

IRON SHIP.

22nd MAY, 1882.

No. 5400 Survey held at Glasgow Date, First Survey Jan^y 31st 1882 Last Survey 11 May 1882

On the Iron screw Steamer "Engineer" (Three masted schooner rig)

TONNAGE under Tonnage Deck 2504.40 ONE, OR TWO DECKED, THREE DECKED VESSEL, Master G. Jeffrey
Ditto of Third, Spar, or Awning Deck. 158.58 SRAC, OR AWINING-DECKED VESSEL. Built at Whiteinch Glasgow
Ditto of Poop, or Raised Qr. Dk. 3.66 Half Breadth (moulded) 18.85 When built 1881-82 Launched 18 Mar. 1882
of Houses on Deck 158.58 Depth from upper part of Keel to top of Upper Deck Beams 27.32 By whom built Aitken & Mansel
Ditto of Forecastle 3.66 Girth of Half Midship Frame (as per Rule) 40.68 Owners T. & J. Harrison
Gross Tonnage 2666.64 1st Number 86.85 Residence Liverpool
Less Crew Space 69.99 1st Number, if a 3-decked Vessel deduct 7 feet 79.85 Port belonging to Liverpool
Less Engine Room 2596.63 Length 348.0 Destined Voyage Calcutta
Less Engine Room 853.32 2nd Number 27.787 If Surveyed while Building, Afloat, or in Dry Dock, Built under Special Survey
Gross Tonnage as cut on Beam 1743.33 Proportions Breadths to Length 9.2
Main Deck ditto 17.3

LENGTH on deck as per Rule 348.0 Feet. Inches. BREADTH Moulded 37.7 Feet. Inches. DEPTH top of Floors to Upper Deck Beams 25.32 Feet. Inches. Power of Engines 345 Horse. N° of Decks with flat laid 2
Do. do. Main Deck Beams 18.1 N° of Tiers of Beams 3
Moulded depth 26.78

Dimensions of Ship per Register, length, 350.2 breadth, 38 depth, 25.3

KEEL, depth and thickness 10 x 3 1/2 10 x 3 1/2
STEM, moulding and thickness 10 x 3 1/2 11 x 2 3/4
STERN-POST for Rudder do. do. 11 x 5 1/2 11 x 5 1/2
" for Propeller 11 1/2 x 5 3/4 11 x 5 1/2
Distance of Frames from moulding edge to moulding edge, all fore and aft 24 24
(Class 100A.)

FRAMES, Angle Iron, for 1/2 length amidships 5 3 8 3 1/2 3 8
Do. for 1/4 at each end 3 1/2 3 8 3 1/2 3 8
REVERSED FRAMES, Angle Iron 3 1/2 3 8 3 1/2 3 8
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships 24 10 24 10
thickness at the ends of vessel 8 8
depth at 1/2 the half-bdth. as per Rule 12 12
height extended at the Bilges 48 48

BEAMS, Upper, Spar, or Awning Deck Single or double Angle Iron, Plate or Tee Bulb Iron 8 8 8 8
Single or double Angle Iron on Upper edge 3 3 6 3 3 6
Average space 48 48

BEAMS, Main, or Middle Deck Single or double Angle Iron, Plate or Tee Bulb Iron 6 3 9 6 3 9
Single or double Angle Iron on Upper edge 24 24
Average space 10 10 10 10
BEAMS, Lower Deck or Hold 4 4 8 4 4 8
Single or double Angle Iron, Plate or Tee Bulb Iron 4 4 8 4 4 8
Single or double Angle Iron on Upper edge 11 11
Average space 16 16

BEAMS, Hold, or Orlop See Lower Deck Single or double Angle Iron, Plate or Tee Bulb Iron 11 11
Single or double Angle Iron on Upper edge 11 11
Average space 16 16

