

KS.

IRON OR STEEL STEAMER.

(Received at London Office 11 Oct 94)

State if Report is also sent on the Machinery of the Vessel

Date of completion of report 5th July 1894 Port of Greenock

Survey held at Greenock Date, First Survey Aug. 11th 1893 Last Survey 29th June 1894

Grathairly

Rig Schooner

THREE DECKED VESSEL.

CLASS 100A1.

Master Edw. S. Rawlings

Year of appointment 1894

Built at Greenock

When built 1894 Launched 3rd May

By whom built Russell & Co

Owners Bunnell & Son

Managers

Residence 54 George Square Glasgow

Port belonging to Glasgow

Destined Voyage Pa. Palma via Spt. If Surveyed while Building, Afloat, or in Dry Dock Building Afloat.

Under Deck	3909.23
Under Upper Deck	3909.23
Under Lower Deck	136.54
Under Main Deck	19.56
Under Hatchways	39.50
Under Forecastle	39.20
Under Main Deck	4142.03
Under Space	94.44
Under Main Deck	4044.59
Under Main Deck	1325.45
Under Navigation Spaces	14.45
Under Tonnage	2704.39

Half Breadth (moulded)	23.58
Depth from upper part of Keel to top of Upper Deck Beams	30.64
Girth of Half Midship Frame (as per Rule)	49.40
	103.92
deduct 7 feet	4.00
1st Number	96.92
Length	367.5
2nd Number	356.8
Proportions—Breadth to Length	7.82
Depth to Length—Upper Deck to top of Keel	11.99
Main Deck ditto	16.78

Length on Deck	367	Breadth	2	Depth top of Floor to Upper Deck Beams	26	Power of Engines	353	No. of Decks with flat laid	Two
per Rule	6	Moulded	2	Do.	18	Horse	353	No. of Tiers of Beams	Two

Dimensions of Ship per Register, Length 367.5 breadth 44.5 depth 26.9 Moulded depth, ft. 29 ins. 8 To Upper Dk. Round up of Beam, Upper Dk. 114 ins.

FORGINGS OF CASTINGS.

KEEL, Bar or Side Plates, depth and thickness
STEM, moulding and thickness
STERN-POST for Rudder do. do.
" for Propeller
MAIN-PIECE of Rudder, diameter at head
" (Pintles & Gudgeons) do. at heel
RUDDER, how constructed Single Plate
Can the Rudder be unshipped afloat?

Inches in Ship	Inches per Rule
11 x 3	11 x 3
11 x 4	11 x 4
11 x 7	11 x 7
9 x 6	9 x 6

FRAMING.

FRAME, Angles, on 1 Base for 1/2 length amidships
Do. for 1/2 at each end
Do. in way of Double Bottoms
Distance of Frames from moulding edge to moulding edge, all fore and aft
REVERSED FRAME Angles
FLOORS, depth and thickness of Floor Plate
" at mid line for 1/2 length amidships
" in way of Engine and Boilers
" thickness at the ends of vessel
" depth at 1/2 the half breadth, as per Rule
" height extended at the Bilges

Inches in Ship	Inches per Rule
6 3/4	6 3/4
5 3/4	5 3/4
3 3/4	3 3/4
2 1/4	2 1/4
6 3/4	6 3/4
4 3/4	4 3/4
9	9

FLOORS & BRACKETS in Cell Dble Bottoms
" Distance apart
CENTRE GIRDER, in Dbl Btm, depth & thickness
" Angles, Top & Bottom
SIDE GIRDERS, number and thickness
" Angles
MARGIN PLATE, dpth (excl. of flange) & thickness
" Angles
INNER BOTTOM PLATING, breadth and thickness of Middle Line Strake
" in Engine and Boiler space
" Remainder in Holds

Inches in Ship	Inches per Rule
4 1/2	4 1/2
2 1/4	2 1/4
4 1/2	4 1/2
6 3/4	6 3/4
3 3/4	3 3/4
30	30
4	4
5 1/2	5 1/2
10	10
10	10
10	10

BEAMS, Upper Deck, Single Angle, Bulb
" Angle, Plate or Tee Bulb
" Angles on upper edge
" Average space
BEAMS, Middle Deck, Single Angle, Bulb
" Angle, Plate or Tee Bulb
" Angles on upper edge
" Average space
BEAMS, Lower Deck, Single Angle, Bulb
" Angle, Plate or Tee Bulb
" Angles on upper edge
" Average space

