordinary weather? *Bulls eyes*

What arrangements for deadlights in bad weather? *Bulls eyes*

Coal Bunker Openings.—How constructed? *Iron bonings* How are lids secured? *Boards* Height above deck? *13 inches*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *Ports & Scuppers.*

Cargo Hatchways.—How formed? *7/16 Plate*

State size Main Hatch *21 ft. 2 x 11 ft. bonings 34 in* Fore hatch *7 ft. 7 in x 7 ft. 9 in bonings 34* Quarter hatch *19 ft. 4 x 11 ft. bonings 24 in*

If of extraordinary size, state how framed and secured?

What arrangement for shifting beams? *Two web beams in main hatch & one in after do. the whole depth bonings*

Hatches, If strong and efficient? *Strong & efficient*

Order for Special Survey No. <i>30</i>	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	<i>Special Survey Date of Survey 1877</i> <i>May 16. June 7-15-25-29. July 23-27-31.</i> <i>Aug. 7-21-22-27-31-Sept. 6-11-10-24-26-28.</i> <i>October 3-18. Nov. 4-13-15-20-22.</i>
✓ Date <i>2 March 1877</i>		2nd. On the plating during the process of riveting	
Order for Ordinary Survey No.		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. <i>69</i> in builder's yard.		5th. After the ship was launched and equipped	

General Remarks (State quality of workmanship, &c.) *Workmanship & materials good*

Is fitted with long Raised Quarter Deck frames all to the top height—beams of 7 x 7/16 built Double angles on top edges 3 x 3 x 6/16. Stringer plates on ends 48 x 9/16. Angles on do. 5 x 3 1/2 x 7/16. Tie plates 22 x 11 x 9/16. Plating outside 8/16—7/16. Deck 3/2 Pine.

Forecastle frames all to the top height—beams 6 1/2 x 6/16 built. Double angles on top edges 2 1/2 x 2 1/2 x 5/16. Stringer plates on ends 19 1/2 x 6/16. Angles on do. 3 1/2 x 3 x 6/16. Tie plates 8 1/2 x 7/16. Plating outside 6/16. Deck 3 in Pine. Deck house fitted at after end 19 ft in length 13 ft breadth framed with 4 x 3 x 6/16 angles, beams the same size, spaced 32 inches, plated outside with 5/16 plate.

Water ballast tank fitted in fore & after hold frames cut connection made with 1/2 inch plates side plates 7/16. Angles on do. 3 1/2 x 3 1/2 x 7/16. Web plates 6/16. Angles on do. 3 x 2 1/2 x 6/16. Top plating 6/16, tested by a head of water to the height of load line.

Additional strengthening at break of Raised Deck main deck stringer plates of end 8 frame spaces sharp break Raised do. 4 spaces before. Hold beam stringers overlap about 16 ft. Sheerstrakes doubled for 20 feet.

State if one, two, or three, decked vessel, or if span, or awning decked, and the lengths of poop, fore-castle, or-raised quarter deck, and the length of double, or part double bottom.

How are the surfaces preserved from oxidation? Inside *Tested & cemented with Portland Cement* Outside *Other parts with Paint*

I am of opinion this Vessel should be Classed *90 A1*

The amount of the Entry Fee ... £ 5 : 0 : 0 is received by me, *Spoc*

Dec 1877 Special ... £ 52 : 13 : 0 *7 Dec 1877*

Certificate ...

(Travelling Expenses, if any, £ ...).

Committee's Minute *11th December, 1877.*

Character assigned *90 A1*

Lloyd's M.C. 11.77 B.W. double bottom 153 ft double bottom 153 ft

This vessel appears eligible to be classed as recommended by Lloyd's Register Foundation