

IRON SHIP.

No. 224 Survey held at Refast Date, First Survey 31st March Last Survey 28 October 1890
 On the Non Sailing Ship "Tiji" Master Refast
 Tonnage under Tonnage Deck 1329.66 ONE, OR TWO DECKED, THREE DECKED VESSEL.
 SPAR, OR AWNING-DECKED VESSEL.
 HALF BREADTH (moulded) 18.00
 DEPTH from upper part of Keel to top of Upper Deck Beams 25.20
 GIRTH of Half Midship Frame (as per Rule) 34.50
 1st NUMBER 80.40
 1st NUMBER, if a THREE DECKED VESSEL [deduct 7 feet]
 LENGTH 220.00
 2nd NUMBER 144.54
 PROPORTIONS—Breadths to Length 6.11
 Depths to Length—Upper Deck to Keel 8.48
 Main Deck ditto 8.48
 Built at Refast
 When built 1845 Launched 29th Dec
 By whom built Thailand & Co
 Owners W. P. Myers & Co
 Port belonging to Liverpool
 Destined Voyage Refast
 Surveyed while Building, Afloat, On in Dry Dock.

Official Number 13
 Register Tonnage 1440.61
 Less Cargo Space 1440.61
 Less Engine Room 1440.61
 as cut on Beam 1440.61

LENGTH	Feet.	Inches.	BREADTH—	Feet.	Inches.	DEPTH top of Floors to Upper	Feet.	Inches.	Power of	Horse	Nº. of Decks with flat laid	Nº. of Tiers of Beams
on deck as			Moulded...			Deck Beams			Engines...			
per Rule...	220	0	36	0	25	2 1/2						

Dimensions of Ship per Register, length, 224.5 breadth, 36.6 depth, 22.05

	Inches in Ship.	Inches per Rule.		Inches in Ship.	Inches per Rule.
KEEL, depth and thickness	9 x 2 1/2	8 1/2 x 2 1/2	FLAT KEEL PLATES, breadth and thickness	36 x 11	36 x 11
STEM, moulding and thickness	8 1/2 x 2 1/2	8 1/2 x 2 1/2	PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges	11 1/2 x 10	11 1/2 x 10
STERN POST for Rudder do. do.	8 1/2 x 2 1/2	8 1/2 x 2 1/2	of doubling at Bilge, or increased thickness, and length applied	11 1/2 x 10	11 1/2 x 10
for Propeller	24	24	fm up. part of Bilge to Ir. edge of Sh'rstrake	10	10
Distance of Frames from moulding edge to moulding edge, all fore and aft	24	24	Main Sheerstrake, breadth and thickness	41 x 12	40 x 12
			of doubling at Sh'rstrake, & length applied from M. to Up. or Spar Dk. Sh'rstrake.	11 1/2 x 10	11 1/2 x 10
WES. Angle Iron, for 1/2 length amidships	5 x 3 1/2 x 8	5 x 3 1/2 x 8	Up. or Spar Dk Sh'rstrake, brdth & thickness	41 x 12	40 x 12
do. for 1/2 at each end	5 x 3 1/2 x 8	5 x 3 1/2 x 8	Butt Straps to outside plating, breadth & thickness	11 1/2 x 10	11 1/2 x 10
REVERSED FRAMES, Angle Iron	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8	Lengths of Plating	12 feet	10 feet
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	24 1/2 x 10	24 1/2 x 10	Shifts of Plating, and Stringers	4 feet	4 feet
thickness at the ends of vessel	9 x 8	9 x 8	Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	48 x 10	44 x 10
depth at 1/2 the half-bdth. as per Rule	13 x 10	12 1/4 x 10	Angle Iron on ditto	5 x 4 x 9	5 x 4 x 9
height extended at the Bilges	5 1/2 x 10	4 1/2 x 10	Tie Plates fore and aft, outside Hatchways	13 x 10	13 x 10
BEAMS, Upper, Spar, or Awning Deck Single or double Ang. Iron, Plate or Tee Bulb Iron	8 1/2 x 8	8 1/2 x 8	Diagonal Tie Plates on Beams No. of Pairs	21	21
Single or double Angle Iron on Upper edge	5 x 3 1/2 x 8	5 x 3 1/2 x 8	Planksheer material and scantling	3/4	3/4
Average space	48	48	Waterways do. do.	3/4	3/4
BEAMS, Main, or Middle Deck Single or double Ang. Iron, Plate or Tee Bulb Iron	8 1/2 x 8	8 1/2 x 8	Flat of Upper Deck do. do.	3/4	3/4
Single or double Angle Iron on Upper edge	5 x 3 1/2 x 8	5 x 3 1/2 x 8	How fastened to Beams	3/4	3/4
Average space	48	48	Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	13 x 9	12 x 9
BEAMS, Lower Deck, Hold, or Orlop Single or double Ang. Iron, Plate or Tee Bulb Iron	8 1/2 x 8	8 1/2 x 8	Is the Stringer Plate attached to the outside plating?	Yes	
Single or double Angle Iron on Upper edge	5 x 3 1/2 x 8	5 x 3 1/2 x 8	Angle Irons on ditto, No.	4 x 4 x 9	4 x 4 x 9
Average space	48	48	Tie Plates, outside Hatchways	5 x 3 1/2 x 8	5 x 3 1/2 x 8
BEAMS Centre line, single or double plate, box, or Intercoastal Plates	14 x 12	14 x 12	Diagonal Tie Plates on Beams, No. of pairs	21	21
Rider Plate	11 x 12	11 x 12	Waterways materials and scantlings	3/4	3/4
Bulb Plate to Intercoastal Keelson	5 x 4 x 9	5 x 4 x 9	Flat of Middle Deck do. do.	3/4	3/4
Angle Irons	5 x 4 x 9	5 x 4 x 9	How fastened to Beams	3/4	3/4
Double Angle Iron Side Keelson	5 x 4 x 9	5 x 4 x 9	Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	13 x 9	12 x 9
Side Intercoastal Plate	5 x 4 x 9	5 x 4 x 9	Is the Stringer Plate attached to the outside plating?	Yes	
do. Angle Irons	5 x 4 x 9	5 x 4 x 9	Angle Irons on ditto, No.	4 x 4 x 9	4 x 4 x 9
Attached to outside plating with angle iron	3 1/2 x 3 1/2 x 8	3 1/2 x 3 1/2 x 8	Stringer or Tie Plates, outside Hatchways	5 x 3 1/2 x 8	5 x 3 1/2 x 8
Angle Irons	5 x 4 x 9	5 x 4 x 9	Flat of Lower Deck (Diagonal 2 plates)	3 1/2	3 1/2
do. Bulb Iron	5 x 4 x 9	5 x 4 x 9	Ceiling betwixt Decks, thickness and material	2 1/2	2 1/2
do. Intercoastal plates riveted to plating for length	5 x 4 x 9	5 x 4 x 9	in hold do. do.	2 1/2	2 1/2
SIDE STRINGER Angle Irons	5 x 4 x 9	5 x 4 x 9	Main piece of Rudder, diameter at head	3 1/4	3
Intercoastal plates riveted to plating for length	5 x 4 x 9	5 x 4 x 9	do. at heel	3 1/4	3
SIDE STRINGER Angle Irons	5 x 4 x 9	5 x 4 x 9	Can the Rudder be unshipped afloat?	Yes	
Frames, material. Knight-heads. Hawse Timbers.	Iron	Iron	Bulkheads No. 2 Thickness of	3/4	
English Oak Pall Bitt	Iron	Iron	Height up to top of deck, & to top of prop-deck frame	486	
	Iron	Iron	How secured to sides of ship	Between double frames	
	Iron	Iron	Size of Vertical Angle Irons	3 1/2 x 3 1/2 x 16	
	Iron	Iron	Are the outside Plates doubled two spaces of Frames in length?	Yes	