Inches in Ship	Inches per Rule
10	10
3 3/4	3 3/4
48	48
11 1/2	11 1/2
3 3/4	3 3/4
48	48

BEAMS, Hold, or Orlop, Plate or Tee Bulb
" Angles on upper edge
" Average space
BEAMS, Poop and Bridge Deck, Angle, Bulb
" Angle, Plate or Tee Bulb
" Angles on upper edge
" Average space
BEAMS, Forecastle Deck, Angle, Bulb
" Angle, Plate or Tee Bulb
" Angles on upper edge
" Average space
PILLARS, In 'tween Decks, Size and Spacing
" Hold

Inches in Ship	Inches per Rule
10	10
3 3/4	3 3/4
48	48
11 1/2	11 1/2
3 3/4	3 3/4
48	48

WEB FRAMES, In Fore Body, No. and spacing
" No. of Side Stringers
WEB FRAMES, In After Body, No. and spacing
" Brdth. & Thickness
" No. of Side Stringers
" Size of Angles or Tee Bars to Web Frames
BRACKET PLATES to Stringers between Web Frames, Depth and Thickness

Inches in Ship	Inches per Rule
18	18
9	9
33	33
24	24

KEELSONS & STRINGERS.

CENTRE LINE KEELSON, Vertical Plate above floors, Through Plate, or Intercoastal Plate
" Rider Plate
" Bulb Plate to Intercoastal Keelson
" Horizontal Plates on Floors
" Angles
SIDE KEELSON, Angles
" Bulb or Plate above floors, for length
" Intercoastal Plate, for length
" Attached to outside Plating with Angle

Inches in Ship	Inches per Rule
9	9
3 3/4	3 3/4
11	11
9	9

BULGE KEELSON, Angles
" Bulb or Plate above floors, for length
" Intercoastal Plate for length
" Attached to outside Plating with Angle
BULGE STRINGER Angles
" Bulb Plate for length
" Intercoastal Plate for length
" Attached to outside Plating with Angle

Inches in Ship	Inches per Rule
9	9
3 3/4	3 3/4
11	11
9	9

SIDE STRINGER Angles
" Bulb or Intercoastal Plate for length
" Attached to outside Plating with Angle
Upper Deck Stringer Plate, on ends of Beams, breadth and thickness
" Angle on ditto
" Tie Plates fore and aft, outside Hatchways
" Flat of Dk. * Iron or Steel, for whole lng.
" No Wood laid down Material & thickness
" How fastened to Beams

Inches in Ship	Inches per Rule
54	54
10	10
54	54
10	10

Middle Deck Stringer Plate, br'dth & thickness
" Angles on ditto, No. 2
" Tie Plates outside Hatchways
" Diagonal Tie Plates on Bms. No. of p's
" Flat of Dk. * Iron or Steel, for whole lng.
" No Wood laid down Material & thickness
" How fastened to Beams

Inches in Ship	Inches per Rule
54	54
10	10
54	54
10	10

Lower Deck Stringer Plate, br'dth & thickness
" Angles on ditto, No.
" Tie Plates, outside Hatchways
" Flat of Deck * Material and thickness
" How fastened to Beams
Hold or Orlop Stringer Plate, br'dth & thickness
" Angles on ditto, No. 2
" Tie Plates outside Hatchways
" Flat of Deck * Material and thickness
" How fastened to Beams

Inches in Ship	Inches per Rule
40	40
11	11
40	40
11	11

Poop Deck Stringer Plate, breadth & thickness
" Angle on ditto
" Tie Plates
" Flat of Deck, Material and thickness
Bridge Deck Stringer Plate, breadth & thickness
" Angle on ditto
" Tie Plates
" Flat of Deck, Material and thickness
Forecastle Deck Stringer Plate, br'dth & thickness
" Angle on ditto
" Tie Plates
" Flat of Deck, Material and thickness

Inches in Ship	Inches per Rule
36	36
7	7
36	36
7	7

PLATING.

