

IRON SHIP.

No. 394 Survey held at Dumbarton Date, First Survey 1 September 74 Last Survey 23 March 1875

On the Part Arming decked S^r S^r "HAYEA" (SCHOONER) Master Wheeler

TONNAGE under } 537.95 ONE, OR TWO DECKED, THREE DECKED, OR AWNING-DECKED VESSEL.
 Ditto of Third, Spar, or Awning Deck. }
 Ditto of Poop, or Rudder Dk. } 146.17
 Ditto of Houses } 7.62
 Ditto of Forecastle } 28.84
 Gross Tonnage } 720.58
 Less Crew Space 28.49
 Less Engine Room 230.59 259.08
 Register Tonnage } 461.50
 as out on Beam }

HALF BREADTH (moulded) 13.5
 DEPTH from upper part of Keel to top of Upper Deck Beams 18.3
 GIRTH of Half Midship Frame (as per Rule) 25.41
 1st NUMBER 54.21
 2nd NUMBER 115.87
 LENGTH 213.75
 PROPORTIONS—Breadths to Length 7.91
 Depths to Length—Upper Deck to Keel 13.96
 Main Deck ditto 13.96

Built at Dumbarton
 When built 1873 Launched 17th March 1874
 By whom built W. Denny & Bros
 Owners James Mills, Harbour Steam Ship Co.
 Port belonging to Glasgow, ultimately Dundee
 Destined Voyage Dundee
 If Surveyed while Building, Afloat, or in Dry Dock. While Building under special survey.

LENGTH on deck as per Rule 213.75 BREADTH Moulded 27 DEPTH top of Floors to Upper Deck Beams 13.9 Power of Engines 160 No. of Decks with flat laid 2 with breaks No. of Tiers of Beams 2 with breaks

Dimensions of Ship per Register, length, 215.7 breadth, 27.35 depth, 14.1

	Inches in Ship.	Inches per Rule.
KEEL, depth and thickness	$1\frac{1}{2} \times 2\frac{1}{4}$	$1\frac{1}{2} \times 2\frac{1}{4}$
STEM, moulding and thickness	$1\frac{1}{2} \times 2\frac{1}{4}$	$1\frac{1}{2} \times 2\frac{1}{4}$
STERN-POST for Rudder do. do.	$1\frac{1}{2} \times 5$	$1\frac{1}{2} \times 5$
for Propeller	$1\frac{1}{2} \times 5$	$1\frac{1}{2} \times 5$
Distance of Frames from moulding edge to moulding edge, all fore and aft	<u>22</u>	(Class <u>MA</u>)
FRAMES, Angle Iron, for $\frac{3}{4}$ length amidships	$3\frac{1}{2} \times 3$	$3\frac{1}{2} \times 3$
Do. for $\frac{1}{2}$ at each end	$3\frac{1}{2} \times 3$	$3\frac{1}{2} \times 3$
REVERSED FRAMES, Angle Iron	$2\frac{1}{2} \times 2\frac{1}{2}$	$2\frac{1}{2} \times 2\frac{1}{2}$
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	$1\frac{1}{2} \times 5$	$1\frac{1}{2} \times 5$
thickness at the ends of vessel	$1\frac{1}{2} \times 5$	$1\frac{1}{2} \times 5$
depth at $\frac{3}{4}$ the half-bdth. as per Rule	$1\frac{1}{2} \times 5$	$1\frac{1}{2} \times 5$
height extended at the Bilges	$3\frac{1}{2} \times 3$	$3\frac{1}{2} \times 3$
BEAMS, <u>Upper</u> , <u>Spar</u> , or <u>Awning Deck</u>	5×3	$4\frac{1}{2} \times 3$
Single or double Angle Iron, <u>Upper</u> or <u>Lower</u> Edge	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
Average space	<u>44</u>	<u>44</u>
BEAMS, Main, or <u>Upper</u> Deck	$6\frac{1}{2} \times 6$	$6\frac{1}{2} \times 6$
Single or double Angle Iron, <u>Upper</u> or <u>Lower</u> Edge	$2\frac{1}{2} \times 2\frac{1}{2}$	$2\frac{1}{2} \times 2\frac{1}{2}$
Average space	<u>44</u>	<u>44</u>
KEELSONS, Centre line, single or double plate, <u>Upper</u> or <u>Lower</u> Edge	$12\frac{1}{2} \times 10$	$12\frac{1}{2} \times 10$
" Rider Plate	$9\frac{1}{2} \times 8$	$9\frac{1}{2} \times 8$
" Angle Irons	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
" Double Angle Iron Side Keelson	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
" Side Intercoastal Plate	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
" do. Angle Irons	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
" Attached to outside plating with angle iron	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
BILGE Angle Irons	$6\frac{1}{2} \times 6$	$6\frac{1}{2} \times 6$
" do. Bulb Iron	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
" do. Intercoastal plates riveted to plating for length	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
BILGE STRINGER Angle Irons	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
Intercoastal plates riveted to plating for length	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$
SIDE STRINGER Angle Irons	$4\frac{1}{2} \times 3$	$4\frac{1}{2} \times 3$

