

# IRON SHIPS.

2091  
2019

No. \_\_\_\_\_ Survey held at London Date August July 28<sup>th</sup> 1864  
 on the Paddle Steamer "Harwich" Master Clabaid  
 Tonnage Gross 749 <sup>55</sup>/<sub>100</sub> Engine Room 199. <sup>90</sup>/<sub>100</sub> Register 549 <sup>65</sup>/<sub>100</sub> Built at Cubitts Town  
 When Built 1864 By whom built Simpson & Co Owners Gr Eastern Rail & Comp  
 Launched June 9<sup>th</sup> Port belonging to London Destined Voyage Rotterdam  
 If Surveyed Afloat or in Dry Dock While building

| Length aloft  | Feet. Inches. | Extreme Breadth | Feet. Inches. | Depth from Beam to top of Floor | Feet. Inches. | Power of Engines | Horse No. |
|---|---------------|-----------------|---------------|---------------------------------|---------------|------------------|-----------|
| 215   |               | 27              | 1 1/4         | 17                              | 9 1/2         |                  | 220       |
| Distance between Transoms amidships   |               | 21              |               | 21                              |               |                  |           |
| Distance between Transoms forward and aft   |               | "               |               | "                               |               |                  |           |
| Distance between Ribs amidships   |               | "               |               | "                               |               |                  |           |
| Distance between Ribs forward and aft   |               | "               |               | "                               |               |                  |           |
| Floors, Size of Angle Iron, and No. / at bottom of Floor Plate                        | 4 1/2         | 3               | 8/16          | 4 1/4                           | 3             | 8/16             |           |
| depth & thickness of Plate at mid line  | 18 1/2        | x               | 9/16          | 18 1/2                          | 9/16          |                  |           |
| depth & thickness of Plate at turn of bilge   |               | 7/2             |               |                                 |               |                  |           |
| Size of Reversed Angle Iron, and No. / at top of Floor Plate                          | 3 1/2         | 3               | 8/16          | 3                               | 2 3/4         | 7/16             |           |
| Ribs, Size of Angle Iron, single or double  | 4 1/2         | 3               | 8/16          | 4 1/4                           | 3             | 8/16             |           |
| Reversed Iron, if to every frame  |               |                 |               |                                 |               |                  |           |
| to middle or every alternate frame  | 3 1/2         | 3               | 8/16          | 3                               | 2 3/4         | 7/16             |           |
| Beams, Deck (N <sup>o</sup> . ) double or single                                      | 4 x           | 8/16            | top           | 7                               | x             | 6/16             |           |
| Bulb Angle Iron   | 7             | x               | 8/16          | 7                               | x             | 6/16             |           |
| depth & thickness of plate amidships  |               |                 |               |                                 |               |                  |           |
| double or single Angle Iron, on lower edge  |               |                 |               |                                 |               |                  |           |
| average space between   | 4.2 in        |                 |               | 4.2 inches                      |               |                  |           |
| if wood (N <sup>o</sup> . ) sided & moulded   |               |                 |               |                                 |               |                  |           |
| Hold, (N <sup>o</sup> . ) double or single  |               |                 |               |                                 |               |                  |           |
| Bulb Angle Iron   | 7             | x               | 7/16          | 7                               | 6/16          |                  |           |
| depth & thickness of plate amidships  |               |                 |               |                                 |               |                  |           |
| double or single Angle Iron, on lower edge  | 4             | x               | 6/16          |                                 |               |                  |           |
| average space between   | 4.2 in        |                 |               | 4.2 in                          |               |                  |           |
| if wood (N <sup>o</sup> . ) sided & moulded   |               |                 |               |                                 |               |                  |           |
| Paddle, wood, sided and moulded   | 4 x 3 x       | 8/16            |               |                                 |               |                  |           |
| or if Iron, size of Plate   |               | 8/16            |               |                                 |               |                  |           |
| Engine  |               |                 |               |                                 |               |                  |           |
| Keelson, wood, sided & moulded, iron, size of plate, if Box, give sketch & dimensions | 25 1/2        | 9/16            |               | 25 1/2                          | 9/16          |                  |           |
| Side or Bilge   | 5 x 3 1/2     | 8/16            |               | 5                               | 3 1/2         | 8/16             |           |
| Number  | one           |                 |               | 7                               |               | 7/16             |           |
| Stem, if bar iron, moulding and thickness   | 7 1/4         | x 3             | 7 1/4         | x 3                             |               |                  |           |
| if plate iron, breadth and thickness  |               |                 |               |                                 |               |                  |           |
| Stern-post, if bar iron, moulding and thickness                                       | 7 1/4         | x 3             |               |                                 |               |                  |           |
| if plate iron, breadth and thickness  |               |                 |               |                                 |               |                  |           |
| Keel, if bar iron, depth and thickness  | 7             | 1 3/8           |               |                                 |               |                  |           |
| if plate iron, breadth and thickness  | 25 1/2        | 9/16            |               |                                 |               |                  |           |
| Garboard Plates, thickness..  | 30            | 11/16           | 30            | 7/16                            |               |                  |           |
| Description of Iron. to bilge   | Blanavon      |                 |               |                                 |               |                  |           |
| Bilge   |               | 10 1/16         | 10 1/16       | 9/16                            |               |                  |           |
| to Wales  |               | 9/16            | 9/16          | 9/16                            |               |                  |           |
| Wales   |               | 9/16            | 9/16          | 9/16                            |               |                  |           |
| Topsides  |               | 7/16            | 7/16          | 7/16                            |               |                  |           |
| Sheerstrakes  | 2 1/2         | 13/16           | 13/16         | 11/16                           | 9/16          |                  |           |
| Planksheers & Waterways   | 7 x 14        |                 |               |                                 |               |                  |           |
| Material. Gunwale Plate or Stringer..   | Oak           |                 |               |                                 |               |                  |           |
| Waterway  | 5 x 3 1/2     | 7/16            | 5 x 3 1/2     | 7/16                            |               |                  |           |
| Deck  |               | 3               |               |                                 |               |                  |           |
| Ceiling in flat   |               | 3               |               |                                 |               |                  |           |
| Bilge Planks inside   |               |                 |               |                                 |               |                  |           |
| Ceiling from Bilge to Clamps  |               |                 |               |                                 |               |                  |           |
| Hold Beam Clamps  |               |                 |               |                                 |               |                  |           |
| Shelf   |               | 5 1/2 x 1/2     |               |                                 |               |                  |           |
| Lower Stringers   | 23            | 7/16            |               |                                 |               |                  |           |
| Ceiling between Decks   |               |                 |               |                                 |               |                  |           |
| Stringers, middle Deck  | 31            | 11/16           |               |                                 |               |                  |           |
| Deck Beam Clamps  |               | 5 x 3 1/2       |               |                                 |               |                  |           |
| Shelf   |               |                 |               |                                 |               |                  |           |
| Stringers in Hold   |               | 3 1/2           |               |                                 |               |                  |           |
| Deck, Lower   |               | 3               |               |                                 |               |                  |           |
| Deck, Upper, how fastened to Beams  |               |                 |               |                                 |               |                  |           |