FLAT PLATE KEEL, breadth and thickness
" D'bling or inc. thickness & len. applied
PLATES in Garboard Strakes, br'dth & thickness
" from Garboard to lower part of Bilges
" Bilges, number of Strakes and thickness
" Of doubling at Bilge, or increased thickness, and length applied
" from up. prt. of Bilge to lr. edge of Sh'strake
" of plates below Sh'strake
" Sheerstrake, breadth and thickness
" Of d'bling at Sh'stk. & length applied
" Poop Sides
" Bridge do.
" Forecastle do.
Lengths of Plating 7 frame spaces

Inches in Ship	Inches per Rule
36	36
18	18
36	36
18	18

Form No. 1 B

(Sparings)
Ceiling betwixt Decks, thickness and material *2 1/4" P*
" in hold do. do. *2 1/4" P*

Number of Breasthooks *Five & deep floors*
" Crutches *Six & deep floors*

BULKHEADS. No. in Vessel *6*
Thickness Angles Spacing Height up. Sngl or Dble. Frames
W. T. BULKHEADS } *4-6* Vrtcl *5 1/2 x 3 1/2* *30* } *Upper deck* *Double*
" *20* Hrzntl *9 x 11 1/2* *48-54* }
Partitions } *Subways* Vrtcl *4 1/2 x 3 1/2* *30* }
" *20* Hrzntl }
Longitudinal } Vrtcl }

Are the outside Plates doubled two spaces of Frames in length? *Yes*
The FRAMES extend in one length from *Margin plate to Gunwale* Riveted through plates with *3/8* in. Rivets, about *6 1/2* apart.
The REVERSED ANGLE on floors and frames *from below to upper deck for 1/2 length, and at aft the after peak bulkhead.*
Before at aft 1/2 length to upper & main deck alternately, and on alternate frames to main deck. Double rivets 3 paces.

RIVETING OF EDGES AND BUTTS OF SHELL PLATING AND BUTTS OF STRINGER PLATES, TIE PLATES, KEELSONS, &c.
Garboard, double riveted to *Bar Keel or Flat Plate Keel*, with rivets *1* in. diameter, averaging *4* ins. from centre to centre.
Edges of Garboards, and to upper part of Bilge, worked clencher, double riveted; with rivets *3/8* in. diameter, averaging *3 1/2* ins. from centre to centre.

Butts from Keel to turn of Bilge, worked carvel, treble or double riveted; treble for *whole* length; with rivets *1 1/8* in dia., averaging *3 1/2 x 3 1/2* ins. from cr. to cr.
" " " overlapped for *whole* length, treble riveted for *whole* length; with rivets *1 1/8* in dia., averaging *3 1/2 x 3 1/2* ins. from cr. to cr.
Butts of *all* Strakes at Bilge for *whole* length, treble riveted, with Butt Straps *thicker than the plates they connect.*

Edges from Bilge to Sheerstrake, worked clencher, double riveted; with rivets *3/8* in. diameter, averaging *3 1/2* ins. from centre to centre.
Butts from Bilge to Sheerstrake, worked carvel, treble or double riveted; treble for *whole* length; with rivets *3/8* in. dia., averaging *3 1/2 x 3 1/2* ins. from cr. to cr.
Remaining Butts from Bilge overlapped for *whole* length, treble riveted for *whole* length; with rivets *3/8* in dia., averaging *3 1/2* ins. from cr. to cr.

Edges of Sheerstrake, double riveted. Butts of Sheerstrake, treble riveted for *whole* length amidships.
Butts of Middle Deck Stringer Plate, treble riveted for *whole* length amidships. Butts of Upper Deck Stringer Plate, treble riveted for *whole* length.

" " Single or Double Straps for *1/2* length amidships. " " Single or Double Straps for *half* length.
Butts of Inner Bottom Plating *double* riveted for *whole* length. Butts of Centre Girder *treble* riveted.

Breadth of edge laps of Shell Plating in double riveting *5 1/2 x 6*. Breadth of edge laps of Shell Plating in single riveting *9, 10 1/2 x 12*.
Butt Straps of Shell Plating, breadth and thickness *19 x 1 1/2 x 16 1/2 x 1 1/2*. Butts if Lapped, breadth of laps *9, 10 1/2 x 12*.

Butt Straps of Keelsons, Stringer and Tie Plates, treble or double riveted? *Double*.
Manufacturer's name or trade mark of the Iron or Steel (state process of manufacture of Steel) used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c. *Steel (Siemens Martin process) James Lamarkshire, Blans. Lamarkshire, Salford, Hudders.*

Hollands. Hudders. Tied Stringer plates. Hudders. Consett, Mossend, Lamarkshire. Outside Plating. Salford, Hudders.
Workmanship. Are the butts of plating planed or otherwise fitted? *Planed.* *Mossend, Clydeside, Emuli, Moor. Floors.*
Salford, Hudders, Consett, Mossend.

