IRON SHIP.

(4th SEPT. 82.)

No. 3816 Survey held at Glasgow Date, First Survey 23rd Nov.r 1881 Last Survey 2nd September 1882

On the Iron Screw Steamer "Clan Forbes"

TONNAGE under Tonnage Deck	2253·24
Ditto of ~~Third, Spar, or Awning Deck~~ Hold-ways	15·64
Ditto of Poop, ~~or Raised Qr. Dk.~~	34·63
Ditto of Houses on Deck	86·44
Ditto of Forecastle	51·06
Gross Tonnage	2441·04
Less Crew Space	69·11
	2371·93
Less Engine Room	781·13
Register Tonnage as cut on Beam	1590·80

~~ONE, OR TWO DECKED~~, **THREE DECKED VESSEL**, ~~SPAR, OR AWNING DECKED VESSEL.~~

	Feet.
Half Breadth (*moulded*)	18·89
Depth *from upper part of Keel to top of Upper Deck Beams*	24·54
Girth *of Half Midship Frame* (*as per Rule*)	42·30
1st Number	88·43
1st Number, *if a* **3-Decked Vessel** .. *deduct 7 feet*	7·00
	81·43
Length	322·50
2nd Number	26354
Proportions— *Breadths to Length*	8·53
Depths to Length—Upper Deck to Keel	11·71
Main Deck ditto	16·29

Master W. Ellwood

Built at Glasgow

When built 1881-82 Launched 16th Aug.t 1882

By whom built Alex.r Stephen & Sons

Owners Messrs Cayzer, Irvine & Co.

Residence Glasgow

Port belonging to Glasgow

Destined Voyage Calcutta

If Surveyed while Building, Afloat, or in Dry Dock.

Building and Afloat.

Official Number

LENGTH on deck as per Rule ... Feet. 322 Inches. 6 | **BREADTH**— Moulded ... Feet. 34 Inches. 9 | **DEPTH** top of Floors to Upper Deck Beams ... Feet. 24 Inches. 0½ / Do. do. Main Deck Beams ... Feet. 16 Inches. 3½ | Power of Engines ... Horse. 300 | N°. of Decks with flat laid Two / N°. of Tiers of Beams Two

Dimensions of Ship per Register, length, 324·5 breadth, 38·1 depth, 23·8

	Inches in Ship.			Inches per Rule.		
KEEL, depth and thickness ~~side plates~~ ...	10 × 1⅛			10 × 1⅛		
STEM, moulding and thickness ...	10 × 2 1/2			10 × 2 1/2		
STERN-POST for Rudder do. do. ...	10 × 5½			10 × 5½		
" " for Propeller ...	10 × 5½			10 × 5½		
Distance of Frames from moulding edge to moulding edge, all fore and aft ...	24			24		
	Inches. In Ship.	Inches. In Ship.	16ths. In Ship.	Inches per Rule	Inches per Rule	16ths per Rule
				(Class 100 A)		
FRAMES, Angle Iron, for ⅗ length amidships ...	5	3½	8	5	3½	8
Do. for ⅕ at each end ...	5	3½	7	5	3½	7
REVERSED FRAMES, Angle Iron ...	3½	3½	8	3½	3½	8
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships ...	Double bottom constructed on the cellular system as per Section attached hereto.					
" thickness at the ends of vessel ...						
" depth at ¾ the half-bdth. as per Rule ...						
" height extended at the Bilges ...						
BEAMS, Upper, ~~Spar, or Awning~~ **Deck** Single ~~or d'ble~~ Ang. Iron, ~~Plate or Tee Bulb Iron~~	6	3	9	6	3	9
~~Single or double Angle Iron on Upper edge~~ ...						
Average space ...	One frame space			One frame space		
BEAMS, Main, or Middle Deck ... Single ~~or d'ble~~ Ang. Iron, ~~Plate or Tee Bulb Iron~~	6	3	9	6	3	9
~~Single, or double Angle Iron, on Upper Edge~~ ...						
Average space ...	One frame space			One frame space		
~~**BEAMS, Lower Deck**~~— Single or d'ble Ang. Iron, ~~Plate or Tee Bulb Iron~~						
~~Single or double Angle Iron on Upper Edge~~ ...						
~~Average space~~ ...						
~~**BEAMS, Hold, or Orlop**~~— Single or d'ble Ang. Iron, ~~Plate or Tee Bulb Iron~~						
~~Single or double Angle Iron on Upper Edge~~ ...						
~~Average space~~ ...						
KEELSONS Centre line, single or double plate, box, or Intercostal, Plates ...	Double bottom constructed on the cellular system as per general Sections attached hereto.					
" Rider Plate ...						
" Bulb Plate to Intercostal Keelson ...						
" Angle Irons ...						
" Double Angle Iron Side Keelson ...						
" Side Intercostal Plate ...						
" do. Angle Irons ...						
" Attached to outside plating with angle iron						
BILGE Stringer Angle Irons ...	3½	3½	7	3½	3½	7
" do. Bulb Iron between web frames						
" do. 7/16 Intercostal plates riveted to plating for whole length with	3½	3½	8	3½	3½	8
~~BILGE~~ STRINGER Side Angle Irons ...	3½	3½	7	3½	3½	7
7/16 Intercostal plates riveted to plating for whole length with	3½	3½	8	3½	3½	8
~~**SIDE STRINGER** Angle Irons~~ ...						

