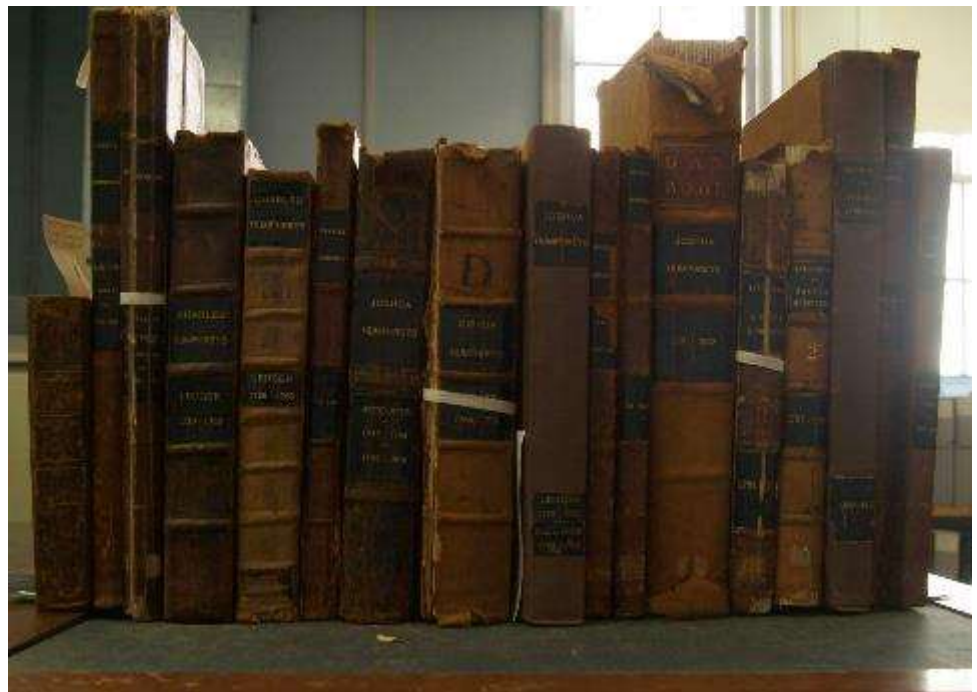# JOSHUA HUMPHREYS NOTEBOOK

5/1/2015   Rosalie Stewart, Editor

The first 160 pages of Volume 1 of the Joshua Humphreys Papers, "Principal Dimensions," are available for viewing at the Historical Society of Pennsylvania website. The remainder are not online. Additional materials of lesser quality that were also obtained from the Historical Society are still being transcribed.

Includes correction to table on Page 8

Joshua Humphreys was born on June 17, 1751, in Haverford, Pennsylvania, to Joshua Humphreys (Sr.) and Sarah (Williams) Humphreys, who owned large amounts of land in Delaware County. In Humphreys' youth, he became a ship carpenter's apprentice in Philadelphia, and after the death of the master, Humphreys was given control of the ship yard. His later creation of his own ship yard made him well-known in the colonies as a naval architect, and he was commissioned by the U. S. government in 1776 to build ships in Philadelphia and prepare them for the Revolutionary War.

After the war, Humphreys was again commissioned by the federal government to build a naval fleet to protect the country from pirates and other attacking ships. These ships needed to be as high quality as those of other European countries, though the fleet would be much smaller. Humphreys made some key changes to improve six frigates that became the foundation of the American Navy. His designs and modifications were approved by the government, and in 1794 he was formally appointed as naval constructor, with the charge to design the frigates. Only the *United States* was built in Philadelphia under his supervision. All of the ships, however, included the modifications suggested by Humphreys, and became known for their speed and efficiency.

By 1801, the government no longer needed a formal naval constructor, and Humphreys was given the task to build a ship yard for use by the Navy in Philadelphia. He began to participate politically in the city, and was considered a very successful businessman in Philadelphia. Joshua Humphreys' brother Charles was a member of the Continental Congress; his son Samuel was also a naval architect, and worked with the federal government after Joshua Humphreys resigned; and his grandson Andrew Atkinson Humphreys served as a general during the American Civil War. Joshua Humphreys died on January 12, 1838.

The originals are in the collection of The Historical Society of Pennsylvania – see http://www2.hsp.org/collections/manuscripts/h/Humphreys306.html for a description of the collection.

The image below shows a typical example of what we were working with.
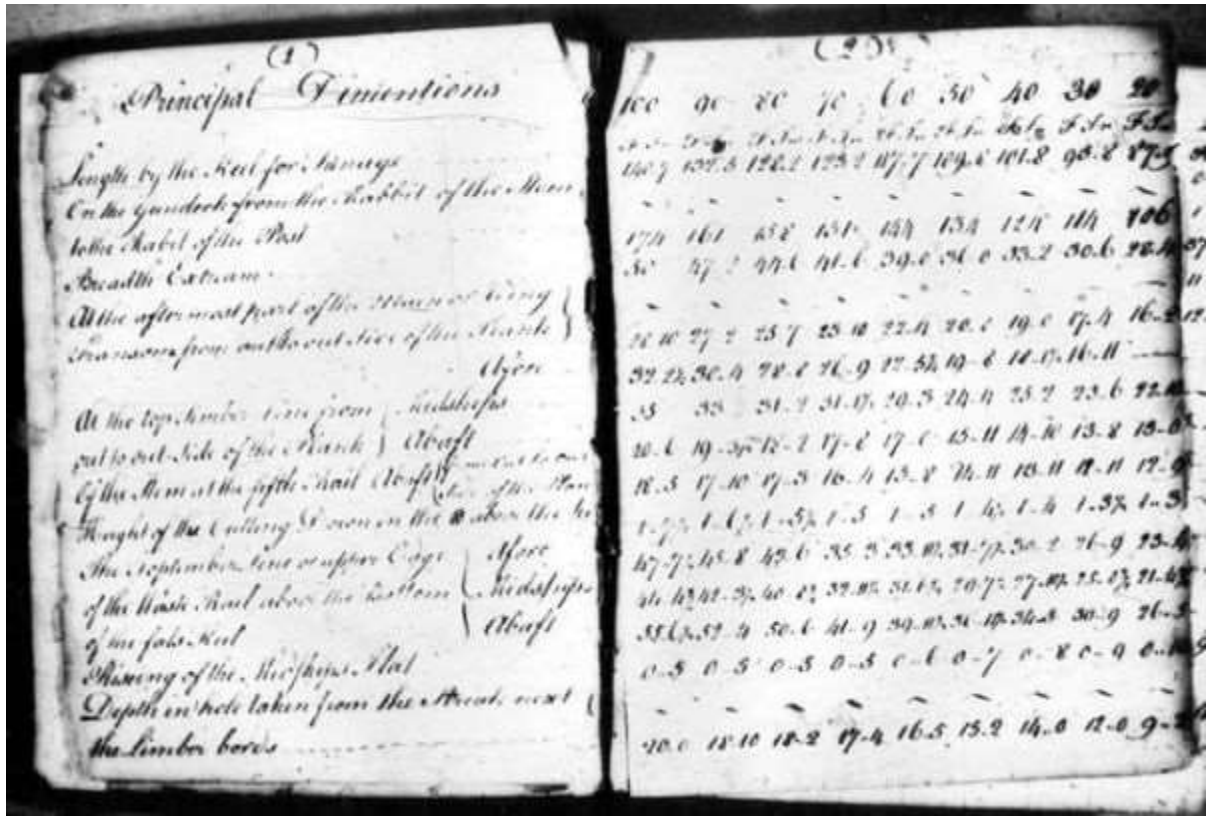
Transcription was a team effort by numerous members of the ModelShipbuilder forum, including 42rocker, aew, daves, Winston, bbrockel, Larry_D, Pete38, Michael Mott, Grant Dale, Maurius Meiring, Tim C, garyshipwright, dbharmon64 and Norman (sorry if I missed anyone!)

Individual scans were transcribed, then Rosalie Stewart compiled the transcriptions into a common look and feel, worked to resolve uncertainties, and now, ready for the public, the first set is being published via the ModelShipbuilder Forum. Future efforts may include working through the information at the Papers of the War Department project website (http://wardepartmentpapers.org/) to fill in more of the details around the work of Humphreys between 1784 and 1800.

Contents

Deptford November the 7th
Principal Dimentions & Scantlings &c.
Of a Ship of each Class Proposed to be Established in Obedience to the Rt. Honourable the Navy Boards Warrants;
Dated the 5 of June last 1719

Principal Dimentions

	100	90	80	70	60	50	40	30	20
	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Length of keel for tonnage	140-7	132-5	128-2	123-2	117-7	109-8	101-8	93-8	87-5
On the gundeck from the rabit of the stern to the rabit of the post	174	161	158	151	144	131	121	114	106

Breadth extream
At the aftermost part of the main at wing transom from the out to the

	100	90	80	70	60	50	40	30	20
outside of the plank	50-0	47-2	44-6	41-6	39-0	36-0	33-2	30-6	28-4

At the top of the timber line from the out to the outside of the plank		100	90	80	70	60	50	40	30	20
	afore	28-10	27-2	25-7	23-10	22-4	20-8	19-0	17-4	16-2
	Midships	32-2½	30-4	28-8	26-9	22-5¼	19-8	18-1¼	16-11	-
	Abaft	1-7½	1-6½	1-5½	1-5	1-5	1-4½	1-4	1-3½	1-3

Of the stem at the fifth rail abaft		100	90	80	70	60	50	40	30	20
	From out to out	20-6	19-3½	18-2	17-8	17-0	15-11	14-10	13-8	13-0
	Side of the plank	18-5	17-10	17-3	16-4	18-8	14-11	13-11	12-11	12-9

	100	90	80	70	60	50	40	30	20
Height of the cutting down in the ☐☐above the keel	1-7½	1-6½	1-5½	1-5	1-5	1-4½	1-4	1-3½	1-3

The top timber line or upper edge of the waist rail above the bottom of the false keel		100	90	80	70	60	50	40	30	20
	Afore	47-7½	45-8	43-6	35-3	33-11½	31-0½	30-2	26-9	23-4
	Midships	44-4¾	42-3½	40-8¾	32-11½	31-3¼	29-7½	27-10½	25-0¾	21-4¾
	Abaft	55-6½	52-4	50-6	41-9	39-11½	36-11½	34-5	30-9	26-5

	100	90	80	70	60	50	40	30	20
Rising of the midships flat	0-5	0-5	0-5	0-5	0-6	0-7	0-8	0-9	0-10
Depth of the hole taken from the strake, next the limber bords	20-0	18-10	18-2	17-4	16-5	15-2	14-0	12-0	9-2

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Strake next yᵉ Limber Boards Thick	0-8	0-7¾	0-7	0-7	0-6	0-6	0-6	0-5	0-5
Broad if can be	1-3	1-3	1-2½	1-2½	1-2	1-2	1-1	1-1	1-0
Burthen in Tons	$1869^{49}/_{94}$	$1566^{84}/_{94}$	1350	$1898^{29}/_{94}$	$951^{27}/_{94}$	$755^{89}/_{94}$	$594^{56}/_{94}$	$463^{41}/_{94}$	$374^{49}/_{94}$
Draught of Water — Afore	21-6	20-2	19-0	17-7	16-6	15-3	13-10	12-11	11-1
Abaft	22-10	21-6	20-4	18-11	17-11	16-5	14-10	13-11	12-4

Orlope {
Beams to round-Two Inches in all Ships
Height from the Upper edge of the beam to the gundeck plank at the Middle of the beam

	100	90	80	70	60	50	40	30	20
	6-6	6-3	6-1	5-11	5-9	5-7	5-6	5-4	5-4

Platform {
abaft | afore } height between Plank & plank

	100	90	80	70	60	50	40	30	20
abaft	6-2	6-7	6-5	6-4	6-3	6-1	6-0	5-11	5-0
afore	6-6	6-3	6-1	5-11	5-9	5-7	5-6	5-4	5-4

Gundeck {
Beams to Round
Plank Thick

	100	90	80	70	60	50	40	30	20
Beams to Round	0-5	0-4¾	0-4½	0-4¼	0-4	0-3¾	0-3½	0-3¼	0-3
Plank Thick	0-4	0-4	0-3½	0-3¼	0-3	0-3	0-2½	0-2	0-1½

Height From the Plank {
To the Upper edge middle or Upper deck Channel at the middle of the Beams } afore midˢ Abaft
To the Port Cells _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
to the Ports from the Midships _ _ _ _ _ _ _ _ _ _

	100	90	80	70	60	50	40	30	20
To the Upper edge ... Abaft	7-2	7-0	6-11	6-11	6-10	6-9½	6-6	6-0	6-9
To the Port Cells	2-4	2-4	2-4	2-3	2-3	2-2	1-11	1-9	1-4
to the Ports from the Midships	4-5½	4-5½	4-8½	5-0	5-0				

Ports {
Deep
Fore & Aft

	100	90	80	70	60	50	40	30	20
Deep	2- 8	2- 7	2- 7	2- 7	2- 6	2- 4	2- 2	2- 2	2- 0
Fore & Aft	3- 0	2- 9	2- 9	2- 9	2- 6	2- 5	52- 4	2- 4	2- 4

Forecastle {
Beams to round
Plank Thick

	100	90	80	70	60	50	40	30	20
Beams to round	0- 7	0- 6¾	0- 6½	0- 6¼	0-6	0-5¾	0- 5½	0- 5¼	0- 5
Plank Thick	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2

Platform

	100	90	80	70	60	50	40	30	20
Long from yᵉ foreside of the stantiants of the beek head	36-3	31-7	10- 4	31- 6	26- 6	26- 6	21- 9	20- 0	?- ?

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		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Quarter Deck	Beams to round	0-8	0-7½	0- 7¼	0-7	0- 6¾	0- 6½	0- 6¼	0- 6	0- 6
	Height from yᵉ plank to upper edge round house beams in yᵉ mid – afore	6- 8	6- 6	6- 2	6- 5	6- 5	5- 5	4- 8	- -	- -
	Height from yᵉ plank to upper edge round house beams in yᵉ mid – abaft	6- 10	6- 8	6- 4	6- 7	6- 7	5- 7	4- 10	- -	- -
	Height from yᵉ plank to the port cells	1- 7	1- 7	1- 6	1- 6	1- 6	1- 6	- -	1- 6	- -
	Ports {Deep	2- 6	2- 6	2- 5	2- 4	2- 3	2- 2	- -	2- 2	- -
	Fore & Aft	2- 9	2- 8	2- 7	2- 6	2- 5	2- 4	- -	2- 2	- -
	Long taken in the midships from the aft part of the stern timber	79-0	79-0	66-3	68-6	62-0	56-6	45-3	43-0	16-9
Round House	Beams to round	0- 9	0- 8½	0- 8½	0- 8½	0- 8½	0- 8	0- 8	- -	- -
	Plank thick	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2	0- 2	- -	- -
Round House	Height from the plank to the upper edge of the topgallant round house beams at middle of the beams {Afore	5-10	- -	- -	- -	- -	- -	- -	- -	- -
	Abaft	6- 0	- -	- -	- -	- -	- -	- -	- -	- -
	Long taken in the midships from the aft of the stern timber	45- 0	42-7	16- 2	34- 3	32- 0	10-6	8- 6	- -	- -
Hanging of the deck at the middle line		2-1	1-11	1-10	1-9	1-8	1-7	1-5½	1-4	1-3
Higher abaft than afore from the keel		0-8	0-8	0-8	0-8	0-8	0-6	0-4	0-4	
Middle Deck	Beams to Round	0-7	0-6¾	0-6½						
	Plank thick	0-3	0-3	0-3						
	Height from the plank to the upper edge of the upper deck Beams at the middle of the beams {Afore	7-1	6-6¾	6-6½						
	Midˢ	- -	- -	- -						
	Abaft	7-3	7-0	6-9						
	Height from the deck plank to the port cells	2-2	2-2	1-11						
	Ports: {Deep	2-9	2-8	2-8						
	Fore & Aft	3-3	3-1	2-11						
	Beams to Round	0-8	0- 7¾	0-7½	0-7¼	0-7	0-6¾	0-6½	0-6¼	0-6
	Plank thick	0-3	0-3	0-3	0-3	0-2½	0-2½	0-2¼	0-2	0-2

			100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Ports:	Deep		2-8	2-7	2-7	2-7	2-6	2-4	2-2	2-2	2-0
	Fore & Aft		3-0	2-9	2-9	2-9	2-6	2-5	2-4	2-4	2-4

Upper Deck	Height from the Plank to the upper edge of yᵉ quaʳ deck Beams at the middle of the beams	Afore	7-6	6-10	6-8	6-8	6-6½	6-6	6-5½	6-5	6-5
		Abaft	7-9	7-1	6-11	6-11	6-8	6-8	6-7	6-7	6-6
	Height of the Waste		5-8	5-4	4-10	5-6	5-0	4-8	4-52	4-2	3-10
	To the port cells		1-10	1-9	1-7	1-10	1-8	1-8	1-6	1-6	1-6
	To the upper edge of the forecastle beams at yᵉ middle of the beame	Afore					Platform				
		Abaft	6-8	6-6	5-10	6-4	6-1	5-9	5-4	5-2	4-8
	Beams to Round		1-0								

Topgallant Roundhouse   Long taken in midships from yᵉ after part of the stern timber   10-6

Length from the forside of the toprail at the height of the fife rail to the foreside Of the figure of the head by the line parallel to the keel	210-9	197-6	188-10	176-3	167-0	155-9	143-2	132-0	121-0
Length from the foreside of the stem to the forepart of the nec of the head	16-6	15-6	13-6	11-6	10-6	9-6	8-6	7-6	7-0

From the foreside of the stem to the beakhead bulkhead	9-0	8-3	8-0	7-0	6-6	6-0	5-6	5-0	- -

From the afterside of the wing transom to the after part of yᵉ counter at the middle line	5-9	5-8	5-7	5-4	4-9	4-6	4-3	4-0	3-4
Of the second counter	7-5	7-3	7-1	6-10	6-2	5-10	5-6	5-2	- -

From the upper edge of the keel to the lower edge of the counter rail at the middle line	31-11	30-4	29-5	28-2	27-0	25-5	23-10	21-1½	18-6

Principal Dimentions

		100	90	80	70	60	50	40	30	20
		Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Height of the gundeck by a perpendicular from the upper edge of the keel	Afore	24-4½	22-11½	22-0½	21-0½	19-11	18-7½	17-4	15-1½	12-3
to the upper edge of the plank at the middle line of the deck	Abaft	25-0½	23-7½	22-8½	21-8½	20-7	19-1½	17-8	15-4½	12-3
Of the upper edge of the wing transom above the upper edge of The keel at the post		27-5	25-11½	25-1	24-0	22-10½	21-4	19-7½	17-2	15-6½
From the upper edge of the keel to the to the lower edge of the rail under yᵉ wardroom lights on 3 deck ships and under the Great cabin lights in 2 deck ships		35-1	33-6	32-6	31-7	30-4½	28-9	27-2½	24-5½	- -
Round of the stern aft the lower counter rail		1-2	1-1	1-0½	0-11½	0-10½	0-10	0-9½	0-8½	- -

The back of the false post to rake 2½ " in a foot and the upright of the stem three inches. The stem to rake forward above the gundeck to the top of it
two inches in a foot

Scantling of the frame and beams

	100	90	80	70	60	50	40	30	20
Rather fore & aft at the lower end with small back if	6-3	5-10¾	5-6¾	4-7¼	3-10¾	3-7¼	3-3¼	3-0⁵⁄₈	2-10

occasion should require. Memᵇʳ to have always a piece of 4 inch plank at the bottom to preserve it from the storms

	100	90	80	70	60	50	40	30	20
Rooms & space of timbers	2-7	2-7	2-7	2-7	2-7	2-7	2-6	2-5	2-5

The floor and futtock timbers in the bearing of the ship to fill up the rooms and space especially for large ships if can conveniently be got

	100	90	80	70	60	50	40	30	20
Floor timbers next the flat sided	1-2	1-2	1-1½	1-1¼	1-1	1-0	0-11	0-10	0-9
Afore and abaft next in wake of the half timbers	1-0	1-0	0-11½	0-11¼	0-11	0-10¼	0-10	0-9	0-8

Scantling of the Frame and Beams

	100	90	80	70	60	50	40	30	20
At the wronghed □ wronght in and out	1-2	1-1¼	1-0¾	1-0	0-11	0-10¼	0-10	0-9	0-8
Afore and abaft in & out	1-1	1-0½	0-11	0-11	0-10	0-9	0-8	0-7	0-6
Lower futtocks sided in the midships next the flats a small distance afore & abaft the bearing of the ship	1-2	1-2	1-1½	1-1¼	1-1	1-0	0-11	0-10	0-9
Sided afore & abaft	1-0	1-0	0-11½	0-11¼	0-11	0-10½	0-10	0-9	0-8

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	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
In and out at the heads in the midships	0-11½	0-11	0-10¼	0-10	0-9	0-8	0-7	0-6	0-5
Second futtocks sided in the midships	1-1½	1-1½	1-1	1-0¾	1-0½	0-11¼	0-10½	0-9½	0-8½
Afore and abaft	0-11½	0-11½	0-11	0-10¾	0-10½	0-10	0-9½	0-8½	0-7½
Third futtocks sided in the midships	1-1	1-1	1-0½	1-0¼	1-0	0-11	- -	- -	- -
Afore and Abaft	0-11½	0-11½	0-11	0-10¾	0-10½	0-9½	- -	- -	- -
Upper Futtocks sided in the midships	1-1	1-1	1-0½	1-0¼	1-0	0-11	0-10	0-9	0-8
Afore and abaft	0-11½	0-11½	0-11	0-10¾	0-10½	0-10	0-9½	0-8½	0-7½
At the gundeck in & out in the □	0-11	0-10½	0-10	0-9½	0-8½	0-7½	0-6½	0-5½	0-5
Top timbers sided at the heel & at the upper futtocks heads	1-1	1-1	1-0½	1-0¼	1-0	0-11	0-10	0-9	0-8
Heads	0-9½	0-9½	0-9	0-9	0-8½	0-7½	0-6½	0-5½	0-5
In and out at the top of the side	0-5	0-4¾	0-4	- -	- -	- -	- -	- -	- -
Orlope beams moulded	1-4	1-3½	1-2½	1-2	1-1	0-11	0-10	0-9	- -
Sided	1-4	1-3½	1-2½	1-2	1-1	0-11	0-10	0-9	- -
Gundeck Beams Sided in the midships and 1 inch less each way afore and afore	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-10	0-8
Moulded	1-5	1-4	1-3	1-2	1-1	1-0	0-11	0-9	0-7
Middle Deck Beams Sided	1-3	1-2	1-1	- -	- -	- -	- -	- -	- -
Moulded	1-1	1-0	0-11	- -	- -	- -	- -	- -	- -
Upper Deck Beams Sided	1-1	1-0½	0-11	0-11	1-0	0-10½	0-9½	0-9	0-8½
Moulded	0-11	0-10½	0-8½	0-11	0-10	0-8½	0-7½	0-7	0-6
Forecastle Beams Sided	0-9½	0-9½	0-8	0-9	0-8	0-6½	0-6	0-6	0-5½
Moulded	0-7½	0-7	0-6	0-7	0-6	0-5½	0-5	0-5	0-4½

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Beams at the forepart of the Forecastle	Sided	2-6	2-5	2-4	2-3	2-2	2-0	1-10	1-9	1-2
To fasten the cattheads	Moulded	0-7½	0-7	0-7	0-7	0-6	0-5½	0-5	0-5	0-5
Roundhouse Beams	Sided	0-7½	0-7	0-6	0-6½	0-6¼	0-4½	0-4	- -	- -
	Moulded	0-5½	0-4½	0-5	0-5	0-3½	0-3	- -	- -	- -
Top Gallant Roundhouse Beams	Sided	0-6	- -	- -	- -	- -	- -	- -	- -	- -
	Moulded	0-4½	- -	- -	- -	- -	- -	- -	- -	- -

To Determine the Burthen in Tons

First instead of measuring from the back of the main post to the perpendicular or square from the keel at the fore part of the stern at the top thereof, or from a square or a perpendicular from the keel at the fore part of the stern at the upper edge of the lower harpen as hath been usual, both which extreams are liable to many uncertaintizs & may be considerable vareed by increasing or lessening the main or false post without the rabit abaft, or by raiseing or lowering the harpin, the raking the upper post of the stern more or less or adding or diminishing to the scantlings of the same before the rabit of the stern, none of which are essentials for determining the tunage. Therefore instead thereof erect a square or perpendicular from a line ranging straight with the low'r part of the rabit of the keel to the aft part of the plank or at the upper edge of y^e wing transom and also another square or perpendicular from the fore part of the plank or rabit of the stern at $^5/_6$ parts off the height of the wing transom, then measure the length between those perpendicular lines and add thereto $^1/_{24}$ of the extream breadth (for the scantlings of the stern before the post abaft the plank without regarding wether there be a fals post or no) from which sum subtract $^6/_{25}$ of the heigh of the wing transom(for the rake Abaft) $^3/_5$ of the main breadth for the rake forward, and the residue is to be accounted the length for tunage, which multiply by the extream breadth and the product by the ½ breadth and that sum divided by 94 give the burthen in tons. This is for square stern ships, but for round stern vessels (or where there is no Wing Transom) off $^3/_5$ of the extream breadth from the lower part of the rabit of the keel on the aft part of the rabit of the post from suppos'd height of the wing transom from whence the perpendicular is to be let fall as before from the wing transom. Y^e other forward let fall from the fore part of the rabit of the stern at $1^5/_6$ parts of the height & then to take y^e distance of those two perpendiculars and work from them as before directed in square stern ships.

The extream Breadth is taken from the outside to the outside of the thick stuff either or below the wales where the ship shall be broadest always deducting the doubling or sheathing from the said breadth.

Parts of the Frame

		100	90	80	70	60	50	40	30	20
		Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Keel Main of elm or beach,	Number of pieces not to exceed (if can be procured)	6-0	6-0	5-0	5-0	5-0	5-0	4-0	4-0	4-0
	Square in midships	1-7	1-6	1-5	1-4	1-3	1-2½	1-1½	1-0½	1-0
Scarphs	Long thrice their breadth or	4-8	4-6	4-4	4-2	4-0	3-10	3-8	3-6	3-4
	No & Size of bolts in each scarph	N^0-In	N^0-In	N^0-In	N^0-In	N^0-In	N^0-In	N^0-In	N^0-In	N^0-In
		8-1¼	8-1¼	8-1¼	8-1¼	8-1¼	6-1	6-1	6-$^7/_8$	6-$^7/_8$
	Sided afore	1-5	1-4	1-3	1-2	1-0	1-0	1-0	0-11	0-11
At the	rabbit of the post	1-0½	1-0	0-11½	0-11	0-10½	0-9½	0-9	0-8½	0-7½
	False Keel thick	0-5	0-5	0-4½	0-4	0-4	0-4	0-3½	0-3	0-3

Number of pieces – The same or 1 more than the main keel

		100	90	80	70	60	50	40	30	20
Stem	Main Breadth at the head thwart ships	2-5	2-3	2-1	1-11	1-9	1-7	1-5	1-3½	1-2
	Below the Hance the bigness of the keel midships									
Stem	Fore & aft at the head	1-9	1-7½	1-6	1-5	1-4	1-3	1-2	1-0	1-0
	At the foot the same as the keel midships									

	100	90	80	70	60	50	40	30	20
Scarphs long, not less than	4-0	3-10	3-8	3-6	3-4	3-3	3-2	3-1	3-0
No and size of bolts in each & to go thru y^e false stem	6-1$^1/_8$	6-1$^1/_8$	6-1$^1/_8$	6-1$^1/_8$	6-1$^1/_8$	6-1	6-1	6-$^7/_8$	6-$^7/_8$

		100	90	80	70	60	50	40	30	20
Stem false) to over launch the scarphs of the stem above and below	Thick	1-0	0-11½	0-11	0-10½	0-9½	0-9	0-8	0-7	0-6
	Broad if can be had	2-5½	2-4	2-2	2-1	1-11	1-10	1-8	1-7	1-6
Scarphs long		1-2	1-2	1-0	1-0	1-0	1-0	1-0	1-0	1-0

	100	90	80	70	60	50	40	30	20
Post, main square at the upper end top end to be wrought upwards if to be had	2-0	1-11	1-10	1-9	1-8	1-7	1-6	1-2	1-0
Fore and aft on the keel ye after false post included	2-9	2-8	2-7	2-6	2-5	2-4	2-2	2-1	2-0

100	90	80	70	60	50	40	30	20
100	90	80	70	60	50	40	30	20

	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Abaft the rabbit at the wing transom	0-11	0-10	0-9	0-8	0-7¼	0-7	0-6¼	0-6	0-5½
False the back of it abaft the rabbit of the keel	2-1	2-0	1-11	1-10	1-9	1-7	1-6	1-5	1-4
The inner part for & aft yᵉ top end upwards	1-4	1-3	1-2	1-1	1-0	0-11	0-10	0-9	0-8
Fore & aft on the keel (if can be had)	1-8	1-7	1-6	1-5	1-4	1-3	1-1	0-11	0-9
Transom wing sided	1-3	1-2	1-1½	1-1	1-0½	1-0	0-11½	-11	0-10½
Moulded at the ends	1-8	1-7	1-6	1-5	1-4	1-3	1-2	1-1	1-0

Deck transom to lye close to the gundeck for the plank of the said deck to let into the same

	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Sided	1-2	1-1	1-0½	1-0	0-11½	0-11	0-10	0-9	0-8½

Deck transom moulded as broad as conveniently may be for the better fastening of the plank of the said deck; between the wing & deck so wide as to leave 2 or 2½ in. air between the wing transom and the gundeck plank.