Is the riveted work properly closed? *Yes.* Do the holes for riveting plate to frames, butt straps, or plate to plate, &c, conform well to each other? *Yes.*
Are the liners between the frames and plates solid single pieces? *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.*
Are the butts of Plating, Stringers, &c., properly shifted and strapped? *Yes.*

MASTS, SPARS, &c.
Material. Total Length
Fore *Steel* *79' 0"*
Main *"* *70' 6"*
Mizzen *"* *70' 6"*

LOWER MASTS....
At Partners. Heel. Hounds. Head.
23 x 4 1/2 18 x 6 19 x 6
No. of plates in round 2
Angles. Number. Size. Riveting. Butts.
Nil - Single treble or double riveted.

Topmasts, Yards and Remainder of Spars *Wood*
Rigging, Material and Size, Shrouds *1/4" Wire 3/4", and backstays 1/2".* Stays *5/8" Wire 4 ins.*

Sails. *One* Suit of Sails, and the following spare sails.
EQUIPMENT No. 40410 LETTER X ANCHORS.

Number of Certificate.		WEIGHT, EX STOCK.			WEIGHT OF STOCK.			TEST, PER CERTIFICATE.			WEIGHT REQ. PR RULE.			Description of Anchor.	Makers.	Where and when tested, and Superintendent.
		Cwts.	qrs.	lbs.	Cwts.	qrs.	lbs.	Tons.	Cwts.	qrs.	lbs.	Cwts.	qrs.	lbs.		
16303	1st Bower ..	42	2	10	10	3	0	34	11	3	14	41	2	0	<i>Rodgers</i>	<i>H. Hingley & Co. Salford, 17/5/94. E. R. Platt</i>
16305	2nd " ..	42	0	0	11	0	3	34	2	2	0	41	2	0	"	"
16302	3rd " ..	41	0	16	10	2	9	36	13	0	14	41	2	0	"	"
16304	4th " ..	34	1	13	9	1	18	34	0	2	14	35	1	0	"	"
	Collective weight	163	0	11							159	3	0			
16304	Stream	13	0	11	3	2	23	14	14	0	21	12	3	0	"	"
16306	Kedge	6	1	15	1	2	19	8	10	0	0	6	2	0	"	"
	and Kedge ..															

CHAIN CABLES. **HAWSERS AND WARFS.**

Number of Certificate.	Fathoms.	Size.	Test per Certificate Tons.	Weight of Chain Cable.	Fathoms & size. Per Rule.	Description.	Makers of Cables.	Where and when tested, and Superintendent.	Material.	Fathoms.	Size.	Fathoms & Size. Per Rule.
14516 & 14515	240	2 1/2	11 1/2	119.124	240 x 2 1/2	<i>Shad Link</i>	<i>H. Hingley & Co. Salford, 17/5/94. E. R. Platt</i>	<i>Best Supl.</i>	Towline <i>Manila</i>	30	1 1/2	30 x 1 1/2
14518	90	1 1/2	3 1/2	66.1	90 x 1 1/2	"	"	"	Hawser <i>Manila</i>	90	3 1/2	90 x 3 1/2
Iron Stream Chain or Steel Wire	90	1 1/2	3 1/2	66.1	90 x 1 1/2	"	"	"	"			
Towline if steel wire	90	1 1/2	3 1/2	66.1	90 x 1 1/2	"	"	"	"			

Boats *11 No. 2-25th Life Boat, 1-20th Jolly Boat, 1-23rd Gig.*
Pumps, Number *Seven.* Diameter of Barrel and Tail Pipe *Barrels 5" Tail Pipes 2 1/2"*

The Windlass is *Iron (Napier Bros. patent)* and Capstan *Good.*
Engine Room Skylights.—How constructed? *Steel frame.*

What arrangements for deadlights in bad weather? *Dark flaps with Bull's Eyes.*
Coal Bunker Openings.—How constructed? *7" Bulb single cranning* How are lids secured? *Hatch bars & tarpaulins* Height above deck *and by in casing.*

Number of Scuppers, and number and dimensions of Freeing Ports, &c. *Each side Forward. 2 deep ports & 3 Ports. Ports 2' 6 1/2 x 1 1/2, 2' 5 x 1 1/2, 2' 5 x 1 1/2.*
2' 0 1/2 x 1 1/2. Aft. 3 deep ports & 3 Ports. Ports 2' 5 x 1 1/2, 2' 3 1/2 x 1 1/2, 2' 3 1/2 x 1 1/2.