FRAMES extend in one length from Centre line to Up deck & Rail out Riveted through plates with 7/8 in. Rivets, about 6 apart.
 REVERSED ANGLE IRONS on floors and frames extend from below middle line to Up deck stringer on and to every frame alternately
 JOINTS. Are the various lengths of Plates and Angle Irons properly connected? Yes And butts properly shifted? Yes
 KEEL. Garboard, double riveted to Keel, with rivets 1 1/8 in. diameter, averaging 5 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 5 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 5 1/2 ins. from centre to centre.
 Butts of 3 Strakes at Bilge for 10 length, treble riveted with Butt Straps 1/6 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 5 1/2 ins. from cr. to cr.
 Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 5 1/2 ins. from cr. to cr.
 Edges of Main Sheerstrake, double or single riveted. Upper Sheerstrake, double or single riveted. On Corn edge
 Butts of Main Sheerstrake, treble riveted for 1/2 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 10 length.
 Breadth of laps of plating in double riveting 5 1/2 Breadth of laps of plating in single riveting 5
 Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted &
 Waterway, how secured to Beams Waterway (Explain by Sketch, if necessary.)
 Beams of the various Decks, how secured to the sides? Beams turned down and riveted No. of Breasthooks, 10 Crutches, 10
 What description of Iron is used, for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Beams & Angles, Hopkins & Co
 Manufacturer's name or trade mark, Hopkins & Co. "Churn"
 The above is a correct description.
 Builder's Signature, Ballance & Co Surveyor's Signature, James M. Hall Lloyd's Register
 Surveyor to Lloyd's Register of British and Foreign Shipping.