	Inches. In Ship.	16ths. In Ship.	Inches. per Rule and upwards	16ths. per Rule Sections
~~Flat Keel Plates, breadth and thickness~~ ...				
PLATES in Garboard Strakes, br'dth & thickness	36	12	36	12
" From Garboard to ~~upper~~ Lower part of Bilges ...		10		10
" ~~Of~~ d'bling at Bilge, ~~or~~ increased thickness, and length applied Half length		11-12		11-12
" From up. prt of Bilge to lr. edge of Sh'rstrake ...		11		11
" Main Sheerstrake, breadth and thickness ...	47	14	47	14
" ~~Of d'blng at Sh'stk. & hg. applied~~				
" ~~From M'n. to Upr. or Spar Dk. Sh'rstrake~~ ...				
" ~~Up. or Spar Dk Sh'rstrake, brdth & thickn'ss~~ ...				
Butt Straps to outside plating, breadth & thickness	16¾ 1½	15/12 11/10	16¾ 1½	15/12 11/10
Lengths of Plating	6 frame spaces		5 frame spaces	
Shifts of Plating, and Stringers	2 "	"	2 "	"
Gunwale Plate on ends of ~~Awning, Spar, or~~ Upper Deck Beams, breadth and thickness ...	46	9	46	9
Angle Iron on ditto ...	4×4	9	4×4	9
~~Tie Plates fore and aft, outside Hatchways~~				
~~Diagonal Tie Plates on Beams~~ No. of Pairs		6		6
Flat of Up., ~~Spar or Awning~~ Dk.* Laid on Iron deck	3½	Y.P		
How fastened to Beams Iron deck Rivets & Screw Bolts ...				
Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness ...	51	10	51	10
Is the Stringer Plate attached to the outside plating?	Yes			
Angle Irons on ditto, No. 2 ...	4×4	9	4×4	9
~~Tie Plates, outside Hatchways~~ ...				
~~Diagonal Tie Plates on Beams, No. of pairs~~				
Flat of Middle Deck* do Iron do. whole length		6		6
How fastened to Beams riveted		wood deck laid thereon		
~~Stringer Plates on ends of Lower Deck, Hold or Orlop Beams~~ ...				
~~*Is the Stringer Plate attached to the outside plating?*~~				
~~Angle Irons on ditto, No.~~ ...				
~~Stringer or Tie Plates, outside Hatchways~~ ...				
~~Flat of Lower Deck~~ *				
Ceiling betwixt Decks, thickness and material (Spruce) ...	6×2	W.P		
" in hold do. do. ...	2½	P.P	2½	
Main piece of Rudder, diameter at head ...	4½		4½	
do. at heel ...	4		3¾	
Can the Rudder be unshipped afloat?	Yes			
Bulkheads No. 6 No. per Rule 4				
" Thickness of 7/16 - 6/16				
" Height up Upper deck				
" How secured to sides of ship Double frame angle bars				
" Size of Vertical Angle Irons 3½×3½×8/16 and distance apart 30 ins.				
" Are the outside Plates doubled two spaces of Frames in length? Yes				

The **FRAMES** extend in one length from Margin plate to Margin plate of from Margin plate to Gunwale Riveted through plates with 7/8 in. Rivets, about 4" apart.