KEELSONS Centre line, single or double plate, box, or Intercoastal Plates 26 1/2 14 26 1/2 14
Rider Plate 14 14 14 14
Bulb Plate to Intercoastal Keelson 6 1/2 4 9 6 1/2 4 9
Angle Irons 6 1/2 4 9 6 1/2 4 9
Double Angle Iron Side Keelson 6 1/2 4 9 6 1/2 4 9
Side Intercoastal Plate 11 9 11 9
Bulb do. - Angle Irons for 1/2 11 9 11 9
Attached to outside plating with angle iron 3 1/2 3 1/2 2 3 1/2 3 1/2 8

BILGE Angle Irons 4 No. (see section) 6 1/2 4 9 6 1/2 4 9
do. Intercoastal plates riveted to plating for 3 length 18 14 9 9
BILGE STRINGER Angle Irons 6 1/2 4 9 6 1/2 4 9
Intercoastal plates riveted to plating for 3 length 9 9

SIDE STRINGER Angle Irons 6 1/2 4 9 6 1/2 4 9

FRAMES extend in one length from Keel to gunwale Riveted through plates with 7/8 in. Rivets, about 7 apart.
REVERSED ANGLE IRONS on floors and frames extend from middle line to middle deck stringer and to gunwale alternately

Are the various lengths of Plates and Angle Irons properly connected? Yes And butts properly shifted? Yes

PLATING G. Garboard, double riveted to Keel, with rivets 1 1/2 in. diameter, averaging 5 1/2 ins. from centre to centre.
Edges of Garboards and to upper part of Bilge, worked clench, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from centre to centre.

Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3 1/2 ins. from centre to centre.
Butts of all Strakes at Bilge for 1/2 length, treble riveted with Butt Straps 1/8 thicker than the plates they connect.

Edges from Bilge to Main Sheerstrake, worked clench, double or single riveted; with rivets 7/8 in. diameter, averaging 3 1/2 ins. from cr. to cr.
Butts from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 1/2 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 1/2 length amidships. Butts of Upper or Spar Sheerstrake, treble riveted length amidships.

Butts of Main Stringer Plate, treble riveted for 1/2 length amidships. Butts of Upper or Spar Stringer Plate, treble riveted for 1/2 length.
Breadth of laps of plating in double riveting 8 1/2 Breadth of laps of plating in single riveting 8

Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Treble double No. of Breasthooks, 5 Crutches, 5 deep floors
What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Best
Manufacturer's name or trade mark, Frames Mossend, Keelsons Coats, Stringers - Glasgow, Hull plating - Consett, & Glasgow
The above is a correct description.

Builder's Signature, Aitken & Mansel Surveyor's Signature, Edwards James Surpren
Surveyors to Lloyd's Register of British and Foreign Shipping.

Workmanship.

Are the butts of plating planed or otherwise fitted?

Planed.

5709 920.

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 in 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 *Fore mast, 57 feet deck to hounds, 23 1/2 in. diam. at deck 6 thick, two plates in round. Fore topmast 21 feet long, 17 1/2 in. diam. by 5 to 4 thick. Main mast, 55 ft. deck to hounds, 21 1/2 in. diam. at deck, 9 1/2 thick, two plates in round. Main topmast 38 ft. long, 16 in. diam. by 5 to 4 thick. Mizzen mast, 50 ft. deck to hounds, 19 in. diam. by 9 1/2 thick at deck. Iron "bonsett", tested.*

NUMBER FOR EQUIPMENT 32230		Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Supplied.	ANCHORS.	N ^o .	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Machine where Tested & Supplied.
SAILS.							Bower Anchors					
Chain		150	1 15/16	74 1/2 + 67 1/2	300 of 1 15/16	No. 6948	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)					
Fore Sails,		150	1 15/16	74 1/2 + 67 1/2	300 of 1 15/16	No. 6957	Netherbow, D. G. Lewis					
Fore Top Sails,		90	1 15/16	34 1/2 + 22 1/2	90 of 1 15/16	No. 10301	Netherbow, D. G. Lewis					
Fore Topmast Stay Sails,		100	1 1/2	100 of 4 black	100 of 4 black		Stream Anchor					
Main Sails,		90	10"	90 of 10	90 of 10		Kedge					
Main Top Sails,		120	6	90 of 8 1/2	90 of 8 1/2		2nd Kedge					
and		120	6									
quality		good										

