

IRON SHIP

No. 15182 Survey held at *Newcastle* Date, First Survey 13th August Last Survey 14th December 1880
On the *Screw Steamer "Northern"* Master *G. W. Watson*

TONNAGE under 2194.44
Tonnage Deck
Ditto of Third Spar
or Awning Deck
Ditto of Upper
Raised Deck
Ditto of House
on Deck
Ditto of Newcastle
Hatch
Gross Tonnage 2221.45
Less Crew Space 48.69
Less Engine Room 710.86
Register Tonnage 1461.90
as cut on Beam

ONE, OR TWO DECKED, THREE DECKED VESSEL.
SPAR, OR AWNING-DECKED VESSEL.
HALF BREADTH (moulded) 17.75
DEPTH from upper part of Keel to top of Upper Deck Beams 22.0
GIRTH of Half Midship Frame (as per Rule) 35.83
1st NUMBER 75.50
1st NUMBER, if a 3-DECKED VESSEL, deduct 7 feet 270.5
LENGTH 210.49
2nd NUMBER 4.00
PROPORTIONS—Breadths to Length 12.72
Depths to Length—Upper Deck to Keel
Main Deck ditto

Built at *Newcastle*
When built 1880 Launched 8th Nov^r
By whom built *Messrs Palmers & Co*
Owners *Messrs Harris & Co*
Port belonging to *London*
Destined Voyage *Genoa*
If Surveyed while Building, Afloat, or in Dry Dock.
While building & Afloat

LENGTH on deck as per Rule 270.5
BREADTH Moulded 35.5
DEPTH top of Floors to Upper Deck Beams 19.0
Do. do. Main Deck Beams 26.25
Power of Engines 240
Horse.
No. of Decks with flat laid 2
No. of Tiers of Beams 3

