

5231-22 IRON SHIPS.

Per 24/12/86

Survey held at Newcastle Date 15th August to the 19th Decr 1886
S. S. "Hornelen" Master R. J. Kramer
 under tonnage deck 198.24 Built at Newcastle When built 1866 Launched 21st Novr 1866
 engine room 63.44 By whom C. Mitchell & Co Owners Nordre Bergenhus Amt's Hemmune
 register tonnage 134.80 Port belonging to Bergen Destined Voyage Bergen
 tonnage 198.24

Keel White building
 Building, Afloat, or in Dry Dock

Loft 132.8 Extreme Breadth 21.1 Depth from top of Upper Deck Beam to top of Floor 11.7 Power of Engines 45 No. of Decks one laid and one post laid

Dimensions of Ship per Register, length 132.8 breadth 21.1 depth 11.5

	Inches in Ship.	Inches required per Rule. for 100 tons Scale.
of bar iron, depth and thickness	<u>6 1/4 x 2 1/8</u>	<u>6 x 1 1/2</u>
if plate iron, breadth and thickness	<u>6 1/4 x 2 1/8</u>	<u>6 x 1 1/2</u>
if bar iron, moulding and thickness	<u>6 1/4 x 2 1/8</u>	<u>6 x 3</u>
if plate iron, breadth and thickness	<u>6 1/2 x 4 1/8</u>	<u>6 x 3</u>
post, if bar iron, moulding and thickness		
if plate iron, breadth and thickness		
Distance of Frames from moulding edge to moulding edge, all fore and aft	<u>18</u>	<u>21</u>

	Inches. In Ship.	Inches. In Ship.	16ths. In Ship.	Inches. required per Rule.	Inches. required per Rule.	16ths. required per Rule.
Keelsons, Size of Angle Iron, single or double	<u>3</u>	<u>2 1/2</u>	<u>4/16</u>	<u>2 1/2</u>	<u>2 1/2</u>	<u>4/16</u>
Reversed Iron, if to every frame or every frame	<u>2 1/4</u>	<u>2 1/4</u>	<u>5/16</u>	<u>2 1/4</u>	<u>2 1/4</u>	<u>5/16</u>
Keelsons, depth and thickness of Floor Plate at mid line	<u>-</u>	<u>13 1/2</u>	<u>4/16</u>	<u>-</u>	<u>13 1/2</u>	<u>5/16</u>
Ditto ditto at Bilge Keelson	<u>-</u>	<u>3</u>	<u>4/16</u>	<u>-</u>	<u>-</u>	<u>-</u>
Size of Reversed Angle Iron, and No. 1 & 2 at top of Floor Plate	<u>2 1/4</u>	<u>2 1/4</u>	<u>5/16</u>	<u>2 1/4</u>	<u>2 1/4</u>	<u>5/16</u>
Keelsons, Deck (No. 35) double Angle Iron, Plate, Tee, or Bulb Iron	<u>6</u>	<u>3</u>	<u>4/16</u>	<u>6</u>	<u>3</u>	<u>4/16</u>
double or single Angle Iron, on top edge	<u>2 1/2</u>	<u>2 1/2</u>	<u>5/16</u>	<u>2 1/2</u>	<u>2 1/2</u>	<u>5/16</u>
average space between	<u>3</u>	<u>feet</u>				
Hold, or Lower Deck (No. 34) double Angle, Tee, Plate, or Bulb Iron	<u>4</u>	<u>3</u>	<u>7/16</u>	<u>4</u>	<u>3</u>	<u>7/16</u>
double or single Angle Iron on edge						
average space between	<u>3</u>	<u>feet</u>				
Paddle, sided and moulded, thickness of Plate size of Angle Iron						
Keelson, single or double plate, box, or intercostal	<u>8</u>	<u>7/16</u>		<u>9</u>	<u>8/16</u>	
Size of Plates	<u>3</u>	<u>2 1/2</u>	<u>4/16</u>	<u>3</u>	<u>3</u>	<u>4/16</u>
Size of Angle Irons	<u>3</u>	<u>2 1/2</u>	<u>4/16</u>	<u>3</u>	<u>3</u>	<u>4/16</u>
Side, single or double, plate, box, or intercostal						
Bilge (No. 1) at each Bilge, single, or double, plate, or box	<u>3</u>	<u>2 1/2</u>	<u>4/16</u>	<u>3</u>	<u>3</u>	<u>4/16</u>

