

IRON SHIPS.

Plan of Iron Ship

Survey held at Sunderland Date January 28th 1866
 Iron Screw Steamer "Charles Howard" Master W Stocker
 her tonnage deck 691.80 Built at Sunderland When built 1866 Launched Novem 24/66
 or upper deck 59.69 By whom built W Pile & Co Owners Ryde & Co
 one room 240.48
 her tonnage 511.01 Port belonging to London Destined Voyage Mediterranean
 while Building, Afloat, or in Dry Dock Whilst Building, Afloat, & in Dry dock

Feet.	Inches.	Feet.	Inches.	Feet.	Inches.	Horse.	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
30	-	17	-	120	-	Two at ends	30	10	30	10		
ship Register, length 205.9 breadth 30.1 depth 16.9												
depth and thickness.....	8 x 2 5/8	inches required per Rule, for 600 Tons Scale 4 x 2 3/4	Plates in Garboard Strakes, breadth and thickness.....									
iron, breadth and thickness.....	8 x 2 3/8	4 x 2 3/4	Ditto from Garboard to upper part of Bilges.....									
iron, moulding and thickness.....	8 x 5	-	" from upper part of Bilge to a perpendicular height from upper side of Keel of 3/8s the entire depth of Hold.....									
bar iron, moulding and thickness.....	8 x 5	-	" from 3/8s depth of Hold to lower edge of Sheerstroke.....									
steel iron, breadth and thickness.....	23	23	" Sheerstroke, breadth and thickness.....									
edges from moulding edge to go, all fore and aft.....	4 3 4	4 3 7	Butt Straps to outside plating, breadth and thickness.....									
of Angle Iron, single or double, reversed Iron, &c to every frame & every alternate frame.....	3 2 3/4 6	3 2 3/4 6	Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness.....									
nd thickness of Floor Plate at mid line.....	19 1/2 8	19 1/2 8	Angle Iron on ditto.....									
ditto at Bilge Keelson.....	8	8	Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways.....									
Reversed Angle Iron, and 1/82 at top of Floor Plate N°. 36)	3 2 3/4 6	3 2 3/4 6	Diagonal Tie Plates on ditto.....									
Bulb Iron.....	7 1/2 2 1/2	7 1/2 2 1/2	Plankshears, materials and scantlings.....									
able or single Angle Iron, on upper edge.....	2 3/4 2 3/4 6	2 3/4 2 3/4 6	Waterway ditto ditto.....									
verage space between.....	at alternate frames		Flat of Upper Deck, thickness and material.....									
Lower Deck (N°. 24)	4 1/2 4	4 1/2 4	" how fastened to Beams.....									
Angle Ties, Planks, Bulb Iron)	2 3/4 2 3/4 6	2 3/4 2 3/4 6	Ceiling betwixt Decks and in Hold, thickness and material.....									
ble or single Angle Iron on upper edge.....	2 3/4 2 3/4 6	2 3/4 2 3/4 6	Clamps or Splicing.....									
age space between.....	on 2 1/2 - 4 1/2 frames		Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness.....									
ed and moulded, thick Plate size of Angle Iron)			Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams.....									
ordouble plate, box, or intercostal of Plates.....	Please see sketches showing scantlings & disposition of Keelsons & floors in double bottom Engine & Boiler Rooms		Stringers in Hold.....									
of Angle Irons.....			Flat of Lower Deck, thickness and material.....									
leord'ble, plate, box, or intercostal at each Bilge, or double, plate, or box.....			Main piece of Rudder, diameter at head.....									
rial 1 of iron, or, if none, in what manner compensated for. and Hawse Timbers	none		" at heel.....									
extend in one length from Keel to Gunwale			(Can the Rudder be unshipped afloat Yes									
are the various lengths of plates or angle irons connected?			Bulkheads, N°. 5 Thickness of 6 1/16									
id, double riveted to keel, double at upper edge, with rivets (7/8 x 11/16 ins.) diameter, averaging (3 1/4 x 1/8 ins.) apart.			" Height up to main deck									
rom Garboards to upper part of bilge, worked clench, double or single riveted; with rivets (3 1/4 in.) diameter, averaging (2 3/4 ins.) apart.			" how secured to the sides of the ship riveted between double frames size of vertical angle irons 3 x 2 1/4 & their distance apart 30									
om Keel to turn of bilge, worked carvel with butt straps (10 x 9 16) thick, double or single riveted; with rivets (3 1/4 in.) diameter, averaging (2 3/4 ins.) apart.			riveted through plates with (3/4 in.) rivets, about (6) apart									
Do the butt straps lap over and rivet through the lands of the staves below? No												
rom bilge to sheerstroke, worked carvel with a lining piece () thick, or clench, double or single riveted; with rivets (3/4 in.) diameter, averaging (2 3/4 in.) apart.												
Do the butt straps lap over and rivet through the lands of the stroke below? No												
of Sheerstroke, double or single riveted At upper edge & double At lower edge												
rom bilge to plankshears, worked carvel with butt straps (8 x 7 x 12 16) thick, double or single riveted; with rivets (3/4 in.) diameter, averaging (2 3/4 ins.) apart. Breadth of laps in double rivetting (5) Breadth of laps in single rivetting (none all double												
Keelsons, Stringer and Tie Plates, double or single riveted? Double Riveted												
w secured to the plating of the sides Explain by sketch if necessary } see Sketch												
w secured to the side? The cords turned down & riveted to the frames & stringer plate												
Deck ditto The same as above. I part in Midship with bracket knees												