The **REVERSED ANGLE IRONS** on floors and frames extend from middle line to Middle deck and to Upper deck 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 1⅛ in. diameter, averaging 5½ 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 3½ ins. from centre to centre.

" **Butts from Keel to turn of Bilge,** worked carvel, double riveted; with rivets 7/8 in. diameter averaging 3½ ins. from centre to centre.

" **Butts** of Three Strakes at Bilge for half length, treble riveted with Butt Straps 1/16 in. 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 3½ ins. from cr. to cr.

" **Butts from Bilge to Main Sheerstrake,** worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3½ ins. from cr. to cr.

Lower **Edges** of ~~Main~~ **Sheerstrake,** double ~~or single~~ riveted. ~~**Upper Sheerstrake,** double or single riveted.~~

" **Butts of** ~~Main~~ **Sheerstrake,** treble riveted for ⅖ length amidships. ~~Butts of Upper or Spar Sheerstrake, treble riveted length amidships.~~

" **Butts of Main Stringer Plate,** treble riveted for ⅖ length amidships. **Butts of Upper** ~~or Spar~~ **Stringer Plate,** treble riveted for half length.

" Breadth of laps of plating in double riveting 5½ ins. ~~Breadth of laps of plating in single riveting~~

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? treble & double No. of Breasthooks, 5 Crutches, 3

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Best

Manufacturer's name or trade mark, Parkhead and Glasgow.

The above is a correct description.

Builder's Signature, A. C. Stephen & Sons *Surveyor's Signature,* J. J. Lovell

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

* If Iron Deck, state if whole or part, and if wood deck, if laid thereon.

State clearly where plating is of alternate thicknesses—as distinguished from diminished thickness at ends of vessel.

(Form No. 1 for Iron Ships—4000—24/5/81.)

ROBT. EDMD. TAYLOR & SON Commercial and General Steam Printers, 19, Old Street, Goswell Road, E.C., London.

Workmanship. Are the butts of plating planed or otherwise fitted? Planed 8516 99.

Do the edges of the carvel work and of the butts fay 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

Masts, ~~Bowsprit~~, Yards, &c., are new 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~~

		Total length	Diam at partners	Diam at heel	Diam at rounds	Diam at top	Diam at head	
Iron (Clydesdale B.B.)	Foremast	84.3	25½	18	18½	13	8	Two plates in the round, treble riveted butts and double riveted laps.
	Mainmast	76.9	24½	19	18	12¾	8	

Lowermast, topmast and topgallantmast in one.

Plating 7/16-inch in thickness to lowermasts, tapering to 5/16-inch at heads.

NUMBER for EQUIPMENT 3147

SAILS. N°.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprntdt.
	Chain 28/6/82 ... (State Machine where Tested, Date, or No. of Certificate, & Name of Superintendant.)	300¾	1 15/16	B.S. 94½ T.S. 67½	300 × 1 15/16	Glasgow. W. Fraser Supt.
One	Iron Stream Chain 27/2/82 ~~or Steel Wire~~ ..	90¼	1 2/16	B.S. 34⅞ T.S. 22¾	90 × 1 2/16	
	Fore Topmast Stay Sails, ~~or Hempen Stm Cable~~ 27/8/82					
Suit	Towline ~~Hemp~~.	100	5	B.S. 59	100 × 4	
	~~or~~ Steel Wire ..					
	Main Sails, Hawser	90	10		90 × 10	
	Main Top Sails, and Warp	90	8½		90 × 8½	
	quality good					