Transoms, material Iron or, if none, in what manner compensated for.

Knight-heads Eng Oak Bulkheads, N<sup>o</sup>. 4 Thickness of 6/16 3 x 3 x 6/16  
 are they free from defects? double frames to side

Hawse Timbers Eng Oak

The Ribs extend in one length from middle line to Gunwale rivetted through plates with (3/8 in.) rivets, about (6) apart.

The reverse angle irons on the floors extend in one length across the middle line from to middle to upper deck stringer alternately  
 on the ribs " " from " to " "

Keelson, if wood, length of scarp if iron, how are the various lengths connected? double rivetted butt straps

Plates, Garboard, double or single rivetted to keel, with rivets (1/2 ins.) diameter averaging (4 1/2 in.) from centre to centre of rivet.

edges from Garboards to turn of bilge, worked carvel with a lining piece (1/16 in.) thick, or clencher, double or single rivetted; rivets (3/4 in.) diameter, averaging (3 ins.) from centre to centre of rivets.

butts from Garboards to turn of bilge, worked carvel with a lining piece (1/16) thick, double or single rivetted; rivets (1/4 in.) diameter, averaging (3 ins.) from centre to centre of rivets. Do the lining pieces lap over and rivet through the lands of the strake below? no

edges from bilge to wales, worked carvel with a lining piece (1/16) thick, or clencher, double or single rivetted; rivets (1/4 in.) diameter, averaging (3 ins.) from centre to centre of rivets.

butts from bilge to wales, worked carvel with a lining piece (1/16) thick, double or single rivetted; rivets (1/4 in.) diameter, averaging (3 in.) from centre to centre of rivets. Do the lining pieces lap over and rivet through the lands of the strake below? no

edges of wales and to planksheers, worked carvel with a lining piece (1/16) thick, or clencher, double or single rivetted; rivets (1/2 in.) diameter averaging (2 1/2 ins.) from centre to centre of rivets.