	Inches in Ship.	Inches per Rule.		Inches in Ship.	Inches per Rule.
KEEL, depth and thickness	9x1	9x1	FLAT KEEL PLATES, breadth and thickness	36	12
STEM, moulding and thickness	9x2 1/2	9x2 1/2	PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges	36	12
STERN-POST for Rudder do. do.	9x5	9x5	" of doubling at Bilge, or increased thickness, and length applied	11x10	11x10
" for Propeller	24	24	" fm up. part of Bilge to h. edge of Sh'rstrake.	40	15
Distance of Frames from moulding edge to moulding edge, all fore and aft	5 3 0	5 3 0	Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied from Mn. to Upper Spar Dk Sh'rstrake.	8	8
FRAMES, Angle Iron, for 1/2 length amidships	3 3 7	3 3 7	" Up or Spar Dk Sh'rstrake, brdth & thickness	8	8
Do. for 1/2 at each end	3 3 7	3 3 7	Butt Straps to outside plating, breadth & thickness	5 1/2 x 4 x 9	5 1/2 x 4 x 9
REVERSED FRAMES, Angle Iron	3 3 7	3 3 7	Lengths of Plating	6 1/2	5 1/2
FLOORS, depth and thickness of Floor Plate	6 3 0	6 3 0	Shifts of Plating, and Stringers	3 7	3 7
at mid line for half length amidships	6 3 0	6 3 0	Gunwale Plate on ends of Awning, Spar, or Upper Deck Beams, breadth and thickness	3 1/2 x 7	3 1/2 x 7
thickness at the ends of vessel	6 3 0	6 3 0	Angle Iron on ditto	14	7
depth at 1/2 the half-bdth. as per Rule	6 3 0	6 3 0	Tie Plates fore and aft, outside Hatchways	14	7
height extended at the Bilges	6 3 0	6 3 0	Diagonal Tie Plates on Beams No. of Pairs	14	7
BEAMS, Upper, Spar, or Awning Deck	6 3 0	6 3 0	Planksheer material and scantling	14	7
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	6 3 0	6 3 0	Waterways do. do.	14	7
Single or double Angle Iron on Upper edge	6 3 0	6 3 0	Flat of Upper Deck do. do.	14	7
Average space	6 3 0	6 3 0	How fastened to Beams	14	7
BEAMS, Main, or Middle Deck	6 3 0	6 3 0	Stringer Plate on ends of Main or Middle Deck	14	7
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	6 3 0	6 3 0	Beams, breadth and thickness	14	7
Single or double Angle Iron, on Upper Edge	6 3 0	6 3 0	Is the Stringer Plate attached to the outside plating?	Yes	
Average space	6 3 0	6 3 0	Angle Irons on ditto, No. 2	5 1/2 x 4 x 9	5 1/2 x 4 x 9
BEAMS, Lower Deck, Hold, or Orlop	6 3 0	6 3 0	Tie Plates, outside Hatchways	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Single or d'ble Ang. Iron, Plate or Tee Bulb Iron	6 3 0	6 3 0	Diagonal Tie Plates on Beams, No. of pairs	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Single or double Angle Iron on Upper Edge	6 3 0	6 3 0	Waterways materials and scantlings	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Average space	6 3 0	6 3 0	Flat of Middle Deck do. do.	5 1/2 x 4 x 9	5 1/2 x 4 x 9
KEELSONS Centre line, single or double plate, box, or Intercoastal, Plates	6 3 0	6 3 0	How fastened to Beams	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Rider Plate	6 3 0	6 3 0	Stringer Plates on ends of Lower Deck, Hold or Orlop Beams	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Bulb Plate to Intercoastal Keelson	6 3 0	6 3 0	Is the Stringer Plate attached to the outside plating?	Yes	
Angle Irons	6 3 0	6 3 0	Angle Irons on ditto, No. 2	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Double Angle Iron Side Keelson	6 3 0	6 3 0	Stringer or Tie Plates, outside Hatchways	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Side Intercoastal Plate	6 3 0	6 3 0	Flat of Lower Deck	5 1/2 x 4 x 9	5 1/2 x 4 x 9
do. Angle Irons	6 3 0	6 3 0	Ceiling betwixt Decks, thickness and material	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Attached to outside plating with angle iron	6 3 0	6 3 0	" in hold do. do.	5 1/2 x 4 x 9	5 1/2 x 4 x 9
BILGE Angle Irons	6 3 0	6 3 0	Main piece of Rudder, diameter at head	5 1/2 x 4 x 9	5 1/2 x 4 x 9
do. Bulb Iron	6 3 0	6 3 0	do. at heel	5 1/2 x 4 x 9	5 1/2 x 4 x 9
do. Intercoastal plates riveted to plating for length	6 3 0	6 3 0	Can the Rudder be unshipped afloat?	Yes	
BILGE STRINGER Angle Irons	6 3 0	6 3 0	Bulkheads No. 6 Thickness of	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Intercoastal plates riveted to plating for 1/2 length	6 3 0	6 3 0	" Height up	5 1/2 x 4 x 9	5 1/2 x 4 x 9
SIDE STRINGER Angle Irons	6 3 0	6 3 0	" How secured to sides of ship	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Transoms, material. Knight-heads. Hawse Timbers.	6 3 0	6 3 0	" Size of Vertical Angle Irons	5 1/2 x 4 x 9	5 1/2 x 4 x 9
Windlass	6 3 0	6 3 0	" Are the outside Plates doubled two spaces of Frames in length?	5 1/2 x 4 x 9	5 1/2 x 4 x 9