Parts of the Frame

Transom under the deck

Transome $\left\{\begin{array}{c}1\\2\\3\end{array}\right\}$ not less than	1-1	1-0	0-11½	0-11	0-10½	0-10	0-9	0-8	0-7

Half transoms to lye clear of the whole transom not less than 3 inch for air

Raising wood as sufficient number of pieces afore & abaft

Abaft (if a short piece of keel) to over launch the scarphs at least 6 foot, if a long piece of keel to drop short of the scarphs 8 foot

Broad in the midships 3 in on each side more than the keel (if can be had)

Knee against yᵉ post upon the lower piece of deadwood, length of the up & down arm	7-0	6-6	6-0	5-6	5-0	5-0	4-6	4-0	4-0
Fore & Aft arm (if can be had	9-0	8-6	8-0	7-6	7-0	6-6	6-0	5-6	5-0

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Distance apart & size of bolts	22-1½	22-1½	22-1³/₈	22-1¼	22-1¼	22-1¼	22-1¼	22-1¹/₈	22-1

Bolted thro the knee and post and upon the said knee bring on the rest of the riseing wood fastened in the same manner

Haus pieces number on each side and a piece between or four if can be had

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
If in two each pieces to be had	Broad	2-8	2-7	2-6	2-5	2-4	2-3	2-2	2-1	2-0
	Holes Diameter	1-4	1-3	1-2	1-1	1-1½	1-0	0-11	0-10	0-9
Timbers room & space		2-7	2-7	2-7	2-7	2-7	2-7	2-6	2-5	2-5

Floor & Futtucks in the bearing of the ship to fill up the room and space especially for large ships (if can conveniently be had)

Parts of the Frame

Timbers next the flat sided
Timbers afore &abaft in the wake of the haft timbers 2 in less than in midships from 100 to 60 gun ships 50 gun ships in 1½ and 40 gun ships & downwards 1 inch less

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
At the wrongheads wrought in and out at □	1-2	1-1½	1-0¾	1-0	0-11	0-10	0-9	0-8	0-7
Afore & abaft	1-1	1-0½	0-11¾	0-11	0-10	0-9	0-8	0-7	0-6
Every other bolted thr'o the keel with bolts of	0-1½	0-1½	0-1³/₈	0-1³/₈	0-1¼	0-1¼	0-1¼	0-1¹/₈	0-1
Heads to lye above the bearing of the floor @midd	1-8	1-6	1-4	1-4	1-4	1-4	1-4	1-4	1-0

Futtucks lower sided in the amidships next yᵉ flats afore and abaft a small distance

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
The bearing of the ship	1-2	1-2	1-1½	0-11¼	1-1	1-0	0-11	0-10	0-9
Afore & abaft	1-0	1-0	0-11½	0-11¼	0-11	0-10½	0-10	0-9	0-8
Heels to scharphs below the flool heads at least	8-0	7-9	7-6	7-2	6-10	6-6	6-2	5-10	5-2
In & out at the heads in □	0-11½	0-11	0-10½	0-10	0-9	0-8	0-7	0-6	0-5½
Scharphs upwards long	7-9	7-5	7-0	6-10	6-9	6-4	7-6	6-4½	5-4
Afore & abaft	6-6	6-3	6-0	6-0	6-0	6-0	6-0	6-5	5-0

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
2nd sided the midships	1-1½	1-1½	1-1	1-0¾	1- 0¼	0-11½	0-10½	0-9½	0-8½
Afore & abaft	0-11½	0-11½	0-11	0-10¾	0-10¼	0-10	0-9½	0-8½	0-7½
Futtucks 2nd scarphs in the midships long	7-9	7-5	7-6	6-10	6-9	6-4	7-6	6-4½	5-4
Afore & abaft if to be had not less than	6-6	6-3	6-0	6-0	6-0	6-0	6-0	5-6	5-0
3rd sided in amidships	1-1	1-1	1-0½	1-0¼	1-0	0-11	- -	- -	- -

Parts of the Frame

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Afore & abaft	0-11½	0-11½	0-11	0-10¾	0-10½	0-9¾	- -	- -	- -
Scarphs long in the midships	7-9	7-5	7-0	6-10	6-9	6-4	- -	- -	- -
Afore and abaft at the heads an inch less than	6-6	6-3	6-0	6-0	6-0	6-0	- -	- -	- -
Upper sided in the midships	1-1	1-1	1-0½	1-0¼	1-0	0-11	0-10	0-9	0-8
Afore and abaft at the heads an inch less than	0-11½	0-11½	0-11	0-10¾	0-10¼	0-10	0-9½	0-8½	0-7½

To reach the upper deck clamps of 2 decks ships & the middle deck clamps of 3 decks ships and the wake of the channels to turn up as high as the deck if can be had

Scarphs	Upper / Lower	in the □□if can be had	7-9	7-5	7-0	6-10	6-9	6-4	7-6	6-4¼	5-4
Long	Upper Afore & / Lower Abaft if can be had	to reach the or middle decks clamps if to be had	6-6	6-3	6-0	6-0	6-0	6-0	6-0	5-6	5-0

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Top timber sided at heels & upp[r] futt[k] heads	1-1	1-1	1-0½	1- 0¼	1-0	0-11	0-10	0-9	0-8
Heads	0-9½	0-9½	0-9	0-9	0-8½	0-8	0-7½	0-7	0-6
In & out at the gunnel or top of the side	0-5	0-4¾	0-4	0-4	0-3¾	0-3¼	0-2¾	0-2¼	0-2¼

Timbers in 50 gun ships at the side of the gundeck ports to make top timber and upper futtocks in one and in all other ships in the wake of the channels some (if can be had). The frame bends to every 4th timber from the midships flat to be canting or beveling timbers afore and abaft and then every other timber

In Hold

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Keelson Square		1-7	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-11
Number of pieces if can be had		6-0	6-0	5-0	5-0	5-0	5-0	7-0	4-0	4-0

Length of the scarphs to reach three floor timbers and to be bolted with bolts of the same size of the floor timbers and two small bolts in the ends of the scarphs standerd upon or under the keelson abaft the up & down arm to but under the lower transom (if can be had).

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
The other arm long		9-0	8-9	8-6	8-3	8-0	7-9	7-6	7-3	7-0
Sided at least		1-1	1-1	1-0½	1-0¼	1-0	0-11½	0-11	0-10½	0-10
Limber board	Thick	0-3	0-3	0-3	0-3	0-3	0-2½	0-2½	0-2½	0-2
	Broad	1-2	1-2	1-2	1-52	1-2	1-2	1-2	1-2	1-0
Streakes next the limber boards	Thick	0-6	0-5							
	Broad if can be had	1-3	1-3							
Thick stuff at the floor heads	Middle Strake thick	0-9	0-9	0-8	0-8	0-7	0-6	0-6	0-5	0-5
	Broad if to be had	1-4	1-3½	1-3	1-3	1-3	1-3	1-2	1-1½	1-1½
Number and thickness	Above the middle	1-9	1-9	1-8	1-8	1-7	1-6	1-6	1-5	1-3
Of the straks		1-8	1-7½	1-6	1-5	1-5	1-4	1-6	1-5	1-3
Dᵒ	below the	1-9	1-9	1-8	1-8	1-7	1-6	1-5	1-5	1-5
	Middle straks	1-8	1-7	1-6	1-5	1-5	1-4	1-5	1-5	1-5

No more than 3 streaks afore & abaft for those 3 deck ships to be but 4 in the 70, 60, & 50 gun ships.

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In

In the 40 & 30 gun ships, 2 streaks of 3 in. & the 20 gun ships one streak of 2½ in.

		100	90	80	70	60	50	40	30	20
Stuff at the Futtocks Head	middle Strake Thick	0-8½	0-7½	0-6½	0-6½	0-6	0-5	0-5	0-4	0-3½
	Broad if can be had	1-3	1-2½	1-2	1-2	1-2	1-2	1-1½	1-1	1-0
Strakes { Above & Below One / One		0-7½	0-6½	0-5½	0-5	0-4½	0-4	0-4	0-2	0-2½
Foot waling the rest in the midships thick		0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-2½	0-2
Afore & Abaft thick		0-3	0-3	0-3	0-3	0-2½	0-2	0-2	0-2	0-1½
Orlopes Clamps { Upper	Strakes thick	0-8	0-7½	0-7	0-7	0-6	0-5½	0-5	0-4	- -
Lower		0-7	0-6½	0-6	0-6	0-5½	0-5	0-4	0-3	- -

Beams to but against the timbers and where are lodging knees to stay them to the timbers,

	90	80	70	60	50	40	30	20	
(Beams)	- -	- -	- -	- -	3-0	2-0	2-0	2-0	- -

Orlope Beams Numbers Afore } / Abaft } the mainmast

	50	40	30	20	
Afore: one under every gundeck	3-0	2-0	2-0	2-0	- -
Abaft: beam excepting yᵉ main hach way and main mast room, 1 under each	3-0	3-0	2-0	2-0	- -

	100	90	80	70	60	50	40	30	20
Knees lodging the shortest arms not less than	4-9	4-6	4-3	4-0	3-9	3-6	3-4	3-4	- -
Sided	0-10½	0-9½	0-9	0-8½	0-8	0-7½	0-7	0-6	- -
Number & Size of bolts in each	7-1³/₈	7-1¼	7-1¼	7-1¹/₈	7-1¹/₈	6-1¹/₈	6-1	6-0⁷/₈	- -
To lye below the upper edge of the beam	0-3	0-3	0-2½	0-2¼	0-2	0-1¾	0-1½	0-1½	- -
Plank or board thick	0-1½	0-1½	0-1½	0-1½	0-1¼	0-1¼	0-1	0-1	- -
Thick stuff on the ends of the beams thick	0-7	0-6½	0-6	0-6	0-5	0-4	0-3½	0-3	- -

Broad — Proper for having a Sufficient opening under yᵉ Gun Clamp

Standard knees where there are no futᵏˢ riders sided the same as the other nees

Nᵒ. & Size of Bolts in each the same size as before carling & leges the same as the Gundeck

	100	90	80	70	60	50	40	30	20
Transom Knees the Wing Sided	1-2	1-1¼	1-1	1-0	0-11	0-10	0-9½	0-8½	0-7

The fore & Aft Arm to be Scored in the Timbers 1½ in. and to scarph with hook & but the fore on the spurketting a sufficient length

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Fore & aft	Long	20-0	19-0	18-0	17-0	16-0	14-0	18-0	12-0	10-0
Shortest Arm	if can be had	10-0	9-6	9-0	8-6	8-0	7-6	7-0	6-6	6-0
Transom nees wing	Distance & Size of Bolts	24-$1^3/_8$	24-1¼	24-1¼	24-1¼	24-$1^1/_8$	24-1	24-1	24-0.$^7/_8$	24-0¾
The deck transom nees	Sided & Bolted the Same size as the Gundeck nees yᵉ number of bolts measuring according to their lengths									
Length of the Longest Arm		10-0	9-0	9-0	8-6	8-0	7-0	7-0	6-6	6-0

Distance and Size of Bolts the Same as the Wing Transom Nees

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Riders Floor	Number	5-0	4-0	3-0	2-0	2-0				
	Length	29-0	27-6	26-0	24-6	23-0				
	Sided	1-7	1-6	1-5	1-4	1-3				
Deep on the Kelson		1-2	1-1	1-0	1-0	1-0				
At the floor timber heads		1-4	1-3¼	1-3	1-2	1-1				
Nᵒ & Size of bolts in each		12-1½	12-1½	10-$1^3/_8$	10-1¼	10-$1^3/_8$				

Distance and size of bolts the same as the wing transom knee below the gundeck sided 2 in. less than the transoms

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Longest Arm Long		10-0	9-9	9-0	8-6	8-0	7-6	7-0	6-6	6-0
Lower futtᵏˢ number on each side		8	4	6	5	5	3	3	2	- -

To have pieces scarph'd & hooked on the heels of the across the keelson where there is no floor riders

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Riders lowʳ futtᵏˢ scarph'd each	Downwards to the low edge off the orlope beams if can be had									
way from the floor riders	Upwards	7-9	7-9	7-4	7-2	7-0	6-9	6-6	6-3	- -
	Sided	1-5	1-4½	1-4	1-4	1-3½	1-3	1-2	1-1	- -
Moulded at the floor head		1-4	1-3½	1-3	1-2	1-1	1-0	0-11	0-10	- -
Nᵒ & size of bolts in back		9-1½	9-1½	9-$1^3/_8$	8-$1^3/_8$	8-1¼	8-1¼	8-$1^1/_8$	- -	- -

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	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Upper futtocks number on each side	8-9	7-0	6-0	5-0	- -	- -	- -	- -	- -
Length downwards if can be had to the heads of the floor riders									
Upwards to the gundeck lodging knees									
Sided	1-3	1-2½	1-2	1-2	- -	- -	- -	- -	- -
Moulded at the upper end	1-1	1-0	0-11	0-10	- -	- -	- -	- -	- -

To be bolted to the orlope beams with 2 bolts the same size as the orlope knees

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Nº & size of the bolts thr'o the side	8-1³/₈	8-1¼	8-1¼	8-1¼	- -	- -	- -	- -	- -
Crotches abaft on the sealing - Nº	2	2	2	2	1	1	1	1	1
Length of each side if can be had	9-0	8-6	8-0	7-6	7-0	6-6	6-5	6-0	5-0
Sided	1-2	1-2	1-1	1-1	1-0	0-11	0-10	0-9	0-8
Nº & size of bolts in each	8-1³/₈	8-1¼	8-1¼	6-1¼	6-1¹/₈	6-1	6-1	6-0⁷/₈	6-0¾

Steps main sided to the diameter of main mast in the partners

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Deep on the keelson	1-7	1-6	1-5	1-4	1-3	1-3	1-2	1-1	1-0

Foresided to the diameter of the foremast in the partners
Deep on the keelson a sufficient depth

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Length if can be had	15-0	14-0	13-0	12-0	11-0	10-0	9-0	8-0	7-0
Nº & size of bolts in each	8-1½	8-1½	8-1³/₈	8-1³/₈	8-1¼	8-1¼	8-1¼	6-1¼	6-1

Steps on mizzen sided the diameters at the mizzen mast in the partners
On the keelson a sufficient depth

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Nº & size of bolts in each	8-1³/₈	8-1¼	8-1¼	6-1¼	6-1½	6-1	6-1	6-0⁷/₈	0- ¾
Steps main capstand Broad	2-0	1-10	1-9	1-8	1-7	1-6	1-5	1-4	1-2
Deep	1-4	1-3	1-2¼	1-2	1-1	1-1	1-1	1-0	1-0

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Bresthook under the gundeck hook low'r	1-3	1-2¼	1-2	1-2	- -	- -	- -	- -	- -
2nd	1-3	1-2¼	1-2	1-2	- -	- -	- -	- -	- -
3rd } Sided	1-3	1-2¼	1-2	1-2	- -	- -	- -	- -	- -
4th	1-3	1-2¼	1-2	1-2	- -	- -	- -	- -	- -
Length if can be had	17..0	16..6	16..0	15..6	15..0	14…6	14..0	13..0	12-0
Nᵒ & size of bolts	13-1¼	13-1¼	13-1³/₈	11-1³/₈	11-1¼	9-1¼	9-1¼	9-1¹/₈	9-1
Pillers upright under the beams square	0-9	0-8¼	0-8	0-8	0-7¼	0-7	0-6	0-6	0-5
To be placed under the middle of each beam Y in the quarters on the scarphs of the riders where there are no pointers									
Pointers Square	1-0	0-11	0-10	0-+	0-8½	- -	- -	- -	- -
Number of pair to meet wholly under the gundeck beams to be scored 1¼ in into the orlope beams	5-0	4-0	3-0	2-0	2-0	- -	- -	- -	- -
Pillers to be bolted to the gundeck beams with up & down bolts & to the orlope beam fore & aft each pointer to have No. bolts in each end	2-1¼	2-1¹/₈	2-1¹/₈	2-1¹/₈	2-1	- -	- -	- -	- -
Well fore & Aft	9-8	9-4	9-0	7-8	7-4	7-0	6-8	6-4	6-0
Thwartships	10-1	9-11	9-10	7-7	7-3	6-10	6-5	6-1	5-8
The plank under the orlope thick	0-3	0-3	0-3	0-3	0-3	0-3	0-2½	0-2	0-2
Shotlockers Nᵒ one abaft & the other before yᵉ well	2-0	2-0	2-0	2-0	2-0	2-0	1-0	1-0	1-0
Fore & aft in the clear	2-6	2-6	2-4	2-4	2-2	2-1	2-0	1-11	1-10
Plank thick	0-3	0-3	0-3	0-3	0-3	0-3	0-2½	0-2½	0-2

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
At the after bitts N⁰	1-0	1-0	1-0	- -	- -	- -	- -	- -	- -
Bulkheads — Length from the inside of the rabit of yᵉ stem on the gundeck to the after bulkhead of the magazine	36-5	34-6	29-0	27-6	25-6	23-6	21-6	19-6	- -
Length from yᵉ inside of the rabit of the post on the gundeck to the foreside of the bulkhead breadroom	32-0	30-6	29-0	27-6	25-6	23-6	21-6	19-6	- -
Length from yᵉ bulkhead of the breadroom to the forepart of the bulkhead of the captains storeroom & pursers sloproom	21-0	20-6	19-6	18-6	18-0	17-6	16-6	15-6	- -
The fish bulkhead to be abaft the bulkhead of the captain's Storeroom & pursers sloproom	5-0	5-20	5-0	5-0	5-0	5-0	5-0	5-0	- -

Gundeck

			Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In	Th-Ft-In
Clamps thick & broad	uppʳ		9-1-3	8¼-1-3	8¼-1-2½	8-1-2	7-1-2	- -	- -	- -	- -
	2nd	to be tabled 2 in into	8-1-1	7-1-0	7¼-1-0	7-1-0	6-1-0	- -	- -	- -	- -
	Lower	each other	7-1-0	6½-1-0	6¼-1-0	6-1-0	6-1-0	- -	- -	- -	- -
Off in 2 streaks	upper		1-5½	1-5	1-5	1-4½	1-4	6-1-3	5½-1-3	5-1-2	4-1-2
	Lower		1-4½	1-4	1-4	1-3½	1-3	5-1-2	4½-1-2	4-1-1	3-1-1
Length of the scarphs			-3-8	-3-7	-3-6	-3-5	-3-4	-3-3	-3-2	-3-1	3-3-0
Opening under them			-0-10	-0-10	-0-10	-0-9½	-0-9	-0-8	-0-8	-0-8	-0-8
Bresthook under yᵉ hawses sided			-1-3	-1-2¼	-1-2	-1-1½	-1-1	-1-0	-0-11	-0-10	-0-9

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Length	17-0	16-6	16-0	15-6	15-0	14-6	14-0	13-0	12-0
Nᵒ & size of bolts	13-1³/₈	13-1³/₈	13-1¼	11-1¼	11-1½	9-1¹/₈	9-1	9-0⁷/₈	9-0¾

Nᵒ & size of bolts — 13-1$^{3}/_{8}$ 13-1$^{3}/_{8}$ 13-1$^{1}/_{4}$ 11-1$^{1}/_{4}$ 11-1$^{1}/_{2}$ 9-1$^{1}/_{8}$ 9-1 9-0$^{7}/_{8}$ 9-0$^{3}/_{4}$

Under the gundeck to have a large chock & to be left as much for & aft as possible for the better fastning, checking & bolting the plank of the gundeck to the same.

Beams			100	90	80	70	60	50	40	30	20
	Sided in the midships	& one inch less	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-10	0-8
	Moulded	afore & abaft	1-5	1-4	1-3	1-2	1-1	1-0	0-11	0-9	0-7

One to be placed under and 1 between each port where it can conveniently be done except in the wake of the hatchways & masts there to have double arm'd beams, that one part may be proper for a standerd, if the other to come under the ports to be double kneed at each end and with 1 hanging & 1 lodging knee.

Knees sided			100	90	80	70	60	50	40	30	20
	Lodg'g	foremast, main & hatch	0-10½	0-10	0-9½	0-6	0-8½	0-8	0-7½	0-6½	0-5½
	Hang'g	to be half inch bigger	0-11	0-10½	0-10	0-9½	0-9	0-8½	0-8	0-7	0-6

	100	90	80	70	60	50	40	30	20
Hanging arm if can be had	6-6	6-4	6-2	5-9	5-6	5-3	5-0	4-9	4-6
Nᵒ & size of bolts in each hanging nee	7-1³/₈	7-1¼	7-1¼	7-1¼	6-1¹/₈	6-1¹/₈	0-1	6-0⁷/₈	6-0¾

To have 4 bolts in the lower arm of the hanging knees, especially in the wake of the masts & hatchways & where the hanging knees can be got of a sufficient length for 80, 70, and 60 gun ships.

Three carlings in yᵉ wake of the main & for hatches & main mast room

Carlings number of teer on each side		3	3	2	2	2	2	2	2	2
	Broad	0-6	0-5½	0-5½	0-5	0-5	0-4½	0-4	0-3½	0-3
	Deep	0-5	0-5	0-5	0-5	0-4½	0-4½	0-3½	0-3	0-2½

	100	90	80	70	60	50	40	30	20
Bolts – Number of pair	2	2	2	2	2	2	2	2	- -
The foreside of the foremast to be abaft the rabbit of the stem	29-10	26-2	26-0	26-0	21-3	20-6	16-2	15-0	- -
Aftermost bitts to be abaft the foreside of the foremast	11-8	11-2	10-4	10-6	10-1	10-6	9-9	9-4	- -

Distance between them thwartships		100	90	80	70	60	50	40	30	20
	Foremast	4-0	3-10	3-8	3-5	3-2	2-11	2-8	2-6	- -
	Aftermast	4-10	4-7	4-4	4-0	3-8	3-5	3-2	3-0	- -

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Crosspiece	Foremast Deep	1-7	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-11
	Fore & Aft	1-8	1-7	1-6½	1-5½	1-4½	1-3½	1-3	1-2¼	1-2
	Aftermast Deep	1-7	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-11
	Fore & Aft	1-8	1-7	1-6½	1-5½	1-4½	1-3½	1-3	1-2¼	1-2
Lower edge above the deck	Foremast	1-10	1-9½	1-6	1-8½	1-8	1-7	1-6	1-5	1-4
	Aftermast	1-9	1-8½	1-8	1-7½	1-7	1-6	1-5	1-4	1-3
Scored in deep		0-3	0-3	0-3	0-3	0-2¼	0-2	0-2	0-2	0-2
Standard knees sided		1-1	1-0½	1-0	0-11½	0-11	0-10½	0-10	0-9½	0-9
Elm backs of		0-6	0-6	0-6	0-6	0-6	0-5½	0-5	0-4½	0-4
Square	Foremost	1-10	1-9	1-7½	1-6	1-4½	1-3	1-1½	1-0	0-11
	Aftermost	1-11	1-10	1-8	1-6	1-5	1-4	1-3	1-2	1-1

To be sufficiently deep to make the carling if can be had.
Bitts, standerd knees, the arm upon the deck to be as long as the bitts are asunder if can be had & the forepart to be flush with the deck.

		100	90	80	70	60	50	40	30	20
Nᵒ & size of bolts in each		$4\text{-}1^{3/}_{8}$	4-1¼	4-1¼	4-1¼	4-1¼	$4\text{-}1^{1/}_{8}$	$4\text{-}1^{1/}_{8}$	$4\text{-}1^{1/}_{8}$	4-1

Waterway thick in the chine one inch thicker than the plank of the deck.

Plank on flat to be English oak in the wake of the standard

Two strakes must the comings in all ships except those of 20 guns to be one inch thicker than the rest of the deck and to be let down an inch on the beams to be bolted with 2 small bolts to ⅝ of an inch in the great ships and ½ inch in all under 70 guns to be 1 inch longer than twice the thickness of the plank

All the rest to be bolted with one bolt in each beam and one treenail in each edge

Thickness on the depth of the cant on the lower cell of the gundeck ports, 3 inch for 100, 90, 80 gun ships, 2½ in. for other classes.

	100	90	80	70	60	50	40	30	20
Partners, for the masts the main to carlings broad	1-5	1-4½	1-4	1-3½	1-3	1-2	1-1	1-0	0-11

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Deep	1-6	1-5½	1-5	1-4½	1-4	1-3	1-2	1-1	1-0
Partners for the masts — Foremasts	0-7	0-7	0-7	0-6½	0-6	0-5½	0-5	0-4½	0-4
Mizenmast } Thick	no thicker than the rest of the deck								
Bowsprit	0-10	0-10	0-9	0-8	0-7	0-6½	0-6	0-5½	0-5
Partner for main capstands	0-7	0-7	0-7	0-6½	0-6	0-5½	0-5	0-4½	0-4
False Dᵒ for the main capstand under the beams thick	0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-2½	- -
Step for the main teer capstand thick	1-4	1-3	1-2	1-1½	1-1	1-0½	1-0	1-0	1-0
Triple capstand thick	1-0	0-11½	0-11½	- -	- -	- -	- -	- -	- -

The steps for the capstands to be no higher above the deck than 4 inch where it can be done

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Hatches — Main fore & aft	8-10	8-7	8-4	8-0	7-8	7-4	7-0	6-8	5-0
Thwartships	6-10	6-7	6-4	6-0	5-8	5-4	5-0	4-8	4-2
Fore — Fore & aft	4-8	4-8	4-8	4-8	4-8	4-8	4-8	4-8	3-1ˢᵖˡ
Thwartships	4-10	4-10	4-8	47	3-8	3-7	3-7	3-2	- -
Next abaft the main mast — fore & aft	4-8	4-8	4-8	4-8	4-8	4-8	4-8	4-8	- -
Thwartships	4-10	4-10	4-9	4-8	4-8	3-8	3-7	3-4	- -
Hatches over yᵉ fishroom — Fore & aft	4-8	4-8	4-8	4-8	4-8	4-8	4-8	4-8	- -
Thwartships	4-10	4-10	4-8	3-8	3-7	3-3	3-3	3-2	- -
Dᵒ over the steward room for & aft	3-4	3-3	3-2	3-1	3-0	2-10			
Thwartships	4-0	3-11	3-10	3-9	3-8	3-7	- -	- -	- -

Plank thick for them   one inch and half to each
Height above the deck   two inches to each

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Scuppers lead number on each side	4	4	4	4	4	6	- -	- -	- -
Diameter in the clear	0-4	0-4	0-4	0-4	0-4	0-6	- -	- -	- -
For the pump dale diameter in the clear	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Manger plank thick	0-4	0-4	0-4	0-4	0-4	0-4	0-3	0-3	0-3
Scupper in Dº on each side	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Scuppers diameter in the clear	0-5	0-5	0-5	0-5	0-5	0-5	0-4½	0-4	0-4
Sperketing number of strakes on each side to be bolted to the next timber									
To each butt with one bolt	3 or 2	3 or 2	3 or 2	3 or 2	3 or 2	3 or 2	2	2	2
Thickness in midships @ the lower edge	0-8	0-7½	0-7	0-6	0-5	0-4½	0-4	0-3½	0-3
@ the upper edge	0-6	0-6	0-5½	0-4½	0-4	0-3½	0-3	0-2½	0-2½
Plank between the middle or upper deck clamps & sperketing Thick	0-4	0-3½	0-3	0-3	0-3	0-2½	0-2½	0-2	0-2
Ports in the counter Number	4	4	2	2	2	2	2	2	2
Oar Number	- -	- -	- -	- -	- -	- -	30	24 & 8	36
Deep	- -	- -	- -	- -	- -	- -	0-8½	0-8½	0-8
Fore & Aft	- -	- -	- -	- -	- -	- -	0-8	0-8	0-7½
Standard number on each side the foremost pair to be iron sided	5	5	4	3	3	2	- -	- -	- -

The up & down arms so long as to take hold of the edge of the middle or upper deck clamps (if can conveniently be had) & abaft to be placed as yᵉ upper and as conveniently may be had

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Shortest arm long (if can be had)	4-6	4-4½	4-3	4-1½	4-0	- -	- -	- -	- -
Number & Size of bolts each	7-1³/₈	7-1¼	7-1¼	7-1¼	7-1¼	- -	- -	- -	- -

Iron standers   Breadth
                  Thickness   *(NOTE: THERE WERE NO ENTRIES FOR THESE ITEMS IN THE*
                  Weight   *ORIGINAL JOURNAL)*

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Capstand, main, diameter in the partners of yᵉ lower part including the whelps	2-1	2-0	1-11	1-10	1-9	1-8	1-7	1-5	- -

		100	90	80	70	60	50	40	30	20
		Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Barrs number		(NOTE: NO ENTRIES HERE IN ORIGINAL JOURNAL)								
Length		12	12	12	12	12	12	12	10	- -

Number of iron palls four to each where they can be fitted, two of which to fall upon the head or trundale heads, and to answer the pauls upon the deck.

		100	90	80	70	60	50	40	30	20
Pillars turn'd in the square		0-8	0-7½	0-7¼	0-7	0-6½	0-6	0-5½	0-5	0-4½
Tiller square in the biggest place		1-1	1-0	0-11	0-10	0-40	0-9½	0-9	0-8½	
Sweep to be flush with the beam	Thickness	0-3	0-3	0-3	0-2½	0-2½	0-2¼	0-2¼	0-2¼	0-2
	Breadth	1-0	0-11	0-10	0-9	0-8	0-7½	0-7	0-6½	0-6½
False transom	Deep	1-0	0-11	0-10	09½	0-8	0-7½	0-7	0-6½	0-6
Knees	Deep	0-10½	0-9½	0-9	0-8½	0-8	0-7½	0-7	0-6½	0-6
Arms	Fore & Aft	11-6	11-0	10-6	10-0	9-6	9-0	8-6	8-0	7-6
Thwartships		6-0	6-0	8-8	5-4	5-0	4-8	4-4	4-0	3-8

Number and size of bolts the same as the middle or upper deck knees

	100	90	80	70	60	50	40	30	20
Bolts ring & eye for each port, number and size	6-1$^{3}/_{8}$	6-1¼	6-1¼	6-1¼	4-1¼	1-1$^{1}/_{8}$	4-1$^{1}/_{8}$	4-1	- -

The additional ring bolts to be placed in the next timber to the port timber

	100	90	80	70	60	50	40	30	20
Diameter in the clear of the ring	0-5½	0-5½	0-5¼	0-5	0-5	0-4$^{3}/_{8}$	0-4$^{1}/_{8}$	0-4¼	- -

The iron of the rings to be somewhat less than the bolts

	100	90	80	70	60	50	40	30	20
On the flat of the deck for the guns size	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1	0-1	0-$^{7}/_{8}$	0-$^{7}/_{8}$	0-$^{5}/_{8}$	- -

The diameter of the rings to be sufficiently only to hook the tackles

	100	90	80	70	60	50	40	30	20
Stopper size	0-1¾	0-1$^{5}/_{8}$	0-1$^{5}/_{8}$	0-1½	0-1½	0-1$^{3}/_{8}$	0-1$^{3}/_{8}$	0-1¼	0-1¼
Diameter of rings in the clear	0-7¼	0-7¼	0-6¼	0-6	0-5½	0-5¼	0-5	0-4¾	0-4½

		100	90	80	70	60	50	40	30	20
	Size	0-1¼	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1	0-1	0-$^{7}/_{8}$	- -
Eye over the port for lassing of the guns	Diameter of the eye in the clear	0-2½	0-2½	0-2$^{3}/_{8}$	0-2$^{3}/_{8}$	0-2¼	0-2¼	0-2	0-2	- -

Bolts, ring eye & stopper to be left so well in as only to let yᵉ rings have plan. Ring eye & all other to go thro the side, that are to be fore lock'd the ring to be let in the side as a short thick forelock hole & about thick point to the bolt.

