

IRON SHIPS.

No. 2487 Survey held at Stockton Date 25th March 65 to 10th February 1866
 on the S.S. "SADO" Master Edward Scott
 Tonnage under tonnage deck 392.26 Built at Stockton When built 1866 Launched 4th Jan'y. 66.
 Ditto of poop or spar deck 40.82 By whom built Richardson's & Co. Owners Francis José Pereira
 Ditto of engine room 108.2 Port belonging to London Destined Voyage Spain
 Total Register tonnage 324.88
 Gross tonnage 433.08
 Surveyed while Building, Afloat, or in Dry Dock While Building for 300 Tons Scale A grade

Length aloft	Feet.	Inches.	Extreme Breadth	Feet.	Inches.	Depth from top of Upper Deck Beam to top of Floor	Feet.	Inches.	Power of Engines	Horse.	No. of Decks
170	—	—	25	—	—	13	6	—	80	—	one

(Dimensions of Ship per Register, length 70-6 breadth 25-0 depth 13-9)

	Inches in Ship.	Inches required per Rule.		Inches in Ship.	Inches required per Rule.
Keel, if bar iron, depth and thickness	$7\frac{1}{2} \times 2$	$6\frac{1}{2} \times 2\frac{1}{4}$	Plates in Garboard Strakes, breadth and thickness	$24 \times 9\frac{1}{16}$	$24 \times 9\frac{1}{16}$
" if plate iron, breadth and thickness	$7\frac{1}{2} \times 2$	$6\frac{1}{2} \times 2\frac{1}{4}$	Ditto from Garboard to upper part of Bilges	$8\frac{1}{16}$	$8\frac{1}{16}$
Stem, if bar iron, moulding and thickness	$7\frac{1}{2} \times 2$	$6\frac{1}{2} \times 2\frac{1}{4}$	" from upper part of Bilge to a perpendicular height from upper side of Keel of $\frac{3}{4}$ ths the entire depth of Hold	$7\frac{1}{16}$	$7\frac{1}{16}$
" if plate iron, breadth and thickness	$7\frac{1}{2} \times 2$	$6\frac{1}{2} \times 2\frac{1}{4}$	" from $\frac{3}{4}$ ths depth of Hold to lower edge of Sheerstrake	$6\frac{1}{16}$	$6\frac{1}{16}$
Stern-post, if bar iron, moulding and thickness	$3\frac{1}{2} \times 8\frac{1}{2}$	$6\frac{1}{2} \times 4\frac{1}{2}$	" Sheerstrake, breadth and thickness	$27 \times 9\frac{1}{16}$	$24 \times 9\frac{1}{16}$
" if plate iron, breadth and thickness	$3\frac{1}{2} \times 8\frac{1}{2}$	$6\frac{1}{2} \times 4\frac{1}{2}$	Butt Straps to outside plating, breadth and thickness	$9 \times 9\frac{1}{16}$	$8\frac{1}{4} \times 9\frac{1}{16}$
Distance of Frames from moulding edge to moulding edge, all fore and aft	23	23	Gunwale Plate or Stringer on ends of Upper Deck Beams, breadth and thickness	$27 \times 9\frac{1}{16}$	$24 \times 9\frac{1}{16}$
Frames, Size of Angle Iron, single or double	$3\frac{1}{2} \times 2\frac{1}{2}$	$3\frac{1}{4} \times 2\frac{3}{4}$	Angle Iron on ditto	$3\frac{1}{2} \times 3\frac{1}{16}$	$3\frac{1}{2} \times 3\frac{1}{16}$
" Reversed Iron, if to every frame	$2\frac{1}{2} \times 2\frac{1}{2}$	$2\frac{1}{2} \times 2\frac{1}{2}$	Stringer or Tie Plates fore and aft, on Upper Deck Beams, outside Hatchways	$10\frac{1}{2} \times 7\frac{1}{16}$	$9\frac{3}{8} \times 7\frac{1}{16}$
Floors, depth and thickness of Floor Plate at mid line	$16 \times 7\frac{1}{16}$	$16 \times 7\frac{1}{16}$	Diagonal Tie Plates on ditto	$10\frac{1}{2} \times 7\frac{1}{16}$	$9\frac{3}{8} \times 7\frac{1}{16}$
" Ditto ditto at Bilge Keelson	$8 \times 7\frac{1}{16}$	$8 \times 7\frac{1}{16}$	Planksheer, materials and scantlings		
" Size of Reversed Angle Iron, and No. one at top of Floor Plate	$2\frac{1}{2} \times 2\frac{1}{2}$	$2\frac{1}{2} \times 2\frac{1}{2}$	Waterway ditto ditto		
Beams, Deck (No. 44) double Angle Iron, Plate, Tee, or Bulb Iron	$6\frac{1}{2} \times 6\frac{1}{16}$	$6\frac{1}{4} \times 6\frac{1}{16}$	Flat of Upper Deck, thickness and material	$3 \times 7\frac{1}{16}$	3
" double or single Angle Iron, on top edge	$2\frac{1}{2} \times 2\frac{1}{2}$	$2\frac{1}{2} \times 2\frac{1}{2}$	" how fastened to Beams	$8\frac{1}{16}$	8
" average space between	3 feet 6 in	3 feet 6 in	Ceiling betwixt Decks and in Hold, thickness and material	2	2
" Hold, or Lower Deck (No. 44) double Angle, Tee, Plate, or Bulb Iron			Clamps or Spirketting ditto		
" double or single Angle Iron on edge			Stringer Plates on ends of Hold or Lower Deck Beams, breadth and thickness	$10 \times 9\frac{1}{16}$	$10 \times 9\frac{1}{16}$
