

IRON SHIPS.

No. 11489 Survey held at Newcastle Date, First Survey 24 February Last Survey 12 June 1871
On the Steamer "Grand Duke Alexis" Master G. R. Edqvist

Tonnage under Tonnage Deck	440-42	ONE, OR TWO DECKED, GRAP, OR AWNING-DECKED VESSELS	THREE DECKED VESSELS	Built at	Newcastle
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	Half moulded breadth 12.3	Half Moulded Breadth....	When built	1871
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	Depth from upper part of Keel to top of Upper Deck Beams	Total Depth if three or more Decks	By whom built	C. Mitchell & Co
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	Girth of Half Midship Frame (as per Rule)	Total Girth of Half Midship Frame	Owners	Steam Navigation Co
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	1st Number Length	3rd Number Length	Port belonging to	Archangel
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	2nd Number Length	4th Number Length	Destined Voyage	Archangel
Depth of Hold, or Keel to top of Upper Deck Beams	4.05	Depths to Length	Breadths to Length	If Surveyed while Building, Afloat, or in Dry Dock.	While building

Length on deck as per Rule, 147 Feet. 6 Inches. Moulded Breadth, 24 Feet. 6 Inches. Depths from top of Floors to Upper Main Deck Beams, as per Rule, 10 Feet. 0 Inches. Power of Engines, 60 Horse. No. of Decks with flat laid, Two. No. of Tiers of Beams, Two.

Dimensions of Ship per Register, length, 157.0 breadth, 24.6 depth, 16.0

	Inches in Ship.	Inches required per Rule.		Inches in Ship.	Inches required per Rule.
Keel, if bar iron, depth and thickness	6 x 1 7/8	4 x 1 5/8	Flat Keel Plates, breadth and thickness		
Do. if centre through plate, depth and thickness	6 1/4 x 1 7/8	6 1/4 x 1 5/8	Plates in Garboard Strakes, breadth and thickness	35	8
Stem, if bar iron, moulding and thickness	6 x 3 1/4	6 x 3 1/4	Do. from Garboard to upper part of Bilges	7	7
Stern-post for Rudder do. do.	21	(Class 100A)	Do. of doubling at Bilge, or increased thickness, and length applied	8	9 1/2
Stern-post for Propeller			Do. from up. part of Bilge to lr. edge of Sh'rstrake	6	6
Distance of Frames from moulding edge to moulding edge, all fore and aft			Do. Main Sheerstrake, breadth and thickness	36	9
Frames, size of Angle Iron, for 1/2 length amidships	3 2 1/2 5	3 2 1/2 5	Do. of doubling at Sh'rstrake, & length applied	5	5
Do. for 1/2 at each end	3 2 1/2 4	3 2 1/2 4	Do. from Mn. to Up. or Spar Dk. Sh'rstrake	40	5
Reversed Frames, size of Angle Iron	2 1/2 2 1/2 4	2 1/2 2 1/2 4	Do. Up. or Spar Dk Sh'rstrake, brdth & thickness	8	5.6.7
Floors, depth and thickness of Floor Plate at mid line for half the length amidships	14 1/2 5	14 1/2 5	Butt Straps to outside plating, breadth & thickness	9 3/4	8.9
Do. at the ends	14 1/2 4	14 1/2 4	Lengths of Plating	3 1/2	3 1/2
Do. do. do. at Bilge Keelson	8 5 4	8 5 4	Shifts of Plating, and Stringers	3 1/2	3 1/2
Do. height extended at the Bilges	2 1/2 5	2 1/2 5	Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	18	5
Beams, Upper, Spar, or Awning Deck (No. 36) single or double Angle Iron, Plate or Tee Bulb Iron	5 3 5	5 3 5	Angle Iron on ditto	2 1/2	2 1/2
single or double Angle Iron on Upper edge			Tie Plates (fore and aft), outside Hatchways	7	5
Average space			Diagonal Tie Plates on Beams (No. of Pairs)	None	
Beams, Main or Middle Deck (No. 32) single, or double Angle Iron, Plate or Tee Bulb Iron	6 6	6 6	Planksheer material and scantling	As per fuller	
Single, or double Angle Iron, on Upper Edge	2 1/2 2 1/2 4	2 1/2 2 1/2 4	Waterways do. do.		
Average space	3 1/2	3 1/2	Flat of Upper Deck do. do.		
Beams, Lower Deck, Hold or Orlop (No.) single or d'ble Ang. Iron, Plate or Tee Bulb Iron			How fastened to Beams		
Single or double Angle Iron on Upper Edge			Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness	29	8
Average space			(Is the Stringer Plate attached to the outside plating?)	Yes	
Keelson Centre line, single or double plate, box, or Intercoastal, size of Plates			Angle Irons on ditto (No. 2)	3 x 3 x 6	3 x 3 x 6
Do. Bulb Plate to Intercoastal Keelson	6 6	6 6	Tie Plates, outside Hatchways	9 1/2	6
Do. Size of Angle Irons	3 3 6	3 3 6	Diagonal Tie Plates on Beams (No. of pairs)	None	
Do. Side Intercoastal Keelson, size of Plates			Waterways materials and scantlings		
Do. Angle Irons on tops of Floors			Flat of Middle Deck do. do.	3 1/2	3 1/2
Do. Bilge Keelson, Bulb Iron	6 6	6 6	How fastened to Beams	As per fuller	
Do. do. Intercoastal plates riveted to plating for length	3 3 6	3 3 6	Stringer Plates on ends of Lower Deck, Hold or Orlop Beams		
Do. do. Angle Irons	3 3 6	3 3 6	(Is the Stringer Plate attached to the outside plating?)		
Side Stringers (No. One) size of Angle Irons	3 3 6	3 3 6	Angle Irons on ditto (No.)		
Do. Intercoastal plates riveted to plating for length			Stringer or Tie Plates, outside Hatchways		

