~~IRON~~ OR STEEL SHIP.

(Received at London Office, 7888

Date of writing Report *Feb 1. 1890* Port of *West Hartlepool* 3 FEB 1890

No. *7888* Survey held at *West Hartlepool* Date, First Survey *16 Sep 89.* Last Survey *31 Jan* 18*90*

On the *Steel Screw Steamer "Eton"* *Schooner* Rig *2 Masts.*

~~TONNAGE under Tonnage Deck~~	
~~In between Tonnage Dk. and 3rd, 4th, Spar or Awning Dk.~~	
Total under Upper Dk.	*2086.17*
Do. of Poop	*65.57*
Do. of Raised Qr. Dk. ~~or Break~~	*167.14*
Do. of Bridge House	*332.85*
Do. of Houses on Deck *Chart*	*5.19*
Do. of excess of Hatchways	*25.50*
Do. of Forecastle *house*	*5.82*
Gross Tonnage	*2688.24*
Crew Space *65.97*	
Space 16.423	*82.39*
Less Engine Room	*860.24*
Register Tonnage as cut on Beam	*1745.61*

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

	Feet.
Half Breadth (moulded)	*20.64*
Depth from upper part of Keel to top of Upper Deck Beams *3 added for camber*	*23.90*
Girth of Half Midship Frame (as per Rule)	*39.66*
1st Number	*84.20*
~~1st Number, if a 3 Decked Vessel .. deduct 7 feet~~	
Length	*298.33*
2nd Number	*25119*
Proportions— Breadths to Length	*7.22*
Depths to Length—Upper Deck to Keel	*12.94*
~~Main Deck ditto~~	

Master *E. Newcomb 7.2.90.*

Year of appointment (1) As master in service of owner of present vessel:—18 (2) As master of this vessel 18

Built at *West Hartlepool*

When built *1890.* Launched *24 Dec 89*

By whom built *W. Gray & Co. Ld.*

Owners *Edward Pembroke*

Managers *✓*

(If desired to be entered in Reg. Book.)

Residence *8 Austin Friars London E.C.*

Port belonging to *London*

Destined Voyage

~~If~~ Surveyed while Building, Afloat, ~~or~~ *and* in Dry Dock.

LENGTH on deck as per Rule ... Feet *298* Inches *4* | BREADTH—Moulded... Feet *41* Inches *3½* | DEPTH top of Floors to Upper Deck Beams ~~Do. do. Main Deck Beams~~ Feet *21* Inches *0* | Power of Engines ... Horse *250* | Nº. of Decks with flat laid *One* Nº. of Tiers of Beams *One & webframes*

Dimensions of Ship per Register, length, *300.0* breadth, *41.65* depth, *21.2* Moulded depth *23.0½*

	Inches in Ship			Inches per Rule		
KEEL, depth and thickness	*10 × 2¾*			*10 × 2¾*		
STEM, moulding and thickness	*10 × 2¾*			*10 × 2¾*		
STERN-POST for Rudder do. do.	*10 × 6*			*10 × 6*		
" for Propeller	*10 × 6*			*10 × 6*		
Distance of Frames from moulding edge to moulding edge, all fore and aft	*24*			*24* (Class *100A*)		
	Inches in Ship	Inches in Ship	~~16ths or~~ 20ths in Ship	Inches per Rule	Inches per Rule	~~16ths or~~ 20ths per Rule
FRAMES, Angle ~~Iron~~ *s*, for ½ length amidships	*5*	*3½*	*8*	*5*	*3½*	*8*
Do. for ¼ at each end	*5*	*3½*	*7*	*5*	*3½*	*7*
REVERSED FRAMES, Angle ~~Iron~~ *s*	*3½*	*3½*	*8*	*3½*	*3½*	*8*
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	*25*	..	*10*	*25*	..	*10*
" thickness at the ends of vessel			*9.8*			*9.8*
" depth at ¾ the half-bdth. as per Rule	*12½*			*12½*		
" height extended at the Bilges	*50*			*50*		
BEAMS, Upper, ~~Spar, or Awning~~ Deck Single ~~or d'ble~~ Ang. ~~Iron, Plate or Tee~~ Bulb ~~Iron~~ *s*	*7½*	*3*	*10*	*7½*	*3*	*10*
~~Single or double Angle Iron on Upper edge~~						
Average space	*24*			*24*		
~~BEAMS, Main, or Middle Deck~~						
~~Single or d'ble Ang. Iron, Plate or Tee Bulb Iron~~						
~~Single, or double Angle Iron, on Upper Edge~~						
~~Average space~~						
BEAMS, Lower Deck— *aft* Single ~~or d'ble Ang. Iron,~~ Plate ~~or Tee~~ Bulb ~~Iron~~ *s*	*10*	..	*10*	*10*	..	*10*
~~Single or~~ double Angle ~~Iron~~ *s* on Upper Edge	*3½*	*3½*	*7*	*3½*	*3½*	*7*
Average space	*48*			*48*		
~~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	*19*	..	*13*	*19*	..	*13*
" Rider Plate	*13¼*	..	*13*	*13¼*	..	*13*
" ~~Bulb Plate to Intercostal Keelson~~						
" Angle ~~Irons~~ *s*	*6*	*4*	*9*	*6*	*4*	*9*
" Double Angle ~~Iron~~ *s* Side Keelson	*6*	*4*	*9*	*6*	*4*	*9*
" Side Intercostal Plate	..	..	*9*	..	..	*9*
" do. ~~Angle Irons~~						
" Attached to outside plating with angle ~~iron~~ *s*	*3½*	*3½*	*8*	*3½*	*3½*	*8*
BILGE Angle ~~Irons~~ *s*	*6*	*4*	*9*	*6*	*4*	*9*
" do. Bulb ~~Iron~~ *s*	*10*	..	*10*	*10*	..	*10*
" ~~do. Intercostal plates riveted to plating for length~~						
BILGE STRINGER Angle ~~Irons~~ *s* / Intercostal plates riveted to plating for length	*Webframes and*			*See Sections*		
SIDE STRINGER Angle ~~Irons~~ *s*	*Intercostals*					