" average space between			Stringer or Tie Plates fore and aft outside Hatchways, on Hold or Lower Deck Beams	$4 \times 3 \times 6\frac{1}{16}$	$3\frac{1}{2} \times 3 \times 6\frac{1}{16}$
" Raddle, sided and moulded, thickness of Plate size of Angle Iron			Stringers in Hold		
" Engine			Flat of Lower Deck, thickness and material		
Keelson, single or double plate, bar, or intercostal			Main piece of Rudder, diameter at head	$4\frac{1}{2}$	$4\frac{1}{4}$
" Size of Plates	$10\frac{1}{2} \times 9\frac{1}{16}$	$10\frac{1}{2} \times 9\frac{1}{16}$	" " at heel	$2\frac{1}{2}$	$2\frac{1}{2}$
" Size of Angle Irons	$4 \times 3 \times 6\frac{1}{16}$	$4 \times 3 \times 6\frac{1}{16}$	(Can the Rudder be unshipped afloat)		Yes
" single or double plate, bar, or intercostal	$6\frac{1}{2} \times 6\frac{1}{16}$	$6\frac{1}{4} \times 6\frac{1}{16}$	Bulkheads, No. 4 Thickness of	$5\frac{1}{16}$	$5\frac{1}{16}$
" double or single plate, bar, or intercostal	$4 \times 3 \times 6\frac{1}{16}$	$4 \times 3 \times 6\frac{1}{16}$	" Height up to main deck		
" material iron or, if none, in what manner compensated for.			" how secured to the sides of the ship		Double frames & broad iron
" and Hawse Timbers			" size of vertical angle irons	$2\frac{1}{2} \times 2\frac{1}{2}$	and their distance apart 30 in.
" and in one length from			" rivetted through plates with	$(\frac{3}{4}$ in.) rivets,	about (6 in.) apart.
" angle irons on the floors extend in one length across the middle line from			" on Bilge to		
" " on the frames " " from			" top of Bilge to		
" on, how are the various lengths of plates or angle irons connected?			" Gunwale on every frame for $\frac{3}{4}$ length		
Plates, Garboard, double rivetted to keel, double rivetted at upper edge, with rivets ($\frac{3}{4}$ ins.) diameter, averaging ($2\frac{3}{4}$ in.) apart.			" Butts shifted strapped and rivetted.		
" Edges from Garboards to upper part of bilge, worked clencher, double or single rivetted; with rivets ($\frac{3}{4}$ in.) diameter, averaging ($2\frac{3}{4}$ ins.) apart.			" Do the butt straps lap over and rivet through the lands of the strake below?		no
" Butts from Keel to turn of bilge, worked carvel with butt straps ($9 \times \frac{3}{8}$ in.) thick, double or single rivetted; with rivets ($\frac{3}{4}$ in.) diameter, averaging ($2\frac{3}{4}$ ins.) apart.			" Edges from bilge to sheerstrake, worked carvel with a lining piece (—) thick, or clencher, double or single rivetted; with rivets ($\frac{3}{8}$ in.) diameter, averaging ($2\frac{1}{4}$ in.) apart.		
" Do the butt straps lap over and rivet through the lands of the strake below?			" At upper edge	Single to Iron Bulwarks	At lower edge
" Edges of Sheerstrake, double or single rivetted?			" Butts from bilge to planksheers, worked carvel with butt straps ($7\frac{1}{2} \times \frac{6}{16}$ in.) thick, double or single rivetted; with rivets ($\frac{5}{8}$ in.) diameter, averaging ($2\frac{1}{4}$ ins.) apart.		
" Breadth of laps in double rivetting ($4\frac{1}{2}$) Breadth of laps in single rivetting ($2\frac{1}{4}$)			" Butt Straps of Keelsons, Stringer and Tie Plates, double or single rivetted?		Double Rivetted
Planksheer, how secured to the plating of the sides			Planksheer, how secured to the plating of the sides		Explain by sketch
Waterway " planksheer and to the Beams			Waterway " planksheer and to the Beams		if necessary.
Deck Beams, how secured to the side?			Deck Beams, how secured to the side?		Beam ends turned and knees welded.
Hold or Lower Deck ditto			Hold or Lower Deck ditto		
Raddle " "			Raddle " "		
No. of breasthooks	3		crutches	2	
What description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.?			What description of Iron is used for the Frames, Beams, Keelsons, Tie and Stringer Plates, Outside Plating, &c.?		good
Manufacturer's name or trade mark			Manufacturer's name or trade mark		"Hopkins" - "Fox Head & Co."
We certify that the above is a correct description of the several particulars therein given.			We certify that the above is a correct description of the several particulars therein given.		
Builder's Signature			Builder's Signature		FOR RICHARDSONS. DENTON.
Surveyor's Signature			Surveyor's Signature		James Tindley