Transoms, material. Knight-heads. Hawse Timbers. *Iron*
Windlass *Iron Patent* Pall Bitt
The FRAMES extend in one length from *Keel* to *Gunwale*
KEEL, REVERSED ANGLE IRONS on floors and frames extend *across* middle line to *H. B. S. A. S. & M. S. A. S.* and to *Wing frames* alternately
PLATING. Are the various lengths of Plates and Angle Irons properly connected? *Yes* And butts properly shifted? *Yes*
ENG. Garboard, double riveted to Keel, with rivets 1/8 in. diameter, averaging 55 ins. from centre to centre.
Bilges of Garboards and to upper part of Bilge, worked clencher, double riveted; with rivets 3/4 in. diameter, averaging 32 1/2 ins. from centre to centre.
Butts from Keel to turn of Bilge, worked carvel, double riveted; with rivets 3/4 in. diameter averaging 32 1/2 ins. from centre to centre.
Edges of 3 Strakes at Bilge for 1/2 length, treble riveted with Butt Straps 7/16 thicker than the plates they connect.
Butts from bilge to Main Sheerstrake, worked clencher, double or single riveted; with rivets 7/8 in. diameter, averaging 37 1/2 ins. from cr. to cr.
Edges from Bilge to Main Sheerstrake, worked carvel, double riveted; with rivets 7/8 in. diameter, averaging 3 3/4 ins. from cr. to cr.
Butts 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 for 1/2 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 amidships.
Butt Straps on of laps of plating in double riveting 4 1/2 x 5 1/4 Breadth of laps of plating in single riveting
Waterway, ho Keelsons, Stringer and Tie Plates, treble or double Riveted?
Beams of the secured to Beams *by utter* (Explain by Sketch, if necessary.)
What describe various Decks, how secured to the sides *by Beam cross timbers & rivets* No. of Breasthooks, 6 Crutches, 4
Manufacture of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c. *Best*
The a's name or trade mark, *Messrs Palmers & Co*
Builder's name is a correct description. *James H. & Co. Ltd*
Surveyor's Signature, *H. J. Lloyd*
Surveyor to Lloyd's Register of British and Foreign Shipping.
Lloyd's Register
MVC 777-0043

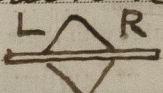
Workmanship. Are the butts of plating planed or otherwise fitted? *planed*
Do the edges of the carvel work and of the butts lay close together throughout their length without requiring any making good of deficiencies? *Yes*
Are the fillings between the ribs and plates solid single pieces? *Yes*
Do the 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 *Iron & Wood* 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 *Main Mast 71 feet long, 22" dia. Fore Mast 23" dia
and 49 feet long, all in three plates in the round butts, double riveted & edges
double riveted plates doubled in way of partners*

NUMBER for EQUIPMENT		Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprntd.	ANCHORS.	No.	Weight. Ex. Stock.	Test per Certificate.	W'ght req'd per Rule.	Machine where Tested & Suprntd.
SAILS.												
No.	CABLES, &c.											
	Chain	270	1 13/16	59 1/2	1 13/16		Bower Anchors	1	32.3.10	50.16.2	32.0.0	
	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)						(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendent.)					
	Fore Sails,							1	31.3.21	30.1.2	32.0.0	
	Fore Top Sails,	45	1 5/8	22 3/4	1 5/8			1	27.3.7	26.19.2	27.1.0	
	Fore Topmast Stay Sails,	90	12		12		Stream	1	10.3.0	12.13.0	10.2.0	
	Hmpn Strm Cbl	90	9 1/2		9 1/2		Kedge	1	5.7.10	7.16.0	5.1.0	
	Hawser ...	90	7 1/2		7 1/2		Ditto	1	2.2.16	5/4	2.2.0	
	Main Sails,	90	6 1/2									
	Towlines	120	5									
	Warp ...	120	3 1/2									
	Main Top Sails,											
	and Spare Sails, quality	good	120	3								