Transoms, material Yes or, if none, in what manner compensated for.
Knight-heads Yes Hawse Timbers Yes
Windlass Iron Pall Bitt Iron
The Frames extend in one length from Keel to funnel Riveted through plates with 5/8 in. Rivets, about 6 apart.
The Reverse Angle Irons on the floors and frames extend across the middle line full to bilge and to main dk alternately
Keelsons. Are the various lengths of Plates and Angle Irons properly connected? Yes And are their butts properly shifted? Yes
Plates, Garboard, double Yes Riveted to Keel, double Yes at upper edge, with Rivets 7/16 in. diameter, averaging 3 1/2 ins. from centre to centre.
Do. Edges from Garboards to upper part of Bilge, worked Clencher, double Yes Riveted; with Rivets 7/8 in. diameter, averaging 3 ins. from centre to centre.
Do. Butts from Keel to turn of Bilge, worked carvel with butt straps to strakes 7/16 thick, double Yes Riveted; with Rivets 5/8 in. diameter averaging 3 ins. from centre to centre. Do the Butt Straps lay over and Rivet through the lands of the strakes above or below? No
Do. of 2 Strakes at Bilge for 1/2 length, double riveted with Butt Straps 7/16 thicker than their plates.
Do. Edges from bilge to Main Sheerstrake, worked carvel with a lining piece thick, or clencher, double Yes single riveted; with rivets 5/8 in. diameter, averaging 3 ins. from centre to centre.
Do. Edges of Sheerstrake, Main, double Yes single Riveted. Upper, double single Riveted. At upper edge Single At lower edge double
Do. Butts from Bilge to Main Sheerstrake, worked Carvel with Butt Straps 7/16 thick, double Yes single Riveted; with Rivets 5/8 in. diameter, averaging 3 ins. from centre to centre.
Do. Butts of Main Sheerstrake, double Yes Riveted. Butts of Upper or Spar Sheerstrake, and Upper Deck Stringer Plate, double Yes Riveted for whole length amidships. Breadth of laps of plating in double Riveting 3 3/4 Breadth of laps of plating in single Riveting 2 1/2
Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? double riveted
Planksheer, how secured to the plating of the sides. Waterway, how secured to the planksheer and to the Beams. (Explain by Sketch, if necessary.)
Beams of the various Decks, how secured to the sides? Turned down No. of Breasthooks, Four Crutches, Two
That description of Iron is used for the Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.?
Manufacturer's name or trade mark, W. & A. Hall