4574 Iron
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 rivetted edges and butts, and at least three and a quarter times the diameter of the rivets where single rivetting is admitted? They are
Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiencies? They do
Do the fillings between the ribs and plates fill in solid with single pieces? or are they in short lengths of various thicknesses? Single solid pieces
Do the holes 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? Sufficiently countersunk
Are there any rivets which either break into or have been put through the seams or butts of the plating? A few in Butts

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.)

General Remarks continued - The Engine and Boiler casings of cast $\frac{3}{16}$ plates. carried up to Bridge deck forming an iron deck house 30 feet 6 ins long x 7 feet 6 ins x 16 feet 10 ins the full length of Bridge

SAILS.			CABLES, &c.			ANCHORS, and their weights.		
N ^o .			Fathoms.	Inches.	Tested to Tons.	N ^o .	Weight. Ex. Stock	Tested to Tons.
Fore Sails,	Chain	.....	210	1 $\frac{1}{8}$	22 $\frac{3}{4}$	Bowers,	3	9.3.10 11 $\frac{1}{20}$
Fore Top Sails,	Hawser Stream Cable	.....	90	1 $\frac{1}{16}$				9.3.10 11 $\frac{1}{20}$
Fore Topmast Stay Sails,	Hawser	.....	90	8				8.0.18 10 $\frac{1}{20}$
Main Sails,	Towlines	.....	90	5		Stream, <u>stock included</u>	4	3.0 6 $\frac{1}{20}$
Main Top Sails,	Warp	.....	60	4 $\frac{1}{2}$		Kedges,	2	2 1.24
	All of <u>good</u> quality.							1.0.14

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

She has one Life Boat and one Pinnace and one gig

The present state of the Windlass is E.O. Capstan — and Rudder good Pumps 3 26 ins diam chamber 1.4 $\frac{1}{2}$

Order for Special Survey DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought Seen
No. 2244 Surveys held 2nd. On the plating during the progress of rivetting three each
Date 21st March 65 while building 3rd. When the beams were in and fastened, and before the decks were laid work
Order for Ordinary Survey as per 4th. When the ship was complete, and before the plating was finally coated while Building
No. — 5th. After the ship was launched special Survey
Date — Section 18.

State if she has a Spar Deck — Poop — or Forecastle —

General Remarks,

She is fitted with a full poop. all frames to top height. Plating $\frac{5}{16}$, single Rivetted at edges and double at Butts with $\frac{5}{8}$ Rivets $2\frac{1}{4}$ apart. Beams of Iron Bars of angle iron. Rivetted back to back one $4\frac{1}{2} \times 3 \times \frac{7}{16}$ other $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{5}{16}$. Stringer plate on beam ends $20\frac{1}{2} \times \frac{7}{16}$. with an angle iron on top. $4 \times 3 \times \frac{7}{16}$ Lie plates. $7\frac{1}{2} \times \frac{7}{16}$. Decks of $\frac{1}{2}$ T. 2" fastened with $\frac{9}{16}$ Bar iron top. Waterways of $\frac{1}{2}$ T. 2" - $10 \times 4\frac{1}{4}$. In lieu of Hold Beams she is fitted with a border stringer $10 \times \frac{1}{2}$ for three thirds vessels length remainder $10 \times \frac{1}{2}$ four Bars of angle iron $3\frac{1}{2} \times 3 \times \frac{7}{16}$. The two outer Bars of the Rivetted to the Reverse Bars which extend to gunwale on frame for three thirds vessels length amidships - see Secretary letter 9th March 65 - The length being over 12 Depths - shearstrakes are increased $\frac{2}{16}$ for $\frac{3}{4}$ length amidships - The gunwale stringer increased $\frac{2}{16}$ for half length and a Rib. iron $6\frac{1}{2} \times \frac{7}{16}$ is fitted three barge angle iron for same length. Wash plates $\frac{1}{4}$ thick fitted in Engine or Boiler space at middle line - The frames are doubled to Bilges for half length amidships - the 23 inch spacing having been adopted. (see above)

In what manner are the surfaces preserved from oxidation? Inside Bottom cemented all other work inside
Ditto ditto Outside and out with three coats of paint

I am of opinion this Vessel should be Classed B

The amount of the Fee £ 5 : 0 : 0 is received by me,

Feb 1866 Special £ 21 : 13 : 0

Certificate (if required) £ : :

Committee's Minute 16th February 18 66

Character assigned B

FOR RICHARDSONS, DENTON,

DUCK & COMPANY LIMITED

John Protheroe Sec

This Iron Steam Vessel appears eligible for Classification as recommended by Lloyd's Register Foundation