

No. 18985 Survey held at Liverpool Date April 1st 1864 on the Sch. Dua Lee (3 Masts) Master F. H. Collins
Tonnage Old Built at Liverpool When built 1864 Launched Augst 1864
By whom built Holderness & Chilton Owners Grant Murdoch & Co
Port belonging to Liverpool Destined Voyage China
Surveyed while Building, Afloat, or in Dry Dock Whilst Building under Special Survey

Length aloft 136 Feet. Extreme Breadth Outside 28 Feet. Depth of Hold 12 Feet.
Thickness of Plank. Inches. 5 1/2

Scantlings of Timber.

	Feet.	Inches.	Feet.	Inches.	Feet.	Inches.
	Ships.	Required per Rule.	Ships.	Required per Rule.	Ships.	Required per Rule.
Timber AND SPACE	6 1/2 to 5 1/2	Inches Space	Garboard Strakes	All the outside	Limber Strakes	No Beeling
ors	between the longitudinal		Garboard to Bilge	Planking from	Bilge Planks	nept hatches
Foothooks	And Frames in the		Bilge Planks	downwards is in	Ceiling in Flat	8 battens between
Ditto	16 to 18 inches	between the	Bilge to Wales	2 1/2 each work	Ditto Bilge to Clamp	the ribs to
Ditto	Iron frames above bilge		Wales	diagonally over	Hold Beam Clamps	protect the
Timbers	4 1/2 to 4		Topsides	each other at opposite	Deck Beam Ditto	Cargo
ck } No. 32 Average	4 feet		Sheer Strakes	4 3/4	Ceiling twist Decks	
ams }			Plank Sheers	none	Hold Beam Shelves	
ck Beams, length amidships	26 1/2		Water Upper Deck	none	Deck Beam Ditto	
ld } No. 6 Average	at ends of		Ways Lower Deck	none		
ams }	Ship		Ditto, faying surface			
ld Beams, length amidships			against Timbers			
el	12 1/2	11 at ends of Ship	Upper Deck	3		
arphs of Ditto	6 feet	16 1/2 in midships				
elsons	12 1/2	12 1/2				
arphs of Ditto	6 feet					

Size of Bolts in Fastenings, distinguishing whether Copper, Yellow Metal, or Iron; also of Treenails.

	Copper or Y.M. in Ship.	Iron in Ship.	Inches required per Rule.		Copper or Y.M. in Ship.	Iron in Ship.	Inches required per Rule.
Keel-Knee, & Deadwood abaft	1 1/2	1 1/2		Hold Beam	Waterway	None	
arphs of Keel, No. 7	1 1/2	1 1/2		Bolts in	Knees	None	
elson Bolts through Keel	1 1/2	1 1/2			Shelf or Clamp	None	
at each Floor	1 1/2	1 1/2		Deck Beam	Waterway	None	
alts thro' Heels of Timbers	1 1/2	1 1/2		Bolts in	Knees	None	
against Deadwood	1 1/2	1 1/2			Shelf or Clamp	None	
				Nails or Bolts in Flat of Deck	1 1/2	1 1/2	
				Treenails	1 1/2	1 1/2	

Planking.—The Space between the Floor Timbers and Lower Foothooks is 1 1/2 Inches. The Space between the Top-Timbers is 1 1/2 Inches.

Floors consist of Greenheart & Morra The First Foothooks of None

Second Foothooks of None The Third Foothooks and Top Timbers of None

Shifts of the First and Second Foothooks are not less than 1 1/2 N. B. When less than prescribed by the Rule, state how many.

rest of the Shifts of the Frame are 1 1/2

Frame is quite squared from the First Foothook Heads upwards, and fairly free from sap, and from these downwards.

Longitudinal Frames are in the bottom bolted together to the Swage.

Butts of the Timbers are all scarphed 2 feet long close together; their thickness not less than of the entire standing at each place.

Keelson is chocked with Butts at each end of the chock. The Main piece of Rudder is Morra of Windlass is Iron Patent

Keel is Am R Elm The Main Keelson is Greenheart and free from all defects.

Stem, and Stern Post of Greenheart The Transoms, Knight Heads, Morse Timbers,

and Aprons of Iron Deadwood, of Lower piece Am R Elm and are free from all defects.

