

IRON SHIP.

17/157
14/10/16

No. 13342 Survey held at Newcastle Date, First Survey 11th February Last Survey 11th October 1886

On the Iron Sr. Rigged Screw Steamer "Cossian" Master Butcherd

| | |
|---------------------------------------------------------|------------------------------------------------------------------------------|
| TONNAGE under Tonnage Deck } <u>1792.49</u> | ONE, OR TWO DECKED, THREE DECKED VESSEL. |
| Ditto of Third, Spar, or Awning Deck. } | STAR, OR AWNING DECKED VESSEL. |
| Ditto of Poop, or Raised Or. Dk. } | HALF BREADTH (moulded)... .. <u>17.0</u> Feet. |
| Ditto of Houses on Deck } <u>76.32</u> | DEPTH from upper part of Keel to top of Upper Deck Beams <u>26.66</u> |
| Ditto of Mast-cleets } | GIRTH of Half Midship Frame (as per Rule) <u>39.08</u> |
| Gross Tonnage } <u>1868.81</u> | 1st NUMBER <u>82.74</u> |
| Less Crew Space } <u>59.42</u> | 1st NUMBER, if a THREE-DECKED VESSEL <u>7</u> |
| Less Engine Room } <u>1809.39</u> | [deduct 7 feet <u>75.74</u>] |
| Register Tonnage as cut on Beam } <u>1211.34</u> | LENGTH <u>283.5</u> |
| | 2nd NUMBER <u>214.72</u> |
| | PROPORTIONS —Breadths to Length <u>8.33</u> |
| | Depths to Length —Upper Deck to Keel <u>10.63</u> |
| | Main Deck ditto <u>14.64</u> |

Built at Newcastle
When built 1876 Launched 6th Sept 76
By whom built C. S. Swanwick
Owners Glover Brothers
Port belonging to London
Destined Voyage Aden
If Surveyed while Building, Afloat, or in Dry Dock. While building

Official Number 13190

| | | | | | | | | | |
|---------------------------------------|-----------------------------------|-------------------------------|----------------------------------|---------------------------------------------------------|--------------------------------------|-------------------------|-------------------|-----------------------------|--------------|
| LENGTH on deck as per Rule ... | Feet. <u>283</u> Inches. <u>6</u> | BREADTH —Moulded... .. | Feet. <u>34</u> Inches. <u>0</u> | DEPTH top of Floors to Upper Deck Beams | Feet. <u>24</u> Inches. <u>8 1/2</u> | Power of Engines | Horse. <u>180</u> | Nº. of Decks with flat laid | <u>Two</u> |
| | | | | Do. do. Main Deck Beams | <u>17</u> <u>8 1/2</u> | | | Nº. of Tiers of Beams | <u>Three</u> |

Dimensions of Ship per Register, length, 283.5 breadth, 34.2 depth, 26.66 Rules 175-76