ANCHORS.	N°	Weight. Ex. Stock.	Test per Certificate	W'ght req'd per Rule.	Machine where Tested & Suprntdt.
Bower Anchors (State Machine where Tested, Date, or No. of Certificate, & Name of Superintendant.)	489	37.0.19	33.17.3.4	36½	Glasgow. W. Fraser Supt.
	490	36.0.1	33.2.2.0	36½	
	488	30.3.16	29.5.2.14	31	
		104			
Stream Anchor	485	11.1.0	13.2.2.0	11¼	
Kedge ...	486	5.2.0	7.16.1.0	5½	
2nd Kedge ...	484	2.3.8	5.6.1.0	2¾	

Standing and Running Rigging Wire & hemp sufficient in size and good in quality. She has Six ~~Long~~ Boats ~~and~~ (2-Lifeboats & 4 others)

The Windlass is Iron (patent) ~~Capstan~~ and Rudder good Pumps good

Engine Room Skylights.—How constructed? Teak framing How secured in ordinary weather? Plates and Bolts

What arrangements for deadlights in bad weather? Flaps with bulls eyes

Coal Bunker Openings.—How constructed? Plates & angles How are lids secured? Solid hatches & tarpaulins Height above deck? 12 inches

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? Sixteen scuppers and fourteen water ports

Cargo Hatchways.—How formed? Deep coaming plates and angles

State size ~~Main~~ No.1 Hatch 14.0 × 11.0 ~~Fore~~ No.2 hatch 28.0 × 11.0 No.3 ~~Quarter~~ hatch 16.0 × 11.0 No.4 hatch 24.0 × 11.0

If of extraordinary size, state how framed and secured? Framed with plates and angles - the plates form coaming & Carling and extend to a height of 21 inches above deck flat.

What arrangement for shifting beams? In No 2 hatchway 2 deep web plates, No 3 hatchway one deep web plate, No 4 hatchway two deep web plates.

Hatches, If strong and efficient? yes (solid hatches)

Order for Special Survey No. 1596

Date 31st March 1881

Order for Ordinary Survey No. ✓

Date ✓

No. 263 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	1881 - Nov: 23 & 26. Dec: 2, 14 & 24.
2nd.	On the plating during the process of riveting	1882 - Jan. 11, 19, 26 & 27. Feb: 2, 10, 16, 20, 23 & 24.
3rd.	When the beams were in and fastened, and before the decks were laid....	March 8, 16, 25 & 29. April 4, 11, 14, 18, 21, 25 & 29.
4th.	When the ship was complete, and before the plating was finally coated or cemented..	May 6, 9, 16, 24 & 31. June 5, 13, 16, 21, 28 & 29
5th.	After the ship was launched and equipped	July 6, 7, 12, 26 & 31. August 3, 7, 10, 12, 19 - Sept: 2.

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

This Vessel has been built in conformity with the approved Midship and Longitudinal Sections, the instructions contained in the Secretary's letters dated 28th February and 8th & 12th March 1881, and otherwise in accordance with the Rules with a view to the grade Contemplated.

The quality of workmanship and material is good

This is a sister vessel to the "Clan Cameron" and "Clan Campbell", (Glasgow Reports Nos. 5661 and 5756) but has iron bulwarks as "Clan Campbell."

Two decks and Web frames with

Poop 12 feet - Bridge 74 feet - Forecastle 38 feet and Double bottom.

State if one, two, or three decked vessel, or if spar, or awning decked; and the lengths of poop, bridge, forecastle, or raised quarter deck. (If double bottom, state particulars on separate form.)

How are the surfaces preserved from oxidation? Inside Paint and Cement Outside Paint

I am of opinion this Vessel should be Classed ✠ 100 A 1.

The amount of the Entry Fee ... £ 5 : 0 : 0 is received by me, 1/9/ 1882

Special ... £ 84 : 6 : 0

Certificate ... 0 : 0 : 0

(to be sent as per margin) £89 : 6 : 0

(Travelling Expenses, if any, £).

J. J. Lowe

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

Committee's Minute 18

Character assigned ✠ 100 A 1 L & C P 2 Decks Iron & web frames

This vessel appears to be eligible to be classed as above.

100 A 1

2 Decks (Iron) & Web frames

see D. Bottom 4/6/82 E

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Reference should be made to any correspondence connected with the case.