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Cesterns for the pumps the plank on the bottom thick	0-4	0-4	0-4	0-4	0-4	0-3½	0-3½	0-3	0-3
Ends	0-5	0-5	0-5	0-5	0-5	0-4½	0-4½	0-4	0-4
Sides Thick	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-2½	0-2½
Fore & Aft	2-0	2-0	2-0	2-0	1-11½	1-11	1-10	1-9	1-8
Deep From out to out	2-8	2-8	2-8	2-7	2-7	2-7	2-6	2-6	2-6
Cestern height above the deck	1-0	1-0	1-0	1-0	1-0	1-0	1-0	1-0	1-0

Knee, fore & aft against the apron of the stem to reach the next beam before the foremast
Sided   1-2   1-1   1-0   & bolted as the gundeck knees

Knee against the stern post to reach 4 beams (if can be had) with a long carling forcht up under the beam to reach the next the mizzen mast & give sufficient scarph to the knee & bolt knee & carling bolt thro each beam with bots of the same size as the gundeck.
To be sided   1-2   1-1   1-0   - -   - -   - -   - -   - -   - -

Centers of masts – the foremast $1/10$ of the length of the gundeck abaft the rabbit of the stem and to stand upright.
Mainmast $1/22$ of the deck abaft the middle of the deck (its bagg or convex part always aft the rake one inch in a yard
Mizenmast mast $4/23$ of the length of the deck before the rabbit of the post & to rake $5/8$ of an inch to a foot

The upper edge of the counter rail at the knuckle of the counter must be fair with the top of the middle deck or upper deck.

Middle Deck

	100	90	80	70	60	50	40	30	20
Clamps Nᵒ of straps on each side	1	1	1	- -	- -	- -	- -	- -	- -
To be wrought anchor stock fashion with hoops or chockes									
Thick at the upper edge	0-7	0-6½	0-6	- -	- -	- -	- -	- -	- -
Lower edge	0-6	0-5½	0-5	- -	- -	- -	- -	- -	- -
Depth	as much as can be allowed								
Beams Sided	1-3	1-2	1-1	- -	- -	- -	- -	- -	- -
Moulded	1-1	1-0	0-11	- -	- -	- -	- -	- -	- -

Joshua Humphreys Notebook

To lye one under & one between each port where they may conveniently be place & as near as possible over yᵉ gundeck beams to have a long carling under the foremast to take hold of the next beam abaft the foremast and that next the foreside of the after bitts

			100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
The carling to be	Deep		1-3½	1-2½	1-1½	- -	- -	- -	- -	- -	- -
	Broad		0-11½	0-10½	0-9½	- -	- -	- -	- -	- -	- -
Knees	Hanging	Sided at each end	0-9½	0-9	0-8	- -	- -	- -	- -	- -	- -
	Lodging		0-9	0-8½	0-8	- -	- -	- -	- -	- -	- -
	The up & down arm to reach the sperketing Shortest arm long (if can be had)		4-0	3-9	3-6	- -	- -	- -	- -	- -	- -
	Nᵒ & size of bolts in each		6-1¹/₈	6-1¹/₈	6-1	- -	- -	- -	- -	- -	- -

The two upper bolts of the handing knees to be as high up as conveniently can be done & the likes for the hanging knees of all other decks, for the better keeping the breadth of the knee to the side

		100	90	80	70	60	50	40	30	20
Transoms, the deck transom deep		0-11	0-10	0-9	- -	- -	- -	- -	- -	- -
Knees at each end sided		0-9½	0-9	0-8	- -	- -	- -	- -	- -	- -
Arms fore & aft long as long as conveniently can be wrought & had Shortest		4-6	4-3	4-0	- -	- -	- -	- -	- -	- -
At the lower port cells deep to be turned at each end		0-8	0-7½	0-7	- -	- -	- -	- -	- -	- -
Bresthook, sided		1-3	1-2	1-1	- -	- -	- -	- -	- -	- -
Long if can be had		17-0	16-0	16-0	- -	- -	- -	- -	- -	- -
Number & size of bolts		13-1¼	13-1¼	13-1¹/₈	- -	- -	- -	- -	- -	- -
Carlings, Number of tier on each side		3	3	3	- -	- -	- -	- -	- -	- -
Broad		0-10	0-9	0-8	- -	- -	- -	- -	- -	- -
Deep		0-8	0-7	0-6	- -	- -	- -	- -	- -	- -

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Leges	Broad	0-4¾	0-4½	0-4½	- -	- -	- -	- -	- -	- -
	Deep	0-4¼	0-4	0-3½	- -	- -	- -	- -	- -	- -

To lye asunder from 9 to 12 inches

Carling short with long coamings of oak pricked down on the beams one inch.

Comings to lye above the deck		0-2	0-2	0-2	- -	- -	- -	- -	- -	- -
Broad with the rabbit		1-0	0-11½	0-11	- -	- -	- -	- -	- -	- -

Waterway thick in the chine to be one inch thicker than the flat of the deck

		100	90	80	70	60	50	40	30	20
Partners for the masts the main to be carling broad		1-5	1-4½	1-4	- -	- -	- -	- -	- -	- -
Deep		1-6	1-5½	1-5	- -	- -	- -	- -	- -	- -
Foremast		0-6½	0-6½	0-6½	- -	- -	- -	- -	- -	- -
Mizenmast & whipstaff	Thick	0-4	0-4	0-4	- -	- -	- -	- -	- -	- -
Teer capstand		0-6	0-6	0-6	- -	- -	- -	- -	- -	- -
To be bolted with bolts of		0-¾	0-¾	0-⅝	- -	- -	- -	- -	- -	- -

	100	90	80	70	60	50	40	30	20
Capstand main teer diameter in the partners, including the whelps	2-1	2-0	1-11	- -	- -	- -	- -	- -	- -
Length of the bars	14-0	13-6	13-0	- -	- -	- -	- -	- -	- -
Number of bars	12½	12	12	- -	- -	- -	- -	- -	- -

Iron palls, four to each when they can be fitted, two of which to fall upon the heads of the trundale heads and to answer the palling on the deck where there are 6 whelps, each bolt to be drove through and cleanched, and if 5 whelps to be bolted with small bolts and cleanched on their barril.

Deck flat to be laid with English Oak in wake of the standards from the cook room forward in the middle of the deck flat, two strakes next the comings to be cocked & bolted down to the hook & transom to have two bolts in each beam to be prick'd down on the beam an inch

	100	90	80	70	60	50	40	30	20
Thick	0-3	0-3	0-3	- -	- -	- -	- -	- -	- -
Plank thick	0-4	0-4	0-4	- -	- -	- -	- -	- -	- -

The rest to be laid with Prussia Deal

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Spirketing number of strakes on each side	2 or 3	2 or 3	2 or 3	- -	- -	- -	- -	- -	- -
Thickness in midships at Lower Edge	0-6½	0-6	0-5	- -	- -	- -	- -	- -	- -
Upper edge	0-5½	0-5	0-4	- -	- -	- -	- -	- -	- -
Plank or deal between spirketing or upper deck clamp Thick	0-3	0-2½	0-2	- -	- -	- -	- -	- -	- -
Scupper lead number on each side	6	6	6	- -	- -	- -	- -	- -	- -
Diameter in the clear	0-3	0-3	0-3	- -	- -	- -	- -	- -	- -
Standards all iron number of pair	7	6	5	- -	- -	- -	- -	- -	- -
The up & down arm to reach the upper edge of the upper deck clamp & a batts as near yᵉ upper end as conveniently may be had									
The shortest arm Long	5-6	5-3	5-0	- -	- -	- -	- -	- -	- -
Breadth									
Thickness			*NOTE: There were no dimensions for breadth, thickness or weight)*						
Weight									
Number and size of bolts in each	7-1$^{1}/_{8}$	7-1$^{1}/_{8}$	7-1	- -	- -	- -	- -	- -	- -
Turn'd piller & the square	0-7	0-6½	0-6	- -	- -	- -	- -	- -	- -
Bolts, ring & eye for the ports, Nᵒ & size	4-1¼	4-1¼	4-1¼	- -	- -	- -	- -	- -	- -
Diameter in the clear	0-5	0-4¾	0-4¼	- -	- -	- -	- -	- -	- -
On the flat of the deck for the gun	1	1	1	The rings to be sufficient only for hook & tackles					
Eye over the ports for lashing the guns Size	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	0-1$^{1}/_{8}$	- -	- -	- -	- -	- -	- -
Diameter of their eye in the clear	0-2$^{3}/_{8}$	0-2$^{3}/_{8}$	0-2¼	- -	- -	- -	- -	- -	- -

Navy Office, August 1ˢᵗ 1737 Dimensions

	100	90	80	70	60	50	40	30	20
Length on the gundeck	174-0	166-0	158-0	151-0	144-0	134-0	124-0	- -	106-0
Breadth extream	50-0	47-9	45-5	43-5	41-5	38-6	35-8	- -	30-6
Depth in hold	20-6	19-6	18-7	17-9	16-11	15-9	14-6	- -	9-5

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Upper Deck										
Clamps to be wrought anchor stock fashion with hook & butt										
At the	upper edge thick	0-6	0-5½	0-5	0-5	0-5	0-4	0-4	0-3½	0-2½
	lower edge thick	0-5	0-4½	0-4	0-4	0-4	0-3½	0-3½	0-3	0-2½
Beams	Sided	1-1	1-0½	0-11	0-1	0-0	0-10½	0-9½	0-9	08½
	Moulded	0-11	0-10½	0-8	0-11	0-10	0-8½	0-7½	0-7	0-6

To lye under & between each port where they can conveniently be placed & as near as possible of the beams of the middle or gundeck & under the great cabin in the distance of others to have a long carling under the furnace to take hold of the beam next abaft yᵉ foremost & that next yᵉ foreside of the afterbitts

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
The carlings to be	Deep	- -	- -	- -	1-0½	0-11½	0-10½	0-9	0-8	- -
	Broad	- -	- -	- -	0-9	0-8½	0-8	0-7	0-6	- -
Knees double at each end hangᵍ & lodgᵍ, sided		0-8½	0-8	0-7½	0-7	0-7	0-6½	0-6	0-5½	0-5

The up & down arm to reach the sperketing

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Shortest arm long if can be had	3-6	3-5	3-4	3-3	3-2	3-1	3-0	2-11	2-10
Number & size of bolts in each	6-1	6-1	6-$\frac{7}{8}$	6-$\frac{7}{8}$	6-$\frac{7}{8}$	6-$\frac{7}{8}$	6-$\frac{3}{4}$	6-$\frac{3}{4}$	6-$\frac{5}{8}$

Upper Deck

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Carlings	Broad	0-9	0-8	0-7½	0-8	0-7½	0-7	0-6¾	0-6½	0-6
	Deep	0-7	0*9	0-5½	0-6	0-5½	0-5	0-4¾	0-4¼	0-4¼
Carlings number of feet for each side except in the wake of the hatchways &										
Mainmast if there is to be 3 to the 1ˢᵗ, 2ⁿᵈ & 3ʳᵈ rate ships		2	2	2	2	2	2	2	2	2

Short with long comings of oak on the prick'd down an inch into the beams

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Commings above the deck	0-2½	0-2½	0-2½	0-2½	0-2½	0-2¼	0-2¼	0-2¼	0-2
Broad with the rabbit	1-0	0-11½	0-11	0-11	0-10½	0-10	0-9½	0-9	0-8½

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Ledges	Broad	0-4½	0-4	0-4	0-3½	0-3½	0-3½	0-3½	0-3¼	0-3¼
	Deep	0-4	0-3½	0-3½	0-3½	0-3½	0-3¼	0-3¼	0-3	0-3

To lye asunder from 9 to 12 inches

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Waterways thick in the chine one inch more than the flat of the deck									
Partners for the Foremast — Thick	0-6	0-6	0-6	0-6	0-6	0-5½	0-5½	0-5	0-5
Teer Capstand	- -	- -	- -	0-6	0-6	0-6	0-5½	0-5	- -
Tripple Ditto	0-5	0-5	0-5	- -	- -	- -	- -	- -	- -
Partners for the mizenmast whipstaff thick	0-4½	0-4½	0-4½	0-4½	0-4	0-4	0-4	0-3½	0-3½

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Flatt three strakes next the comings and all the forepart of the deck to be oak – Thick	0-2½	0-2½	0-2½	0-2½	0-2½	0-2½	0-2½	0-2	0-2

Flatt two strakes next the commings to give scarph to each other & to be pricked down an inch into the beam layed & hooked into ye transoms & deck hook & bolted to ye beams deck hook & transom to be oak the rest of the deck to be Prusia Deal.

	100	90	80	70	60	50	40	30	20
Capstand, Tripple Teer diameter in the partners including the whelps	1-7	1-6	1-5	- -	- -	- -	- -	- -	- -
Barrs long	0-9	0-9	0-9	- -	- -	- -	- -	- -	- -
Number	10	10	10	- -	- -	- -	- -	- -	- -
N^o of iron pauls	1	1	1	- -	- -	- -	- -	- -	- -
Main teer diameter in ye partners including the whelps	- -	- -	- -	1-10	1-9	1-8	1-7	1-5	- -
Barrs long	- -	- -	- -	12-0	11-6	10-6	10-6	9-0	- -
Number	- -	- -	- -	12	12	12	10	10	- -
N^o of iron pauls	four to each, two of wich to fall on the trundale								

Main heads to answer the pauls on the deck

	100	90	80	70	60	50	40	30	20
Sperketing number of strakes on each side	2	2	2	2	2	2	2	2	2
Thickness at the Lower Edge	0-4	0-4	0-4	0-4	0-4	03	0-3	0-3	0-2
Upper Edge	0-3½	0-3½	0-3½	0-3½	0-3½	0-2½	0-2½	0-2½	0-2
Scupper lead number on each side	6	6	6	6	6	6	6	6	6
Diameter in the clear	0-3	0-3	0-3	0-3	0-3	0-3½	0-3½	0-4½	0-4½

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Standards Irons number of pairs	4	4	3	4	3	2	2	2	1
Breadth	- -	- -	- -	- -	- -	- -	- -	- -	- -
Thickness	- -	- -	- -	- -	- -	- -	- -	- -	- -
Weight	- -	- -	- -	- -	- -	- -	- -	- -	- -
The up & down arm to reach yᵉ upper edge of & bolt thro the forecastle & quarter deck clamps									
The shortest arm long	3-6	3-5	3-4	3-3	3-2	3-1	3-0	2-11	2-10
Number & size of bolts in each	6-1	6-1	6-0⁷/₈	6-0⁷/₈	6-0⁷/₈	6-0¾	6-0¾	- -	- -
String, in the wast thick in & out	0-4½	0-4	- -	0-4	0-4	0-3 String & plank sheer in & out			
Collar beams square	- -	- -	- -	0-10	0-9½	0-9	0-8	0-8	- -
Transom at the lower port cells deep	- -	- -	- -	0-6½	0-6	0-5½	0-5¼	0-5	0-4½
Kneed at the end	- -	- -	- -	- -	- -	- -	- -	- -	- -
Bitts, Main Topsail sheet & jeer square	1-1	1-0½	0-11½	0-9½	0-8¼	0-8	0-7¼	0-7	0-7
Jeer high above the deck	3-10	3-9	3-8	3-7	3-6	3-5	3-4	3-3	3-2
Topsail sheet & jeer & the crosspiece fore & aft	0-11	0-10½	0-10	0-9½	0-9	0-8	0-7½	0-7	0-7
Deep	0-9½	0-9	0-8½	0-8	0-7½	0-7	0-6	0-5½	0-5
Scored in the bitts	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-1½	0-1½
Bitts the crosspiece of the gallows sided	0-11½	0-11	0-10½	0-9½	0-8¾	0-8	0-7	0-6½	- -
Deep	1-6	1-5	1-4	1-3	1-2	1-1	1-0	0-11	- -
Long	13-8	13-0	12-4	11-8	11-0	10-4	9-8	9-0	- -
Upper edge of it above the deck	7-6	7-0	6-9	6-11	6-8	6-6	6-4	6-2	- -
Scored in	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-1½	- -
Bolts, ring & eye for the ports Nᵒ & size of each	4-1¹/₈	4-1¹/₈	4-1	4-1	4-0⁷/₈	4-0⁷/₈	4-0⁷/₈	4-0⁷/₈	0-4¾
Diameter of the ring in the clear	0-4½	0-4¼	0-4¹/₄	0-4¹/₄	0-4³/₈	0-4¹/₄	0-4¹/₈	0-4	0-4
On the flat of the deck for the guns, size	0-1	0-1	0-1	0-1	0-⁷/₈	0-⁷/₈	0- ¾	0- ¾	0- ¾
The ring to be only sufficient to hook the takles									

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Eye for lashing the blocks on each side of the mainmast & foremast	Size	0-1¹/₈	0-1¹/₈	0-1¹/₈	0-1	0-1	0-⁷/₈	0-⁷/₈	0-⁷/₈	0- ¾
For the tackles	size	0-1¾	0-1¾	0-1½	0-1½	0-1³/₈	0-1³/₈	0-1³/₈	0-1¼	0-1¼

All carling & leges afore & abaft where they are shorter to be made lessor than they are in ye midships

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Quarter Deck									
Clamps Upper Thick	0-4½	0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-2½
Lower	0-3	0-3	0-3	0-3	0-2½	0-2	0-2	0-2	0-2
Broad if can be had	1-4	1-3½	0-3	1-2½	1-2	1-1½	1-1	1-0½	0-11
Beams sided to have a small strap of iron round the timber to every 2nd or 3rd beams in the wake of the cabin Moulded	0-9½	0-9½	0-8	0-9	0-8	0-6½	0-6	0-6	0-5½
To lye asunder from 2--4 to 2--2 each where they can conveniently be placed									
In the great cabin to be bolded into the clamps at the ends with bolts of	- -	- -	- -	- -	- -	- -	- -	- -	- -
Knees hanging sided	0-6½	0-6	0-5½	0-5½	0-5	0-4½	0-4½	0-4	- -
The up & down to reach the sperketing Shortest arm long	3-0	2-11	2-10	2-9	2-8	2-7	2-6	2-5	- -
Number & Size of bolts in each	5-$^7/_8$	5-$^7/_8$	5- ¾	5- ¾	5- ¾	5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	- -
Waterways thick in the chine one inch thicker than the plank of the deck									
String of oak in the great cabbin Upper edge	0-6	0-6	0-5½	0-5½	0-5¼	0-5	0-4	0-4	0-2½
Lower edge*	0-3½	0-3½	0-3	1-2½	1-2½	1-1½	1-1½	1-1½	1-0
Greatings broad in the clear	3-8	3-6	3-4	3-2	3-0	2-10	2-8	2-6	- -
Sperketing lower edge thick / upper edge thick	0-3½	0-3	0-3	0-3	0-3	0-2½	0-2	0-2	0-2
Quick work birthed up with deal of	0-2	0-2	0-2	0-2	0-2	0-1½	0-1½	0-1½	0-1½
Bolts Ring & eye number & size of each port	4-1	4-1	4-$^7/_8$	4-$^7/_8$	4-$^7/_8$	4-$^7/_8$	- -	4- ¾	- -
Diameter of rings in the clear	0-4	0-4	0-3¾	0-3¾	0-3½	0-3½	- -	0-3¼	- -

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In

Forecastle

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Clamps	Thick	0-4½	0-4	0-4	0-4	0-4	0-3	0-3	0-3	- -
	Broad	1-3	1-3	1-3	1-3	1-3	1-2	1-2	1-2	- -
Beams	Sided	0-9½	0-9	0-7½	0-7	0-7½	0-6½	0-6	0-6	- -
	Moulded	0-7½	0-7	6	0-7	0-6	0-5½	0-5	0-5	- -
	Asunder	2-0	2-0	2-0	2-0	2-0	2-0	2-0	2-0	2-0

At the bulkhead furnace & fireplace to be double kneed and all the other to be single kneed

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Knees	Hanging Sided	0-6½	0-6	0-5	0-5½	0-5	0-4½	0-4½	0-4	- -

These numbers are clear in Humphreys' original notes, but the 0 feet for the 100, 90 & 80 gun ships do not seem correct in proportion to the other specifications.

The up & down arm long to reach the sperketing

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Shortest arm long	3-0	2-11	2-10	2-9	2-8	2-7	2-6	2-5	2-4

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Number & size of bolts in each	5- ¾	5- ¾	5- ¾	5- ¾	5- ¾	5- ⁵/₈	5- ⁵/₈	5- ⁵/₈	- -

Waterways thick in the chine – one inch thicker than the deck

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Beams at the forepart of the forecastle	Broad or double	2-6	2-5	2-4	2-3	2-2	2-0	1-10	1-9	- -
To fasten the catheads	Deep under yᵉ rabbit of yᵉ deck	0-7½	0-7	0-7	0-7	0-6	0-5½	0-5	0-5	- -

To be stept well with a double slope in the collar beam and scored into the stantions at the forecastle beam no more than ½ an inch thick & that to be shouldered into the beams

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Cathead	Fore & aft	1-7	1-6	1-5	1-4	1-3	1-2	1-1½	0-11	0-9½
	Stantions for the beakhead square	0-6	0-6	0-6	0-5½	0-5½	0-5½	0-4½	0-4½	- -
	Up & down	1-6	1-5	1-4	1-3	1-2	1-0¼	0-11	0-10	0-9

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Bitts foretopsail sheet and jeer square to meet in the middle		0-11½	0-11	0-10½	0-9½	0-8½	0-7¾	0-7	0-6¼	0-6
	Height above the deck	3-10	3-9	3-8	3-7	3-6	3-5	3-4	3-3	3-2

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Crosspiece	Fore & aft	0-10	0-9½	0-9	0-8½	0-8	0-7½	0-7	0-6½	0-6
	Deep	0-8½	0-8½	0-8	0-7½	0-7	0-6½	0-6	0-5½	0-5
	Scored in the bitts	0-1½	0-1½	0-1½	0-1½	0-1½	0-1½	0-1½	0-1½	0-1½

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Bolts spanshakles (the corners of the shackles to be rounded) Size of bolts		0-1$^7/_8$	0-14 ¾	0-1¾	0-1½	0-1$^3/_8$	0-1$^3/_8$	0-1$^3/_8$	0-1¼	0-1¼
Eye D^o for the main topmast stay		0-1¼	0-1¼	0-1¼	0-1$^1/_8$	0-1$^1/_8$	0-1$^1/_8$	0-1	0-1	0-1

Round House

		100	90	80	70	60	50	40	30	20
String	Thick	0-4	0-4	0-3	0-4	0-4	0-3	0-2	- -	- -
	Broad	1-1	1-0½	1-0	0-11½	0-11	0-10½	0-10	- -	- -
Beams	Sided (to have a small strap of ;iron round the timber,	0-7	0-7	0-6	0-6½	0-6½	0-4½	0-4	- -	- -
	Moulded bolted to every other beam	0-5½	0-5½	0-4½	0-5	0-5	0-3½	0-3	- -	- -
	Asunder	2-0	2-0	2-0	2-0	2-0	2-0	2-0	- -	- -
To be bolted into the clamps at each end with bolts of		0-$^5/_8$	0-$^5/_8$	0-$^5/_8$	0-$^5/_8$	0-$^5/_8$	0- ¼	0- ¼	- -	- -
Knees at the bulkhead Hanging Sided		0-5½	0-5	0-4½	0-4	0-4	0-4	0-3½	- -	- -
Up & down arm to reach the sperketing Shortest arm Long		2-6	2-5	2-3	2-4	2-3	2-3	2-3	- -	- -
Number & size of bolts		5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	5-$^5/_8$	- -	- -

Waterways thick in the chine one inch thicker than the plank of the deck

Top Gallant Roundhouse

		100	90	80	70	60	50	40	30	20
String or clamps	Thick	0-3	- -	- -	- -	- -	- -	- -	- -	- -
	Broad	1-0	- -	- -	- -	- -	- -	- -	- -	- -
Beams	Sided to have a small strap of ;iron round the timber,	0-6	- -	- -	- -	- -	- -	- -	- -	- -
	Moulded bolted to every other beam	0-4½	- -	- -	- -	- -	- -	- -	- -	- -
	To lye asunder	2-0	- -	- -	- -	- -	- -	- -	- -	- -
Waterways thick in the chine		0-3	- -	- -	- -	- -	- -	- -	- -	- -

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In

Top Gallant Roundhouse

	100	90	80	70	60	50	40	30	20
To be bolted into the string at each end with bolts of	0-$^5/_8$								
Flatt of the deck thick	0-2								
Gunnel to the toprail deep	0-6								

NB No holes to be board in the timber when first cut up except one for a wianclog nor any trunails holes in the wake of the ring & eyebolts for the ports, chain bolts or any other bolts that may sufficiently fasten the work without trunails. All thick stuff, plan, &c of 10 in. broad & under to be only cross board cabin & all other joynes work to be fram'd and pannel'd with deal from where it may conveniently be done. The port cells on each deep to cant out ½ an inch from a level from the inside height, all beams to be moulded $^1/_{12}$ less at the ends than in the middle.