| | Inches in Ship. | Inches per Rule. | Inches in Ship. | Inches per Rule. | 16ths in Ship. | 16ths per Rule. |
|------------------------------------------------------------------------------------------------|----------------------|----------------------|-----------------|------------------|----------------|-----------------|
| KEEL , depth and thickness | <u>9 1/2 x 2 1/2</u> | <u>9 1/2 x 2 1/2</u> | | | | |
| STEM , moulding and thickness... .. | <u>9 x 2 1/2</u> | <u>9 x 2 1/2</u> | | | | |
| STERN-POST for Rudder do. do. .. | <u>9 x 4 1/2</u> | <u>9 x 5</u> | | | | |
| for Propeller | <u>9 x 5</u> | <u>9 x 5</u> | | | | |
| Distance of Frames from moulding edge to moulding edge, all fore and aft | <u>24</u> | <u>24</u> | | | | |
| FRAMES , Angle Iron, for 3/4 length amidships .. | <u>5 3 8</u> | <u>5 3 8</u> | | | | |
| Do. for 1/2 at each end | <u>5 3 7</u> | <u>5 3 7</u> | | | | |
| REVERSED FRAMES , Angle Iron | <u>3 3 7</u> | <u>3 3 7</u> | | | | |
| FLOORS , depth and thickness of Floor Plate } at mid line for half length amidships .. | <u>23 1/2 x 9</u> | <u>23 1/2 x 9</u> | | | | |
| thickness at the ends of vessel | <u>4</u> | <u>4</u> | | | | |
| depth at 3/4 the half-bdth. as per Rule .. | <u>11 3/4</u> | <u>11 3/4</u> | | | | |
| height extended at the Bilges... .. . | <u>47</u> | <u>47</u> | | | | |
| BEAMS, Upper, Spar, or Awning Deck } Single or double Ang. Iron, Plate or Tee Bulb Iron | <u>7 x 7</u> | <u>7 x 7</u> | | | | |
| Single or double Angle Iron on Upper edge .. | <u>3 3 6</u> | <u>3 3 6</u> | | | | |
| Average space... .. . | <u>48</u> | <u>48</u> | | | | |
| BEAMS, Main or Middle Deck | <u>5 1/2 3 8</u> | <u>5 1/2 3 8</u> | | | | |
| Single or double Ang. Iron, Plate or Tee Bulb Iron | <u>5 1/2 3 8</u> | <u>5 1/2 3 8</u> | | | | |
| Single, or double Angle Iron, on Upper Edge .. | <u>5 1/2 3 8</u> | <u>5 1/2 3 8</u> | | | | |
| Average space... .. . | <u>24</u> | <u>24</u> | | | | |
| BEAMS, Lower Deck, Hold, or Orlop } Single or double Ang. Iron, Plate or Tee Bulb Iron | <u>5 1/2 x 8</u> | <u>5 1/2 x 8</u> | | | | |
| Single or double Angle Iron on Upper Edge .. | <u>3 3 7</u> | <u>3 3 7</u> | | | | |
| Average space... .. . | <u>56</u> | <u>56</u> | | | | |
| KEELSONS Centre line, single or double plate, } Box, or Intercostal, Plates .. | <u>18 x 13</u> | <u>18 x 13</u> | | | | |
| " Rider Plate | <u>12 x 13</u> | <u>11 3/4 x 13</u> | | | | |
| " Bulb Plate to Intercostal Keelson | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| " Angle Irons | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| " Double Angle Iron Side Keelson | <u>22 1/2 x 8</u> | <u>22 1/2 x 8</u> | | | | |
| " Side Intercostal Plate | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| " do. Angle Irons | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| " Attached to outside plating with angle iron | <u>3 3 7</u> | <u>3 3 7</u> | | | | |
| BILGE Angle Irons | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| " do. Bulb Iron <u>Tambour</u> | <u>6</u> | <u>6</u> | | | | |
| " do. Intercostal plates riveted to plating for | <u>8 x 8</u> | <u>8 x 8</u> | | | | |
| BILGE STRINGER Angle Irons | <u>5 1/2 4 9</u> | <u>5 1/2 4 9</u> | | | | |
| Intercostal plates riveted to plating for | <u>8 x 8</u> | <u>8 x 8</u> | | | | |
| SIDE STRINGER Angle Irons | <u>8 x 8</u> | <u>8 x 8</u> | | | | |