Deck and Hold Beams of Iron The Breasthooks of Iron The Knees of none

Planking Outside.—From the Keel to the Height defined in Note to Table A the Plank is Am R Elm & Greenheart

there is nothing between the at the First Foothook Heads

in the above named Height to the Light Water Mark Greenheart

in the Light Water Mark to the Wales Greenheart

Wales and Black-strakes are Greenheart The Topsides & Sheer-strakes Greenheart & Engbalt

Spirketting and Plank-sheers None The Water-ways { Upper Deck None

Decks Yellow & Red Pine State of Good Lower Deck None

Shifts of the Planking are not less than 3 to 4 Feet Inches. N. B. If less than prescribed by the Rule, state whether general

or partial, and if partial, in what part of the Ship. The Planking is wrought True between, and without step-butting

Planking Inside.—The Limber-strakes and Bilge-strakes are None

Ceiling, Lower Hold, and between Decks None Shelf Pieces and Clamps None

Fastenings.—To Hold Beams 6 Angle Beams at Ends of Ship 6 x 3 1/2 rivetted to

vertical Iron Ribs

ok Beams Built Iron Beams rivetted to Iron Sheerstrakes, vertical

Ribs & the Iron Stragger plate on Beams

umber of Breasthooks one Rib. feet connected Pointers none (one & off frames) Crutches Rib. feet connected

Butt End Bolts are of Iron in the Bottom & two Bolts in each Butt End are through and clenched in the

Bilge and Limber Strakes are of Metal bolted through and clenched. Treenails of Greenheart How Made normal

Thickness over Double Floors bolts through and clenched General Quality of Workmanship Good

We certify that the above is a correct description of the several particulars therein given

Builder's Signature W. H. Holderness Surveyor's Signature Andrew Martin

Lloyd's Register

Foundation

LV584-0354

Her Masts, Yards, &c. are in good condition, and sufficient in size and length.

She has SAILS.

Fore Sails,
Fore Top Sails,
Fore Topmast Stay Sails,
Main Sails,
Main Top Sails,

CABLES, &c.
Messrs. St. James' Cable Works
Provided by *St. James' Cable Works*
Chain 237 1/8
Hempen Stream Cable 80 8
Hawser 80 6
Towlines 80 4
Warp
All of good quality.

ANCHORS, and their weights.

Messrs. St. James' Cable Works
Bower, *Swedish Patent* 920 3 15-1-0
Stream, 1 16-0-0
Kedge, 2 12-3-6
1 1-2-10

Her Standing and Running Rigging are sufficient in size and good in quality.

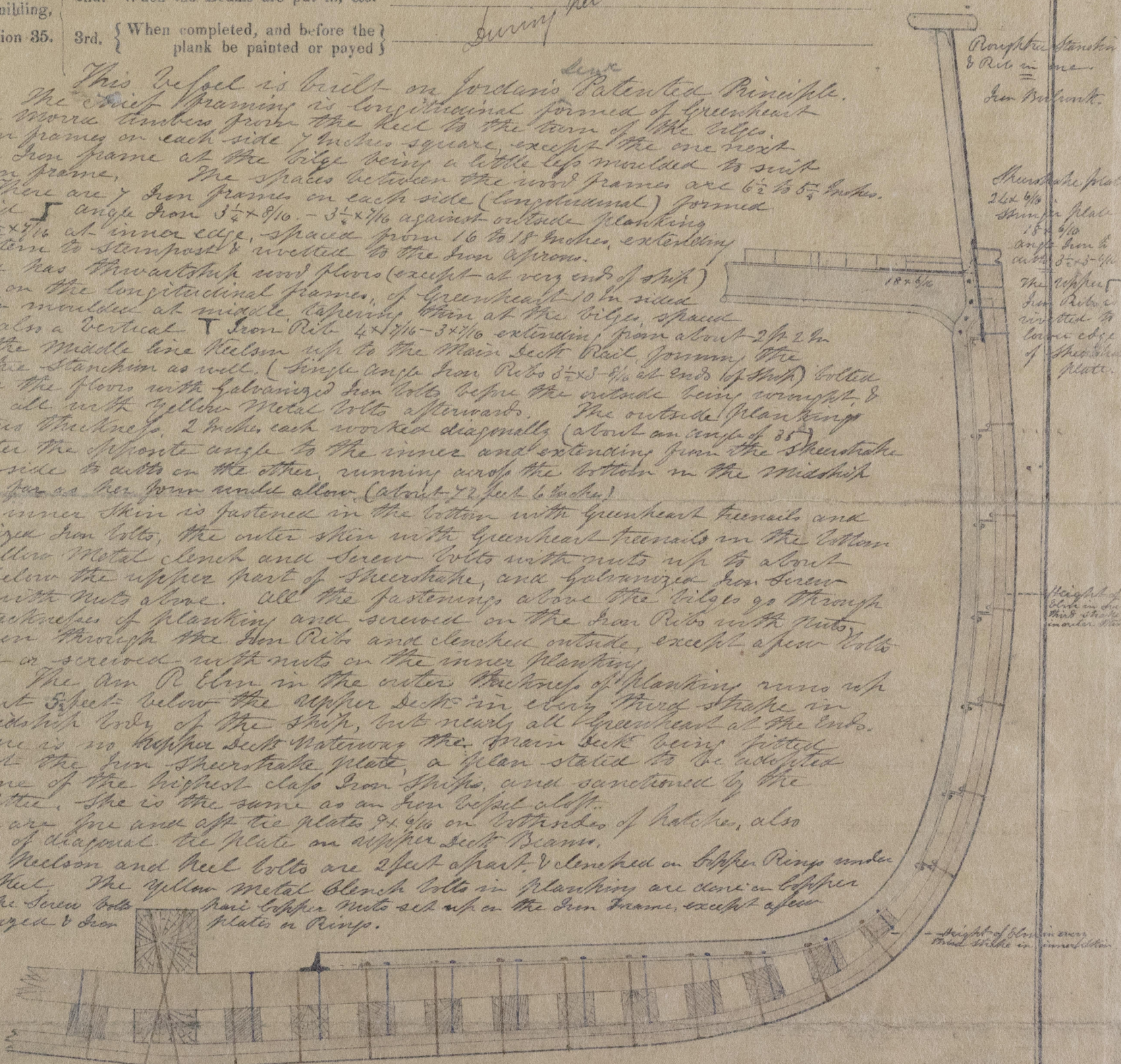
She has one Long Boat and two others
The present state of the Windlass is good Capstan good Rudder good Pumps good