Standing and Running Rigging *Wm. Shaper* sufficient in size and *good* in quality. She has *2* Long Boats and *2* others
The Windlass is *Efficient* Capstan *good* and Rudder *Efficient* Pumps *In each compartment 4" dia*
Engine Room Skylights. How constructed? *Iron coming up with Sun* How secured in ordinary weather? *Screws*
What arrangements for deadlights in bad weather? *Tarpaulins*
Coal Bunker Openings. How constructed? *Iron coming up* How are lids secured? *Iron bars* Height above deck? *10"*
Scuppers, &c. What arrangements for clearing upper deck of water, in case of shipping a sea? *Open bulwarks all fore & aft on*
awning deck
Cargo Hatchways. How formed? *Iron coming up*
State size Main Hatch *24 x 12* Fore hatch *12 x 12* After Hatch *27 x 12*
If of extraordinary size, state how framed and secured? *Iron coming up Solid hatches & wood fore & aft*
What arrangement for shifting beams? *Deep Webs*
Hatches, If strong and efficient? *Yes*

Order for Special Survey No. <i>146</i>	1st. On the several parts of the frame, when in place, and before the plating was wrought	1880 Aug ^r 13. 17. 18. 20. 24. 27. 30
Date <i>18th August 1880</i>	2nd. On the plating during the process of riveting	Sept. 1. 2. 6. 9. 10. 14. 16. 20. 22. 24. 27.
Order for Ordinary Survey No. <i>147</i>	3rd. When the beams were in and fastened, and before the decks were laid....	Oct 1. 4. 8. 13. 15. 19. 20. 21. 23. 29. 30
Date <i>18th August 1880</i>	4th. When the ship was complete, and before the plating was finally coated or cemented..	Nov 2. 3. 5. 8. 9. 10. 11. 12. 15. 17. 22. 25. 29. 30
No. <i>420</i> in builder's yard.	5th. After the ship was launched and equipped	Dec 4. 8. 10. 13. 14. 16. 17

General Remarks (State quality of workmanship, &c.) *This Vessel has been built in conformity with the Rules & Midship Section & longitudinal plan herewith appended. A load line of 20.6 marked on the ship side amidships as required by the Rules  as sanctioned by the Committee in letters dated 5th August & 8th Oct^r 1880. Is fitted with cellular bottom which has been tested in conformity with the Rules of the dimensions as per ballast form appended.*

Pumping arrangement fitted as per sketch which was submitted & approved by the Committee in letter dated 21st September 1880.

The workmanship & materials are of good quality.

State if one, two, or three decked vessel, or if spar, or awning decked; and the lengths of poop, forecabin, or raised quarter deck, and the length of double bottom. *236' 215' double bottom*
How are the surfaces preserved from oxidation? Inside *Cement & Paint* Outside *Paint & Cam*
I am of opinion this Vessel should be Classed *100 A1 Awning deck Load line 20.6*
The amount of the Entry Fee ... £ 5 : - : - is received by me, *W.G.S.*
Special ... £ 49 : 6 : 6 *6th Jan'y 1881*
Certificate *gratis* - : - : -
(Travelling Expenses, if any, £)
Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *Tuesday January, 11th. 1881.*
Character assigned *100 A1 Awning Deck*
100 A1 Awning Deck
100 A1 Awning Deck

No. *420*
No. in Su
Reg. Book.
on t
Master
Engines made
Boilers made
Registered Ho
NGINES,
Description of
Diameter of Cyl
Diameter of Ser
Diameter of scre
No. of Feed pu
No. of Bilge pu
Where do they p
No. of Donkey L
hold we
re all the bilge
to. of bilge injec
ow are the pun
re all connection
re they fixed sup
re they each fitte
That pipes are c
re all pipes, co
re the pipes, co
Then were stern
the screw shaft
ILERS, &
umber of Boiler
orking Pressure
scription of sup
n each boiler be
of square feet
to each boiler
of safety valve
allest distance b
meter of boilers
ickness of shell
of plating
e of manholes in
of Furnaces in
ickness of plates
orking pressure o
ustion chamber
ch of stays to di
stays are fitted w
meter of stays at
l plates in steam
orking pressure by
nt plates at botto