Without Board

Whales, main & the stuff between to be of an equal thickness to be worked with hook & butt

	100	90	80	70	60	50	40	30	20
Deep from the upper to the lower edge	5-2	4-10	4-6	4-2	3-10	3-6	3-2	2-10	2-6
Thick	0-10	0-9	0-8½	0-7½	0-7	0-5¼	0-5	0-5	0-4
One strake above them Thick	0-8	0-7	0-6½	0-6	0-5¼	0-4	0-4	0-4	0-3
To be cypher'd at the upper edge	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0- ½
Thick strakes below the whales number	7	6	5	5	4	2	2	1	1
Thickness of the upper edge of the upper strake	0-8	0-7	0-6½	0-6	0-5½	0-4	0-4	0-4	0-3
Low D°	0-4	0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-2
The rest of the plank under the thickstuff to be brought full to these thickness at the floorheads	- -	0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-2
Whales, Channels, Broad from the up^r to the low^r edge	2-9	2-8	2-6½	2-5	2-4	2-2½	2-2½	2-0	- -
To be wrought all of a thickness Thick	0-5½	0-5½	0-5¼	0-5	0-4	0-4	0-3½	0-3½	- -
The strake above & below them thick & to increase gradually to the cypher'd strake above the whales	0-4	0-4	0-4	0-4	0-3	0-3	0-2½	0-2½	- -

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Sheer or string in too strakes Broad	2-3	2-2	2-1	- -	- -	- -	- -	- -	- -
Thick	0-4	0-4	0-4	- -	- -	- -	- -	- -	- -
Strake above & below them thick	0-3	0-3	0-3	- -	- -	- -	- -	- -	- -
Deal in the wast at the top of the side Thick	0-2½	0-2½	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Channels Main long (if ports well admitted)	38-0	35-6	33-0	30-6	28-0	25-6	23-0	20-0	17-0
Broad at the foremost end	2-10	2-6	2-8	2-6	2-4	2-2	1-11	1-9	1-7
but sufficient to carry the shrouds clear of the gunnell & fife rail									
Thickness at the inner edge	0-6	0-6	0-5½	0-5½	0-5½	0-5	0-4½	0-4	0-4
Outer Dº	0-4½	0-4½	0-4½	0-4	0-4	0-3½	0-3	0-2¾	0-2½
Nº & size of bolts for fastening	10-1$\frac{1}{8}$	10-1$\frac{1}{8}$	9-1	9-1	8-1	7-$\frac{7}{8}$	7-$\frac{7}{8}$	6-¾	5-¾
Fore long (if the ports will admit)	31-10	29--	27-0	05-0	23-0	21-0	19-0	17-0	15-0
Breadth at the after end but however sufficient to carry the shrouds	2-8	2-6	2-4	2-2	2-0	1-10	1-8	1-6	1-4
clear of the gunnell									
Thickness at the Inner Edge	0-6	0-6	0-5¾	0-5½	0-5¼	0-5	0-4½	0-4	0-4
Outer Edge	0-4½	0-4½	0-4½	0-4	0-4	0-3½	0-3	0-2¾	0-2¾
Nº & size of bolts for fastning	9-1$\frac{1}{8}$	9-1$\frac{1}{8}$	8-1	8-1	7-1	6-$\frac{7}{8}$	6-$\frac{7}{8}$	5-¾	5-¾
Mizen Long But however sufficient to carry the	17-6	16-0	14*6	13-6	12-6	11-6	10-6	9-0	7-6
Breadth shrouds clear of the gunnels & fife rails	2-1	1-11½	1-10	1-8½	1-7	1-5½	1-4	12 ½	1-1
Thickness at the Inner Edge	0-5	0-5	0-4¾	0-4¼	0-4	0-3½	0-3	0-2¾	0-2½
Outer Edge	0-3½	0-3½	0-3¼	0-3	0-3	0-2½	0-2	0-2	0-1¾
Nº & size of bolts for fastning	5-$\frac{7}{8}$	5-$\frac{7}{8}$	5-$\frac{7}{8}$	5-$\frac{7}{8}$	4-$\frac{7}{8}$	4-¾	3-¾	3-¾	3-¾

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Chain plates main & fore broad	0-4	0-4	0-3⅞	0-3¾	0-3½	0-3¼	0-3	0-2¾	0-2½
Thick In the middle	0-1½	0-1½	0-1½	0-1¾	0-1¾	0-1¼	0-1⅛	0-1	0-⅞
At the eye	0-1	0-1	0-1	0-⅞	0-⅞	0-⅞	0-¾	0-⅜	0-¼
Size of the bolts	0-1⅝	0-1½	0-1½	0-1¼	0-1⅜	0-1¼	0-1¼	0-1⅛	0-1⅛

Platings & backstays for the main & fore chains to have the breadth & thickness & the same sized as the mizzen chainplates

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Binding for the dead eyes for the Main & fore Size	0-1¾	0-1⅝	0-1½	0-1½	0-1⅜	0-1¼	0-1¼	0-1⅛	0-1⅛
Mizen Size	0-1¼	0-1¼	0-1⅛	0-1⅛	0-1	0-⅞	0-⅞	0-¾	0-¾
Dead eyes for the main channel number & size	11-1-5	10-1-4½	10-1-3½	9-1-2½	9-1-1½	8-1-0¼	8-1-0	7-0-11	6-0-11
Fore Deadeyes including spare one	10-1-4	9-1-3¼	8-1-1½	8-1-¾	7-0-11½	7-0-11½	7-0-11	6-1-10½	5-0-10

Dito main & fore channels to be thickness ¾ an inch more than half the diameter

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Mizen channels No and size	7-0-11	6-0-10½	5-0-10	5-0-10	4-0-9	4-0-8	4-0-7	4-0-7	3-0-7

To be thicker ½ an inch more than half the diameter

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Main topmsᵗ Gallant Backstays Number & size on each side	3-0-11	3-0-10	3-0-10	3-0-10	3-0-9	3-0-8	3-0-7	3-0-7	3-0-7
Deadeyes for the Foretopmast Back Stays No & Size	3-10	3-9	3-9	3-9	3-8	3-7	2-6	2-6	2-6
Gallant on each side	1-8	1-7	1-6	1-6	1-6	1-6	1-5	1-5	1-5
Mizenmast	1-8	1-7	1-7	1-6	1-6	1-5	1-5	1-5	1-5
Rotherhead Thwartships if can be had	2-4	2-2	2-2	2-0	1-10	1-7½	1-5	1-3	1-1
Fore & Aft	2-6	2-5	2-4	2-2	2-0	1-9½	1-7	1-5	1-3
Braces & pintles Number of pair	7	7	7	6	6	6	5	5	5
Upper afore the rabbit of the post Long	4-3	4-0	3-9	3-6	3-3	3-0	2-10	2-8	2-6
Lower afore the back of the post Long	7-0	6-6	6-0	5-6	5-0	4-9	4-6	4-3	4-0

To be hung Flemish fashion and secured with a chock above the water to prevent its unhanging

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Pintles Diameter	0-3½	0-3½	0-3½	0-3	0-2⅞	0-2⅝	0-2⅛	0-2⅛	0-2
Length of upper pintles	1-3	1-2¼	1-1½	1-0¾	1-0	0-11¼	0-10½	0-9½	0-9

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Lower pintle only to be		1-5	1-4½	1-3½	1-2¼	1-2	1-1¼	1-0¾	0-11¼	0-11
Braces for straps for pintles broad		0-5	0-4¾	0-4½	0-4¼	0-4	0-3¾	0-3½	0-3¼	0-3
Thick in the shoulder at the return		0-2$^1/_8$	0-2	0-1$^7/_8$	0-1¾	0-1$^5/_8$	0-1½	0-1¼	0-1¼	0-1$^1/_8$

To have a strap of iron on the back & at each corner an eye well clenched on the inside of the straps of sufficient bigness to receive an oval ring

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Chafters	Sided at the gunnell	- -	- -	- -	0-7	0-6½	0-6	0-5½	0-5	0-4½
Fenders		0-4	0-4	0-4	0-3	0-3	0-3	0-3	0-2½	0-2½
Against the hatchways asunder		1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Linings of the anchor	Thick	0-3	0-3	0-3	0-2½	0-2½	0-2½	0-2	0-2	0-2
Navelings between the hold	Thick	0-9	0-8½	0-8	0-7½	0-7	0-6½	0-6½	0-5½	0-5½
Bolt holes to be bored	Size	0-1	0-1	0-1	0-1	0-$^7/_8$	0- ¾	0- ¾	0-$^5/_8$	0-$^5/_8$
Rails on the beakhead the shear Broad		0-10½	0-10	0-9½	0-8½	0-8	0-7½	0-7	0-6½	0-5½
	Thick	0-4	0-3¾	0-3½	0-3¼	0-3	0-3	0-2¾	0-2½	0-2¼
Afterdrift	Broad	0-7½	0-7	0-6½	0-6	0-5½	0-5	0-4¾	0-4½	0-4
	Thick	0-3¾	0-3½	0-3¼	0-3	0-3	0-2¾	0-2¾	0-2½	0-2½
Plank shier in the wast	Thick	0-3	0-3	0-2½	0-3	0-2½	0-2½	- -	- -	- -
Drift	Thick	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
Waist Rail	Broad	0-8½	0-7½	0-6½	0-6	0-5½	0-5	0-4¾	0-4¼	0-4
	Thick	0-4½	0-4	0-3¾	0-3¾	0-3¾	- - - - no planks here - - - -			

To be struck with a astride within and without the square to overhang the plank or deal half an inch within the board or without

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Shank painter chains	Long	20-6	19-0	17-6	16-0	15-0	14-0	13-0	12-0	10-0
	Size of links	1$^1/_{16}$	1	$^{15}/_{16}$	$^{15}/_{16}$	$^7/_8$	$^7/_8$	$^{10}/_{16}$	$^{10}/_{16}$	¾
Port hinges for the gundeck	Broad	0-3$^7/_8$	0-3$^7/_8$	0-3¾	0-3$^5/_8$	0-3½	0-3$^3/_8$	0-3¼	0-2$^7/_8$	- -
	Thick	0-1$^1/_8$	0-1$^1/_8$	0-1	0-1	0-$^7/_8$	0- ¾	0- ¾	0- $^5/_8$	- -

100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Port hinges middle deck	Broad	0-3½	0-3⅜	0-3¼	- -	- -	- -	- -	- -	- -
	Thick	0- ⅞	0- ⅞	0- ¾	- -	- -	- -	- -	- -	- -
Hooks for the Gundeck — Size to be cleanched within board		0-1⅛	0-1⅛	0-1⅛	0-1	0-1	0-1	0- ⅞	0- ⅞	- -
Middle Deck		0-1	0-1	0-1	- -	- -	- -	- -	- -	- -
Shackles to clench on the hinge N° & size		0-2⅞	0-2⅞	0-2⅞	0-2⅞	- -	- -	- -	- -	- -
Rings diameter in the clear		0-4	0-4	0-3¾	0-3⅝	0-3½	0-3¼	0-3	0-2¾	
Number & size		2- ¾	2- ¾	2- ¾	2-⅝	2-⅝	1- ⅝	1-⅝	1- ¼	
Diameter of the rings in the clear		0-2½	0-2½	0-2⅜	0-2¼	0-2¼	0-2⅛	0-2	0-1⅞	

(right brace for the four rows above: Gun Deck)

	100	90	80
Port shackles to clench on the ring no & size	1- ⅝	1- ⅝	1- ⅝
Diameter of the rings in the clear	0-3½	0-3¼	0-3⅛
Rings with eyes for the port roped to go thro' the hinge & clench with inside, N° & size	2- ⅝	2- ⅝	2- ⅝
Diameter of the rings in the clear	0-2¼	0-2¼	0-2¼

(right brace for the rows above: Middle Deck)

Bolts For the butts underwater where they are necessary to be placed in the timber next the bulk

	100	90	80	70	60	50	40	30	20
To be cleanched within side, size	0-1	0-1	0-1	0- ⅞	0- ⅞	0- ¾	0- ¾	0- ¾	0- ¾
Eye for the standing part of the main & for sheet	0-1⅝	0-1⅝	0-1½	0-1½	0-1⅜	0-1⅜	0-1¼	0-1¼	0-1⅛
Eyebolts for the mizzen sheet main broad main & fore topsail haylyards bowsprit shroud & in the wake of the chain plate, size	0-1⅜	0-1⅜	0-1¼	0-1¼	0-1⅛	0-1⅛	0-1	0-1	0-1
For the mizzen topsail halyards & the mizzen truss — Size	0-1⅛	0-1⅛	0-1⅛	0-1	0-1	0-1	0- ⅞	0- ⅞	0- ¾
Swivel on the quarter for the long boat — Size	0-1⅜	0-1⅜	0-1¼	0-1¼	0-1⅛	0-1⅛	0-1	0-1	0-1
Diameter of the rings in the clear	0-4½	0-4½	0-4½	0-4	0-3¾	0-3½	0-3½	0-3	0-2¾

The Head

Head – place the upper edge of the upper rail of the head on the first and second rails at height of the upper deckline & for third, 4th, 5 & 6 rail at ye height of the lower port cells of the upper deck that the chase guns may fire over the rail. You may place the throat of the knee of the head at the height of the gundeck & crown of the lyon as high as the upper sheer rail afore & between the throat of the knee and the crown of the lyon divided into five parts and set one of them down by a perpendicular from the top of the lyon for the upper part of the knee of the head and middle between the top of the knee & throat of Dº for the lower part of the lyon.

	100	90	80	70	60	50	40	30	20
	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Length of the head from the foreside of the stem to the									
Foreside of the knee of the head	1-66	15-6	13-6	11-6	10-6	9-6	8-6	7-6	7-0
From the foreside of the stem to the beakhead Bulkhead	9-0	8-6	8-0	7-0	6-6	6-0	5-6	5-0	- -
Cheaks of the head Sided Upper	1-1	1-0	0-11	0-10	0-9	0-8	0-7½	0-6½	0-6
Lower	1-2	1-1	1-1	0-11	0-10	1-9½	0-8½	0-7½	0-6½
Length of the arm against the side	13-6	12-6	11-6	10-6	9-6	9-0	8-6	7-6	6-6
Rails, upper at the after end Fore & aft	1-2	1-1	1- ½	0-11½	0-10½	0-9½	0-9	0-8	0-7
Thwartships	0-10¼	0-9¾	0-9¼	0-8¾	0-8	0-7¼	0-6¾	0-6	0-5¼

Rails to
And the foremost end to be ²/₃ of the after end and the rest of the rails to be ²/₃ of one another at the afterend, & to diminish in the same proportion

	100	90	80	70	60	50	40	30	20
The timbers of the head sided From	0-8¼	0-8	0-7½	0-7	0-6½	0-5¾	0-5	0-4½	0-4
To	0-5¼	0-5	0-4½	0-4¼	0-3¾	0-3¾	0-3½	0-3½	0-3

Gallerys

The length fore & aft to be as long as the head is from the fore part of the stem, and the rails to follow the shear of the ship and to answer with stern rails. But now it is customary to make the gallery so little that there is hardly any rule exactly followed, but commonly according as approved of when the ship is built.

Of Placing of Drifts

Place the drift at the entering place $^5/_9$ of the length of the lower deck from afore, but some place the center of the mast that is the mast drive ½ the length of your lower deck and twice the diameter and ¼ the mast more abaft the middle but observe that you have not upper deck port in the wake of your steps.

Place your foremast drift as you may have two ports close in the forecastle, and three in the steerage besides one in the cabin. Depth of drifts as you design to get height for a roundhouse or not, but let you midship drift cover your mast. Set off your length on the gun deck and so square the breadth of the steps up to the top of the side or to the middle deck and space a port just afore or just abaft. Then space a bow port with regards to the lining of the anchor & abaft the gunners cabin then space the rest at an equal distance one from another.

Dimensions of Jeer Capstands

Six whelps in the upper jeer barrel & five whelps in the lower, diameter of upper barrel, diameter of the partners, proportions for the whelps and size of the barr holes to be as the main capstand.

		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Length of the upper barrel to the lower part of ye drumhead		3-0	3-0	3-0	3-01	3-0	3-0	3-0	3-0	3-0
Diameter of the lower barrel when brought into ye square		2-3	2-2	2-1	2-0	1-11	1-10	1-9	1-8	1-5
Diameter of the drumhead		5-0	4-10½	4-9	4-7½	4-6	4-4½	4-3	4-1½	4-0
Half thickness of the drumhead		0-7	0-7	0-7	0-7	0-6½	0-6½	0-6	0-5½	0-5½
Sett in hole in the drumhead square		1-5	1-5	1-4½	1-4	1-3½	1-3	1-2	1- 0½	1-0
Diameter of the spindle ½ the lower barrel		1-1½	1-1	1-0¼	1-0	0-11½	0-11½	0-10½	0-9½	0-8½
Trundale head Thickness of the	Upper piece	0-6	0-6	0-6	0-5¾	0-5½	0-5¼	0-5	0-5	0-4¾
	Lower piece	0-5	0-5	0-5	0-4¾	0-4¼	0-4¼	0-4	0-4	0-3¾

Main Capstand

	100	90	80	70	60	50	40	30	20
Diamiter of the barril	2-5	2-4	2-3	2-2	2-1	2-0	1-11	1-9	1-7
Ditto of the partners	2-1	2-0	1-11	1-10	1-9	0-8	0-7	1-5	1-3
Length of the upper barrel to the lower part of the drumhead	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
Diamiter of the spindle $^2/_3$ of the partners	1-5	1-4	1-3$^1/_3$	1-2$^2/_3$	1-2	1-1$^1/_3$	1-0$^1/_3$	0-11$^2/_3$	0-10
In the steps	1-1½	1-1	1-0½	1-0	0-11½	0-11	0-10½	0-9½	0-8½
Number of whelps	6	6	6	66	6	6	6	6	6

Whelps deep at the lower end ½ the diameter of the barrels at the upper end $^2/_3$ of the lower end; also at the surge end $^2/_3$ of the lower end

	100	90	80	70	60	50	40	30	20
	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In

Length of the surge (blank) of the length of the whelps

		100	90	80	70	60	50	40	30	20
Diamiter of the drumheads		5-1½	5-0	4-10½	4-9	4-7½	4-6	4-4½	4-3	4-0
Barr holes square at the outside		0-4¾	0-4¾	0-4¾	0-4½	0-4¼	0-4	0-4	0-4	0-4
	Inner end	0-3½	0-3½	0-3½	0-3½	0-3½	0-3	0-3	0-3	0-3
Chocks	Upper thick	0-2½	0-2½	0-2½	0-2½	0-2½	0-2	0-2	0-2	0-2
	Lower Thick	0-4	0-4	0-4	0-3¾	0-3½	0-3¼	0-3	0-3	0-2¾

Dimensions thought fit for Capstands

For a jeer capstand, the upper barrel not to exceed 3 feet in length, the lower end of the whelps to be ½ the diameter of the barrel; the whelps to surge 2 inches in a foot.

The length of the head $^1/_3$ the length of the whelps.

Allowing 2 ½ or 3 inches for the stop of the head, and let the upper part of the head to be one inch shallower than the lower part of the head. Let all the whelps taper 1 ½ inches on each side in a foot drop.

The partners ought to be at least 2 inches of a side less than the upper barrel and of a sufficient length to be left the capstand high enough for to shift the vial.

The lower barrel to be ¾ of an inch bigger on each side than the partners that the whelps may not be set to far into the barrel, the lower whelps to be 5/9 of the length from the end of the upper whelps, the lower end of the whelps to be 3/5 of the lower barrel and to taper 2 inches in a foot in the length of the surge the head to follow the same tapering, allowing at least 3 inches slop

The length of the head something less than $^1/_3$ the length of the whelps. The spindle ought at least to be ½ the lower barrel in length as you please & conveniently will serve.

The drum head ought to overhand the lower end of the whelps 2 inches round and the thickness according to the bigness of the barr holes.

These proportions differ somewhat from the Old Rule but our opinions make much handsomer capstands.

Dimensions for Main Capstand

For a main capstand but little to be said, for there is no reason why it should be any bigger in the partners than the Jeer, considering that the number of men that will heave the jeer to pieces will not be able to wrong the main; for considering the distance from the barrs to the vial in the jeer capstands & how near together they are in the main, the whelps of the main capstand may be something longer than 3 feet because there is the use in the deck as with the jeer. The lower edge of the spindle is to be half the partners then proceeding in everything else as with the upper barrel of the jeer.

An abstract of numbers, natures, lengths & weight of cannon

An abstract of numbers, natures, lengths & weight of cannon according to several rates of ships as proposed at a meeting of Flag Office and established by His Majestic Council on the 6th of July, 1716.

Rates	Guns	Decks	No. of guns on each deck	Nature of guns- Pounders	Length Ft	In	Weight
		Lower	28	42 or 32	10	0	55
		Middle	28	24	10	0	48
1st	100	Upper	28	12	9	6	34
		Quarter	12	6	9	0	24
		Forecastle	4	6	9	0	24
		Lower	26	32	9	6	52
		Middle	26	18	9	6	42
2nd	90	Upper	26	9	9	6	29
		Quarter	10	6	9	0	24
		Forecastle	2	6	9	0	24
		Lower	26	32	9	6	53
		Middle	26	12	9	6	34
3rd	100	Upper	24	6	9	0	24
		Quarter	14	6	9	0	20

Rates	Guns	Decks	No. of guns on each deck	Nature of guns- Pounders	Length Ft	In	Weight
		Lower	26	24	9	6	46
3rd	70	Upper	26	12	9	0	32
		Quarter	14	6	8	0	20
		Forecastle	4	6	2-9-0		24
					2-8-0		20
		Lower	24	24	9	6	46
4th	60	Upper	26	9	9	0	29
		Quarter	8	6	8	0	20
		Forecastle	2	6	8	0	20

4th	50	Lower	22	18	9	0	36
		Upper	22	9	8	6	26
		Quarter	4	6	8	0	20
		Forecastle	2	6	9	0	24
5th	40	Lower	20	12	9	0	31
		Upper	20	6	8	6	32
5th	30	Lower	8	9	8	6	26
		Upper	20	6	8	0	20
		Quarter	2	4	7	6	16
6th	30	Upper	20	6	7	6	18

Dimensions of ships carriages, etc.

Dimensions of ships carriages, exeltress different length
According to the new regulations

Trucks for the under mentioned cannon of

Pounders	32	24	18	12	9	6
Guns Length (Feet)	10.0 – 9.6	10.0 – 9.6	9.6 – 9.0	9.6 – 9.0 – 8.6	9.6 – 9.0 – 8.6	9.6 – 9.0 – 8.6

Brackets				Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
	Wooden keys for the bottom		Length	0-10³/₈	0-9¾	0-9¼	0-8¼	0-8¼	0-7¼
			Breadth	0-4	0-4	0-4	0-3¼	0-3¼	0-3¼
			Thickness	0-1½	0-1½	0-1¼	0-1¹/₈	0-1¹/₈	0-1
	Key Pins		Length	0-7	0-7	0-7	0-7	0-6½	0-6
			Breadth	0- ¾	0- ¾	0- ¾	0- ¾	0- ¾	0- ¾

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Pounders			32	24	18	12	9	6
Transoms	Length		1-10	1-8	1-6½	1-5	1-3½	0-1 ½
	Breadth		1-0	0-11	0-11	0-9½	0-9	0-8
	Thickness		0-6	0-5½	0-5	0-4³/₈	0-4	0-3½
	Sitting in part	Length	0- ¾	0- ¾	0- ¾	0- ½	0- ½	0- ¼
		Breadth	0-6	0-5½	0-5	0-4³/₈	0-4	0-3½
		Depth	0-9	0-8	0-8	0-6½	0-6	0-5
Exeltress	Toplength	Fore	4-9¾	4-3	3-11 ¼	3-7½	3-4½	3-1½
		Hind	5-1¼	4-6½	4-3	3-11	3-8½	3-4½
	Arms Length	Fore	0-11 ³/₈	0-9³/₈	0-9¼	0-8⁵/₈	0-8¼	0-7³/₈
		Hind	0-11 ³/₈	0-9³/₈	0-9¼	0-8⁵/₈	0-8¼	0-7³/₈
	Bedds Depth		0-7³/₈	0-7½	0-7¼	0-6¾	0-6	0-5½
	Bedds Thickness		0-6⁵/₈	0-6½	0-6¼	0-5½	0-5¼	0-4¾
	Arms Thickness		0-6³/₈	0-6	0-5¾	0-5½	0-5	0-4¾
Trucks	Height	Fore	18	16	16	14	12	12
		Hind	15	13	13	12	10	10 10
	Thickness		0-6¾	0-5¾	0-5¼	0-4⁵/₈	0-4½	0-3¾

Bottoms

	32	24	18	12	9	6
Total Length	6.4 - 6.1 ½	6.3 - 6.0½	5.11 - 5.8 ¼		5.5 ¾ - 5.6½	5.4 - 5.1 ½
5.3-5.0½ — 5.3	4.10 4.10½ Breadth	Before	2-8½	2-5½	2-3	2-0½ 1-10½
1-8 — Behind	3.1 ¾ -3.1 ½		2.11- 2.8	2.7 ¼ -2.5 ¼	2.5 ½- 2.3 ¼	2.3½ -2.3
2.0¾-2.0	1.11 ¾ - 1.11 ½					
Thickness	6	5 ½	5	4 ³/₈	4	3 ½
Exeltree Breadth	6 ³/₈	6 ¼	6	5 ½	5 ¼	4 ¾
Toggling part Depth	0-1	0-1	0-1	0-1	0-1	0- ¾
Circles Semidiamiter	- -	4-0	3-6	3-3	3-0	2-9
Fore exeltress center from yᵉ breadth of the carriage	0-10	0-9	0-9	0-8	0-7	0-7
At the hind Dᵒ from the bottoms hind port	1-2¹/₈	1-2¹/₈	1-1¹/₈	1-1¼	1-1¼	0- ¾
Keyholes Length	0-5	0-5	0-5	0-4	0-4	0-4
Keyholes Depth	0-3	0-3	0-3	0-2½	0-2½	0-2½

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Stepps	Length			3.7 $^1/_8$ -0.6$^7/_8$		0.7 – 0.6 ¾	0.6 ½ - 0.61¾		0.6 ½ - 0.6 ¼	0.6 – 0.5 ½
	0.6 – 0.5 ½	0.5 ½ - 0.5							
	Depth			0-4½	0-4	0-3¾	0-3¼	0-3$^1/_8$	0-2¾

	1	2	3	4	5	6
Iron joints center from the fore port	0-11	0-10½	0-10½	0-9¼	0-8	0-8
Sinking of the iron joints center	0-1$^1/_8$	0-1$^1/_8$	0-1	0-1	0-1	0-1
Iron joints semidiamiter	0-3$^1/_8$	0-2$^7/_8$	0-2$^5/_8$	0-2$^3/_8$	0-2$^1/_8$	0-1$^7/_8$

		1	2	3	4	5	6
	Length	0-8	0-8	0-8	0-8	0-8	0-8
Wooden keys for bottom	Breadth	0-5	0-5	0-5	0-4½	0-4½	0-4¼
	Thickness	0-1¾	0-1¼	0-1¼	0-1$^1/_8$	0-1$^1/_8$	0-1½

The Rule Whereby the Proportions of Masts & Yards is Cast

To find the length of the masts.

Multiply the extream breadth of 1st, 2nd, 3rd rates of 80 guns by 2.28,   3rd rates of 70 guns by 2.32   4th rates of 60 guns by 2.34
4th rates of 50 guns by 2.36   5th rates of 40 guns by 2.38   5th rates of 30 guns by 2.4
6th rates of 20 guns by 2.42   This gives the length of the mainmast in feet.

The foremast $^9/_{10}$ of the mainmast   Mizenmast of all but 6th rates $^{11}/_{13}$ the 6 rates $^8/_{10}$ of the main mast.
 Bowsprit   of the 1st and 2 rates $^{11}/_{18}$ and   of all other rates $^{13}/_{19}$ of the mainmasts

Maintopmast $^{13}/_{18}$ of the mainmast   Foretopmast $^{15}/_{16}$ of the maintopmast   Top gallant masts $^{30}/_{61}$ of their topmasts
Mizzen topmast $^6/_7$ of the maintopmasts   Spritsail topmast $^3/_8$ of the bowsprit where used   Flying gibboom 6 feet less than breadth of the ship

To find the diameter of the masts
For the main & foremasts   of the 1st, 2nd, 3rd rates of 80 guns   One ⎫   3rd rates of 70 guns $^{31}/_{33}$ ⎫
    of 4 rates of 60 guns $^{27}/_{28}$ ⎬ Inch to a yard   of 4th rates of 50 guns $^9/_{10}$ ⎬   Inch to a yard
    of 5th rates of 40 guns & 30 guns $^9/_{10}$ ⎭   of 6 rates of 20 guns $^9/_{10}$ ⎭

Maintopmast $^9/_{10}$ of an inch to a yard.

Foretopmast to be as big in the cap as the maintopgallant masts
Spritsail topmast   an inch to a yard

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Mizzen masts	of 1st, 2nd 3rd & 4th rates of 60 guns	$^{15}/_{22}$	
	of 4th rates of 50 guns &all other 5th rate	$^2/_3$	Inch to a yard
	6 rates	$^8/_{13}$	
Mizentopmast	$^5/_6$ of an inch to a yard		

Bowsprit	1st-2nd-3rd & 4th rates of 60 guns	$1\,^5/_9$	
	4th rates of 50 guns	$1\,^3/_9$	Inch to a yard
	all 5th rates	$1\,^1/_3$	
	6th rates	$1\,^2/_9$	and one inch bigger Up & down in the bed where there is wood sufficient
Flying gibb boom	$^7/_8$ of an inch to a yard		

The Poling of the Masts

The head of the foremast must pole 3/5 of the head of the mainmast upwards. The head of the mizzen mast must pole to the upper or side of the main tressletrees in all ships to the 50 guns; the 40 guns to be 18 inches shorter, the 30 guns 20 inches & the 20 guns 30 inches shorter. Bowsprit to be 3/7 of the mainmast afore the stern.

Head of	Mainmast	4 ¾	
	Foremast	5	Inches to a yard
	Mizenmast	3 ¾	
	All topmast & topgallant masts	3 ½	

The quarter of all masts & yards to be set off by semicircles or a rule agreeable thereto
NB The main foremasts to be quartered from the upper partners to the hounds, but the mizenmast to be from the upper partners to the middle of the hounds

To Find the Length of the Yards

Multiply the length of the gundeck by $^5/_9$ to give the length of the main yard in feet.
The fore yard is 7/8 of the main yard   Mizen yard 5/6 of the main yard
Main & fore topsail yard 18/25 of their lower yards   Crossjack yards & spritsail yards the length of the foretopsail yard
Mizentopsail yard ¾ of the cross Jack yard, spritsail topsail yard 2/3 of the spritsail yard.
Topgallant yards 7/12 of the topsail yard.

The Diameter of Yards

For the main & foreyards	9/13	
Main & foretopsail yard & spritsail yard	5/8	
Topgallant, mizentopsail & sprit Sail topsail yards	3/5	Inches to a yard
Mizen yard	7/13	
Crossjack yard	2/13	

Proportions for Masts & yards and Bowsprit at the several places of their setting off

The heads of all standing masts that are cheaked to $^4/_7$ square of their diameter in the partners, at the hounds $^9/_{13}$ fore & aft & $^5/_6$ thwartships of the diameter in the partners and at the heal to be the bigness is at the 2nd quarter.

The heads of the top masts square $^6/_{18}$ and at the hounds $^9/_{13}$ of the diameter of the cap. All main & fore yards $^2/_5$ of their diameter in the slings for the bigness at the yard arm and all other yards on third of the diameter in the slings for the yarn arm except the mizzen yards lower and $^8/_{13}$ of the diameter in the slings its upper end one third. Topsail yard arm to be so long as to take in the lower reef, the sails to be made no bigger than the length the yard arm will spread when the reef is taken in.

The quarters of all masts, yards & bow

Sprits in the following manner. **Viz A** represents a rule or battin on which set off half the diameter at the hounds as **F** & take the half between **B** & **F** for the diameter of the masts at the per quarter as **E** the medium between the $^2/_3$ and ½ of **BE** for the 2nd quarter as **D** & the $^2/_3$ of **BD** for the first quarter as **D**.

The same for all bowsprits & yards only having regard for bowsprits to divide between the diameter & half the diameter to keep the same bigness at the upper and quarter as if the head was half the diameter in the bed but to diminish from the upper quarter to $^2/_5$ at the end. All standing masts to be quartered from the upper part of the hounds to the upper partners where they are wedged, topmast & topgallant mast from the upper part of the hounds to the cap bowsprits from the head to the outer gammoning; yards to the end of the slings.

A to **B** represents ½ the diameter of the mast in the partners

NB This rule answers the same end as the Semicircle.

NOTE: The above graphic is copied directly from Humphreys' notes to ensure correct scale.

Standing masts cheaks the length of the cheeks $^3/_7$ the length of the masts.

The thickness of the cheek at the upper part of the head the $^1/_3$ of $^6/_7$ of the mast, the lower part of the hounds the same
At the lower end of the cheak the ½ thickness of the head the stop ½ the cheek at the lower part of the head, fore & aft the $^9/_{13}$ of the mast.
The upper part of the head the $^5/_8$ of the thwartships way. To end the lower part of the cheeks the fore & aft way the $^{11}/12$ to the middle & the $^2/_3$ to the end

NB For the masting such ships as have dimentions agreeable to the Old Establishments, the following alterations are to be observed **(Viz).**
The mainmast of the 80, 60, 50, 40, & 30 gunships shortened 2 foot from this proportion the bowsprit,

Top mast, topgallant masts & all yards not be altered from this proportion for ships of the like classes but for all ships that differ much in their dimentions from both the old & this new established their dimentions for their masts & yards were cast by for this establishment all main & fore yard made of New England Tress to be cast at $^8/_{11}$ of an inch diameter to their length in yards.