Cargo Hatchways.—How formed? *Deep plate forming cranning & earling 3ft. Hatches, If strong and efficient? Yes. 3 in. thick.*
State size No. 1 Hatch (Forward) *23' 9" x 15' 11 1/2"* No. 2 Hatch *31' 6" x 15' 11"* No. 3 Hatch *24' 10" x 15' 11"* No. 4 Hatch *21' 9" x 15' 10"*

Number of Web Plates, Shifting Beams, and Fore and Afters to each Hatch *Two web plates and three fore and afters to each of Nos. 1, 3 & 4 Hatches, and three web plates and three fore and afters to No. 2 Hatch.*
Bulwarks, height above deck and description *4' 6" High. 2 1/2" steel.* Main Rail, material and size *Channel 11 1/2" x 3 1/2" with hollow ground on outside, and solid 2 1/2" inside.*

The above is a correct description.
Builder's Signature (here only) *Rufell & Co by their attorney Joseph Rufell*
Surveyor's Signature, *J. J. Horner*
Surveyor of Lloyd's Register of British and Foreign Shipping.

Order for Special Survey No. 1083
Date 7/9/12 June 1894
Order for Ordinary Survey No. -
Date -
No. 3414 in builder's yard
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 process of riveting
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 or cemented
5th. After the ship was launched and equipped
Built under SS and Surveyed
Date of First Survey Aug. 11th 1893
" " Last " July 24th 1894
Total No. of Visits 82

State dates and initials of letters respecting this case M. 1893-23 & 30/6, 4 & 5/7, 11, 14, 18 & 25/8, 2, 18, 21, 27, 28 & 29/9, 3, 4, 5, 14, 19, 21 & 24/10, 14/11 & 1/12, & E. 20 & 24/10 E. 1894-15/1 & 5/2.

General Remarks (State quality of workmanship, &c.)
This vessel has been built in accordance with the accompanying approved plans, as amended, the tracing of midship section forwarded on the 3rd July, for the preparation of the Certificate of Class, and otherwise as required by the Rules.
The quality of workmanship and material is good.
The pumps are in efficient working order, also watertight doors.
Two reports on forgings herewith

Particulars for Record in the REGISTER BOOK.—Length of Poop 52 ft., R.Q.D. or Break ft., Bridge Dk. 82 ft., F'castle 38 ft.
(in feet and tenths) where the Poop is joined to the B.D., this should be distinctly stated
No. and Material of Decks (if Iron or Steel) and whether wholly or partially covered with wood, and No. of tiers of Beams (this information is to be given as it should appear in the Register Book) 2 Dks (Iron) & deep framing 3 Dk Rule.
Official No. 104533 ; Signal Letters

PARTICULARS OF WATER BALLAST.
Double bottom, aft, length and water capacity in tons Double bottom, forward, length and water capacity in tons
Double bottom, under engines and boilers, length and water capacity in tons If under engine only, or boilers only, state which
Double bottom, constructed on the cellular system, length 310 Feet, and water capacity in tons 760
Fore peak tank, water capacity in tons 195 After peak tank, water capacity in tons 32
Midship deep tank, length 62 feet and water capacity in tons 460 Other tanks, if fitted, length and water capacity in tons
The above have now been tested as required by the Rules.
(If necessary, furnish further information by sketch.)
How are the surfaces preserved from oxidation? Inside Paint, S.S. & Co's patent Cement on tanks, top and bottom, and on floor in midship boiler. Portland Cement in tanks and on bottom under boilers. Outside Paint.

FREEBOARD assigned by the Committee, as per Secretary's Letter dated
In Summer ft. ins.
In Winter ft. ins.
For Winter in North Atlantic ft. ins.
Fresh Water above the centre of disc ft. ins.
To top of Wood, Iron or Steel Upper Deck.
The amount of Entry Fee £ 5 : : is received by me, J. J. Howell
Special £ 126 2 : 6 29. 6 18 94 * Certificate to be sent to Greenock
Certificate £ : :
Travelling Expenses, if any £ : :
I am of opinion this Vessel should be Classed * 100A1 "Steel"
Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 10 JUL 1894
Character assigned 100A1 (Steel)
2 Dks (Iron) & deep framing 3 Dk rule
F.K. pt. top pt. Cem
L.A. & B.P. A.L.M. C. 6. 94
This Vessel appears to have been built in accordance with the Rules and the approved plans, and it is submitted she is eligible to be classed 100A1 (Steel) as recommended.
100A1 (Steel)
2 Dks (Iron) & deep framing 3 Dk Rule
N.B. = C.W. D.B. a 110' x E 24' x 154' 7600 D.T. a 62' 4600 F.P.T. 195 = A.P.T. 324
F.K. pt. top pt. Cem
Lloyd's Register Foundation
attatched 4/7/94