Planksheer, how secured to the plating of the sides } Explain by sketch, } screw bolts with nuts  
 Waterway " " planksheer and to the Beams } if necessary.

Side trussing breadth and thickness of plates how secured

Deck trussing " " diagonal tee plates on upper & middle Deck

Deck Beams, how secured to the side Knee plates rivetted to ribs & welded to beams

Hold " " "

Paddle " " Rivetted to double frames

No. of breasthooks 3 crutches how are pointers compensated?

What description of iron is used for the angle iron and bar iron in the vessel? Blanavon best

3691 Iron

**Workmanship.** Are the lands or laps of the clenchwork in all cases sufficiently wide to take the rivets and support the strain on them? *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 all solid with sliver pieces, or are they in short lengths? *in solid pieces*  
 Do the holes for rivetting plate to lining piece, or plate to plate, &c., answer well to each other? *Yes* 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*  
 Was the plating caulked internally in the wake of the frames or ribs? *no*

Her Masts, Yards, &c., are in *new* condition, and sufficient in size and length.

| She has SAILS. |                             | CABLES, &c.                  |          |         | ANCHORS, and their weights.      |     |         |
|----------------|-----------------------------|------------------------------|----------|---------|----------------------------------|-----|---------|
|                |                             |                              | Fathoms. | Inches. |                                  | No. | Weight. |
| one full set   | Fore Sails,                 | Chain <i>Proved to 3 3/4</i> | 270      | 1 7/16  | Bower, <i>Proved strain 23.1</i> | 3   | 11.1.15 |
|                | Fore Top Sails,             | Hempen Stream Cable          | 90       | 7       | <i>23.2</i>                      |     | 18.1.15 |
|                | Fore Topmast Stay Sails,    | Hawser                       | 90       | 7/8     | <i>22.18</i>                     |     | 18.6.20 |
|                | Main Sails,                 | Towlines                     | 90       | 5       |                                  |     |         |
|                | Main Top Sails,             | Warp                         | 90       | 4       |                                  |     |         |
| and            | All of <i>best</i> quality. |                              |          |         |                                  |     |         |

Her Standing and Running Rigging *Hemp* sufficient in size and *good* in quality.

She has *one* Long Boat and *four others*  
The present state of the Windlass is *Harfield's* Capstan and Rudder *good* Pumps *4 + Engine Pumps*

**General Remarks, Statement and Date of Repairs, extent of corrosion (if any) both internally and externally, and condition of rivets.**

- 1st. On the several parts of the frame, when in place, and before the plating was wrought *Feby 22<sup>nd</sup>*  
 2nd. On the plating during the progress of rivetting \_\_\_\_\_  
 3rd. When the beams were in and fastened, and before the decks were laid *to*  
 4th. When the ship was complete, and before the plating was finally coated \_\_\_\_\_  
 5th. After the ship was launched *July 28<sup>th</sup>*

This vessel has been built specially for the conveyance of Cattle as a three deck ship, on a specification submitted to the Committee and examined by Mr Martin - The only deviations from the same are the lower strakes of topsides which was found 1/32 in thin and has been compensated for by a doubling plate worked inside twelve inches wide by 7/16 as recommended by Mr Martin and myself and shown by the midship section

In what manner are the surfaces preserved from oxidation? *Red Lead + Portland Cement*

I am of opinion this Vessel should be classed *A*  
 The amount of the Fee .....£ 3 : - : - is received by me,  
 Special *attendant* 5 : 5 : -  
 Certificate (if required) .....£ : 5 : -

*Thos W. Nawn*

Committee's Minute *9<sup>th</sup> August 1864*

Character assigned *B*

*WMA*

*I concur in the above recommendations*  
*8 Aug 1864 J.H.R.*  
 Lloyd's Register Foundation