Navy Office August 1737 Dimentions

Dimentions Guns		Masts Length Inches Yd-In Diamiter		Yards Length Inches Yd-In Diamiter	
100	Main Mast	38-0	38-0	33-3$^5/_8$	23-0
90	Main Dᵒ	35-$^{20}/_{26}$	35-$^7/_8$	31-7$^1/_6$	14- ¼
80	Main Dᵒ	34-18	34- ¼	30-2	20- ¾
70	Main Dᵒ	30-0	32-0	28-27	20-0
60	Main Dᵒ	31-17	30- $^3/_8$	27-14	19-0
50	Main Dᵒ	29-10	26- $^3/_8$	25-18	17- $^5/_8$
40	Main Dᵒ	27-18	24- $^7/_8$	24-34	17- $^3/_8$

The Proportions for Capps

All capps (except the capps for the flying gibb booms) to be twice the diameter of their topmasts or topgallant masts for their breadth and twice their breadth for their length. The thickness of the capps for the main & foremasts $^9/_{10}$, the mizenmast capps $^3/_7$ and the top mast capps $^2/_5$ of their breadth. The capps for the flying gibb booms to be 5 times the diameter of the boom for their length, twice the diameter for the breadth, and $^9/_{20}$ of the breadth for the thickness

Main Capps Length for all Rates

	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Length	6-7½	6-3	5-11	5-7	5-3½	4-11	4-7	4-3	3-11
Breadth	3-3¼	3-1½	2-11 ½	2-9½	2-7¾	2-5½	2-1½	2-1¼	1-11 ¾
Depth	1-1$^5/_8$	1-4$^3/_8$	1-3$^7/_8$	1-3	1-2¼	1-1¼	1-0$^3/_8$	0-11 $^3/_8$	0-10¼

Proportions for Topps

The main & foretops thwartships to be $1/3$ of the length of the topmasts, the mizzen topps to be $7/30$ of the length of the mizentopmast, the spritsail topps to be $7/8$ of the length of the spritsail topmast. All the tops to be ¾ fore & aft of what they are thwartships.

Proportions for Trestletrees

The tressletrees where there are topps to reach the overhanging of the top rings the depts. at the main & fore trestletrees to be $25/26$ of an inch to a foot of their length & their breadth to be $5/7$ of their depth, the depth of the mizzen trestletrees to be $6/7$ of an inch to a foot of their length & their breadth to be $11/16$ of their depth. The main & foretopmast trestletrees to be $1/3$ as long as their top gallant masts & the depth to be $25/26$ of an inch to a foot in their length and the breadth to be $18/25$ of their depth, the mizentopmast trestletrees to half the length of the main topmast trestletrees & their depth to be an inch to a foot in their length and their breadth $11/13$ of their depth, the depth of the spritsail & trestletree to be $26/29$ of an inch to a foot of their length & their breadth $17/19$ of their depth.

The Proportions for Crosstrees

The crosstrees (where there are topps to reach the overhangings of the toprims) the length of the main & fore topmasts crosstrees to be $4/15$ of their top gallant masts, the mizzen topmasts crosstrees to be the same length as their tressletrees, the breadth of their crosstrees to be the same as their trestletrees; & half the depth of their trestletrees for their depth.

Iron work for masts, yards & Capps	100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Bolts for the heads & cheaks for the main & foremasts	26	26	22	20	19	18	17	15	14
Size	0-1¼	0-1¼	0-1$^1/_8$	0-1$^1/_8$	0-1	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$	0-¾
Streight for clamps for the main & fores	8	8	8	8	8	6	6	6	6
Capps No in each & size thick	0-1¼	0-1¼	0-1$^1/_8$	0-1$^1/_8$	0-1	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$	0-¾
Eye bolts in the main & for capps No in each	4	4	4	4	4	2	2	2	2
Size	0-1¾	0-1¾	0-1$^5/_8$	0-1$^5/_8$	0-1	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$
Streights for the mizzen & spritsail caps	2	2	2	2	2	2	2	2	2
No in each & size	0-1	0-1	0-1	0-1	0-1	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$
Eye in D° number in each & size	2-1¼	2-1¼	2-1¼	2-1$^1/_8$	2-1$^1/_8$	2-1$^1/_8$	2-1	2-1	2-1
Streight for the main & foretop mast	3	3	3	3	3	3	3	3	3
No & size in each	0-$^7/_8$	0-$^7/_8$	0-$^7/_8$	0-¾	0-¾	0-¾	0-¾	0-¾	0-$^5/_8$

Iron work for masts, yards & Capps		100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In	20 Ft-In
Eye bolts for main & fore topmast caps		2	2	2	2	2	2	2	2	2
Number in each & size		0-1	0-1	0-1	0-1	0-$7/8$	0-$7/8$	0-$7/8$	0-$7/8$	0-$7/8$
Streight for the flying gibb boom capps		- -	- -	- -	3	3	3	3	3	3
Number in each & size		- -	- -	0-1¼	0-1¼	0-1	0-1	0-¾	0-¾	0-¾
Eye for Dᵒ one to each capp, size		- -	- -	- -	0-1¼	0-1	0-1	0-¾	0-¾	0-¾
Clasp with two staples to each flying gibb boom capp										
Hoops in the head of the	Main mast	6	6	5	5	5	5	4	4	4
	Foremast	6	6	5	5	5	5	4	4	4
	Mizenmast	4	4	3	3	2	- -	- -	- -	- -
Heals of the	Mainmast	3	3	3	3	2	2	2	2	2
	Foremast	3	3	3	3	3	2	2	2	2
	Mizenmast	2	2	1	1	1	1	1	1	1
	Bowsprit	2	2	1	1	1	1	1	1	1

Number

The Proportions for Merchant Ships, Masts & Yards

To find the length of the mainmast – Rule:

Take the length of the gundeck or lower deck, the main breadth & the depth in hold & add them together. Half of that product is the length of the main mast, only subtracting the main step out of it, which is $1/6$ of the depth of the hold.

To find the diameter of the masts for ships of the largest size	one inch to every yard in length
for ships of the middle size	$7/8$ Do
of the smallest size	¾ of an inch to a yard.

To find the quartering of the masts – Rule:

The first quarter	$30/31$ of the bigness in the partners
The second Do	$11/12$
The third	$4/5$
The fourth quarter	$5/9$ of the diameter in the partners
Length of the foremasts	$7/8$ or $8/9$ of the main mast
Mizzen mast	$6/7$ of the main mast, allowing $2/3$ inch diameter for every yard in length
but for small ships	$5/6$ of the main masts.
Bowsprit	$2/3$ of the main mast, for bigness $9/10$ or more of the main mast
For lessor ships	¾ of the foremasts
Foretop mast	$3/5$ of the foremast
Main topmast	$2/3$ of the mainmast
Mizzen topmast	$1/3$ of the mizzenmast
Topgallant masts	½ the length of their topmast or a little shorter
Spritsail topmast	$1/3$ of the foretop mast for length, allowing ¾ inch diameter to every yard in length for the smallest of these masts & yards and not to exceed one inch for the biggest.

The Proportions for Merchant Ships, Masts & Yards

Main yard	$7/8$ of the main masts
Fore D^o	$7/8$ of the main yard
Mizzen D^o	$7/8$ of the main yard
Diameter	½ an inch for a yard in length.
Main topsail yard	$5/9$ of main yard
Fore topsail yard	$5/9$ of fore yard
Mizen topsail	$1/3$ mizzen yard, allowing ¾ inch to a yard for the bigness.
Crossjack yard	something longer than the main topsail yard, allowing ½ inch to a yard in length
Spritsail yard	$5/7$ of the fore yard
Spritsail topsail yard	half of the spritsail

All standing masts to be quartered from the upper part of the hounds to the partners, Topmasts & topgallant masts from the upper parts of the hounds to the capp
Bowsprit from the head of the gammoning yards to the end of the slings

Proportions for masts yards bowsprit at their several places of setting off.

The heads of all standing masts that are cheaked to be $4/7$ square of the diameter in the partners; at the hounds $2/13$ fore & aft and $5/6$ thwartship of the diameter in the partners and at the heel to be as big as the mast is in the 2nd quarter.

Boats Masts

For boats masts that goes with a boom length 3 times the breadth of the boat or something more.
Diameter $5/7$ of an inch to a yard bigness at the partners & half as big at the upper end, boom ¾ of the mast. Bow sprit half the mast.
For shoulder of mutton sail 4 times the breadth of the boat. Length of the boom $3/5$ of the mast.

NOTE: The above graphic is a scan of Humphrey's Page 130. Transcription of this page would add nothing to the manuscript.

Dimensions for Drawing of Ships And Boats

First for Boats - - Draw a straight line at the bottom of the paper representing the middle line, then raise a square at one end of the paper & sett of your length of your boat. Then sett off the half breadth of your boat moulded, and then set of your depth of your keel up & down (that is ½ inch to a foot in breadth) then set of the rake off your stem according to proportion that is half the breadth level to the frame. Then middle the boat for □ & square it up, then your depth in midships is ½ of the breadth. The sheer abaft is 2 inches or more to every foot in breadth. Rake the post ¼ of the height of the line and set off the bigness of the post below them from the line sett down the breadth of the upper strake. At both ends of your boat shear forward one inch to a foot in breadth, rising of the floor from 2 to 4 inches at □ rising at the tuck aft lies ½ of the straight up, afore answerable to it. The rising of your breadth at □ the lower edge of your upper strake and abaft in the middle of Dº & forward almost the lower part of Dº then sett of your ½ breadth of transom $^{1}/_{3}$ of the ½ breadth and draw your narrowing to □ & keep it as full as you can, then draw your bow to the after part of the stem the sett of your room & space as you please then take the half breadth of your boat a □   & your height of breadth from the upper edge of the keel at □ & please yourself with a midships timber or divide the ½ breadth & height into 10 equal parts and cross them where the lines intersect & them is your sett you go by for your midships timber then sett off your dead rising & draw it across & that will give you the half breadth of floor.

To Crop the Molds for a Boat

By whole molding, first make a mould to your midships bend and to your rising line then sett of all your rising and narrowing of main breadth and place the mold well with the narrowing of breadth and straight with the rising of the floor at each timber severally and draw them by the mould then please yourself with the hollow to your after timber so as to lower the tuck make a mould to it and mark the upper edge of the keel then mark the ending of the hollow and divide it into as many parts as you have timbers to hollow marking them with their proper names, then lay a straight battin with the bottom of the heel and the bagg of the midship timber and where it breaks off on the midship timber is the floor surmark them strike a line through the body of timbers of the surmark to the tuck & lay that line down for a ribbon line to prove the body.

Square Tucks (for ships or boats) for the tuck you must set of breadth height abaft the half breadth of transom, and divide the whole breadth of transom into 3 equal parts and let one of them be the sweep for the tuck then hollow it & sett of the height of the side & round of your term to your mind. Height of tucks of ships or boats $1/_8$ the breadth of the boat from the top of the keel proportions for a long boat – Let the length of the boat be what it will the breadth must as 10 is to 34 for boats from 37 to 34 feet long but for those boats you must allow ¼ an inch to a foot in length, rake of the stem $7/_{20}$ of the breadth depth in midships $5/_{13}$ of the breadth shear from the depth in midships $1/_7$ an inch to a foot in length rake of the post 2 ¼ of the height, of breadth of □ $10/_{38}$ of the breadth, breadth of transom $2/_3$ of breadth, floor sweep $4/_{11}$ of the breadth rising of the floor 2 ½ inches, abaft the height of the tuck (which is $1/_8$ of the breadth) & a little higher afore height of breadth afore at the stem the upper part of the upper frame & at □ & aft lower edge of the lower lance on the middle between the whales the narrowing of the breadth and with the ½ breadth of transom the keel up & down $5/_8$ of an inch to every foot in length & thwartships one inch less breadth of the post below twice the breadth of the keep & the heads $1/3$ of what is below.

Proportions for Pinaces

Lett the length be what it will the breadth must be as 6 is to 28 from a boat of 28 feet of or upwards but for upward 28 you must allow one inch more than the proportion (rake the stem $5/_7$ the breadth Dᵒ the post ¼ of the length). Breadth of the post $2/_3$ of the rake below, the keel ¾ of an inch deep to a foot in length, and the upper and ¼ of the lower depth in the midships $5/_{12}$ of the breadth & sheer abaft 2 inches to every foot in breadth & afore one inch less; rising of the floor abaft is $3/_{10}$ of the breadth, Dᵒ afore $2/_6$ of the breadth, breadth of the transom $4/_{11}$ of the breadth Space of timbers $2/_{10}$ floor sweep $2/_6$ breadth sweep $1/_3$ breadth of the floor $11/_{13}$ of the breadth.

Instructions for Drawing of Ships

Let the breadth be what it will, the length of the keel is 3 times the breadth & the $3/_5$ of the breadth added to it for the rake from the forepart of the stem to the rabbit of the post abaft at the upper edge of the keel is ½ an inch to a foot in breadth. Rake of the stem ¼ or $2/_5$ or $3/_5$ of the breadth. Length of the sweep for a stem with one sweep is $3/_5$ of the breadth but for a stem with 2 sweeps the lower sweep $4/_9$ of the breadth, the upper sweep $1/_3$ of the breadth.

Rake of the post 3 ½ to a foot post abaft the rabbit below is commonly as much as the keel & falls keel is deep abaft ¼ of what is below.
First sett of your depth in hold but observe to allow for your floor timber & ceaing and allow downwards what your beams rounds because it is the line of the side, then lay your beam mould well with your deck line that is your depth in hold in midships and let it lay the depth of your keel & false keel lower afore than abaft. Then sett of your transom from the deck, or work $3/_5$ of the breadth for the height of your wing transom, if you have wales, place the middle of the middle wale with the deck then sett of your upper & lower wales from that, but if you have but 2 wales, place the upper edge of the lower wales well with the deck and for height in midships for Man of War as your supports on the lower deck comes just above the wales but for other ships place it a little above the deck then sett off the middle &

lower wales from the upper and for the upper edge of the lower wales abaft place it as you think fit below the wing transom chain bolts & channel wales for Men of War you place the lower edge of your chain bold wales so as to make the steps of the lower deck ports in the midships & you may carry a parallel shear or you may lift it a little as you see it convenient, but for merchant ships you must be guided by your deck. Your wooden scuppers the wales in midships then sett of your channel wales in midships, then sett of your channel wales from your chain bolts wales shear raile for men of war you have a shear rail in the middle of your upper deck ports in the midships & carry a parallel shear fore & aft from the channel whales.

Sheer Streak

You must first sett of the height of your wast from the upper deck, then your shear strake is commonly so broad as to make the shape of your upper deck ports in the midships, & you must carry is parallel to the channel whales fore & aft & the lower edge of it is the using of the double depth because your nuccle lies well with the lower edge of it.

Riseing of the floor Line. Height of the rising of the floor abaft is $^{18}/_{32}$ of the breadth & at $\otimes$ from 4 to 10 inches rising height of the rising afore $^{4}/_{13}$ of the breadth.

Narrowing of the Floor Line Breadth of the floor ½ or $^{2}/_{5}$ of the breadth & if you work by the narrowing of the floor line you may take from the ¼ breadth you did by the ½ breadth of the floor in midships & carry it parallel with the half breadth fore & aft, or you may thin it abaft if you please.

Lower Height of breadth when two for merchant ships place it well with the lower wale in the midships, but for Man of War at the upper edge of the upper whale and abaft it you have 3 whales at the upper edge of the lower whales, but if you have but two whales at the lower edge of the lower whale and afore take for your dead rising to your height of breadth line the midships & carry it parallel with the rising of the floor line & then you will have no reconcileing molds for it. Weight of Breadth line when you place your height of breadth in the midships pretty near the middle of your whales or a little higher & abaft about a foot or more above the wing transom or at the after frame to be a little above the upper edge of the upper whale & at the foremast frame a little above the upper edge of the upper whale. Narrowing of the Breadth Line Breadth abaft for Man of War $^{2}/_{3}$ of the breadth in midships or something less, but for merchant ships it must be something more than the proportion & for your bowline draw is full or lean as you fancy

Upper height of breadth line when two first set of what straight you intent to have your futtock then sett of your using ½ narrowing If your foremast & aftermast timbers then draw a straight line from the midship height to the half breadth of your foremast & aftermast timber then square them up from the half breadth of each timber to that line then where they cross the first line there is the height of breadth of each timber then draw them across for your use Riseing of the Double Depth Your riseing of the double depth line ties with the lower edge of the waste rail or shear streak because of the nuccle. Narrowing of the Double Depth Tumbling home of $\otimes$ is commonly $^{1}/_{14}$ of the breadth or something more & abaft within the half breadth abaft half of what it is in midships & afore $^{2}/_{3}$ of what it is in midships .

To Place $\otimes$ **N,B** middle gundeck & place it afore 7 ^{ft} 4^{in}, 7 ^{ft}.2 ^{in}, .7 ^{ft}.1 ^{in}, .6 ^{ft} 10 ^{in},   6 ^{ft}.9 ^{in}, 6 ^{ft}.7 ^{in}, 6 ^{ft}..5 ^{in}, 6 ^{ft}.3 ^{in}, 6 ^{ft}.3 ^{in},   or you may place it $^{4}/_{9}$ of gundeck from afore the rabbit.

To Lay Down the Midship Bend

Breadth of the floor $^1/_3$ or $^2/_5$ or ½ of the breadth dead riseing from 4 to 10 inches (as before mentioned) floor sweep $^5/_{22}$ of the breadth (or something more & less as you please) and for your under breadth sweep open your compasses on the height of breadth line till it reconciles with your floor sweep, under breadth the sweep (if you have 3 sweeps is $^1/_3$ of the breadth reconcileing sweep is $^3/_5$ of the breadth sweep above the breadth $^1/_3$ of the breath back sweep above the breadth for the hollow of the toptimber $^1/_3$ or a ¼ of the breadth but for full ships draw it fair with an elliptical mold from the bagg of your floor sweep up to your half breadth and you'll want no lower breadth sweep only aft.

To Shorten your Under Breadth Sweep when you have your under breadth sweep that reconciles with ⊗. Sett with your half breadth where you begin to narrow your breadth, then for your sweep abaft divide the half breadth of transom into 3 parts and sett one of the off from the middle line & draw a diminishing line, butt observe if you would mould that if you have more sweep at the after frame than you have distance between the rising of the floor & the rising of the breadth, take something less distance & draw from that. To work out your hollow abaft you must first please yourself with a hollow so your after-most timber as near the foot of the fashion pieces as you can, then you must work by a riseing of a straight line or work it out by a progression of lines. That is, lay the straight of your hollow mould by a perpendicular then work of your after timber. Set the lower end then strike a parallel line and divide both lines into as many equal parts as there is timbers as far as your hollow & where they cut the mould that is the lipping of each timber then keep the mould at the breadth of the keel & the upper edge and to the bagg of its proper timber. Rake of the fashion piece on the flatt at the upper edge of the keel $^1/_{14}$ of the breadth & for abaft at the wing transom see how much you will round your wing transom forward & how big you will have it fore & aft at the end & add them together and that is the distance abaft on the floor.

To Lay Down the Buttuck of a Ship

First sett of the height of your transom then sett of the [indecipherable] rabbit of the post & the rake. Then sett of the rake of the fashion piece in the flat but if you intend to cant your fashion piece you must take out as much as you intend to cant the fashion p^s out of the end of the transom height of lower transom 3/5 of height of wing. Then you must sett of your transom on the post & draw them parallel to the upper edge of the keel till the cut of the fashion p^s. Square down all the transoms to the middle line for the brick of your transom then square down all the transoms where they butt the height line butt on the cant you have no need to square down only the wing transoms & the lower end & the wing transoms 3, 4 or 5 less flight if you cant your fashion piece but the lower transom the same then draw your post as you intend to taper it then take of your boddy the breadth of each timber of the height of each transom singly and sett them of upon the room & space of each timber as you sett for your buttuck upon their one prop timbers and so force them by fair lines till they come to your spots at the end of your rabbit & where the square lines that come from the rake of your fashion piece cut the fore & aft lines that is cut through the body of your timbers that is the half breadth of your transom or the fore part of the transom for your fashion piece to lye on when your fashion piece is on the flat but on the cant you must not allow your wing transom flight not so much as on the flat by 3 or 4 or 5 inches or more or less. The flight below at the lower transom may be the same as one the flat to strike the cant line is thus you must take the half breadth of the wing transom from the boddy & sett off below & where the square line of the flight of wing transom cuts it is the spot & where the flight of the lower transom squared down will cut the waterline of the lower transom is the after spott then strike a line from spott to spott & that is the cant line and where the cant line cuts the rest of the rakes line between the wing & lower transom is the half breadth of the rest of the transoms with spott must be squar'd up with an essing flight line the rest as on the flat.

To Make the Fashion Piece Mould

You must take the height of all your transoms according to the rake of the fashion piece & sett them of on a square on the body of timbers downwards from the height of breadth & strike the lines across the body, then take the half breadth of your transoms & sett them on the proper height of the transoms sett down then take the shortning of your under breadth sweep at the transom & set it of from the half breadth on the height of breadth line in the body towards the middle line & swap it downward then take your hollow mold or elliptical mold & see if your setts of the half breadth of your transom comes fare with your [*under breadth edge*] & the transoms & if nott draw a fair line with your hollow mould & take the half breadth of your fashion piece at that transom that does not come fare & carry to your water line or for or aft line that you forst for your transoms & so make them some fare.

To take the beveling of transoms & fashion piece

Lay a bevel with the line that goes athwartships & cut of the end of the transoms below at the half breadth that is the flight or cants line) and open your bevel to the thickness of your fashion piece on the fore & aft line that is forst fair & that will give you the beveling of the fashion piece at every transom. To bevel the end of the transoms for the fashion piece to lay on lay a bevel well with the fore & aft of transom & open it to the rake of the of the fashion piece and that will give it; to level the transoms lay a bevel well with the fore & aft line of the transom & [*shade*] it to the rabbit of the post.

Scan of graphic from Humphreys' Page 145

To take the beveling of the timbers from the body of after your ribband lines on your body are prov'd fair lay a battin well with your ribband line across your body & take the lipping of every timber of on your battin butt observe that you must strike two parallel lines one from the other [*& divide*] as the exact [*room & space*] is then make a square at one end & sett of your lipping of timbers on each side then line from the square then strike a straight line from the square of the first lipping on the other side to follow each spott one after another and that will give you the true beveling of each timber then take them from that & sett them upon a board. But let your board be parallel that you may take them off for the timbers that are standing as well as under.

To Lay Down the Midship Bend

Breadth of the floor ²/₅ for great ships above fourth rates & ¹/₃ for 4th, 5 & sixth rates of the main breadth moulded length of the floor sweep ¼ of the main breadth but may after *[this proportion].* In great ships to make the boddy fuller; reconciling sweep between the floor & underbreadth sweep ⁵/₉ of the main breadth underbreadth sweep in midships ¹/₃ of the main breadth & underbreadth sweep ½ of the midships & afore ²/3 of the midships & then you may shorten them from the midships aft & forward by a diminishing line sweep above the breadth is ²/₅ for 1st 2nd & 3rd rates and ¼ of the main breadth for 4th 5th & 6 rates. Back sweep of the toptimber ⁵/₉ for first second & third rates & ²/₅ for 4 5 & 6 rates of the main breadth moulded.

Length of sweeps for the hollow abaft for 1st rates 18 feet, for 2nd 17 feet, for 3rd 16 feet, for 4th 15 feet, for 5th 12.6 feet, for 6th 10.63 feet. But if your ship is to be a full ship for burthen you must make your sweep the shorter and work of your hollow out to a straight sooner but afore you will have no occasion of *[indecipherable text]* any rule for which it is so customary to make so much or so little hollow that there is very seldom any used only to make the waterline fare.

To work out your hollow abaft

You please yourself with a hollow to your after timber as near the foot of your fashion piece as you can then mark the mould at the upper edge of the keel with the proper name of the timber then mark the ending of the hollow with that name as you designated your hollow. Then draw a straight line and parse a perpendicular in the middle of the line & turn the mould on the edge up the perpendicular & mark the other spott on the perpendicular then with them distances sweep a simmecircle to the straight line & divide each quadrant into as many equal parts as you have timbers to come in between them & draw a line to each spott turn the mould upon the edge and mark them on the *[indecipherable text]* that gives it to lip one more than another keep the spots down to the keel.

NB To find the bevlings of transoms you must draw as many lines as you see convenient, parrel to the middle line through your boddy laid down then take the height of each timber up that perpendicular and carry it to the respective timbers on your room & space in your shear draught you can also draw those parrillels through your boddy of transoms laid down and take the round forward of each transom & sett of on each height of transom down from your post. Then with your elliptical mold force all these spots fair (it gives you the true sections of your vessel at those places) then lay your bevel on your line drawn for the upper side of your transom and open your bevel to your curve line forst it gives you the bevelings at these places.

To work out your hollow abaft of your top timber

When you have got your hollow at flat reconcile one end of it to what hollow you designe your after frame shall have then mark the double depth line 4 ⊗ and the breaking of the hollow at the upper breadth sweep & extend that distance upwards above the double depth at ⊗ and that is the after frame then mark it with its proper name. Then divide that timber to ⊗ into as many equal parts as you have timbers to come in between keeping every part down to double depth at ⊗ & to the narrowing & breaking of the proper timber you are laying down.

To work out your knuckle afore

You must first make your mould to the same hollow as you did for ⊗ abaft then reconcile your mould at the other end with the shape you designe your foremast nuckle timber to be then draw your foremast nuckle & mark the double depth of its one timber on the mould and mark it with a ⊗ upon your mould where you begin to degenerate from your upper deck sweep then divide them two distances into as many equal as you have timbers in the wake of your foremast drift and keep every part well with the riseing of the double depth and the breaking off the back of the upper breadth sweep and its one timber.

For Pink Stern Vessels

In working out lute stern you must work you proportions as you do for ships only draw a narrowing of breadth line home to the post abaft & the riseing of breadth flies up to the lute but if it be a flagg boat it lies with the upper deck & for the working out your after timber you must make a joint mould where your tumbling home begins to decline & to work it out by your half breadth aft all the rest as ships, the stern post rakes [4 inches] or 4 ½ in a foot.

To find the floor sirmark in all ships first sett off your depth of keel & falls keel in midships & the half breadth of keel then lay a battin well with the bottom of the keel and where it touches the bagg of the mould that is the floor surmark.

To find the floor ribbin afore & abaft the height of the floor at the stern & at the post and sett them off on the middle line & so draw a straight line to floor sirmark then divide the after and foremast timbers up to the height of board surmark as you did at ⊗ and draw a straight line to the middle line.

Shear Mould by a ¼ Seate

The length of your sweep for first and second rates 14 feet or 13-6 feet for third rates 13-6 feet or 13 feet for 4 rates 12 feet or 11-6 feet for 5th rates 10 or 9-6 feet for 6 rates 9-6 feet or 9 feet .

To Make a Ships Rother

Take the $1/_8$ of the extreme breadth of the ship for the breadth below (that is 1 ½ inches to a foot) for the lower hance $2/_3$ of the lower end which height lies half the ships breadth from the bottom of the keel, & for the bigness of the head fore & aft take from 16 to 20 of from your of numbers & carry to the bigness of the post athwartships & extend it forward & that will give you your bigness at the head fore and aft, to beard your rother take $3/_5$ of the thickness lot from the middle line or $1/_3$ sett from the upper edge of your tiller hold thwartships $1/_3$ of the rother & up & down 1 inch more the after part of the hole $2/_3$ of the forepart. The tiller at the foremast line ½ of what it is at the after end.

To measure a ships sheathing

Take the length of your ship from stem to post ½ the height between the keel & whale, then take the girt of the body in every 10 foot as there is to length and add them together & divide by the number of so many 10 feet as there is in the length & that the girt of the body then measure as you do com-on measure but you must allow the thickness of the sheathing in your girt & measure the keel & whales stem & post by themselves.