I certify that the above is a correct description of the particulars therein given.
Builder's Signature, La. C. Mc Surveyor's Signature, Ben. M. Hall

IRON 1148 - 0442

Workmanship. Are the butts of plating planed or otherwise fitted? planed
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 solid with single pieces? or are they in short lengths of various thicknesses? Solid single
Do the holes for riveting plate to frames, butt straps, or plate to plate, &c., conform well to each other? Yes and are the rivet holes well and sufficiently countersunk in the plate and punched from the faying surfaces? Yes
Are there any rivets which either break into or have been put through the seams or butts of the plating? Very few

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 riveting, quality of Materials, and if stamped with Maker's name.
State also Length and Diameter of Lower Masts and Bowsprit

90932m

Number for equipment		Fathoms.	Inches.	Test as per Certificate.	In. req'd per Rule.	Test req'd per Rule.	ANCHORS, &c.	N ^o .	Weight. Ex. Stock.	Test as per Certificate.	W'ght req'd per Rule.	Test req'd per Rule.				
N ^o .	SAILS.						Bowers									
	Fore Sails,						Chain									
	Fore Top Sails,						(State Machine where Tested, and name of Superintendent).									
	Fore Topmast Stay Sails						Hempen Stream Cable									
	Main Sails,						Hawser									
	Main Top Sails,						Towlines									
and							Warp									
							All of quality.					Kedges				

Her Standing and Running Rigging fair sufficient in size and good in quality. She has one Long Boat and two others.
The present state of the Windlass is good Capstan and and Rudder good Pumps good
Engine Room Skylights.—How constructed? For compass How secured in ordinary weather? Lashes
What arrangements are there for deadlights in such for bad weather? Solid Lead shutters & bulls eyes
Coal Bunker Openings.—How constructed? For pipes How are lids secured? Studs How high above deck? 3 inches
Scuppers, &c.—What arrangements are there beyond the scuppers on deck, for clearing upper deck of water, in case of a sea coming on board? Ports on each side
Cargo Hatchways.—How formed? For compass State size 10' 6" x 8' 0" 7' 0" x 6' 0"
If of extraordinary size, state how framed and secured? Ordinary eye
What arrangement for shifting beams? Double line fore and aft
Hatches, themselves, whether strong and efficient? Yes Main Hatchways.—State size 10' 6" x 8' 0"

Order for Special Survey No. 200 DATES of 1st. On the several parts of the frame, when in place, and before the plating was wrought
Date 5 Jan 1871 Surveys held 2nd. On the plating during the progress of riveting } Built under
Order for Ordinary Survey No. 200 while building 3rd. When the beams were in and fastened, and before the decks were laid }
Date 5 Jan 1871 as per 4th. When the ship was complete, and before the plating was finally coated or cemented } Special Survey
No. 200 in builder's yard. Section 18. 5th. After the ship was launched and equipped }

General Remarks,
This vessel has a double bottom in the after hold - the plating of which is 1/16 the flange plates 5/16 thick.

X This is an Awning decked vessel, and not entitled to be marked for double bottom.

State if one, two or three decked vessel, or if spar or awning decked, and lengths of poop, forecabin or raised quarter deck, or of double or part double bottom
In what manner are the surfaces preserved from oxidation? Inside Painted cement Outside Paint
I am of opinion this Vessel should be Classed 100A

The amount of the Entry Fee£ 3: 0: 0 is received by me,
James M. M. Special£ 22: 4: 0
Certificate
(Travelling Expenses)
(if any) £ 0
Committee's Minute 25th Janr 1871
Character assigned 100A D
James M. M.
This Awning Decked, Seven Ton Fund Special Survey appears to have been built in conformity with the accompanying ship section previously submitted.
Lloyd's Register
Foundation