General Remarks and Statement and Date of Repairs, if any.

DATES of Surveys
held while building,
as per Section 35.

- 1st. When the Frame is completed
2nd. When the Beams are put in, &c.
3rd. { When completed, and before the }
plank be painted or payed }

This vessel is built on Jordan's Patented Principle.
The chief framing is longitudinal formed of greenheart
and more timber from the keel to the turn of the bilge.
Eleven frames on each side 7 inches square, except the one next
to the iron frame at the bilge being a little less moulded to suit
the iron frame.
The spaces between the iron frames are 6 1/2 to 5 1/2 inches.
There are 7 iron frames on each side (longitudinal) formed
of solid T angle iron 3 1/2 x 8 1/2 - 3 1/2 x 7 1/2 against outside planking
and 2 1/2 x 7 1/2 at inner edge, spaced from 16 to 18 inches, extending
from stern to stempost & riveted to the iron frames.
She has thwartship wood floors (except at very end of ship)
fitted on the longitudinal frames, of greenheart 10 in sided
and 7 in moulded at middle, tapering from the bilge, spaced
4 feet, also a vertical T iron rib 4 x 7 1/2 - 3 x 7 1/2 extending from about 2 ft 2 in
from the middle line keelson up to the main deck rail, forming the
roughen stanchion as well. (Single angle iron ribs 5 x 5 - 5/8 at ends of ship) bolted
through the floors with galvanized iron bolts before the outside being wrought-iron
through all with yellow metal bolts afterwards. The outside planking
is in two thicknesses, 2 inches each worked diagonally (about an angle of 35)
the outer the opposite angle to the inner and extending from the sheerstake
on one side to cut on the other, running across the bottom in the midship
body as far as her form will allow (about 22 feet length).
The inner skin is fastened in the bottom with greenheart treenails and
galvanized iron bolts, the outer skin with greenheart treenails in the collar
and yellow metal clench and screw bolts with nuts up to about
2 feet below the upper part of sheerstake, and galvanized iron screw
bolts with nuts above. All the fastenings above the bilge go through
both thicknesses of planking and secured on the iron ribs with nuts,
or driven through the iron ribs and clenched outside, except a few bolts
clenched or secured with nuts on the inner planking.
The iron rib in the outer thickness of planking runs up
to about 5 feet below the upper deck in every third strake in
the midship body of the ship, but nearly all greenheart at the ends.
There is no copper deck waterway the main deck being fitted
against the iron sheerstake plate, a plan stated to be adopted
in some of the highest class iron ships, and sanctioned by the
Committee. She is the same as an iron vessel aloft.
There are five and a half tie plates 9 1/2 x 9/16 on both sides of hatch, also
5 pairs of diagonal tie plates on upper deck beams.
The keelson and keel bolts are 2 feet apart, & clenched on copper rings under
side of keel. The yellow metal clench bolts in planking are driven on copper
rings. The screw bolts have copper nuts set up on the iron frame, except a few
on galvanized & iron plates or rings.



Present condition of Caulking of Bottom, good Deck, good and Waterways none

If Sheathed, Doubled, Felted, or Coppered of metal or felt When last done present time

I am of opinion this Vessel should be Classed A1 14 yrs, subject to the Committee's approval
(Expt B.S.)

The Amount of the Fee £ 4 : : : is received by me,

Special £ 17 : 2 : : 1864

Certificate £

Committee's Minute Spent - 11 October 1864

Character assigned A1 for 14 Years - Expt B.S. Built under Special Survey

Classing confirmed

See Cont. Min.

27 October 1864