Principal Dimentions of ye Garland of 24 Guns

		Ft	In
Depth on the gundeck		112	0
D^o of the keel for tonnage		92	9
Breadth extream		32	0
Depth in hold		11	0
Height of wing transom		18	2
Breadth of the shear rail abaft		14	3
Height of the lower whale	Afore	18	0
	Abaft	22	6
Breadth of the wing transom		- -	- -
Height of the stem		22	6
Cutting down	Afore	2	7 ½
	Abaft	3	1 ½
	Midships	4	7
Riseing of the midships flat		0	11
Height of top timberline or	Afore	16	2
upper edge of waste rale	Abaft	29	6
Upper edge of the keel	midships	23	0
Hanging of ye gundeck at the middle line		1	4
Higher abaft than afore from the keel		0	5
Gallery stools wide		3	0
Height of topraile from quarter deck		4	9

Dimentions of y^e Garlands Masts & Yards

Joshua Humphreys Notebook

		Masts			Yards		
		Length		Diameter	Length		Diameter
		Yd	In	In	Yd	In	In
Main	Mast	25	0	23	22	0	15 ½
	Topmast	15	18	13 ½	16	0	9 ½
	Top gallant mst	8	0	7 ¼	11	0	6 ¼
Fore	Mast	22	24	20½	20	0	14
	Topmast	13	9	13 $^{1}/_{8}$	14	6	9
	Top gallant mast	7	18	7	10	0	6
Mizen	Mast	21	6	14 ½	18	22	10½
	Topmast	10	8	8 $^{5}/_{8}$	10	17	6 ½
	Top gallant mast	14	17	5 ½	8	12	4 ¾
	Bowsprit	14	30	23	14	6	9
	Spritsail topmast	- -	- -	- -	9	23	5 ¾
	Crossjack yard	- -	- -	- -	14	6	9
	Flying Gibb boom	10	24	9 ½	- -	- -	- -
Flagstaff Main (Topmast)	Main	8	0	5 ¾	- -	- -	- -
	Fore	7	0	5 $^{3}/_{8}$	- -	- -	- -
	Mizen	6	18	4 ¾	- -	- -	- -
[Studonsails boom]	Main	- -	- -	- -	9	5 ½	5 ¼
	Topmast	10	33 ½	6 $^{1}/_{8}$	7	18	4 ½
	Top gal^{t} mast	- -	- -	- -	5	1	3
	Fore	- -	- -	- -	8	1	4 $^{7}/_{8}$
	Topmast	9	23	5 ¾	7	6	4 $^{3}/_{8}$
	Top gallant mast	- -	- -	- -	5	0	3
	Driver	14	0	8 ¾	9	5 ¼	[indecipherable]

Principal Dimentions of the Establishment in the year 1745

			100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In
Length of the keel for tonnage			144-6½	168-4	134-10¼	131-4	123-0¼	117-8½	108-10	93-4
Dᵒ on the gundeck from the rabbit of the post to the rabbit of the stern			178-0	170-3	169-0	160-0	150-0	144-0	133-0	114-0
Breadth	extream		51-0	48-6	47-0	45-0	42-8	41-0	37-6	32-0
	at the aftermost part of the wing transom		33-0	31-0	30-5	27- t	26-0	25-0	22-9	18-4
	At the top timberline front outside to outside plank	afore	33-0	31-0	30-5	27-6	26-0	25-0	22-11	19-0
		Midships	36-6	34-9	33-6	32-6	32-0	30-9	28-1	26-0
		Abaft	23-6	22-4	21-8	21-0	20-0	19-2	17-6	14-9
Weight	of the cutting down in the midships above the keel		1-8	1-7½	1-6½	1-6	1-5¼	1-5	1-5	1-4½
	Of top timberline or upper edge of the Waist raile above the keel	Afore	47-0	45-4¾	44-6	36-7	34-1	33-5	30-9	25-4
		⊗	43-7	42-4	40-11	34-0	32-4	31-0	28-11	23-1
		Abaft	59-8	52- ¼	50-2	42-8	40-3	37-9	34-4	28-3
Riseing of ⊗			0-4	0-4	0-4	0-5½	0-6	0-6½	0-8	0-9
Height	Gundeck from the plank to the upper edge of the middle or upper deck beam	Afore ⊗ Abaft	7-2	7-0	7-0	7-0	6-10½	6-9	6-8	6-1
	From the plank to the port cells		2-4	2-4	2-4	2-4	2-3	2-3	2-1	1-10
Ports	Deep		2-9	2-8	2-8	2-8	2-8	2-7	2-6	2-2
	Fore & aft		3-7½	3-5	3-5	3-5	3-4	3-3	2-11	2-6

Joshua Humphreys Notebook

Principal Dimentions of the Establishment in the year 1745

		100	90	80	70	60	50	40	30
		Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In	Ft-In
Hanging of the deck at the middle line		2-1½	2-0	1-11	1-10	1-9	1-8	1-7	1-6

Height from the upper deck plank			100	90	80	70	60	50	40	30
	Beams to round		0-8½	0-8¼	0-8	0-7¾	0-7½	0-7¼	0-7	0-6¾
	From the upper deck to the upper edge Of the quarter deck beams	Afore	7-0	6-10	6-8	6-8	6-7	6-7	6-6	6-5
		Abaft	7-4	7-1	6-11	6-11	6-9	6-8½	6-7¼	6-7
	At the waste		5-8	5-7	5-6	5-10	5-3	5-0	4-8	4-7
	To the port cells		1-10	1-10	1-8	1-11	1-9	1-9	1-8	1-8
	To the upper edge of the forecastle beams	Afore Abaft	6-8	6-6	6-0	6-4	6-2	5-10	5-5	5-3
	Ports	Deep	2-8	2-8	2-7	2-8	2-7	2-7	2-4	2-4
		Fore & Aft	3-0	2-9	2-9	2-10	2-8	2-8	2-5	2-5

	100	90	80	70	60	50	40	30
Forecastle beams to round length of Dᵒ from the foreside beakhead stantions	38-0	36-0	36-0	33-0	28-0	27-0	25-6	18-0

Quarterdeck as long as the main jeers will allow

	100	90	80	70	60	50	40	30
Length from the foreside of the toprail at the height of the fiferail to the Foreside of the figure of the head bylines parrel to the keel	212-9	203-0	196-0	186-0	175-0	167-0	154-0	131-0

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Principal Dimentions of the Establishment in the year 1745

			100 Ft-In	90 Ft-In	80 Ft-In	70 Ft-In	60 Ft-In	50 Ft-In	40 Ft-In	30 Ft-In
Length	From yᵉ forepart of the stem to the forepart of the Knee of the head		17-6	16-6	16-6	12-1	11-6	11-0	10-0	8-6
	From the forepart of the stem to the beakhead bulkhead		9-0	8-6	8-0	7-0	6-6	6-2	5-6	4-8
	From the aft side of the wing transom to the afterpart Of the counter at the middle line		6-8	6-6	6-2	5-11	5-6	5-3	5-0	4-0
	From Dᵒ to the second counter at Dᵒ		8-4	8-1	7-8	7-5	6-11	6-7	6-3	5-2
Height	Of the gundeck by a perpendicular from the upper edge of the keel at the keel to the upper side of the plank at the midline	Afore	26-0	24-9	24-0	23-3	22-3	21-3	19-5½	14-2
		Abaft	26-8	25-5	24-8	23-8	22-11	21-10	19-11 ½	14-6
	Of the aft side of wing transom above the upper edge of the keel at the post from the upper edge		29-0	27-9	27-0	26-3	25-2	24-1	22-0	16-4
	of the keel to the lower edge of the counter raile at the middle line		33-4	32-3	31-3	30-4	29-4	28-0	26-0	20-4
	of breadth above the upper edge of the keel in midships	yᵉ lower	18-8	18-0	17-6	16-3	15-7	14-11	13-5	11-4
		yᵉ upper	21-9	21-9	21-0	20-4	19-4	18-0	16-6	13-8
Rounding of the stem aft at the lower counter raile			1-2	1-1	1-0½	1-0	0-11	0-10	0-9½	0-8½

The back of the fals post to rake 2 ½ in a foot and the upright of the stern 3 inches in a foot. The floor & futtock timbers in the bearing of thickness to full up the room & space especially in large ships the stem to rake forward above the gundeck 2 inches in a foot.

Weight of Turpentine

Memorandum, Turpentine Ought to Weigh 321 Ct per Barrel if it is Survey'd and branded at Carolina.

Dimentions of the Randolph Frigate of 23 guns built at Philad[a] July 10 1776

	Feet	
Length of the gundeck from the aft side apron to the foreside rudder	137	3
Keel for tonnage	112	0
Extream breadth	34	6
Depth in Hold	11	
Breadth of transom	21	6
Rising of mid[s] ⊗	1	9
Breadth of floor	14	
Tumbling home top timber	3	
Hanging gundeck	1	7
Height between decks	5	2
Waste amid[s]	5	2
Port cells from deck	1	8
Up & down in the clear	2	3
Fore & aft D[o] ~ ~ ~	2	6
Distance between the ports	7	5
13 ports on the gundeck		
Height from upper part gundeck to the upper part of Qut[r] deck at fore end	6	10
Height forecastle to the top of the beam at the after end	6	2
Quarter deck short of the center main mast but should run within 2 feet of it	7	1
Beakhead[s] from the apron	3	9
Foremost port abaft the beakhead	4	1
After port from the side rudder	9	6
Length of forecastle	27	-
Center foremost abaft the apron	19	3
D[o] ~ of cable bitts abaft the center for mast but should be at least 2 ft more	9	6
Center main mast abaft center foremast	59	6
Center of mizenmast abaft center main mast	36	6
Center of D[o] ~ D[o] ~ before the rudder	22	-

Dimentions of capstand

Quarterdeck up drumhead   1 ft 1 diam[t] by 4 [high] ⎤ thickness   12 in
       lower D[o] ~   3 ft 10 in by 8   ⎰ Filling

Length barrel under the drumhead   3[ft] 2[in] by 1ft 8 in
Whelps   at bottom 10½   at surge 6½   at top 9½
                 from the bottom to the surge 2 feet 5 in
Lower capstand, upper drumhead 4 to 9 lower sided as above
      barrell 2 feet diam[r] height as above
Whelps   at bottom 12   at surge 7½   at the top 10½

The amo[t] of ship carpenter & laborer wages is £2289 when wages was at 7 shillings per day & the ship joyners work am't to £380 & used 22 thousand feet boards & scantling.

Dimensions of the Delaware Frigate of 28 Guns

	Ft	In
Length of Gun deck from the aft side of the apron to fore side rudder	119	
Keel Length for tonnage	96	
Extream breadth	32	
Depth in hold	10	6
Height between decks	5	
Breadth of Transom		
Breadth of floor		
Rising of Do		
Tumbling home top timber		
Hanging Gundeck		
Wake amidships	4	10
Port Cills from deck	1	7
Do Up & down	2	1½
Do Fore & aft	2	4
Distance between the ports	7	0 ½
12 ports on the gun deck		
Height under the 2nd deck from plank to plank	6	6
Do under the forecastle from plank to plank	5	9
Length of Do	21	
Beak head abaft the apron	3	6
Fore mast part abaft the beak head	3	6
After port before the rudder	8	
Center foremast abaft the apron	16	
Do of cable bitts Do of foremast	11	
Do of capstand Do Do	23	0 ½
Do of main mast Do Do	53	
Do of capstand abaft main mast	15	
Do of mizzen mast Do	32	
Do of before rudder	19	
Brest of the figure before the hawse piece	12	6

Dimensions of the Languedoc of 90 guns

	Ft	In
Length of the keel from the foot of the post to the rear of the stem	165	-
Length of the ship from stem to stern	184	
Rake of the stern post	2	
Do Do stem	17	
Breadth midl frame	48	4
Length of midl beam	46	2
Height port keelson lower deck	2	2
Distance between the ports	7	8
Height on the gun deck under the beams	5	6
Height of the port cells on the second deck	1	10
Distance between the ports	7	9
Height of the hold asunder the beams	5	1
Depth of the hold	23	2
Breadth of the ship on the lower deck	46	8
Do Do on the outside Do	50	
Thickness of the ships side	2	9

Dimentions of her Masts & Yards	Feet In.	Diameter	Head of L	
Length of main mast	116	38 $^2/_3$	13 $^2/_3$	
Foremast	108	36	12 ¾	
Mizen D^o ~	80 ½	23	9 ½	
Bow spritsail	71	37 $^1/_3$	- -	
Main topmast	72¾	21 $^2/_3$	7 ¼	
Fore D^o ~ D^o ~	6 ¾	19 $^2/_3$	6 $^2/_3$	
Mizen D^o ~ D^o ~	46 ½	13 ¾	4 $^2/_3$	
Main TG mast	49	11 $^1/_3$	16 $^2/_3$	
Fore	43 ½	10 ¼	14 $^2/_3$	
Mizen	35 ½	8	12 ¼	
Gibb boom	51 ½	14	yd	arms
Main yard	106 $^2/_3$	26 $^2/_3$	9 $^2/_3$	
Fore Do ~	97	24 ¼	9	
Mizen yard	95	18 ½	2	
Spritsail yard	69	15 ¼	6	
Main topsail yard	81	17	16	11
Fore T Y	74	15 ½	15	4
Crossjack yard	74	14 ¾	6	2
Mizen F D^o ~	58	9 $^2/_3$	9 ½	
Main TG yard	53 ¼	9 $^2/_3$	9 ½	
Fore TG D^o ~	48 ½	8	4 ¼	
Mizen F G^l D^o ~	42 ½	7	3 ¾	
Main T G Royal Yard	35 ½	6	3	
Fore D^o	32 ½	5½	3	
Height of Ensigne Staff	48 ½			

Sails their Dimentions	Extent	Drop	Foot
Main Sail	97	48	
Fore D^o	88	42	
Main top sail	64 $^2/_3$	2	94
Fore D^o	58 $^2/_3$	57	85
Mizen D^o	48 ½	32	62 $^2/_3$
Sprit Sail	63	31½	63
Main T G Sail	48 ½	32	62 $^2/_3$
Fore D^o D^o	44 ¼	29	56 $^2/_3$
Main T G R Sail	38 ¼	23	46
Fore D^o	32 $^1/_3$	14	46
Mizen D^o	29 ½	12 ½	42

Anchors their Weight	
1 best bower	7750
1 D^o	7650
1 small D^o	7500
1 Stream anchor	2480
1 D^o	2340

2 spare anchors in the hole, 1 weighs 7500; the other 7150

Cables

		Weight	
Seven	23 inch	15500 each	
Four	12 D^o Stream Cables	5000 D^o	

	Inch	36 pounders on lower Deck
Main Shrouds	10 ½	26 D^o Second deck
D^o T G D^o	5 ¼	
D^o T M D^o	3	12 D^o fore castle & 2nd Deck
Main Shrouds	10 ½	
D^o T G D^o	15 ½	
D^o T M D^o	10 ½	
Main Stay	15 ½	
Fore Shrouds	10 ½	
D^o T M D^o	5	
D^o T G	2 ¾	
D^o Stay	15	

The Languedoc with six months provisions on board & 2 months wages amounts to 1,100000 French Livres

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76388.75 \quad \text{per M}
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Dimensions &c of a Twenty Five Gun Ship Built by Joshua Humphreys for the Honorable Navy Board

Feet	Inch			Feet	Head
147		Keel	Main Mast	112	16 ½
149		Beam	Fore Mast	101	14 ½
19		Hold	Mizen Mast	94	13
31 ½		Feet Transom	Bow Sprit	80	
22 ½		Floor	Main top mast	76	11
2		Rising	Fore Dᵒ	10	
7		Between Deck	Mizen Dᵒ	60	8 ½
2	6	Port cills from beams	Main Top Gal mast	38	30 ½
8	1	Distance between the ports	Fore Dᵒ	35	28
3		Ports in the clear for & aft	Mizen Dᵒ	30	24
2	7	Up & down	Main Yard	108	
17	10	After port from rabbet post	Fore Dᵒ	94 ½	
15	9	Fore port Dᵒ Stem	Mizen Dᵒ	86	
5	6	Masts	Main Top Sail Yard	77	
2	4	Port cills from beams	Fore Dᵒ	67 ½	
8	7	Distance between the ports	Mizen Dᵒ	58	
2	6	Fore & aft clear	Main Top Gallant Yard	47	
2½		Up & Down	Fore Dᵒ	42	
6	10	Under the quarter deck	Mizen Dᵒ	36	
6	4	Fore Castle			
43 ½		Length			

Quarter Deck within 2 feet of the main mast

	5	Tumbling home
	2	Hanging Gun Deck
6	6	Beak head abaft the rabbet
3 ½		Fore port abaft Dᵒ

For the honorable Navy Board

Dimensions of Frigate Confederacy Hull

	Feet	Inches
Length of Keel Straight Rabbet (133)	133	
Breadth of Beam	36	8
Depth of Hold	12	6
Height between Decks	6	3
Gun Deck from Stem to Stern	160	
Length from one point of the stern to the afterpart of the rabbet	158	
Length of the quarter deck	84	
Length of the forecastle	40	
Height of the fore part of the quarter deck	6	
Height of the afterpart of the forecastle	6	4

Masts

	Diam Inch	Length Feet	Lgth of yd Feet
Foremast	27	82	11½
Main Mast	28	88	12½
Mizen Mast	21	77	9½
Bowsprit	27	55	
Fore Top Mast	18 ¼	48	7
Main Top Mast	19	53	7½
Mizen Top Mast	13	38	6½
Fore Top Gallant Mast	11½	26	21
Main Dº	12	28½	23
Mizen Dº	8½	20	16

Proportion for poling the Main Mast - 4 times the length of the Beam from the top of the keelson to the top Gallant Hounds

Yards	Diam Inch	Length Feet	
Fore Yard	18	76	
Main Yard	19	86 ½	
X Jack Yard	12 ½	60	
Fore Top Sail Yards	12	58	
Main Dº		12 ½	64
Mizen Dº	10	46	
Fore Top Gallant Yard	6½	34	
Main Dº		7 ¼	38
Mizen Dº	5 ½	28	
Jibb Boom	13	41	
Mizen Derrick	12	40	
Spritsail Yard	11 ½	58	
Spritsail Top sail yard	7 ¼	38	
Fore Royal Yard			18
Main Dº			24
Driver Boom	10	52	
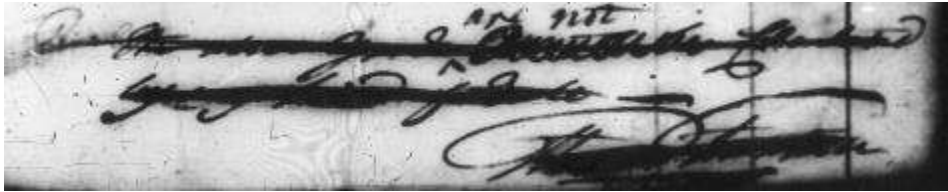
TRANSCRIPTIONIST NOTE: There are 2 lines of text on the bottom of this page which are blacked out and completely indecipherable. There is also a signature on the bottom of the page that has been partially blacked out but is recognizable to this transcriptionist as Thomas Truxton.

Memorandum for the Weight of any Rope

Multiply the circumference by itself and divide the product by 4 gives the weight in lbs of one fathom of hauser lay'd ropes, but not so much in a cable by 1/10 part, as in a hauser laid rope.

Of our common yarns in each strand for 4 Inch & ¾ hauser lay'd rope. Yarns in each strand for 6 inch & ¼ hauser lay'd rope.

To warpe yarns for a stay 7 times the length of the stay to be brought about in four

3	19	4		3	19	4 ½		3	19
	19				19				19
	38 yarns for the inch				9 ½				19
					47				57

If 3:19:6
    19
    19
    19
    76 yarns a hook

3:19:6
    19
    19
    19
    9 ½
    85 thread for 6 ½ a hook

3   19   7
    19
    19
    19
    19
    95 threads a hook for 7 Inch, hawser lay'd rope, by this rule at the rate of 19 thread a hook for three Inch.

To proportion yarns for any size Rope

If 3 Inch Rope take 19 thread a hook, how many will a four Inch require, as 3 is to 19 so is 4 to 25 the direct proportion; then say as 3 is to 25 so is four to the quantity of yarns required, which is 33 & so for any other rope.

These proposals was made & agreed upon by the Master and Journeyman in the Year of our Lord 1694.

Master to have but two apprentices in a ground at a time & to take no Covenant Servants; but to serve three times under three masters Roof as an Apprentice ought to do, & to employ none but what hath served a lawful time and if spinners do want Employ to hire no Labourers, but a wheel heaver.

Item for spinning to spin out nine threads together. To spin 24 threads of Riga hemp 22 of Riga & pass 20 of all pass or Raffia of 160 fathom for a days work.

To warp Crankhalls of 180 threads 5 men 6 a day for capstand halls of 360 threads 8 men a day.

To tarr crank halls of 180 threads with a capstand, 5 men at the barr, 8 a day; with a crank 8 men at the crank, 12 a day Capstand Halls of 360 threads 8 men at the barn 8 a day.

To warpe & lay top Sheets 4 pair a day. 6 tack strands from 5 in & upwards ready warp'd for ¼ of a day & the tacks 2 pair for ¼ of a day.

To lay twice lay'd Ropes upon the wheel warped 135 fathom; 12 a day, the same length for strands upon the wheel; Ropes upon the hooks from 2 ½ to 5 in 4 a day & upwards, 3 a day the same length.

Head Ropes not to exceed 60 or 70 fathoms when lay'd 5 men 8 a day both ropes ye same length from 2¼ to 3¼ 5 men; and all upward 6 men 4 a day.

For ½ ropes white or tar'd from 3 In to 5 In one thread extra above½ the allowance of the whole rope from 5 in & all upward 2 threads.

The yarn for short lay'd ropes to be warped 180 Fathom: for cable lay'd ropes 200 fathom, & short lay'd ropes from 2 ¼ to 3 inch handed upon the wheel.

Allowances for cords and cables

Allowance for Hauser lay'd cordage				Allowance for cable strands				Allowance for Cables				Allowance for Strands & Stays			
Size	No of men to lay it	no of boys	No Layd per day	Size	No of men to lay it	no of boys	No Layd per day	Size	No of men to lay it	no of boys	No Layd per day	Size	No Layd per day	Size	No Layd per day
7	24	0	3	18	35	0	3	18	70	0	2	15	2	9	3
6 ½	23	0	3	17	31	0	3	17	62	0	2	14 ½	2	8 ½	4
6	21	0	3	16	258	0	3	16	54	0	2	14	2	8	4
5 ½	16	0	3	15	26	0	3	15	50	0	2	13 ½	2	7 ½	4
5	14	0	3	14	23	0	3	14	44	0	2	13	2	7	4
4 ½	12	0	4	13	21	0	3	13	40	0	2	12 ½	2	6 ½	4
4	12	0	4	12	17	0	4	12	36	0	6	12	2	6	4
3 ½	10	0	4	11	15	0	4	11	34	0	3	11 ½	3	5 ½	4
3 ¼	9	0	4	10	14	0	4	10	29	0	3	11	3	5	4
3	8	0	4	9	11	0	4	9	27	0	3	10 ½	3	4 ½	4
2 ¾	7	0	4	8	9	0	4	8	24	0	4	10	3	4	4
2 ½	5	0	4	7	8	0	4	7	17	3	4	9	3	~~3~~	~~3~~
2 ¼	4	1	4	6	7	0	4	6	15	0	4				
2	8	2	12	5	5	1	4	5	12	1	4				
1 ¾	8	2	12	4 ½	8	1	12	4 ½	11	1	4				
1 ½	7	1	12	4	7	1	12	4	1	0	4				
1 ¼	7	1	12	3 ½	6	1	12	3 ½	8	0	4				
1	5	2	12	3	5	1	12	3	7	0	4				
¾	5	2	12												

Size	No men to warp	no of thread for warping	no of men to lay	no lay'd per day	Inch	12	13	14	15	16	Inch	17	18	19	20
					9	108	117	126	135	144	9	153	162	111	180
8	14	6	42	2	8 ½	95	107	112	120	128	8 ½	136	144	152	160
7 ½	16	6	37	2	8	85	92	99	106	113	8	120	123	135	147
7	14	6	32	2	7 ½	75	81	87	93	100	7 ½	106	112	118	125
6 ½	14	4	28	10	7	65	70	76	81	87	7	92	93	103	108
6	12	4	25	10	6 ½	56	61	65	70	75	6 ½	97	84	896	95
5 ½	12	3	21	9	6	48	52	56	60	64	6	68	72	76	80
5	11	3	19	9	5 ½	40	43	47	50	53	5 ½	57	60	63	67
4 ½	9	2	16	4	5	33	36	38	51	44	5	47	50	52	55
4	9	2	14	4	4 ½	27	29	31	33	36	4 ½	38	40	42	45
3 ½	7	2	12	4	4	21	23	24	26	28	4	30	32	33	35
3	7	2	11	4	3 ½	16	17	19	20	21	3 ½	23	24	25	27
					3	12	13	14	15	16	3	17	18	19	20
					2 ½	8	9	9	10	11	2 ½	11	12	13	19

Column groups:
- **Allowance for White Shrouds**: Size, No men to warp, no of thread for warping, no of men to lay, no lay'd per day
- **A table from 12 thread a hook for 3 inch to 16 for 3 inch hauser lay'd**: Inch, 12, 13, 14, 15, 16
- **A table from 12 thread a hook for 3 inch to 20-3 inch hauser lay'd**: Inch, 17, 18, 19, 20

A Table from 21 thread a hook for 3 inch to 24 for 3 inch Hauser Lay'd					A Table from 25 thread a hook for 3 inch to 28 for 3 inch Hauser Lay'd					A Table from 29 thread a hook for 3 inch to 32 for 3 inch Hauser Lay'd				
Inch	21	22	23	24	Inch	25	26	27	28	Inch	29	30	31	32
9	189	198	207	216	9	225	234	243	252	9	261	270	279	288
8 ½	168	176	184	192	8 ½	200	208	216	224	8 ½	232	240	248	256
8	149	156	163	170	8	177	184	192	199	8	206	213	220	227
7 ½	131	137	143	150	7 ½	156	162	168	175	7 ½	181	187	193	200
7	114	119	124	130	7	136	141	147	152	7	157	163	168	174
6 ½	99	103	107	112	6 ½	117	121	126	131	6 ½	136	140	145	150
6	84	88	92	96	6	100	104	108	112	6	116	120	124	128
5 ½	70	73	77	80	5 ½	84	87	90	94	5 ½	97	100	104	107
5	58	61	63	66	5	69	72	75	77	5	80	83	86	88
4 ½	47	49	51	54	4 ½	56	58	60	63	4 ½	65	67	70	72
4	37	39	40	42	4	44	46	48	49	4	51	53	55	45
3 ½	28	29	31	32	3 ½	34	35	36	38	3 ½	39	40	42	43
3	21	22	23	24	3	25	26	27	28	3	29	30	31	32
2 ½	14	15	15	16	2 ½	17	18	18	19	2 ½	20	20	21	22

A Table from 33 thread a hook for 3 inch to 34 for 3 inch Hauser Lay'd

Inch	33	34
9	297	306
8 ½	264	272
8	234	241
7 ½	206	212
7	179	185
6 ½	154	159
6	132	136
5 ½	110	114
5	194	97
4 ½	74	76
4	58	60
3 ½	44	46
3	33	34
2 ½	22	23

A Table from 15 thread a hook for six inch to 19 for 6 in cable Lay'd

Inch	15	16	17	18	19
18	135	144	153	162	171
17 ½	127	136	144	153	161
17	120	128	136	144	152
16 ½	113	121	128	136	143
16	106	113	220	128	135
15 ½	100	106	113	120	126
16	93	100	106	112	118
14 ½	87	93	99	105	110
14	81	87	92	98	103
13 ½	75	81	86	91	96
13	70	75	79	84	89
12 ½	65	69	73	78	82
12	60	64	68	72	76
11 ½	55	58	62	66	69
11	50	53	57	60	63

A Table from 15 thread a hook for 6 inch to 19 for 6 inch Cable Lay'd

Inch	15	16	17
10 ½	45	49	52
10	51	44	47
9 ½	37	40	42
9	33	36	38
8 ½	30	32	34
8	26	28	30
7 ½	23	25	26
7	20	21	23
6 ½	17	18	19
6	15	16	17
5 ½	12	13	14
5	10	11	11
4 ½	8	9	9
4	6	7	7
3 ½	5	5	5
3	4	4	4

A Table from 20 threads a hook for 6 inch to 24 for 6 in cable lay'd

Inches	20	21	22	23	24
18	180	189	198	207	216
17 ½	170	179	187	198	206
17	160	168	176	184	192
16 ½	151	157	166	173	181
16	142	149	156	163	170
15 ½	133	140	146	153	160
15	125	131	137	143	179
14 ½	116	122	128	134	140
14	108	114	119	125	130
13 ½	101	106	111	116	121
13	93	98	103	107	112
12	86	91	95	99	104
11 ½	73	77	80	84	88
11	67	70	73	77	80

A Table for 20 thread a hook for 6 inch to 24 for 6 in cable Lay'd

Inches	20	21	22	23	24
10 ½	61	64	67	70	73
10	55	58	61	63	66
9 ½	50	52	55	57	60
9	45	47	49	51	54
8 ½	40	42	44	46	48
8	35	37	39	40	42
7 ½	31	32	32	35	37
7	27	28	29	31	32
6 ½	23	24	25	26	28
6	20	21	22	23	24
5 ½	16	17	18	19	20
5	13	14	15	15	15
4 ½	11	11	12	12	13
4	8	9	9	10	10
3 ½	6	7	7	7	8
3	5	5	5	6	6

A Table to Shew the weight of cable lay'd cordage from 1 fathom to 120 at every 5 fathom

The Weight of 18 in cable					The weight of 17½ inch cable					The weight of 17 inch cable				
Fath	Ct	Qt	Lb	Oz	Fath	Ct	Qt	Lb	Oz	Fath	Ct	Qt	Lb	Oz
1	0	2	19	9	1	0	2	15	7	1	0	2	11	9
5	3	1	14	0	5	3	0	21	5	5	3	0	1	3
10	6	3	0	0	10	6	1	14	10	10	6	0	2	6
15	10	0	14	0	15	9	3	7	14	15	9	0	3	8
20	13	2	0	0	20	12	2	1	3	20	12	0	4	11
25	16	3	14	0	25	15	3	22	8	25	15	0	5	14
30	20	1	0	0	30	19	0	15	12	30	18	0	7	0
35	23	2	14	0	35	22	1	9	1	35	21	0	8	3
40	27	0	0	0	40	25	2	2	6	40	24	0	9	6
45	30	1	14	0	45	28	2	23	10	45	27	0	10	8
50	33	3	0	0	50	31	3	16	15	50	30	0	11	11
55	37	0	14	0	55	35	0	10	4	55	33	0	12	14
60	40	2	0	0	60	38	1	3	8	60	36	0	14	3
65	43	3	14	0	65	41	1	24	3	65	39	0	15	3
70	47	1	0	0	70	44	2	18	2	70	42	0	16	6
75	50	2	14	0	75	47	3	11	6	75	45	0	17	8
80	54	0	0	0	80	51	0	4	11	80	48	0	18	11
85	57	1	14	0	85	54	0	26	0	85	51	0	19	14
90	60	3	0	0	90	57	1	19	4	90	54	0	21	0
95	64	0	14	0	95	60	2	12	9	95	57	0	22	3
100	67	2	0	0	100	63	3	5	14	100	60	0	23	6
105	70	3	14	0	105	66	3	27	2	105	63	0	24	8
110	71	1	0	0	110	70	0	20	7	110	66	0	25	11
120	81	0	0	0	120	76	2	7	0	115	69	0	26	14
										120	72	1	0	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 16½ inch cable					The weight of 16 in cable					The weight of 15½ in cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	2	7	6	1	0	2	3	11	1	0	2	0	1
5	2	3	9	10	5	2	2	18	11	5	2	2	0	5
10	5	2	19	4	10	5	1	9	6	10	5	0	0	11
15	8	2	0	14	15	8	0	0	0	15	7	2	0	14
20	11	1	10	8	20	10	2	18	11	20	10	0	1	3
25	14	0	22	2	25	13	1	9	6	25	12	2	1	8
30	17	0	1	12	30	16	0	0	0	30	15	0	1	2
35	19	3	11	6	35	18	2	18	11	35	17	2	2	1
40	22	2	21	0	40	21	1	9	6	40	20	0	2	6
45	25	2	2	10	45	24	0	0	0	45	22	2	2	10
50	28	1	12	4	50	26	2	18	11	50	25	0	2	15
55	31	0	21	14	55	29	1	9	6	55	27	2	3	4
60	34	0	3	8	60	32	0	0	0	60	30	0	3	8
65	36	3	13	2	65	34	2	18	11	65	32	2	3	12
70	39	2	22	12	70	37	1	9	6	70	35	0	4	1
75	42	2	4	6	75	40	0	0	0	75	37	2	4	6
80	45	1	14	0	80	42	2	18	11	80	40	2	4	15
85	48	0	23	10	85	45	1	9	6	85	42	2	4	15
90	51	0	5	9	90	48	0	0	0	90	45	0	5	4
95	43	3	14	14	95	50	2	18	11	95	47	2	5	9
100	46	2	24	8	100	53	1	9	6	100	50	0	5	14
105	59	2	6	2	105	56	0	0	0	105	52	2	6	2
110	62	1	15	12	110	58	2	18	11	110	55	0	6	7
115	65	0	25	6	115	61	1	9	6	115	57	2	6	12
120	68	0	7	0	120	64	0	0	0	120	60	0	7	0