Plates in Garboard Strakes, breadth and thickness 30 9/16 24 8/16
 Ditto from Garboard to upper part of Bilges 8/16 7/16
 " from upper part of Bilge to a perpendicular height from upper side of Keel of 3/4ths the entire depth of Hold 7/16 6/16
 " from 3/4ths depth of Hold to lower edge of Sheerstrake 7/16 6/16
 " Sheerstrake, breadth and thickness 30 9/16 24 9/16 7/16

Butt Straps to outside plating, breadth and thickness 8 to 8 1/2 9/16 to 7/16
 Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness 20 9/16 19 5/16
 Angle Iron on ditto 3 1/2 x 3 1/2 x 7/16 3 x 3 x 5/16
 Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways 8 7/16 8 5/16
 Diagonal Tie Plates on ditto 8 7/16 8 5/16
 Planksheer, materials and scantlings 8 x 5 Red Pine
 Waterway ditto ditto 8 x 5 Red Pine
 Flat of Upper Deck, thickness and material 1 1/2 3 2 1/2
 " how fastened to Beams nut & screw bolts

Ceiling betwixt Decks and in Hold, thickness and material 2" K. Pine Cutting in Hold
2" battens between decks
 Clamps or Spirketting ditto - -
 Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness 15 5/16 14 5/16
 Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams - -
 Stringers in Hold - - 2 1/2 Yellow Pine
 Flat of Lower Deck, thickness and material - - 4 3
 Main piece of Rudder, diameter at head - 2 1/2 - 2
 " " " at heel - 2 1/2 - 2

(Can the Rudder be unshipped afloat Yes)
 Bulkheads, No. 4 Thickness of 4/16
 " Height up three to upper deck, after one to hold beams, iron deck
 " how secured to the sides of the ship double frames
 " size of vertical angle irons 2 1/2 x 2 1/2 and their distance apart 30 ins
 rivetted through plates with 5/8 in. rivets, about 5 ins. apart

Frames extend in one length from Keel to gunwale
 reverse angle irons on the floors extend in one length across the middle line from to above to the lower deck stringer plate
 " " " on the frames " " from to and on alternate frames to upper deck.

Keelson, how are the various lengths of plates or angle irons connected? by butt straps
 Plates, Garboard, double or rivetted to keel, double or at upper edge, with rivets 3/4 to 5/8 ins. diameter, averaging 3 to 2 1/2 in. apart.
 Edges from Garboards to upper part of bilge, worked clencher, double or single rivetted; with rivets 5/8 in. diameter, averaging (2 1/4) ins. apart.

Butts from Keel to turn of bilge, worked carvel with butt straps 9/16 & 7/16 thick, double or single rivetted; with rivets 5/8 in. diameter, averaging (2 1/4) ins. apart.
 Do the butt straps lap over and rivet through the lands of the strake below? no
 Edges from bilge to sheerstrake, worked carvel with a lining piece () thick, or clencher, double or single rivetted; with rivets 5/8 in. diameter, averaging (2 1/4) in. apart.
 Do the butt straps lap over and rivet through the lands of the strake below? no

Edges of Sheerstrake, double or single rivetted? At upper edge single At lower edge double
 Butts from bilge to planksheers, worked carvel with butt straps 9/16 & 7/16 thick, double or single rivetted; with rivets 5/8 in. diameter, averaging (2 1/4) ins. apart. Breadth of laps in double rivetting (3 1/4) Breadth of laps in single rivetting (2 1/4)

Butt Straps of Keelsons, Stringer and Tie Plates, double or single rivetted? double rivetted
 Planksheer, how secured to the plating of the sides Explain by sketch
 Waterway " " planksheer and to the Beams if necessary. Bolted to stringer and side
 Deck Beams, how secured to the side? Single plate knees, rivetted to frames and beams.