Standing and Running Rigging *galv'd iron wire* sufficient in size and *good* in quality. She has *2 Life Long* Boats and *4 others*

The Windlass is *Napier's patent* Capstan *iron* and Rudder *good* Pumps *good* as per approved plan

Engine Room Skylights. How constructed? *Teak hood on iron casing* How secured in ordinary weather? *glass bulls eyes*

What arrangements for deadlights in bad weather? *Tarpaulins* How secured? *30m starboard and 20m port side.*

Coal Bunker Openings. How constructed? *Iron shoots through iron casing bulkheads, 18" above decks, viz: 30m starboard and 20m port side.* Height above deck? *10m*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *10 scuppers, 8 wash ports, 6 mooring pipes, 5 gangway ports, on each side.*

Cargo Hatchways. How formed? *iron plates and angle irons.*

State size Main Hatch *20 feet x 13 feet* Fore hatch *8 feet x 8 feet* Quarter hatch *After hatches 16 x 10; 8 x 8; 16 x 8*

If of extraordinary size, state how framed and secured? *Not extraordinary*

What arrangement for shifting beams? *One web plate shifting beam in the main hatch; shifting beam in after*

Hatches, If strong and efficient? *Yes.*

Order for Special Survey No. <i>1899</i>	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	<i>Special Survey, 1881. Jan 31; Feb 2, 9, 17, 24; March</i>
Date <i>31st March 1881</i>		2nd. On the plating during the process of riveting	<i>24, 25; April 8, 14, 20, 25, 27; May 4, 9, 12, 19, 27, 31; June 3,</i>
Order for Ordinary Survey No. <i>1</i>		3rd. When the beams were in and fastened, and before the decks were laid...	<i>9, 14, 20, 24, 28; July 6, 11, 16, 22, 25, 27, 29; Aug 3, 5, 9, 12, 14</i>
Date <i>1st April 1881</i>		4th. When the ship was complete, and before the plating was finally coated or cemented...	<i>19, 23, 24, 30; Sep. 5, 7, 8, 13, 15, 19, 23, 28; Oct. 3, 7, 11, 14</i>
No. <i>111</i> in builder's yard.		5th. After the ship was launched and equipped	<i>21, 26, 31; Nov 3, 7, 11, 15, 18, 24, 29; Dec 1, 7, 10, 14, 21, 28, 1881</i>

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

This vessel has been built in general conformity with the approved sketches and arrangements, returned herewith (14 No.), and in accordance with the rules; and the workmanship and materials are good throughout. The Secretary's letters referring to this case are dated respectively the 20 Jan, and 19 May, 1881.

State if one, two, or three decked vessel, or if open, or covering deck; and the lengths of poop, bridge, fore-castle, or raised quarter deck. (If double bottom, state particulars on separate form.)

How are the surfaces preserved from oxidation? Inside *cement and paint* Outside *paint*

I am of opinion this Vessel should be Classified *+100 A.1.* 2 iron decks; 2 decks, 3 trs. bms.

The amount of the Entry Fee ... £ *5:0:0* is received by me, *G. Stanbury*

Special ... £ *89:14:6* 16/5/1882

Certificate ... (to be sent as per margin).

(Travelling Expenses, if any, £ ...).

Committee's Minute

Character assigned

Tuesday, 23rd May, 1882

Surveyor to Lloyd's Register of British and Foreign Shipping.

It is submitted that this vessel is a ...

Classed 100 A.1.

2 iron decks, 3 trs. bms.

16/5/1882