| | Inches in Ship. | 16ths in Ship. | Inches per Rule. | 16ths per Rule. |
|-----------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges of | <u>36</u> | <u>12</u> | <u>36</u> | <u>12</u> |
| of | <u>10 1/4</u> | <u>11</u> | <u>10 1/4</u> | <u>11</u> |
| of | <u>70</u> | <u>70</u> | <u>70</u> | <u>70</u> |
| fm up. part of Bilge to lr. edge of Sh'rstrake | <u>10 1/4</u> | <u>11</u> | <u>10 1/4</u> | <u>11</u> |
| Main Sheerstrake , breadth and thickness of | | | | |
| of | | | | |
| of | | | | |
| from Mn. to Upr. or Spar Dk. Sh'rstrake. | | | | |
| Up. or Spar Dk Sh'rstrake , brdth & thickness | <u>40</u> | <u>13</u> | <u>40</u> | <u>13</u> |
| Butt Straps to outside plating, breadth & thickness | <u>11 1/2</u> | <u>10 1/4</u> | <u>11 1/2</u> | <u>10 1/4</u> |
| Lengths of Plating | <u>10 feet</u> | <u>10 feet</u> | <u>10 feet</u> | <u>10 feet</u> |
| Shifts of Plating, and Stringers... .. . | <u>4</u> | <u>4</u> | <u>4</u> | <u>4</u> |
| Gunwale Plate on ends of | | | | |
| Upper Deck Beams, breadth and thickness... } | <u>52</u> | <u>10</u> | <u>52</u> | <u>10</u> |
| Angle Iron on ditto | <u>4 x 4 x 9</u> |
| Tie Plates fore and aft, outside Hatchways .. | <u>14</u> | <u>9</u> | <u>14</u> | <u>9</u> |
| Diagonal Tie Plates on Beams No. of Pairs, Planksheer material and scantling | | | | |
| Waterways do. do. | <u>Iron Gutter</u> | <u>Iron Gutter</u> | <u>Iron Gutter</u> | <u>Iron Gutter</u> |
| Flat of Upper Deck do. do. | <u>4</u> | <u>4</u> | <u>4</u> | <u>4</u> |
| How fastened to Beams | <u>Screw bolts and nuts</u> |
| Stringer Plate on ends of | <u>50</u> | <u>9</u> | <u>50</u> | <u>9</u> |
| Beams, breadth and thickness | <u>50</u> | <u>9</u> | <u>50</u> | <u>9</u> |
| Is the Stringer Plate attached to the outside plating? .. | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> |
| Angle Irons on ditto, No. | <u>4 x 4 x 9</u> |
| Tie Plates, outside Hatchways | <u>4 x 4 x 9</u> |
| Diagonal Tie Plates on Beams, No. of pairs | | | | |
| Waterways materials and scantlings | <u>Count twist frames</u> | <u>Count twist frames</u> | <u>Count twist frames</u> | <u>Count twist frames</u> |
| Flat of Middle Deck do. do. | <u>Iron</u> | <u>6</u> | <u>Iron</u> | <u>6</u> |
| How fastened to Beams | <u>Riveted</u> | <u>Riveted</u> | <u>Riveted</u> | <u>Riveted</u> |
| Stringer Plates on ends of | <u>35</u> | <u>9</u> | <u>35</u> | <u>9</u> |
| Beams | <u>35</u> | <u>9</u> | <u>35</u> | <u>9</u> |
| Is the Stringer Plate attached to the outside plating? .. | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> |
| Angle Irons on ditto, No. | <u>4 x 4 x 9</u> |
| Stringer or Tie Plates, outside Hatchways | | | | |
| Flat of Lower Deck | | | | |
| Ceiling betwixt Decks, thickness and material .. | <u>9 1/2</u> | <u>2 1/2</u> | <u>9 1/2</u> | <u>2 1/2</u> |
| in hold do. do. | <u>9 1/2</u> | <u>2 1/2</u> | <u>9 1/2</u> | <u>2 1/2</u> |
| Main piece of Rudder, diameter at head | <u>6 3/4</u> | <u>6 3/4</u> | <u>6 3/4</u> | <u>6 3/4</u> |
| do. at heel | <u>3 1/2</u> | <u>3 1/2</u> | <u>3 1/2</u> | <u>3 1/2</u> |
| Can the Rudder be unshipped afloat? | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> |
| Bulkheads No. | <u>6</u> | <u>6</u> | <u>6</u> | <u>6</u> |
| Thickness of | <u>6</u> | <u>6</u> | <u>6</u> | <u>6</u> |
| Height up | <u>6</u> | <u>6</u> | <u>6</u> | <u>6</u> |
| How secured to sides of ship | <u>Double frames</u> | <u>Double frames</u> | <u>Double frames</u> | <u>Double frames</u> |
| Size of Vertical Angle Irons | <u>3 x 3 x 7/16</u> |
| and distance apart | <u>50</u> | <u>50</u> | <u>50</u> | <u>50</u> |
| Are the outside Plates doubled two spaces of Frames in length? .. | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> | <u>Yes</u> |