Hold or Lower Deck ditto d: d: d:
 Paddle " " No. of breasthooks 3 crutches 3
 What description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.? Angle iron, Plate and Beams, marked, Northrop & Stockton N. S. C.

We certify that the above is a correct description of the several particulars therein given.
 Builder's Signature C. Mitchell & Co Surveyor's Signature A. Harding

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Workmanship. Are the lands or laps of the clenwork in all cases in breadth at least five and a half times the diameter of the rivet rivetted edges and butts, and at least three and a quarter times the diameter of the rivets where single rivetting is admitted? Yes
 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
 Do the fillings between the ribs and plates fill in solid with single pieces? or are they in short lengths of various thicknesses? long lengths
 Do the holes for rivetting plate to frames, butt straps, or plate to plate, &c., conform well to each other? generally so and are the rivet holes well and sufficiently countersunk in the outer plate? Yes
 Are there any rivets which either break into or have been put through the seams or butts of the plating? a few

Her Masts, Bowsprit, Yards, &c., are in good condition, and sufficient in size and length. (If they are of Iron or Steel give the 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 rivetting, quality of Materials, and if stamped with Maker's name.

She has SAILS.		"Lloyd's Regd." proving house CABLES, &c., tested at (Signed) Robt. Bunell Esq ^r					"Lloyd's Regd." proving house ANCHORS, tested at (Signed) Robt. Bunell Esq ^r				
No.		No. on Chain seen by me.	No. and date on Certificate	Fathoms.	Inches.	Tested to Tons.	No.	No. on Anchor seen by me.	No. and date on Certificate.	Weight. Ex. Stock.	Tested to Tons.
one	Fore Sails,	Chain	1771 1771-17.11.66	90	7/8	13.15.0.0	Bowers	1	4325 4325-14.12.66	5.1.0	7.11
	Fore Top Sails,	Hemp	1806 1806-14.12.66	90	7/8	13.15.0.0		1	4324 4324-14.12.66	5.0.24	7.11
Complete	Fore Topmast	Stream Cable		60	9/16			1	1825 1825-8.12.65	4.1.7	6.13
and	Stay Sails,	Hawser		80	6		Stream	1		2.0.21	
	Main Sails,	Towlines		120	4						
	Main Top Sails,	Warp		120	3 1/2		Kedges	1		1.0.0	
		All of <u>good</u> quality.		120	3						

Her Standing and Running Rigging is sufficient in size and good in quality.
 She has two life ~~long~~ Boats and one other
 The present state of the Windlass is Capstan good and Rudder good Pumps 2 hand, Main Engine & Steam

Order for Special Survey DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought
 No. 579 Surveys held 2nd. On the plating during the progress of rivetting
 Date 13 Aug 1866 while building 3rd. When the beams were in and fastened, and before the decks were laid
 Order for Ordinary Survey as per 4th. When the ship was complete, and before the plating was finally coated
 No. _____ Section 18. 5th. After the ship was launched
 Date _____
 State if she has a ~~Spar Deck~~ ^{Raised} Quarter deck Peep & small or Forecastle

General Remarks,
 This vessel has been built in accordance with the Midship Section and per Secretary's letter 23rd August 1866
 One Bower Anchor is scarcely up to the requirements of Table 22, but seeing that an additional one of 4.1. ^{out of} ^{the} ^{stock} has been supplied, I beg to leave the figure 1. for the favorable consideration of the Committee.

In what manner are the surfaces preserved from oxidation? Inside Cement and Paint
 Ditto ditto Outside Paint

I am of opinion this Vessel should be Classed A
 The amount of the Fee£ 2: : : is received by me,
 Dec^r M.C. Special£ 9: 10: :
 Certificate (if required)£ : : :
 Committee's Minute 27th December 1866

Character assigned A 1

J. Harding
 The Hull of this Screw Steamer appears eligible for Classification and the Committee recommend above for Committee's consideration
 Dec 24 1866
 Lloyd's Register Foundation

more 3 notations 26 3, down area, there are the ea