	Inches in Ship	~~16ths or~~ 20ths in Ship	Inches per Rule	~~16ths~~ or 20ths per Rule
~~Flat Keel Plates, breadth and thickness~~				
PLATES in Garboard Strakes, br'dth & thickness	*36*	*12*	*36*	*12*
" From Garboard to upper part of Bilges		*11*		*11*
" ~~Of d'bling at Bilge, or increased thickness, and length applied~~ *plating reduced 1/20 in way of tanks*		*See Sectn.*		
" From up. prt of Bilge to lr. edge of Sh'rstrake		*11*		*11*
" Main Sheerstrake, breadth and thickness	*40*	*13*	*40*	*13*
" ~~Of d'bling at Sh'stk. & lng. applied~~ *At arrangement of bridge side plating*			*See Sections*	
" ~~From M'n. to Upr. or Spar Dk. Sh'rstrake~~				
" ~~Up. or Spar Dk Sh'rstrake, brdth & thickn'ss~~	*19*	*17*	*19*	*17*
Butt Straps to outside plating, breadth & thickness	*16¾*	*16.15*	*16¾*	*16.15*
Lengths of Plating *12 to 7 spaces*			*5 spaces*	
Shifts of Plating, and Stringers *2 & 3 spaces.*			*2 spaces*	
Gunwale Plate on ends of ~~Awning, Spar, or~~ Upper Deck Beams, breadth and thickness	*42½*	*10*	*42½*	*10*
Angle ~~Iron~~ *s* on ditto	*6 × 4 × 9*		*6 × 4 × 9*	
~~Tie Plates fore and aft, outside Hatchways~~				
~~Diagonal Tie Plates on Beams No. of Pairs~~				
Flat of Up., ~~Spar, or Awning~~ Dk.* *Steel*		*6*		*6*
How fastened to Beams *Iron Rivets*	*5/8*		*5/8*	
~~Stringer Plate on ends of Main or Middle Deck Beams, breadth and thickness~~ *Deck plating increased in thickness in way*				
~~Is the Stringer Plate attached to the outside plating?~~ *of openings*				
~~Angle Irons on ditto, No.~~				
~~Tie Plates, outside Hatchways~~				
~~Diagonal Tie Plates on Beams, No. of pairs~~				
~~Flat of Middle Deck* do. do.~~				
~~How fastened to Beams~~				
Stringer Plates on ends of Lower Deck, ~~Hold or Orlop~~ *aft* Beams	*41*	*9*	*41*	*9*
Is the Stringer Plate attached to the outside plating? *Yes*				
Angle ~~Irons~~ *s* on ditto, No. *2 at centre*	*4 × 4 × 9*		*4 × 4 × 9*	
Stringer ~~or~~ Tie ~~Plates, outside Hatchways~~	*4 × 4 × 9*		*4 × 4 × 9*	
~~Flat of Lower Deck*~~				
Ceiling betwixt Decks, thickness and material	*2½*		*2½*	
" in hold do. do.	*2½*		*2½*	
Main piece of Rudder, diameter at head	*7¾*		*7¾*	
do. at heel	*3¾*		*3¾*	

Can the Rudder be unshipped afloat? *Yes.*

Bulkheads No. *5* No. per Rule *5*

" Thickness of *7/20 to 6/20* *7 & 6/20*

" Height up *to Upper Deck*

" How secured to sides of ship *between double frames*

" Size of Vertical Angle ~~Irons~~ *s* *5 × 3½ × 8/20* and distance apart *30* ins.