	Inches in Ship.	16ths in Ship.	Inches required	16ths required
PLATES in Garboard Strakes, breadth and thickness	<u>30</u>	<u>9</u>	<u>30</u>	<u>9</u>
ness from Garboard to upper part of Bilges	<u>30</u>	<u>9</u>	<u>30</u>	<u>9</u>
at doubling at Bilge, or increased thickness, and length applied	<u>30</u>	<u>9</u>	<u>30</u>	<u>9</u>
fin up. part of Bilge to l. edge of Sheerstrake	<u>30</u>	<u>9</u>	<u>30</u>	<u>9</u>
Main Sheerstrake, breadth and thickness	<u>30</u>	<u>12</u>	<u>30</u>	<u>12</u>
at doubling at Sheerstrake, & length applied	<u>30</u>	<u>12</u>	<u>30</u>	<u>12</u>
from l. edge to Upr. or Spar Bk. Sheerstrake	<u>30</u>	<u>12</u>	<u>30</u>	<u>12</u>
Upr. or Spar Bk. Sheerstrake, breadth & thickness	<u>16\frac{1}{2}</u>	<u>9\frac{1}{2}</u>	<u>16\frac{1}{2}</u>	<u>9\frac{1}{2}</u>
Butt Straps to outside plating, breadth & thickness	<u>16\frac{1}{2}</u>	<u>9\frac{1}{2}</u>	<u>16\frac{1}{2}</u>	<u>9\frac{1}{2}</u>
Lengths of Plating	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>
Shifts of Plating, and Stringers	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	<u>23</u>	<u>6</u>	<u>23</u>	<u>6</u>
Angle Iron on ditto	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Tie Plates fore and aft, outside Hatchways	<u>4\frac{1}{2}</u>	<u>6</u>	<u>4\frac{1}{2}</u>	<u>6</u>
Diagonal Tie Plates on Beams No. of Ribs	<u>12</u>	<u>3\frac{3}{4}</u>	<u>12</u>	<u>3\frac{3}{4}</u>
Planksheer material and scantling	<u>12</u>	<u>3\frac{3}{4}</u>	<u>12</u>	<u>3\frac{3}{4}</u>
Waterways do. do.	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>
Flat of Upper Deck do. do.	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>
How fastened to Beams	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>	<u>2\frac{3}{4}</u>
Stringer Plate on ends of Main or Middle Deck	<u>42\frac{3}{4}</u>	<u>10</u>	<u>42\frac{3}{4}</u>	<u>10</u>
Beams, breadth and thickness	<u>42\frac{3}{4}</u>	<u>10</u>	<u>42\frac{3}{4}</u>	<u>10</u>
Is the Stringer Plate attached to the outside plating?	<u>Yes</u>			
Angle Irons on ditto, No. 2	<u>4\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>4\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Tie Plates, outside Hatchways	<u>10</u>	<u>8</u>	<u>10</u>	<u>8</u>
Diagonal Tie Plates on Beams, No. of pairs	<u>10</u>	<u>8</u>	<u>10</u>	<u>8</u>
Waterways materials and scantlings	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Flat of Lower Deck do. do.	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
How fastened to Beams	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Stringer Plates on ends of Lower Deck, Hold on	<u>26\frac{1}{2}</u>	<u>7</u>	<u>26\frac{1}{2}</u>	<u>7</u>
Is the Stringer Plate attached to the outside plating?	<u>Yes</u>			
Angle Irons on ditto, No. 3	<u>4\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>4\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Stringers or Tie Plates, outside Hatchways	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Flat of Lower Deck	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Ceiling betwixt Decks, thickness and material	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>
in hold do. do.	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>	<u>2\frac{1}{2}</u>
Main piece of Rudder, diameter at head	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
do. at heel	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Can the Rudder be unshipped afloat?	<u>Yes</u>			
Bulkheads No. 4 Thickness of	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>	<u>3\frac{1}{2}</u>
Height up	<u>Main deck</u>			
How secured to sides of ship	<u>Double frames except for outside</u>			
Size of Vertical Angle Irons	<u>2\frac{1}{2} \times 2\frac{1}{2}</u>			
and distance apart	<u>30</u>			
Are the outside Plates doubled two spaces of Frames in length?	<u>Yes</u>			

Transoms, material. Knight-heads. Hawse Timbers. Iron
 Windlass Iron Patent Fall Bitt Iron

The FRAMES extend in one length from Keel to Main deck above Riveted through plates with 3/4 in. Rivets, about 5 apart.