The weight of 15 inch cable					The weight of 14½ inch cable					The weight of 14 inch cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	1	24	8	1	0	1	21	1	1	0	1	17	10
5	2	1	10	8	5	2	0	21	5	5	2	8	4	
10	4	2	21	0	10	4	1	14	10	10	4	0	9	5
15	7	0	3	8	15	6	2	7	14	15	6	0	14	0
20	9	1	14	0	20	8	3	1	3	20	8	0	18	10
25	11	2	24	8	25	10	3	22	8	25	10	0	23	5
30	14	0	7	0	30	13	0	15	12	30	12	1	3	0
35	16	1	17	8	35	15	1	9	1	35	14	1	4	10
40	18	3	0	0	40	17	2	2	6	40	16	1	9	5
45	21	0	10	8	45	19	2	23	10	45	18	1	14	0
50	23	1	21	0	50	21	3	16	15	50	20	1	18	1
55	25	3	3	8	55	24	0	10	4	55	22	1	23	5
60	28	0	14	0	60	26	1	3	8	60	24	2	0	0
65	30	1	24	8	65	28	1	24	13	65	26	2	4	10
70	32	3	7	0	70	30	2	18	2	70	28	2	9	5
75	35	0	17	8	75	32	3	11	6	75	30	2	14	0
80	37	2	0	0	80	35	0	4	11	80	32	2	18	10
85	40	0	10	8	85	37	0	26	0	85	34	2	23	5
90	42	1	21	0	90	39	1	19	4	90	36	3	0	0
95	44	2	3	8	95	41	2	10	12	95	38	3	4	10
100	46	3	14	0	100	43	3	5	15	100	40	3	9	5
105	49	0	24	8	105	45	3	27	2	105	42	3	14	0
110	50	2	7	0	110	48	0	20	7	110	44	3	18	10
115	53	3	17	8	115	50	1	15	12	115	46	3	23	5
120	56	1	0	0	120	52	2	7	0	120	48	0	0	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 13½ inch cable					The weight of 13 in cable					The weight of 12½ in cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	1	14	8	1	0	1	11	7	1	0	1	8	7
5	1	3	16	10	5	1	3	1	2	5	1	2	14	5
10	3	3	5	4	10	3	2	2	5	10	3	1	0	10
15	5	2	21	14	15	5	1	3	8	15	4	3	14	14
20	7	2	10	8	20	7	0	4	10	20	6	2	1	3
25	9	1	27	2	25	8	3	5	13	25	8	0	15	8
30	11	1	15	12	30	10	2	7	0	30	9	3	1	2
35	13	1	4	6	35	12	1	8	2	35	11	1	16	1
40	15	1	21	0	40	14	0	9	5	40	13	0	2	6
45	17	0	9	10	45	15	3	10	8	45	14	2	16	10
50	18	3	26	4	50	17	2	11	10	50	16	1	2	14
55	20	3	14	14	55	19	1	12	8	55	17	3	17	3
60	22	3	3	8	60	21	0	14	0	60	19	2	3	8
65	24	2	20	2	65	22	3	15	2	65	21	0	17	12
70	26	2	8	12	70	24	2	16	25	70	22	3	4	1
75	28	1	25	6	75	26	1	17	8	75	24	1	18	6
80	30	1	14	0	80	28	0	18	10	80	26	0	4	10
85	32	1	2	10	85	29	3	19	13	85	27	2	18	15
90	34	0	19	4	90	31	2	21	0	90	29	1	5	4
95	36	0	7	14	95	33	1	22	2	95	30	3	19	9
100	37	3	24	8	100	35	0	23	5	100	32	2	5	4
105	39	3	13	2	105	36	3	24	8	105	34	0	20	2
110	41	3	1	12	110	38	2	25	10	110	35	3	6	6
115	43	2	18	6	115	40	1	26	13	115	37	1	20	11
120	45	2	7	0	120	42	1	0	0	120	39	0	0	7

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 12 inch cable					The weight of 11½ inch cable					The weight of 11 inch cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	1	5	9	1	0	1	2	13	1	0	1	0	4
5	1	2	0	0	5	1	1	14	5	5	1	1	1	3
10	3	0	0	0	10	2	3	0	10	10	2	2	2	6
15	4	2	0	0	15	4	0	14	14	15	3	3	3	8
20	6	0	0	0	20	5	2	1	3	20	5	0	4	11
25	7	2	0	0	25	6	3	15	8	25	6	1	5	14
30	9	0	0	0	30	8	1	1	12	30	7	2	7	0
35	10	2	0	0	35	9	2	16	1	35	8	3	8	3
40	12	0	0	0	40	11	0	2	6	40	10	0	9	6
45	13	2	0	0	45	12	1	16	11	45	11	1	10	8
50	15	0	0	0	50	13	3	2	15	50	12	2	11	11
55	16	2	0	0	55	15	0	17	3	55	13	3	12	14
60	18	0	0	0	60	16	2	3	8	60	15	0	14	0
65	19	2	0	0	65	17	3	17	13	65	16	1	15	3
70	21	0	0	0	70	19	1	4	2	70	17	2	16	6
75	22	2	0	0	75	20	2	18	6	75	18	3	17	8
80	24	0	0	0	80	22	0	4	11	80	20	0	18	11
85	25	2	0	0	85	23	1	19	0	85	21	1	19	14
90	27	0	0	0	90	24	3	5	4	90	22	2	21	0
95	28	2	0	0	95	26	0	19	9	95	23	3	22	3
100	30	0	0	0	100	27	2	5	14	100	25	0	23	6
105	31	2	0	0	105	28	3	20	2	105	26	1	24	8
110	33	0	0	0	110	30	1	6	7	110	27	2	25	11
115	34	2	0	0	115	31	2	20	12	115	28	3	26	14
120	36	0	0	0	120	33	0	7	0	120	30	1	0	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 10½ inch cable					The weight of 10 in cable					The weight of 9½ in cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	25	11	1	0	0	23	6	1	0	0	21	0
5	1	0	16	10	5	1	0	4	11	5	0	3	21	5
10	2	1	5	4	10	2	0	9	6	10	1	3	14	10
15	3	1	21	14	15	3	0	14	0	15	2	3	7	14
20	4	1	10	8	20	4	0	18	11	20	3	3	1	3
25	5	2	27	2	25	5	0	23	6	25	4	2	22	8
30	6	3	15	12	30	6	1	0	0	30	5	2	15	12
35	8	0	4	6	35	7	1	4	11	35	6	2	9	1
40	9	0	21	0	40	8	1	9	6	40	7	2	2	6
45	10	1	9	10	45	9	1	14	0	45	8	1	23	10
50	11	1	26	4	50	10	1	18	11	50	9	1	16	15
55	12	2	14	12	55	11	1	23	6	55	10	1	10	4
60	13	3	3	8	60	12	2	0	0	60	11	1	3	8
65	14	3	20	2	65	13	2	4	11	65	12	0	21	3
70	16	0	8	12	70	14	2	9	6	70	13	0	18	2
75	17	0	25	6	75	15	2	14	0	75	14	0	11	6
80	18	1	19	0	80	16	2	18	11	80	15	0	4	11
85	19	2	2	10	85	17	2	23	6	85	15	3	26	0
90	20	2	19	4	90	18	3	0	0	90	16	3	19	4
95	21	3	7	14	95	19	3	4	11	95	17	3	12	9
100	22	3	24	8	100	20	3	9	6	100	18	3	5	14
105	24	0	13	2	105	21	3	14	0	105	19	2	27	2
110	25	1	1	12	110	22	3	3	11	110	20	2	20	7
115	26	1	18	6	115	23	3	23	6	115	21	2	13	12
120	27	2	7	0	120	25	0	0	0	120	22	2	27	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 9 inch cable					The weight of 8½ inch cable					The weight of 8 inch cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	18	4	1	0	0	16	13	1	0	0	14	14
5	0	3	16	8	5	0	3	0	5	5	0	2	18	11
10	1	2	21	0	10	1	2	0	10	10	1	1	9	6
15	2	2	3	8	15	2	1	0	14	15	2	0	0	0
20	3	1	14	0	20	3	0	1	3	20	2	2	18	11
25	4	0	24	8	25	3	3	1	8	25	3	1	9	6
30	5	0	7	0	30	4	2	1	12	30	4	0	0	0
35	5	3	17	8	35	5	1	2	1	35	4	2	18	11
40	6	3	0	0	40	6	0	2	6	40	5	1	9	6
45	7	2	10	8	45	6	3	2	10	45	6	0	0	0
50	8	1	21	0	50	7	2	2	15	50	6	2	18	11
55	9	1	7	8	55	8	1	3	4	55	7	1	9	6
60	10	0	14	0	60	9	0	3	8	60	8	0	0	0
65	10	3	21	8	65	9	3	3	13	65	8	2	18	11
70	11	3	7	0	70	10	2	4	2	70	9	1	9	6
75	12	2	17	8	75	11	1	4	6	75	10	0	0	0
80	13	2	0	0	80	12	0	4	11	80	10	2	18	11
85	14	1	10	8	85	12	3	5	0	85	11	1	9	6
90	15	0	21	0	90	13	2	5	4	90	12	0	0	0
95	16	0	3	8	95	14	1	5	0	95	12	2	18	11
100	16	3	14	0	100	15	0	5	14	100	13	1	9	6
105	17	2	24	8	105	15	3	6	2	105	14	0	0	0
110	18	2	7	0	110	16	2	6	7	110	14	2	18	11
115	19	1	17	8	115	17	1	6	12	115	15	1	9	6
120	20	1	0	0	120	18	0	7	0	120	16	0	0	0

| A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms | | | | | | | | | | | | | | |
| The weight of 7½ inch cable | | | | | The weight of 7 in cable | | | | | The weight of 6½ in cable | | | | |
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	13	2	1	0	0	11	7	1	0	0	9	14
5	0	2	9	10	5	0	2	1	3	5	0	1	21	5
10	1	0	19	4	10	1	0	2	6	10	0	3	14	10
15	1	3	0	14	15	1	2	3	8	15	1	1	7	14
20	2	1	10	8	20	2	0	4	11	20	1	3	1	3
25	2	3	20	2	25	2	2	5	14	25	2	0	22	8
30	3	2	1	12	30	3	0	7	0	30	2	2	15	12
35	4	0	11	6	35	3	2	8	3	35	3	0	9	1
40	4	2	21	0	40	4	0	9	6	40	3	2	2	6
45	5	1	2	10	45	4	2	10	8	45	3	3	2	10
50	5	3	12	4	50	5	0	11	11	50	4	1	16	5
55	6	1	21	14	55	5	2	12	14	55	4	3	10	4
60	7	0	3	8	60	6	0	14	0	60	5	1	8	8
65	7	2	13	2	65	6	2	15	3	65	5	2	24	18
70	8	0	22	12	70	7	0	16	16	70	6	8	18	2
75	8	3	4	6	75	7	2	17	8	75	6	2	11	7
80	9	1	14	0	80	8	0	18	11	80	7	0	4	11
85	9	3	23	10	85	8	2	11	14	85	7	1	25	15
90	10	2	5	4	90	9	0	21	0	90	7	3	19	4
95	11	0	14	14	95	9	2	22	3	95	8	1	12	9
100	11	2	24	8	100	10	0	23	16	100	8	3	5	14
105	12	1	6	2	105	10	2	24	8	105	9	0	27	2
110	12	3	15	12	110	11	0	0	11	110	9	2	20	7
115	13	1	25	6	115	11	2	26	14	115	10	0	13	12
120	14	0	7	0	120	12	1	0	0	120	10	2	7	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 6 inch cable					The weight of 5½ inch cable					The weight of 5 inch cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	8	6	1	0	0	7	1	1	0	0	5	13
5	0	1	14	0	5	0	1	7	5	5	0	1	1	3
10	0	3	0	0	10	0	2	14	10	10	0	2	2	6
15	1	0	14	0	15	0	3	21	14	15	0	3	3	8
20	1	2	0	0	20	1	1	1	3	20	1	0	4	11
25	1	3	14	0	25	1	2	8	8	25	1	1	5	14
30	2	1	0	0	30	1	3	15	12	30	1	2	7	0
35	2	2	14	0	35	2	0	23	0	35	1	3	8	3
40	3	0	0	0	40	2	2	2	5	40	2	0	9	6
45	3	1	14	0	45	2	3	9	10	45	2	1	10	8
50	3	3	0	0	50	3	0	16	5	50	2	2	11	11
55	4	0	14	0	55	3	1	23	8	55	2	3	12	14
60	4	2	0	0	60	3	3	2	8	60	3	0	14	0
65	4	3	14	0	65	4	0	10	13	65	3	1	15	3
70	5	1	0	0	70	4	1	18	2	70	3	2	16	6
75	5	2	14	0	75	4	2	25	0	75	3	3	17	8
80	6	0	0	0	80	5	0	4	11	80	4	0	18	11
85	6	1	14	0	85	5	1	12	0	85	4	1	19	14
90	6	3	0	0	90	5	2	19	5	90	4	2	21	0
95	7	0	14	0	95	5	3	26	10	95	4	3	22	3
100	7	2	0	0	100	6	1	5	14	100	5	0	23	6
105	7	3	14	0	105	6	2	13	3	105	5	1	24	8
110	8	1	0	0	110	6	3	20	8	110	5	2	25	11
115	8	2	14	0	115	7	0	27	12	115	5	3	26	14
120	9	0	0	0	120	7	2	7	0	120	6	1	0	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 4½ inch cable					The weight of 4 in cable					The weight of 3½ in cable				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	4	11	1	0	0	3	11	1	0	0	2	15
5	0	0	23	10	5	0	0	18	11	5	0	0	14	5
10	0	1	19	4	10	0	1	9	6	10	0	1	0	10
15	0	2	14	14	15	0	2	0	0	15	0	1	14	14
20	0	3	10	8	20	0	2	18	11	20	0	2	1	3
25	1	0	6	2	25	0	3	9	6	25	0	2	15	8
30	1	1	1	12	30	1	0	0	0	30	0	3	1	12
35	1	1	25	6	35	1	0	18	11	35	0	3	16	1
40	1	2	21	0	40	1	1	9	6	40	1	0	2	6
45	1	3	16	10	45	1	2	0	0	45	1	0	16	10
50	2	0	12	4	50	1	2	18	11	50	1	1	2	14
55	2	1	7	14	55	1	3	9	6	55	1	1	17	3
60	2	2	3	8	60	2	0	0	0	60	1	2	8	8
65	2	2	27	2	65	2	0	18	11	65	1	2	17	12
70	2	3	22	12	70	2	1	9	6	70	1	3	4	1
75	3	0	18	6	75	2	2	0	0	75	1	3	18	6
80	3	1	14	0	80	2	2	18	11	80	2	0	5	10
85	3	2	9	10	85	2	3	9	6	85	2	0	18	15
90	3	3	5	4	90	3	0	0	0	90	2	1	5	4
95	4	0	0	14	95	3	0	18	11	95	2	1	19	9
100	4	0	24	8	100	3	1	9	6	100	2	2	6	4
105	4	1	20	2	105	3	2	0	0	105	2	2	20	3
110	4	2	15	12	110	3	2	18	11	110	2	3	6	8
115	4	3	11	6	115	3	3	9	6	115	2	3	20	12
120	5	0	7	0	120	4	0	0	0	120	3	0	7	0

A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms				
The weight of 4 inch cable				
Fath	Ct	Qr	Lb	Oz
1	0	0	2	2
5	0	0	10	5
10	0	0	21	0
15	0	1	3	8
20	0	1	14	0
25	0	1	24	8
30	0	2	7	0
35	0	2	17	8
40	0	3	0	0
45	0	3	10	8
50	0	3	21	0
55	1	0	3	8
60	1	0	14	0
65	1	0	24	8
70	1	1	7	0
75	1	1	17	8
80	1	2	0	0
85	1	2	10	8
90	1	2	21	0
95	1	3	3	8
100	1	3	14	0
105	1	3	24	8
110	2	0	7	0
115	2	0	17	8
120	2	1	0	0

A table to show the weight of Hauser Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 9 inch hauser layd rope					The weight of 8½ in Hauser Layd Rope					The weight of 8 inch hauser layd rope				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	20	4	1	0	0	17	15	1	0	0	15	14
5	0	3	17	4	5	0	3	5	14	5	0	0	23	10
10	1	3	6	8	10	1	2	11	13	10	1	1	19	5
15	2	2	23	12	15	2	1	17	12	15	2	2	15	0
20	3	2	13	0	20	3	0	23	11	20	2	2	10	10
25	4	2	2	41	25	4	0	1	10	25	3	3	6	5
30	5	1	19	8	30	4	3	7	8	30	4	4	2	0
35	6	1	8	12	35	5	2	13	7	35	4	4	25	10
40	7	0	26	0	40	6	1	19	6	40	5	5	21	5
45	8	0	15	4	45	7	0	25	4	45	6	6	17	0
50	9	0	4	8	50	8	0	3	2	50	7	7	12	10
55	9	3	21	12	55	8	3	9	2	55	7	7	8	5
60	10	3	11	0	60	9	2	25	0	60	8	8	4	0
65	11	3	0	4	65	1	1	20	15	65	9	9	27	10
70	12	2	17	8	70	11	0	26	14	70	9	9	23	5
75	13	2	6	12	75	12	0	4	13	75	10	10	19	0
80	14	1	24	0	80	12	3	10	12	80	11	11	14	10
85	15	1	13	4	85	13	2	16	11	85	12	12	10	5
90	16	1	2	8	90	14	1	22	10	90	12	12	6	0
95	17	0	19	12	95	15	1	0	8	95	13	13	1	10
100	18	0	9	0	100	16	0	6	7	100	14	14	25	5
105	18	3	26	4	105	16	3	12	8	105	14	14	21	0
110	19	3	15	8	110	17	2	18	4	110	15	15	16	10
115	20	3	4	12	115	18	1	24	2	115	16	16	12	5
120	21	2	22	0	120	19	1	2	0	120	17	17	8	0

A table to show the weight of Hauser Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 7½ in Hauser Layd Rope					The weight of 7 inch hauser Layd rope					The weight of 6½ in Hauser Layd Rope				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	13	12	1	0	0	12	3	1	0	0	10	6
5	0	2	13	0	5	0	2	5	0	5	0	1	23	14
10	1	0	26	0	10	1	0	10	1	10	0	3	19	12
15	1	3	11	0	15	1	2	15	2	15	1	1	15	10
20	2	4	24	0	20	2	0	20	2	20	1	3	14	8
25	3	0	9	0	25	2	2	25	3	25	2	1	7	6
30	3	2	22	0	30	3	1	2	4	30	2	3	3	4
35	4	1	7	0	35	3	3	7	4	35	3	0	27	2
40	4	3	20	0	40	4	1	12	5	40	3	2	23	0
45	5	2	5	0	45	4	3	17	6	45	4	0	18	14
50	6	0	18	0	50	5	1	22	6	50	4	2	14	12
55	6	3	3	0	55	5	3	27	7	55	5	0	10	10
60	7	1	16	0	60	6	2	4	8	60	5	2	6	8
65	8	0	1	0	65	7	0	9	9	65	6	0	2	6
70	8	2	14	0	70	7	2	14	10	70	6	1	26	4
75	9	0	27	0	75	8	0	19	10	75	6	3	22	2
80	9	3	12	0	80	8	2	24	11	80	7	1	18	0
85	10	1	25	0	85	9	1	1	2	85	7	3	13	14
90	11	1	10	0	90	9	3	6	13	90	8	1	9	12
95	11	3	23	0	95	10	1	11	13	95	8	3	5	10
100	12	2	8	0	100	10	3	16	14	100	9	1	1	8
105	13	0	21	0	105	11	1	21	15	105	9	2	25	6
110	13	3	6	0	110	11	3	26	15	110	10	0	21	4
115	14	1	19	0	115	12	2	3	0	115	10	2	17	2
120	15	0	4	0	120	13	0	9	0	120	11	0	13	0

| A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms | | | | | | | | | | | | | | |
| The weight of 6 inch Rope | | | | | The weight of 5½ in Rope | | | | | The weight of 5 in Rope | | | | |
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	8	14	1	0	0	7	7	1	0	0	6	3
5	0	1	16	11	5	0	1	9	12	5	0	1	2	3
10	0	3	5	7	10	0	2	11	7	10	0	2	6	4
15	1	0	22	2	15	1	0	1	2	15	0	3	9	6
20	1	2	10	13	20	1	1	10	4	20	1	0	12	8
25	1	3	27	8	25	1	2	20	9	25	1	1	15	10
30	2	1	16	4	30	2	0	2	4	30	1	2	18	12
35	2	3	4	15	35	2	1	12	0	35	1	3	21	4
40	3	0	21	10	40	2	2	21	11	40	2	0	25	0
45	3	2	10	6	45	3	0	3	6	45	2	2	0	2
50	3	3	27	2	50	3	1	13	2	50	2	3	3	4
55	4	1	15	13	55	3	2	22	13	55	3	0	6	6
60	4	3	4	8	60	4	0	4	8	60	3	1	9	8
65	5	0	21	3	65	4	1	14	4	65	3	2	12	10
70	5	2	9	14	70	4	2	23	15	70	3	3	15	12
75	5	3	26	10	75	5	0	5	10	75	4	0	18	14
80	6	1	15	5	80	5	1	15	6	80	4	1	22	0
85	6	3	4	0	85	5	2	25	1	85	4	2	25	2
90	7	0	20	12	90	6	0	6	12	90	5	0	0	4
95	7	2	9	7	95	6	1	16	8	95	5	1	3	6
100	7	3	26	2	100	6	2	26	3	100	5	2	6	8
105	8	1	14	14	105	7	0	7	14	105	5	3	9	10
110	8	3	3	9	110	7	1	17	10	110	6	0	12	12
115	9	0	20	4	115	7	2	27	5	115	6	1	15	14
120	9	2	9	0	120	8	0	9	0	120	6	2	19	0

	A table to show the weight of Cable Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms													
The weight of 4½ inch Rope					The weight of 4 inch Rope					The weight of 3½ inch Rope				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	5	1	1	0	0	4	0	1	0	0	3	1
5	0	0	25	5	5	0	0	19	15	5	0	0	15	4
10	0	1	22	10	10	0	1	11	14	10	0	1	2	8
15	0	2	19	14	15	0	2	3	12	15	0	1	17	12
20	0	3	17	3	20	0	2	23	11	20	0	2	5	0
25	1	0	14	8	25	0	3	15	10	25	0	2	20	4
30	1	1	11	12	30	1	0	7	8	30	0	3	7	8
35	1	2	9	1	35	1	0	27	7	35	0	3	22	12
40	1	3	6	6	40	1	1	9	6	40	1	0	10	0
45	2	0	3	10	45	1	2	11	4	45	1	0	25	4
50	2	1	0	14	50	1	3	3	3	50	1	1	12	8
55	2	1	26	3	55	1	3	23	2	55	1	1	25	12
60	2	2	23	8	60	2	0	15	0	60	1	2	15	0
65	2	3	20	12	65	2	1	6	15	65	1	3	2	4
70	3	0	18	1	70	2	1	26	14	70	1	3	17	8
75	3	1	15	96	75	2	1	18	12	75	2	0	4	12
80	3	2	12	10	80	2	3	10	11	80	2	0	20	0
85	3	3	10	14	85	3	0	2	10	85	2	1	7	4
90	4	0	7	11	90	3	0	22	8	90	2	1	22	8
95	4	1	4	9	95	3	1	14	7	95	2	2	9	12
100	4	2	1	14	100	3	2	6	6	100	2	2	25	0
105	4	2	27	3	105	3	2	26	4	105	2	3	12	4
110	4	3	24	7	110	3	3	18	3	110	2	3	27	8
115	5	0	21	12	115	4	0	10	2	115	3	0	14	12
120	5	1	19	0	120	4	1	2	0	120	3	1	2	0

A table to show the weight of Hauser Lay'd Cordage from 1 to 120 fathoms at every 5 fathoms														
The weight of 3 inch hauser layd rope					The weight of 2½ in hauser layd rope					The weight of 2 ¼ in hauser layd rope				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	2	4	1	0	0	1	9	1	0	0	1	4
5	0	0	11	3	5	0	0	7	13	5	0	0	6	5
10	0	0	22	6	10	0	0	15	10	10	0	0	12	10
15	0	1	5	8	15	0	0	23	6	15	0	0	19	0
20	0	1	16	11	20	0	1	3	3	20	0	0	25	5
25	0	1	27	14	25	0	1	11	0	25	0	1	3	10
30	0	2	11	0	30	0	1	18	12	30	0	1	10	0
35	0	2	22	3	35	0	1	26	9	35	0	1	16	5
40	0	3	5	6	40	0	2	6	6	40	0	1	22	10
45	0	3	16	8	45	0	2	14	2	45	0	2	1	0
50	0	3	27	11	50	0	2	21	5	50	0	2	7	5
55	1	0	10	14	55	0	3	1	12	55	0	2	13	10
60	1	0	22	0	60	0	3	9	8	60	0	2	20	0
65	1	1	5	3	65	0	3	17	5	65	0	2	26	5
70	1	1	16	6	70	0	3	25	2	70	0	3	4	10
75	1	1	27	8	75	1	0	4	14	75	0	3	11	0
80	1	2	10	11	80	1	0	12	11	80	0	3	17	5
85	1	2	21	14	85	1	0	20	8	85	0	3	23	10
90	1	3	5	0	90	1	1	0	4	90	1	0	2	0
95	1	3	16	3	95	1	1	8	1	95	1	0	8	5
100	1	3	27	6	100	1	1	18	14	100	1	0	14	10
105	2	0	10	8	105	1	1	23	10	105	1	0	21	0
110	2	0	21	11	110	1	2	3	9	110	1	0	27	5
115	2	1	4	14	115	1	2	11	5	115	1	1	5	10
120	2	1	16	0	120	1	2	19	0	120	1	1	12	0

A table for 8 thread hook hauser lay'd					A table for 7 thread hook Hauser lay'd					A table for 6 thread hook hauser lay'd				
Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz	Fath	Ct	Qr	Lb	Oz
1	0	0	1	2	1	0	0	0	15	1	0	0	0	13
5	0	0	5	11	5	0	0	4	15	5	0	0	4	4
10	0	0	11	6	10	0	0	9	14	10	0	0	8	7
15	0	0	17	0	15	0	0	14	12	15	0	0	12	10
20	0	0	22	11	20	0	0	19	11	20	0	0	16	17
25	0	1	0	6	25	0	0	24	10	25	0	0	21	1
30	0	1	6	0	30	0	1	1	8	30	0	0	25	4
35	0	1	11	11	35	0	1	6	7	35	0	1	1	8
40	0	1	17	6	40	0	1	11	6	40	0	1	5	12
45	0	1	23	0	45	0	1	16	4	45	0	1	9	15
50	0	2	1	11	50	0	1	21	3	50	0	1	14	2
55	0	2	6	6	55	0	1	26	2	55	0	1	18	15
60	0	2	12	0	60	0	2	3	0	60	0	1	22	8
65	0	2	17	11	65	0	2	7	15	65	0	1	26	12
70	0	2	23	6	70	0	2	12	14	70	0	2	2	15
75	0	3	1	0	75	0	2	17	12	75	0	2	7	2
80	0	3	6	11	80	0	2	22	11	80	0	2	11	6
85	0	3	12	6	85	0	2	27	10	85	0	2	15	9
90	0	3	18	0	90	0	3	4	8	90	0	2	19	12
95	0	3	23	11	95	0	3	9	7	95	0	2	23	15
100	1	0	1	6	100	0	3	14	6	100	0	3	2	0
105	1	0	7	0	105	0	3	19	4	105	0	3	4	6
110	1	0	12	11	110	0	3	24	3	110	0	3	8	9
115	1	0	18	6	115	1	0	1	2	115	0	3	12	12
120	1	0	24	0	120	1	0	6	0	120	0	3	17	0