No. of breasthooks 4 crutches 4
 of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c. The angle iron Beams
 manufacturer's name or trade mark by Bolchow & Vaughan. The Plate by the Stockton Iron Co
 that the above is a correct description of the several particulars therein given.

(Sgd) W Pile & Co

Surveyor's Signature

(Sgd) Thomas Lawrence

Workmanship. Are the lands or laps of the clenchwork in all cases in breadth at least five and a half times the diameter of the rivets in double riveted 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 say 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? **Solid: with single**

Do the holds for rivetting plate to frames, butt straps, or plate to plate, &c., conform well to each other? **They do** 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? **Very few**

of Red Pine in
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.)

The testing certificates of Anchors & Chain Cables have been produced, issued from the Sunderland Public Testing Machine, & signed by Mr John Thompson. (Sig'd) James Gibon

She has SAILS.

CABLES, &c. tested at Sunderland ANCHORS, and their weights.

N. <i>one complete Jail</i>	Fore Sails,	Chain	Fathoms.	Inches.	Tested to Tons.	Bowers, Rodgers.....	N. 2203	Weight. Ex. Stock	Tested Tons.
	Fore Top Sails,	Hempen Stream Cable	135	142	10 1/2	do Potters	2090	21.2.14	22.1.1.16
	Fore Topmast Stay Sails,	Hawser	60	7	do	do	2155	21.0.7	22.3.1.1
	Main Sails,	Towlines	80	10	do	Stream,	1	19.0.14	19.12.22
	Main Top Sails, and	Warp	80	8	do	Kedges,	2	2.0.16	5.1.0
	All of good quality.	80	6						

Her Standing and Running Rigging of wire & hemp sufficient in size and

She has **2 Life** Long Boats and **3 Others**

The present state of the Windlass is **secure**. 2 Capstan & 3 Winches and Rudder & 4 Pumps **New & good**

Order for Special Survey

No. **1851**

Date **May 15/66**

Order for Ordinary Survey

No. **—**

Date **—**

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
- 2nd. On the plating during the progress of rivetting
- 3rd. When the beams were in and fastened, and before the decks were laid
- 4th. When the ship was complete, and before the plating was finally coated
- 5th. After the ship was launched

*Built under
Special Survey
from 6th June
1866 to the
present date*

State if she has a Spar Deck **No** Poop 50 ft in length Forecastle 20 ft in length

General Remarks. The frames of this vessel are double to top of Bilges for upwards of half the length in midships, & has a double bottom fitted with longitudinal Keelsons, & short floor plates to every other frame (as shown upon sketch) from the Engine & Boiler space to the fore bulk head, also from the after bulk head to the Engine room. The fore and aft ends also the length through the Engine & Boiler rooms is constructed with plates to every frame, the Engine & Boiler sleepers are shown on sketch and at the ends with middle line & long Keelsons, as per rules, also an extra side Keelson there are 4 ft length of angle iron at middle line riveted through to fore frames before and abaft the double frames. Before the Boiler space the frames are cut off & the outer Keelsons are connected to the shell plates as shown on sketch with fore and aft angle irons 6x4x10/16 (the principal Surveyors' sum of 15th Aug 1866 was not received until the Bilge shake marked A was unravelled up, on measuring that shake carefully it was found to be full 9/16" quite as near to 10/16" as to 9/16, and in lieu of removing it this large angle iron was introduced in compensation). The Brackets shown to Keelsons are well connected with the frames, floor plates & outside plating abaft the Engine Room the main frames are not cut off, the double bottom is made tight with flange plates & angle irons as usual, care has been taken to maintain the longitudinal strength of the vessel by overlapping the ends of the Keelsons with the Engine & Boiler sleepers, &c, through the bulkheads, to compensate for the length exceeding 11 times the depth in this vessel, the sheer strakes are increased $\frac{1}{3}$ in thickness for $\frac{2}{3}$ the length in midships, & the Main Deck stringer plates $\frac{2}{3}$ 1/16

In what manner are the surfaces preserved from oxidation? Inside **By Cement to Bilges & Paint in other parts**
Ditto ditto Outside **By Paint**

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

The amount of the Fee £ 5 : 0 : 0 is received by me,
Special £ 34 : 11 : 0 (y'd) 99 H

Certificate (if required) £ :

Committee's Minute **1st Feby 1864**

(Sig'd) **2** **—**
Thomas Lawrence

Character assigned

A 1