IRON 463-0660

Workmanship. Are the butts of plating planed or otherwise fitted? *Hammed* 15362 Iron
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 do*
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? *No*

Masts, Bowsprit, Yards, &c., are *All* 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, & giving 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 *1st M. Lower Mast in one 125' 2 1/2" or here 10 1/2" as deck 15' at top of topmast. Plates 7/16 to 1/4 Angles 3/4 x 3/4 to 1/2 x 1/2. Nipen Lower Mast in one 108' 1/2" or here 24 1/2" as deck 15' at top. 3/4 to 1/2 x 1/2. Bowsprit 23' at head, 27 1/2' at end. 3/4 to 1/2 x 1/2. 2nd M. Upper Mast 82' 19 1/2" 3/4 to 1/2 x 1/2. Cross Piece 61' 3" x 1 1/4 to 3/4 x 1/4. 3rd M. Lower Mast 70' 6" x 16 1/2" 3/4 to 1/2 x 1/2. Nipen 2nd Mast 56' 9" x 13 1/2" 3/4 to 1/2 x 1/2. 4th M. Lower Mast 66' 15 1/4" 3/4 to 1/2 x 1/2. Nipen 3rd Mast 57' 6" x 12 1/2" 3/4 to 1/2 x 1/2. Constructed of 3 plates and 3 angles, lances single riveted. Ribs, quadruple, tube and double riveted. Ribs straps in pairs of 4 or 6 at top. 40' fitted on inside of 40' at top.*

NUMBER for EQUIPMENT		18.934	Fathoms.	Inches.	Test per Certificate.	Length & Size req'd per Rule.	Test req'd per Rule.	ANCHORS.	N ^o .	Weight.	Test per Certificate.	Weight per lb. av.	Gale.	
N ^o .	SAILS.	CABLES, &c.	Chain	135-	178	88 3/10	2 1/2	89 1/8	Bowers	1	34.3.0	32.3.0	32.0.0	30 3/20
	Fore Sails,			135 1/2	178	88 3/10	1 1/16	82 3/4		1	34.1.3	31 7/20	32.0.0	30 3/20
	Fore Top Sails,									1	30.1.1	26.6.1.0	24.3.0	26 1/20
	Fore Topmast Stay Sails	Storm Obl		90	116	90 7/16								
	Main Sails,	Hawser ...							Stream	1	13.2.25	13.8.3.0	13.0.0	
	Main Top Sails,	Towlines ...				90 7/16	9 1/2			1	6.3.18	8.0.0.0	6.2.0	
and		Warp ...				90 7/16	6		Kedges	3	3.0.25	4.9.20	3.1.0	
		quality												

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Standing and Running Rigging sufficient in size and in quality. She has *Long* Boat and *no* other

The Windlass is *Good and efficient* Capstans *Good* and Rudder *Good* Pumps *Good and efficient*

Engine Room Skylights. How constructed? *—* How secured in ordinary weather? *—*

What arrangements for deadlights in bad weather? *—*

Coal Bunker Openings. How constructed? *—* How are lids secured? *—* Height above deck? *—*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *The scuppers and few large ports, through the bulkheads on each side*

Cargo Hatchways. How formed? *Box Coomings &c*

State size Main Hatch *11' x 11'* Forehatch *4' 6" x 6'* Quarterhatch *4' 6" x 4'*

If of extraordinary size, state how framed and secured? *—*

What arrangement for shifting beams? *The strong potare iron beam*

Hatches, If strong and efficient? *Yes*

Order for Special Survey No. <i>174</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>March 31. April 5, 14, 19, 22, 25. May 4, 14, 19, 20, 21, 28</i>
Date <i>31 March 1875</i>		2nd. On the plating during the process of riveting.	<i>June 4, 9, 15, 23, 30. July 5, 8, 12, 14, 19, 24, 25, 30</i>
Order for Ordinary Survey No. <i>95</i>		3rd. When the beams were in and fastened, and before the decks were laid.	<i>August 2, 3, 11, 14, 15, 23, 30. September 1, 6, 9, 13, 14, 20, 24, 29, 30. October 4, 6, 9, 11, 15, 19, 22, 23, 24, 29, 30</i>
Date <i>—</i>		4th. When the ship was complete, and before the plating was finally coated or cemented.	
No. <i>95</i> in builder's yard.		5th. After the ship was launched and equipped.	

General Remarks (State quality of workmanship, &c.)

This two decked vessel, with Raised Quarter Deck from Stern to after Bulkhead (which is situated 12 feet before the stern) and Cabin up to top of deck house) and deck house with side poortholes extending 40 feet in front of said Bulkhead, also Forecastle 31' 6" in length has been built in accordance with the approved accompanying sketch of the midship section, and in other respects with the Rules for the 100 A. Class.

She is efficiently protected from oxidation by Cement and paint, the Cement of bottom being Cabin up to the top of close ceiling, and the materials of which she is constructed, with the workmanship throughout are of a superior description.

Boatkey boiler and steam winch fitted on board to work Cargo L. but not connected to pump or windlass.

State if one, two, or three, decked vessel, or if spar, or awning decked; and the lengths of poop, forecastle, or raised quarter 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.*

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

N. W. M. C. Special ... £ 61 : 15 : 0 *5th Nov. 1875*
Certificate ... *gratis*

Committee's Minute *5th November 1875*

Character assigned *100 A.*

with 2000 for equipment J. H. & C. P.