Transoms, material. Knight-heads. Hawse Timbers. Iron
Windlass Harfield's Patent Pawl-Bitt

The **FRAMES** extend in one length from Keel to Gunwale Riveted through plates with 7/8 in. Rivets, about 6 1/2 apart.
The **REVERSED ANGLE IRONS** on floors and frames extend from middle line to M. Dk. S. A. D. 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 1/2 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 4 ins. from centre to centre.
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 3/4 ins. from centre to centre.
Butts of Three Strakes at Bilge for half length, treble riveted with Butt Straps 70 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 4 ins. from cr. to cr.
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 3/4 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 half length amidships.
Butts of Main Stringer Plate, treble riveted for half length amidships. **Butts of Upper or Spar Stringer Plate**, treble riveted for half length.
Breadth of laps of plating in double riveting 5 1/4 Breadth of laps of plating in single riveting

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble and double riveted
Waterway, how secured to Beams Iron Gutter (Explain by Sketch, if necessary.)
Beams of the various Decks, how secured to the sides? Welded knees riveted to frames. No. of Breasthooks, Five Crutches, Four

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angles and Bulbs from
Manufacturer's name or trade mark, Hopkins Gilkes & Co. Middlesbro' and Plates from Consett Iron Co

The above is a correct description.
Builder's Signature, C. S. Swanwick Surveyor's Signature, J. H. Cooke
H. Maincock Surveyor to Lloyd's Register of British and Foreign Shipping.

IRON 468-0382

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? *Yes*
 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* 17157 Iron

Masts, Bowsprit, Yards, &c., are *Iron* 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 *Fore mast length extreme 49 1/2 feet, diameter 23 inches*
Main mast 73 feet, diameter 21". Masts formed with two plates in the round
6/16 to 5/16" in thickness, edges double riveted, and butts treble and double
riveted. Makers of Iron Conssett-Iron Co.

| NUMBER for EQUIPMENT 23156 | | Fathoms. | Inches. | Test per Certificate. | Length & Size req'd pr 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. | | | | | | | | |
|----------------------------|--------|------------------------------|-------------------------------------------------|-----------------------|------------------------------|----------------------|----------|------------------|--------------------|----------------------|-----------------------|----------------------|-----------------------------------------|--------|------------------------------------------------------------------------------------|------------|----------|--------|--------|--|
| No. | SAILS. | CABLES, &c. | | 55 1/2 | 270-1 1/2 | 55 1/2 | Bowers | 1 | 30.2.0 | 29.0.0.0 | 30.0.0 | 25 1/2 | | | | | | | | |
| | | Chain | 270 | | | | | | | | | | 1 1/2 | 55 1/2 | 1 | 30.1.26 | 29.0.0.0 | 30.0.0 | 25 1/2 | |
| | | Fore Sails, | making strain | | | | | | | | | | 77 1/2 | 1 | 25.0.7 | 24.17.0.24 | 25.2.0 | 25 1/2 | | |
| | | Fore Top Sails, | River Wear P. H. J. Hartness Supt. | | | | | | | | | | | | River Wear P. H. J. Hartness Supt. | | | | | |
| | | Fore Topmast Stay Sails | Date of certificate 3 rd August 1876 | | | | | | | | | | | | Date of certificates 3 rd , 4 th , 27 th Aug 1876 | | | | | |
| | | Fore Topmast | Hemp | | | | | | | | | | 90 | 1 1/2 | 90-1 1/2 | | | | | |
| | | Main Sails, | Hawser ... | | | | | | | | | | 90 | 11 | 90-11 | Stream ... | 1 | 12.0.9 | 12.0.0 | |
| | | Main Top Sails, | Towlines ... | | | | | | | | | | 90 | 9 | 90-9 | Kedges ... | 1 | 6.0.10 | 6.0.0 | |
| | | or Rigging wire | Warp ... | | | | | | | | | | 150 | 2 1/2 | 150-2 1/2 | | 1 | 3.0.14 | 3.0.0 | |
| | | Standing and Running Rigging | Hemp | | | | | | | | | | sufficient in size and good in quality. | | She has 2 Life Long Boats and Two others | | | | | |