" Are the outside Plates doubled two spaces of Frames in length? *Yes*

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

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

The FRAMES extend in one length from *centre line* to *gunwale* Riveted through plates with *7/8* in. Rivets, about *5"* apart.

The REVERSED ANGLE ~~IRONS~~ *s* on floors and frames extend *from* middle line to *Upper Deck* and to *Upper Longitudinal & Forecastle Dk.* alternately

KEELSONS. Are the various lengths of Plates and Angle ~~Irons~~ *s* properly connected? *Yes* And butts properly shifted? *Yes*

PLATING. Garboard, double riveted to Keel, with rivets *1 1/8* in. diameter, averaging *5 5/8* 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~~ *treble* riveted; with rivets *7/8* in. diameter averaging *3 1/16* ins. from centre to centre.

" Butts of *all* Strakes ~~at Bilge~~ for *¾* length, treble riveted with Butt Straps *4/20* 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~~ *treble* riveted; with rivets *7/8* in. diameter, averaging *3 1/16* ins. from cr. to cr.

Butts of C. E. G & I strakes treble overlapped for ¾ length

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

" Butts of Main Sheerstrake, treble riveted for *¾* length amidships. ~~Butts of Upper or Spar Sheerstrake, treble riveted length amidships.~~

" Butts of Main Stringer Plate, treble riveted for *¾* length amidships. ~~Butts of Upper or Spar Stringer Plate, treble riveted for length.~~

" Breadth of laps of plating in double riveting *6 5¼ 4½* Breadth of laps of plating in single riveting *✓*

Butt Straps of Keelsons, Stringer and Tie Plates, treble, *and* double ~~or single~~ Riveted? No. of Breasthooks, *8* Crutches, *4*

What description of ~~Iron~~ *s* is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? *Siemens Martin Steel.*

Manufacturer's name or trade mark, *Steel — from Dorman Long & Co. Middlesbro', and Consett Iron Co.* *Iron — from Dorman Long & Co. Middlesbro', South Stockton Iron Co. & West Hpl Iron Co.*

The above is a correct description.

Builder's Signature, For William Gray & Co. Limited. *W. Gray* Managing Director

Surveyor's Signature, *Thos. Phillips*

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

[Form No. 1 for Iron or Steel.]

Workmanship. Are the butts of plating planed or otherwise fitted? *Planed, where practicable*

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 generally* 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? *Yes. a few.*

Masts, Bowsprit, Yards, &c., are *Iron* 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 *The lower masts are of Iron in accordance with the tracings approved for the S.S. "Twickenham" West Hpl Report No. 6766 The iron in these masts has been tested as prescribed by the Rules & found satisfactory.*

Number for Equipment *27898*
Letter for do. *C*

N. SAILS. Fore Sails, Fore Top Sails, Fore Topmast Stay Sails, Main Sails, Main Top Sails, and quality — *All Sail Complete.*

Studlink CABLES, &c. Number of Certificate.	Fathoms.	Inches.	Test per Certificate. Tons.	Fathoms & Inches per Rule.	Machine where Tested and Superintendent, also Name of Chain Maker.
18938 - 2/1/90	*134¼*	*1 7/8*	*63¼ Tons*	*270 - 1 7/8*	*Maker. J Green Dudley*
18939 - 3/1/90	*135¾*	*1 7/8*	*63¼ Tons.*		*Netherton Machine*
19016 - 3/1/90	*75*	*1 1/8*	*22¾ Tons*	*75 - 1 1/8*	*D.G. Lewis Supt.*
Iron Stream Chain or Steel Wire	*100*	*4*	*33 Tons*	*100 - 4*	*Steel Wire*
Hempen Stream Cable	*90*	*3½*	*26 Tons*	*90 - 3½*	
TOWLINE— Hemp or Steel Wire	*90*	*2¾*	*15.5 Tons*	*90 - 2¾*	
Hawser					
Warp *Good*					