The REVERSED ANGLE IRONS on floors and frames extend from middle line to upper turn of bilge and to Main Deck 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\frac{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\frac{1}{4} ins. from centre to centre.

Butts of two Strakes at Bilge for half length, treble riveted with Butt Straps to 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\frac{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\frac{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 for 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 4\frac{1}{2} 3\frac{1}{4} Breadth of laps of plating in single riveting

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? double and part treble riveted

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

Beams of the various Decks, how secured to the sides? Forged bracket knees No. of Breasthooks, three Crutches, two

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

Manufacturer's name or trade mark, Coats, Palmer & Co

The above is a correct description

Builder's Signature, W. Denny & Bros
C. & Johnson

Surveyor's Signature, W. Denny & Bros

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? Single 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? Yes
Do any rivets break into or through the seams or butts of the plating? A few at corners of butts

Masts, Bowsprit, Yards, &c., are 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 14157 Lm

NUMBER for EQUIPMENT 12745

N ^o .	SAILS.	CABLES, &c.	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.	Wght req'd per Rule.	Test req'd per Rule.
		Chain	210	1 5/16	3 1/2	210 1 5/16	31	Bowers					
	Fore Sails,									15.1.17	16 15/20	15 1/4	16 20
	Fore Top Sails,									15.0.0	16 10/20	"	"
	Fore Topmast Stay Sails									13.0.24	14 19/20	13 1/2	14 13/20
	Main Sails,	Storm Cbl	90	1 1/16	2 1/2	90 1 1/16	10	Stream		6.2.21	—	6 1/2	—
	Main Top Sails,	Hawser ...	90	8	—	—	—	Kedges		3.0.14	—	3 1/2	—
		Towlines ...	80	8	—	—	—			1.3.2	—	—	—
		Warp ...	80	6	—	—	—						
		quality <u>good</u>	90	5	—	—	—						

Standing and Running Rigging Woolen sufficient in size and good in quality. She has 2 Life Long Boat and 2 others.

The Windlass is Napiers Patent Capstan Iron and Rudder good Pumps Three Iron with

Engine Room Skylights. How constructed? Iron casing but not How secured in ordinary weather? Blocked down

What arrangements for deadlights in bad weather? Thick glass - Brass gratings

Coal Bunker Openings. How constructed? Casement frames How are lids secured? Locking lids Height above deck? Flush

Scuppers, &c. What arrangements for clearing upper deck of water, in case of shipping a sea? Three large square ports on each side

Cargo Hatchways. How formed? Iron Casings

State size Main Hatch 11 x 8 Forehatch 11 x 9 Quarterhatch —

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

What arrangement for shifting beams? Shifting beam of wood

Hatches, If strong and efficient? yes

Order for Special Survey No. 996

Date July 13/74

Order for Ordinary Survey No. —

Date —

No. 100 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 } 1874. September 7. 7. 9. 14. 22. 25. 29 October
- 2nd. On the plating during the process of riveting } 2. 6. 7. 9. 12. 15. 19. 22. 26. 29. November 2. 5. 9. 12. 16.
- 3rd. When the beams were in and fastened, and before the decks were laid... } 19. 23. 30 December 3. 7. 14. 17. 21. 30. 1875 January
- 4th. When the ship was complete, and before the plating was finally coated or cemented.. } 11. 18. 21. 25. 28. Febry. 1. 4. 8. 11. 15. 18. 24. 26.
- 5th. After the ship was launched and equipped } March 1. 4. 11. 15. 18 and 22.

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

Spirtketting plate 9 x 12/16 with angle iron on upper edge
filled in way of openings between prop and Bridge also Bridge and Forecastle
Bridge being open at sides the engine and boiler openings closed in and
carried up to Bridge deck.

Is filled with deck houses 30 feet long x 10 feet wide

Is well built and constructed in accordance with approved midship
section. Herewith

State if one, two, or three, decked vessel, or if spar, or awning decked; and the lengths of poop, forecabin, or raised quarter deck, and the length of double, or part double bottom.

How are the surfaces preserved from oxidation? Inside Cement in bottom paint above Outside Paint

I am of opinion this Vessel should be Classed 100 A. S.

The amount of the Entry Fee ... £ 5 : 4 : 0 is received by me, 22th

Special ... £ 34 : 12 : 0 March 1875

Certificate ... Grants

(Travelling Expenses, if any, £ 6. 6/2).

Committee's Minute 30th March 1875

Character assigned 100 A

not approved Mr. J. B. M.

This vessel appears eligible to be Classed as recommended by 100 A. S.
March 30th 1875
One dicto

Lloyd's Register Foundation