The Windlass is *Good* Capstan *Good* and Rudder *Good* Pumps *Good*
Engine Room Skylights.—How constructed? *Iron casing 6/16" & Wood Top* How secured in ordinary weather? *Bolted 6 angles*
 What arrangements for deadlights in bad weather? *Solid shutters & bulls eyes.*
Coal Bunker Openings.—How constructed? *Cast Iron Comings* How are lids secured? *By hatch bars* Height above deck? *9"*
Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *4 Ports each side besides mowing pipes*
Cargo Hatchways.—How formed? *Iron Comings and headledges riveted together.*
 State size **Main Hatch** *20ft x 11ft.* **Fore hatch** *8ft x 8ft* **Quarter hatch** *20ft x 11ft & 8ft x 8ft*
 If of extraordinary size, state how framed and secured? *Ordinary size*
 What arrangement for shifting beams? *Web plate in centre of large hatchways & Wood fore & afters in each hatch*
Hatches, If strong and efficient? *Yes.*

| Order for Special Survey No. | Date | Order for Ordinary Survey No. | Date | No. | DATES OF SURVEYS held while building as per Section 18. |
|------------------------------|-------------|-------------------------------|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1110 | 8 June 1876 | | | 24 | 1st. On the several parts of the frame, when in place, and before the plating was wrought { 10, 16, 22, 28, 29, 20, March 2, 4, 7, 9, 14, 21, 23, 27. |
| | | | | | 2nd. On the plating during the process of riveting { April 5, 7, 11, 12, 21, 24, 27, May 1, 4, 8, 10, 12, 15, 17, 22. |
| | | | | | 3rd. When the beams were in and fastened, and before the decks were laid { 26, 31, June 2, 9, 14, 16, 21, 27, July 4, 7, 11, 18, 23, 27. |
| | | | | | 4th. When the ship was complete, and before the plating was finally coated or cemented. { Aug 2, 9, 10, 15, 22, 25, 31, Sep 2, 5, 8, 13, 18, 21, 20. |
| | | | | | 5th. After the ship was launched and equipped 20 Oct 2, 6, 11. |

General Remarks (State quality of workmanship, &c.) *This is a three decked vessel, built in accordance with approved tracings attached and the Secretary's letter (N) of the 15th March 1876 and in accordance with the Rules she has a complete iron middle deck. Is fitted with water ballast tanks before and abaft the engine and boiler space, the fore tank being 68 feet and the after tank 82 feet in length, top plating 6/16 and flange plates 7/16 in thickness. Tanks tested to load water line and found satisfactory. The general quality of the workmanship is good.*

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 & Paint* Outside *Paint*
 I am of opinion this Vessel should be Classed *100 A1 Two decks and three tiers of beams.*
 The amount of the Entry Fee ... £ 5 : : is received by me, *A. Young*
 Special ... £ 40 : 5 : 13 Oct 1876
 Certificate ...
 (Travelling Expenses, if any, £ —).
 Committee's Minute *17th October 1876*
 Character assigned *100 A1*
double bottom 150ft Lloyd's M.L. 1st deck 20ft 3rd tier beams part double bottom 150ft

H. H. Cooke, Surveyor, Newcastle-on-Tyne