ANCHORS. Number of Certificate (State if any and	Weight. Ex. Stock. which Anchors	Test per Certificate are Stockless.)	W'ght req'd per Rule.	Machine where Tested and Superintendent, also Name of Anchor Maker.
26921 3/1/90	*34.2.2*	*32.1.3.14*	*34.0.0*	*J Green (Maker) Dudley*
26924 4/1/90	*33.2.6*	*31.6.3.14*	*34.0.0*	*Netherton Machine*
26925 4/1/90	*29.2.10*	*28.6.3.14*	*29.0.0*	*D.G. Lewis Supt.*
Collective Weights	*97.2.18*		*97.0.0*	
Stream *26928 4/1/90*	*10.3.11*	*12.15.1.7*	*10.3.0*	
Kedge *26927 4/1/90*	*5.2.7*	*7.18.1.21*	*5.2.0*	
2nd Kedge *26926 4/1/90*	*2.3.7*	*5.7.2.0*	*2.2.0*	

Standing and Running Rigging *Wire & manilla* sufficient in size and *good* in quality. She has *two* Long Boat and *two life boats.*

The Windlass is *Good.* ~~Capstan~~ *Winches* *Good* and Rudder *Good* Pumps *Good*

Engine Room Skylights.—How constructed? *of Iron & Steel* How secured in ordinary weather? *By slide bars.*

What arrangements for deadlights in bad weather? *Strong steel shutters with bulls eyes fitted.*

Coal Bunker Openings.—How constructed? *of Iron.* How are lids secured? *2½" hatches* Height above *Bridge* deck? *18 & 37".*

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? *On each side: Forward, 3 Ports each 28 × 21" – 13" up; and aft, 4 Ports each 27 × 11".*

Cargo Hatchways.—How formed? *of Iron Plates & angles.* **Hatches,** If strong and efficient? *Yes. 3" & 2½" thick*

State size **Main Hatch** *24.0 × 14.4 × 21"* Forehatch *20.0 × 13.0 × 38"* Quarterhatch*es* *24.0 × 14.0 × 36"* *24.0 × 14.0 × 36"*

If of extraordinary size, state how framed and secured... *See Sections.* What arrangement for shifting beams? *As per Rule*

Order for Special Survey No. *1383* Date *June 19. 89.*
~~Order for Ordinary Survey No.~~ ~~Date~~
No. *380* 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 Special Survey
Date 1st Survey 16 Sep 89.
" Last 31 Jan 90.

Total No. of Visits *51*

State dates of letters respecting this case *27 Sep 88 (M) and Feb 19. 89 M.*

General Remarks (State quality of workmanship, &c.) *This vessel has been built in accordance with the Rules, and the approved tracings now in the London office. The requirements in Secretary's letter of the 27 Sep 88 (M) in regard to holes in web frames, and as to double riveting of the landings of Bridge side plating have been complied with. The whole of the steel used in the hull has been tested as prescribed by the Rules and found satisfactory. The freeboards assigned by the Committee in the Secretary's letter of the 27 Sep 88 (M) for the sister vessel "Mortlake" Gray's No. 359 Vessel have been marked on the vessels' sides viz: S. 2.2½ W. 2.6 Freshwater 4½" It is respectfully submitted, the Freeboards be recorded in the Register Book*

For William Gray & Co. Limited.
W. Gray
Managing Director.

How are the surfaces preserved from oxidation? Inside *by paint & Portland Cement* Outside *by paint.*

Particulars for Record in R.B.—Length of Poop *26 11/12* ft., R.Q.D. *90* ft., Bridge Dk., *120* ft., F'castle *27 2/12* ft.; No. of Dks. (excluding spar, awn., &c.) *One*

Material of dks *Steel* If spar, awn. dk., &c. ✓ Material of spar, awn. dk, &c. ✓; No. of tiers of beams (with and without dks. laid) *One & web frames.*

Official No. *98031*; Signal Letters

If double bottom, state particulars on separate form.

I am of opinion this Vessel should be Classed ✠ *100 A1*

The amount of the Entry Fee ......£ 5 : : is received by me,
Special ......£ *90* : *11* : *5.2.1890*
(to be sent as per margin). Certificate ..... : :
(Travelling Expenses, if any, £

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

It is submitted this vessel appears eligible to be classed 100 A 1 Steel as recommended 1 Dk (steel) & Web Frames D.B. (Particulars appended)

Well Dk

Committee's Minute FRIDAY 7 FEB 1890

Character assigned *100 A1 Steel 1 Dk (Steel) & Webframes*

LA 1/2/1

+ EMc 1/90 Record Freeboard Welldeck

HPL 361/184