A Table for 5 Thread a Hook Hauser Lay'd					A Table for 4 Thread a Hook Hauser Lay'd					A Table for 3 Thread a Hook Hauser Lay'd				
Fath	Ct	Qt	Lb	Oz	Fath	Ct	Qt	Lb	Oz	Fath	Ct	Qt	Lb	Oz
1	0	0	0	11	1	0	0	0	9	1	0	0	0	6
5	0	0	3	8	5	0	0	2	13	5	0	0	2	2
10	0	0	7	0	10	0	0	5	10	10	0	0	4	4
15	0	0	10	8	15	0	0	8	6	15	0	0	6	6
20	0	0	14	0	20	0	0	11	3	20	0	0	8	8
25	0	0	17	8	25	0	0	14	0	25	0	0	10	10
30	0	0	21	0	30	0	0	16	12	30	0	0	12	12
35	0	0	24	8	35	0	0	19	9	35	0	0	14	14
40	0	1	0	0	40	0	0	22	6	40	0	0	17	0
45	0	1	3	8	45	0	0	25	2	45	0	0	19	2
50	0	1	7	0	50	0	0	27	15	50	0	0	21	4
55	0	1	10	8	55	0	1	2	12	55	0	0	23	6
60	0	1	14	0	60	0	1	5	8	60	0	0	25	8
65	0	1	17	8	65	0	1	8	5	65	0	0	27	10
70	0	1	21	0	70	0	1	11	2	70	0	1	1	12
75	0	1	24	8	75	0	1	13	14	75	0	1	3	14
80	0	2	0	0	80	0	1	16	11	80	0	1	6	0
85	0	2	3	8	85	0	1	9	8	85	0	1	8	2
90	0	2	7	0	90	0	1	22	4	90	0	1	10	4
95	0	2	10	8	95	0	1	25	1	95	0	1	12	6
100	0	2	14	0	100	0	1	27	13	100	0	1	14	8
105	0	2	17	8	105	0	2	2	10	105	0	1	16	10
110	0	2	21	0	110	0	2	5	6	110	0	1	18	12
115	0	2	24	8	115	0	2	8	1	115	0	1	20	14
120	0	3	0	0	120	0	2	11	0	120	0	1	23	0

A Table for 2 Thread a hook hauser lay'd					A Table of How many Fathoms & Feet of Yarn will make Fathoms of cable lay'd Cordage								
Fath	Ct	Qt	Lb	Oz	Fath	Feet	Fath	Fath	Feet	Fath	Fath	Feet	Fath
1	0	0	0	5	1	4	1	43	2	26	85	0	51
5	0	0	1	7	3	2	2	45	0	27	86	4	52
10	0	0	2	14	5	0	3	46	4	28	88	2	53
15	0	0	4	4	6	4	4	48	2	29	90	0	54
20	0	0	5	11	8	2	5	50	0	30	91	4	55
25	0	0	7	2	10	0	6	51	4	31	93	2	56
30	0	0	8	8	11	4	7	53	2	32	95	0	57
35	0	0	9	15	13	2	8	55	0	33	96	4	58
40	0	0	11	6	15	0	9	56	4	34	98	2	59
45	0	0	12	12	16	4	10	58	2	35	100	0	60
50	0	0	14	13	18	2	11	60	0	36	101	4	61
55	0	0	15	10	20	0	12	61	4	37	103	2	62
60	0	0	17	0	21	4	13	63	2	38	105	0	63
65	0	0	18	7	23	2	14	65	0	39	106	4	64
70	0	0	19	14	25	0	15	66	4	40	108	2	65
75	0	0	21	4	26	4	16	68	2	41	110	0	66
80	0	0	22	11	28	2	17	70	0	42	111	4	67
85	0	0	24	2	30	0	18	71	4	43	113	2	68
90	0	0	25	8	31	4	19	73	2	44	115	0	69
95	0	0	26	15	32	2	20	75	0	45	116	4	70
100	0	1	0	6	35	0	21	76	4	46	118	2	71
105	0	1	2	12	36	4	22	78	2	47	120	0	72
110	0	1	3	3	38	2	23	80	0	48	121	4	73
115	0	1	4	10	40	0	24	81	4	49	123	2	74
120	0	1	6	0	41	4	25	83	2	50	125	0	75

A Table of How Many Fathoms & Feet of Yarn will make fathom of cable Lay'd Rope						A Table of How Many Fathoms & Feet of Yarn will make Fathoms of Hauser Lay'd Rope								
Fath	Ct	Fath	Fath	Ct	Fath	Fath	Feet	Fath	Fath	Feet	Fath	Fath	Ct	Fath
126	4	76	173	2	104	1	3	1	39	0	26	76	3	51
128	2	77	175	0	105	3	0	2	40	3	27	78	0	52
130	0	78	176	4	106	4	3	3	42	0	28	79	3	53
131	4	79	178	2	107	6	0	4	43	3	29	81	0	54
133	2	83	180	0	108	7	3	5	45	0	30	82	3	55
140	0	84	181	4	109	9	0	6	46	3	31	84	0	56
141	4	85	183	2	110	10	3	7	48	0	32	85	3	57
143	2	86	185	0	111	12	0	8	49	3	33	87	0	58
145	0	87	186	4	112	13	3	9	51	0	34	88	3	59
146	4	88	188	2	113	15	0	10	52	3	35	90	0	60
148	2	89	190	0	114	16	3	11	54	0	36	91	3	61
150	0	90	191	4	115	18	0	12	55	3	37	93	0	62
151	4	91	193	2	116	19	3	13	57	0	38	94	3	63
143	2	92	195	0	117	21	0	14	58	3	39	96	0	64
155	0	93	196	4	118	22	3	15	60	0	40	97	3	65
156	4	94	198		120	24	0	16	61	3	41	99	0	66
158	2	95	200			25	3	17	63	0	42	100	3	67
160	0	96				27	0	18	64	3	43	102	0	68
161	4	97				28	3	19	66	0	44	103	3	69
163	2	98				30	0	20	67	3	45	105	0	70
165	0	99				31	3	21	69	0	46	106	3	71
166	4	100				33	0	22	70	3	47	108	0	72
168	2	101				34	3	23	72	0	48	109	3	73
170	0	102				36	0	24	73	3	49	111	0	74
171	4	103				37	3	25	75	0	50	112	3	75

A Table of how many Fathoms & Feet of yarn will make Fathoms of hauser lay'd rope						A Table of How Many Fathoms Feet of yarn will make Fathoms & Feet of Stays							
Fath	Feet	Fath	Fath	Feet	Fath	Fath	Feet	Fath	Feet	Fath	Feet	Fath	Feet
114	0	76	151	3	101	7	0	1	0	94	3	13	3
115	3	77	153	0	102	10	3	1	3	98	0	14	0
117	0	78	154	3	103	14	0	2	0	101	3	14	3
118	3	79	156	0	104	17	3	2	3	105	0	15	0
120	0	80	157	3	105	21	0	3	0	108	3	15	3
121	3	91	159	0	106	24	3	3	3	112	0	16	0
123	0	82	160	3	107	28	0	4	0	115	3	16	3
124	3	83	162	0	108	31	3	4	3	119	0	17	0
126	0	84	163	3	109	35	0	5	0	122	3	17	3
127	3	85	165	0	110	38	3	5	3	126	0	18	0
129	0	86	166	3	111	42	0	6	0	129	3	18	3
130	3	87	168	0	112	45	3	6	3				
132	0	88	169	3	113	19	0	7	0				
133	3	89	171	0	114	52	3	7	3				
135	0	90	172	3	115	56	0	8	0				
136	3	91	174	0	116	59	3	8	3				
138	0	92	175	3	117	63	0	9	0				
139	3	93	177	0	118	66	3	9	3				
141	0	94	178	3	119	70	0	10	0				
142	3	95	180	0	120	73	3	10	3				
144	0	96	182	3	121	77	0	11	0				
145	3	97	184	0	122	80	3	11	3				
147	0	98	185	3	123	84	0	12	0				
148	3	99	187	0	124	87	3	12	3				
150	0	100	188	3	125	91	0	13	0				

A Table of How many Fathoms & Feet of Yarn will make Fathoms & Feet of Tacks

Fath	Feet	Fath	Feet	Fath	Feet	Fath	Feet
1	4	1	0	16	4	10	0
2	3	1	3	17	3	10	3
3	2	2	0	18	2	11	0
4	1	2	3	19	1	11	3
5	0	3	0	20	0	12	0
5	5	3	3	20	5	12	3
6	4	4	0	21	4	13	0
7	3	4	3	22	3	13	3
8	2	5	0	23	2	14	0
9	1	5	3	24	1	14	3
10	0	6	0	25	0	15	0
10	5	6	3	25	5	15	3
11	4	7	0	26	4	16	0
12	3	7	3	27	3	16	3
13	2	8	0	28	2	17	0
14	1	8	3	29	1	17	3
15	0	9	0	30	0	18	0
15	5	9	3	30	5	18	3

A Table of How many Fathoms of Yarn will make a strand to bring down in 3 parts for buoy ropes or sheets

Fath	Fath		Fath	Fath
5	1		105	21
10	2		110	22
15	3		115	23
20	4		120	24
25	5		125	25
30	6		130	26
35	7		135	27
40	8		140	28
45	9		145	29
50	10		150	30
55	11		155	31
60	12		160	32
65	13		165	33
70	14		170	34
75	15		175	35
80	16		180	36
85	17		185	37
90	18		190	38
95	19		195	39
100	20		200	40

For Warping Tacks

Taper them $2/3$ of the length, as suppose your yarn be 24 fathom begin your taper at 8 fathom from the head of your tacks; and if you have 19 or 25 or any odd thread a hook at the head, take the head half for the shank & cut your taper of an equal length. Some do put but $1/3$ of the yarn in the shanks, for suppose the head to be 24 threads a hook at the head they put 8 in the shank & so proportion for all others.

For Warping topsail sheets

Begin your taper half way & half your yarn in the shank but if you be odd threads a hook in the head, take the least half for the shank.

Tables for sizing strands

A Table for Sizing Strands for cable in inch & qtr & the 1 8th part of a ¼ of an inch								A Table for Sizing Strands for stays in inches & 9 parts of an inch					
Cables	In	Qr	Parts	Cable	In	Qr	Parts	Stay	In	Parts	Stay	Ins	Parts
18	9	2	0	10	5	1	61	18	8	0	10 ½	4	6
17 ½	9	0	17	9 ½	5	0	55	17 ½	7	7	10	4	4
17	8	3	16	9	4	3	50	17	7	5	9 ½	4	2
16 ½	8	2	15	8 ½	4	1	45	16 ½	7	3	9	4	0
16	8	1	14	8	4	0	40	16	7	1	8 ½	3	7
15 ½	8	0	13	7 ½	3	3	35	15 ½	6	8	8	3	5
15	7	3	12	7	3	2	31	15	6	6	7 ½	3	3
14 ½	7	2	11	6 ½	3	1	27	14 ½	6	4	7	3	1
14	7	1	10	6	3	0	23	14	6	2	6 ½	2	8
13½	7	0	9	5 ½	2	3	20	13 ½	6	0	6	2	6
13	6	3	8	5	2	2	16	13	5	7	5 ½	2	4
12 ½	6	2	7	4 ½	2	1	13	12 ½	5	5	5	2	2
12	6	1	6	4	2	0	11	12	5	3	4 ½	2	0
11 ½	6	0	5	3 ½	1	3	8	11 ½	5	1	4	2	7
11	5	3	4	3	1	2	6	11	4	8			
10 ½	5	2											

This is the Rivell of 24			Hauser Lay'd cordage at the size of 16 thread a hook for 3 in				Hauser Lay'd Cordage at 20 for 3 in					
Size		Thread a hook	Size		Thread a hook	In the rope	Size		Thread a hook	Total Threads	Men to Lay	Per Day
0	3	3	0	3	2	6	0	3	2	6	6	12
1	0	4	1	0	3	9	1	0	3	9	6	12
1	1	5	1	2	5	15	1	2	6	18	7	10
1	2	6	2	0	8	24	2	0	9	27	9	10
1	3	8	2	2	12	36	2	2	14	42	6	4
2	0	10	3	0	16	48	3	0	20	60	9	4
2	1	13	3	2	21	63	3	2	26	78	10	4
2	2	16	4	0	28	48	4	0	35	105	14	4
2	3	20	4	2	36	108	4	2	44	132	16	4
3	0	24	5	0	44	132	5	0	54	162	18	3
3	1	28	5	2	53	159	5	2	65	195	20	3
3	2	33	6	0	64	192	6	0	77	231	23	3
3	3	37	6	2	75	225	6	2	91	273	26	3
4	0	43	7	0	87	261	7	0	105	315	30	3
4	1	48	7	2	100	300	7	2	122	366	34	3
4	2	54	8	0	113	339	8	0	138	414	40	3
4	3	60	8	2	128	384	8	2	156	468	45	3
5	0	66	9	0	144	432	9	0	175	525	50	2
5	1	74	9	2	160	480	9	2	195	585	54	2
			10	0	178	534	10	0	216	648	60	2

Size		Thread a hook	In the Strand	In the [head]	In the stay	This is 25 Thread a hook		Size		Thread a hook	In the fathom	In the [head]	In the Stay	Thread a Hook
							Size for Ordinary Yarn, the Size of 20 Thread for 3 inch							
19	*	144	432	144	1872	180		10	2	44	132	44	572	56
18	2	136	408	136	1768	171		10	0	40	120	40	520	51
18	0	129	387	129	1677	162		9	2	36	108	36	468	46
17	2	122	366	122	1586	153		9	0	33	99	33	429	41
17	0	115	345	115	1495	145		8	2	29	87	29	377	37
16	2	109	327	109	1417	136		8	0	26	78	26	338	33
16	0	103	309	103	1339	128		7	2	23	69	23	299	29
15	2	96	288	96	1248	120		7	0	20	60	20	260	25
15	0	90	270	90	1170	113	The last column of 25 thread a hook is fine yarn	6	2	17	57	17	221	22
14	2	84	252	84	1092	105		6	0	15	45	15	195	19
14	0	78	224	78	1014	98		5	2	13	39	13	169	16
13	2	73	219	73	949	91		5	0	11	33	11	143	13
13	0	68	204	68	884	85		4	2	9	27	9	117	11
12	2	63	189	63	819	78		4	0	7	21	7	91	9
12	0	58	174	58	784	72		3	2	5	15	5	65	7
11	2	53	159	53	689	67		3	0	4	12	4	52	5
11	0	48	144	48	624	56								

The last column is fine yarn

With the 1/8 inch		1	3	5	7	1	3	5	7	1	3	5	7	0
Size of Thread	5	5	5	5	5	6	6	6	6	7	7	7	7	8
Size of Cable	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½
With the 1/8 inch	7/8	0	2	3	3	7	1	7	5	7	0	2	4	0
Size of Thread	1	2	2	2	2	2	3	3	3	3	4	4	4	4
Size of Cable	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½

[One line of text along right hand margin is indecipherable}

	Fine Yarn				An account of what Man is Allow'd for Strands for stays; and strands & stay per Day									
Size	Threads a hook	Total Threads	Men per Rope	Ropes a Day	Size	Man per Strand	Strands per day	Man Per stay	Stays per Day	Size	Man per Strand	Strands per day	Man Per stay	Stays per Day
1 ½	7	21	7	10	19	27	4	70	6	11	15	4	36	6
2	10	30	9	10	18 ½	26	4	65	6	10 ½	14	4	34	6
2 ½	16	48	6	4	18	25	4	64	6	10	14	4	32	6
2 ¾	20	60	7	4	17 ½	24	4	63	6	9 ½	12	4	30	6
3	25	75	10	4	17	23	4	60	6	9	12	4	29	6
3 ½	34	102	12	4	16 ½	22	4	58	6	8 ½	11	4	27	6
4	44	132	14	4	16	21	4	56	6	8	11	4	26	8
4 ½	56	168	16	3	15 ½	20	4	54	6	7 ½	10	4	24	8
5	68	204	18	3	15	20	4	52	6	7	10	4	23	8
5 ½	83	249	20	3	14 ½	19	4	50	6	6 ½	9	4	21	8
6	98	294	23	3	14	19	4	48	6	6	9	4	20	8
6 ½	115	345	26	3	13 ½	18	4	46	6	5 ½	9	4	18	8
7	133	399	30	3	13	16	4	44	6	5	8	8	17	8
7 ½	153	459	34	3	12 ½	16	4	42	6	4 ½	7	8	16	8
8	174	522	40	3	12	16	4	40	6	4	7	8	14	8
8 ½	197	591	43	3	11 ½	15	4	38	6					
9	220	660	50	2										
9 ½	246	738	54	2										
10	272	810	60	2										

							Cable Lay'd Cordage							
Size	Thread a hook	In a Strand	In the Cable	Man to Strand	Strand a Day	Men to the Cable	Cables a day	Size	Thread a hook	In a Strand	In the Cable	Man to Strand	Strand a Day	Men to the Cable	Cables a day
3	6	18	54	7	12	9	5	12 ½	90	270	810	19	4	55	4
3 ½	8	24	72	8	12	10	5	13	98	294	882	21	4	59	4
4	10	30	90	9	12	12	5	13 ½	106	318	954	22	4	64	4
4 ½	12	36	108	10	12	13	5	14	114	342	1026	23	4	70	4
5	15	45	137	7	4	14	4	14 ½	122	366	1098	24	4	75	4
5 ½	18	54	162	7	4	15	4	15	130	390	1170	25	4	80	4
6	21	63	189	8	4	18	4	15 ½	139	417	1251	26	4	84	4
6 ½	24	72	216	8	4	20	4	16	148	444	1332	28	4	90	4
7	28	84	258	10	4	22	4	16 ½	157	471	1413	29	4	95	4
7 ½	32	96	288	10	4	24	4	17	167	501	1503	31	4	101	3
8	37	111	333	11	4	26	4	17 ½	177	530	1593	32	4	106	3
8 ½	42	126	378	11	4	27	4	18	187	561	1683	34	3	113	3
9	47	141	423	12	4	29	4	18 ½	198	594	1782	35	3	119	3
9 ½	52	156	463	13	4	31	4	19	209	627	1881	36	3	126	3
10	58	174	522	14	4	33	4	19 ½	220	660	1980	38	3	133	3
10 ½	64	192	576	15	4	37	4	20	231	693	2709	40	3	140	3
11	70	210	634	16	4	42	4	20 ½	243	729	2187	43	3	149	3
11 ½	76	225	664	17	4	45	4	21	255	765	2295	46	3	156	2
12	83	249	717	18	4	50	4	21 ½	267	801	2403	49	3	165	2
								22	280	849	2520	52	3	176	-

Cable Strands Hauser lay'd being the size of 17:18:19:20

Size	Thread a hook at 17 in	Thread a hook at 18 in	Thread a hook at 19 in	Thread a hook at 20 in for 6 at 18
18	153	162	171	180
17 ½	144	153	161	170
17	136	144	153	160
16 ½	128	136	143	151
16	121	128	135	144
15 ½	113	120	128	135
15	103	112	118	125
14 ½	99	105	110	116
14	92	90	105	108
13 ½	85	91	96	102
13	79	84	90	96
12 ½	73	78	83	88
12	68	72	76	80
11 ½	62	66	70	73
11	57	60	63	67
10 ½	52	55	58	61

16 Thread for 6 in Rope 20 thread a hook for 6 in cable lay'd

Size	17	18	19	20
10	47	50	52	55
9 ½	42	45	47	50
9	38	40	42	45
8 ½	34	36	38	40
8	30	32	34	36
7 ½	26	25	29	31
7	23	24	25	27
6 ½	20	21	22	23
6	17	18	19	20
5 ½	14	15	16	17
5	11	12	13	14
4 ½	9	10	11	12
4	8	8	9	10
3 ½	5	6	7	8
3	4	2	5	6
				-

A Table Shewing the size of strands for a cable

Size of Cables	Size of Strand In	Size of Strand 1/8	Size of Cable	Size of Strand In	Size of Strand 1/8
4	2	1	11	5	6
4 ½	2	3	11 ½	6	0
5	2	5	12	6	3
5 ½	2	7	12 ½	6	5
6	3	1	13	6	7
6 ½	3	3	13 ½	7	1
7	3	5	14	7	3
7 ½	3	7	14 ½	7	5
8	4	2	15	7	7
8 ½	4	4	15 ½	8	1
9	4	6	16	8	4
9 ½	5	0	16 ½	8	6
10	5	2	17	9	*
10 ½	5	4	17 ½	9	4

An account of what men is allowed for tack strands & how many per day & n° of yarns

Cables a day	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8
Men for the cable	22	21	20	18	18	17	16	15	15	13	12	11	10	9	9
Strands a day	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Men for the strand	10	9	9	8	8	7	7	7	7	6	6	6	6	6	6
Thread in yᵉ cable	174	156	141	126	111	99	87	75	63	54	45	36	30	24	18
Thread in a shank	20	18	16	14	13	11	9	8	7	6	5	4	4	3	2
Thread a hook	58	52	47	42	37	33	29	25	21	18	15	12	10	8	6
Size	10	9 ½	9	8 ½	8	7 ½	7	6 ½	6	5 ½	5	4 ½	4	3 ½	3

A table to shew the lengths of hauser lay'd cordage by the length of the yarn

Length of yarn		Length of rope	Length of yarn		Length of rope
7	2	5	135	0	90
15	0	10	142	2	95
20	2	15	150	0	100
30	0	20	157	2	105
37	2	25	165	0	110
45	0	30	172	2	115
52	2	35	180	0	120
60	0	40	187	2	125
67	2	45	195	0	130
75	0	50	202	2	135
82	2	55	210	0	140
90	0	60	217	2	145
97	2	65	225	0	150
105	0	70	232	2	155
112	2	75	240	0	160
120	0	80	*		
127	2	85	*		

The length of cable by the length of the yarn, the strands to be brought about in 3 parts

Length of yarn	Length of Cable	Length of yarn	Length of Cable	Length of yarn	Length of Cable
5	1	90	18	175	35
10	2	95	19	180	36
15	3	100	20	185	37
20	4	105	21	190	38
25	5	110	22	195	39
30	6	115	23	200	40
35	7	120	24	205	41
40	8	125	25	210	42
45	9	130	26	215	43
50	10	135	27	220	44
55	11	140	28	225	45
60	12	145	29	230	46
65	13	150	30	235	47
70	14	155	31	240	48
75	15	160	32	245	49
80	16	165	33	250	50
85	17	170	34		

A table to Shew the length of cable lay'd cordage by the length of yarn

Length of yarn	Length of Cable	Length of yarn	Length of Cable
5	3	70	42
10	6	75	45
15	9	80	48
20	12	85	51
25	15	90	54
30	18	95	57
35	21	100	60
40	24	105	63
45	27	110	66
50	30	115	69
55	33	120	72
60	36	125	75
65	39	130	78

Continued Below

Length of cable	81	84	87	90	93	96	100	102	105	108	111	114	117	120
Length of Yarn	135	140	145	150	155	160	165	170	175	180	185	190	195	200

Length of the Stay by the length of yarn the strands to be brought about in 4 parts				The weight of Cable, the yarn to be 200 fathom & the cable 120 fathom with the weight of one fathom of each							The weight of Cable lay'd cordage the cable to be 100 fathom							
Length of yarn	Length of Stay	Length of yarn	Length of Stay	Size of Cable	Ct	Qr	Lb	Qr	Lb	Oz	Size	Ct	Qr	Lb	Size	Ct	Qr	Lb
7	1	112	16	4	4	0	0	-	3	11	22	102	1	11	12 ½	33	3	11
14	2	119	17	4 ½	5	0	14	-	4	10	21 ½	97	2	14	12	30	1	10
21	3	126	18	5	6	10	0	-	5	9	21	92	0	26	11½	27	3	4
28	4	132	19	5 ½	7	2	14	-	7	0	20 ½	88	3	11	11	25	2	10
35	5	140	20	6	9	0	0	-	8	6	20	84	1	23	10 ½	23	1	7
42	6	147	21	6 ½	10	2	14	-	9	12	19 ½	80	1	20	10	21	0	23
49	7	154	22	7	12	1	0	-	11	3	19	76	1	19	9½	19	0	1
56	8	161	23	7 ½	14	0	14	-	13	1	18 ½	72	1	16	9	17	0	20
63	9	168	24	8	16	0	0	-	14	14	18	68	1	14	8½	15	1	12
70	10	175	25	8 ½	18	0	14	-	16	12	17 ½	64	1	11	8	13	2	12
77	11	182	26	9	20	1	0	-	18	14	17	61	3	7	7½	11	2	22
84	12	189	27	9 ½	22	0	14	-	23	5	16 ½	57	1	16	7	10	0	27
91	13	196	28	10	25	0	0	-	-	*	16	54	0	13	6½	8	3	1
98	14	203	29	11	30	1	0	-	5	9	15 ½	50	3	17	6	7	2	19
105	15	210	30	12	36	0	0	-	11	3	15	47	2	3	5½	6	2	9
				13	42	0	0	-	17	11	14 ½	44	2	12	5	5	1	26
				14	49	0	0	*	*		14	41	2	20	4 ½	4	1	15
											13 ½	38	3	1	4	3	2	1
											13	35	3	9	3 ½	2	3	17
															3	2	0	21

	Hauser Lay'd Cordage the yarn to be 170 Fathoms			
Size	Thread a hook	Ct	Q^r	Lb
10	216	26	1	8
9 ½	195	23	3	1
9	175	21	1	85
8 ½	156	19	0	1
8	138	16	3	8
7 ½	122	14	3	13
7	105	12	3	5
6 ½	91	11	0	10
6	77	9	1	14
5 ½	65	7	3	18
5	54	6	2	9
4 ½	44	5	1	2
4	35	4	1	1
3 ½	26	3	0	19
3	20	2	1	21
2 ½	14	1	2	23
2	9	1	0	10
1 ½	6	0	2	25
1	3	0	1	22
¾	2	0	0	27

Dimensons of the Frigate South Carolina

Length of keel for tonnage 143 ft 8 in. Length of gundeck from one foot before the rabbit of the stern to the rabbit of the port 172 ft 6t in. Extreem breadth as follows Viz:

At		Ft	In		Ft	In	
1	Dis	19	5	from rabbit of port is	35	9 ½	broad
2	Do	20		forward	40	0	
3	Do	20		Do	41	10 ¾	
4	Do	21		Do	42	6	
5	Do	20		Do	42	8½	extream breadth
6	Do	20		Do	41	9	
7	Do	20		Do	37	9	
8	Do	11	10	Do	33	1½	
9	Do	10	2	Do	26	6½	
10	Do	7	7	Do to the after part of the apron			
11	Do	6		Do to the rabbit of the stern			
12	Do		1	Do to the foreside of the stern			

Feet 172 – 6 length of gundeck.

Stem tumbles home 6 in above wales.

Extream Breadth at the top of the plankshear

	Ft	In		Ft	In
1 distance	6	1	abaft the rabbit of the stern	26	wide
2 distance	20		abaft the first dis	33	6
3 distance	20			37	5
4 distance	20			38	4
5 distance	20	0		38	4
6 distance	26	0		37	1
7 distance	20	0		35	2
8 distance	16			31	6
9 distance	20			24	1
10 distance	6	8		23	

The last distance is to the after part of the stern & 4 ft 2 in from that is the after part of the Balcony.

All the Breadths are taken from Outside to Outside of the timber.

The flat of the stern rakes 9 in in 4 feet & the after part of the Balcony rakes 12 in in 4 feet; Poopdeck takes in the Mizzen Mast. After port 9 ft 6 in from the Rabbit of the Post, foremost post 22 feet from the side of the stern round the outside of Beam 7 Ft 10 In distance between the ports & 14 ports, height of port sills 2 feet 5 In, ports fore and aft 3 ft 4 In, up & down 3 ft 1 In

Center of the Fore Mast 18 ft 6 In abaft the Rabbit of the stern on the gundeck, Center of the Main Mast abaft the center of the foremast 70 feet & the center of the Mizzen Mast 53 ft 3 in abaft the center of the Main Mast.

Height of the Crossbeam above the lower edge of the rabbit of the Keel 24 ft 7 In, height of the lower edge of the lower wale, at the fore end at the lower edge of the Rabbitt 20 ft 11 In. Length of the Transom (or the

length from the outside of the upper edge of lower wale where the Cross seam lays) 28 ft 2 In; Rudder at the lower end 4 ft 6 In Wide, & 7 pair of Rudder Irons, Sternpost at the lower end clear of the rabbit 23 In & at the cross 10½ In, Keel thwarthsips 16 In. Projection of the Counter abaft the rabbit of the port on a Square 3 ft 10 In & the lower edge of the Arch board at the upper edge the black streak, 3 Wales & the black streak are 15 In each in lower moulding on the Arch board 6 inches & the upper moulding 7 ½ in w^d & 16 In between the mouldings, lower rim of the galery 11 feet long & 3½ feet from the wide cathead outside of the nuckle 6 feet 18 In fore & aft by 15 In.

Gangways 9 feet 9 in wide clear of the inside waste plank. 8 shrouds to the foremast & the channel 2 ft 3 in wide, 27½ feet long, 9 shrouds for the main mast & the channel 2 ft 6 in wide 35 ½ feet long; 6 shrouds to the mizzen mast & the channel 18½ wide by 15 ft long. Channell wales 13 ¼ in wide by 6 in thick, clamps 6 in

From the top of the deadwood to the top of the floor timber in the throat 21 in & sided to 12 &½ inches timber at the upper edge of the middle wale 12 in & at the upper end 10 in. Keelson 12 in deep 20 in broad. Depth of the hold from the top of the floor timber to the top of the beam is 15 feet 9 inches; stern post at the head fore & aft 22 in by 16 in; transom 18 in fore & aft before the port & jogled for the port [*__indecipherable__*] which makes it 28 in by 19 in counter timber at the keel 12 by 9 hold of beams 9 by 12 not kneed, 7 feet apart with 5 ledges of 4 in square between them, cable bitts 16 by 18 & the cross piece 29 by 16 height of the fore castle from plank to plank 6 ft 10 in & the beams 12 in square. Main hatch 7 ft 8 in fore & aft by 7 ¼ feet.

Diameter of double capstand 3 ft 10 in the spindle 23 in in the partners, water 7 in thick & the running plank in the bottom is 4 ¼ inches.

Lower deck beams 13 in sided 12 moulded, quarter deck beam 12 in square gundeck beams 15 in moulded & 14 in sided, Hollop deck 6 feet below the lower deck from plank to plank, height between decks 6 feet 5 in. Height under the Qtr deck 6 ft 10 in hanging knees for the gundeck sided to 11 in & lodging knees 9 ½ .

The stem rakes as near as could be measured 15 feet.
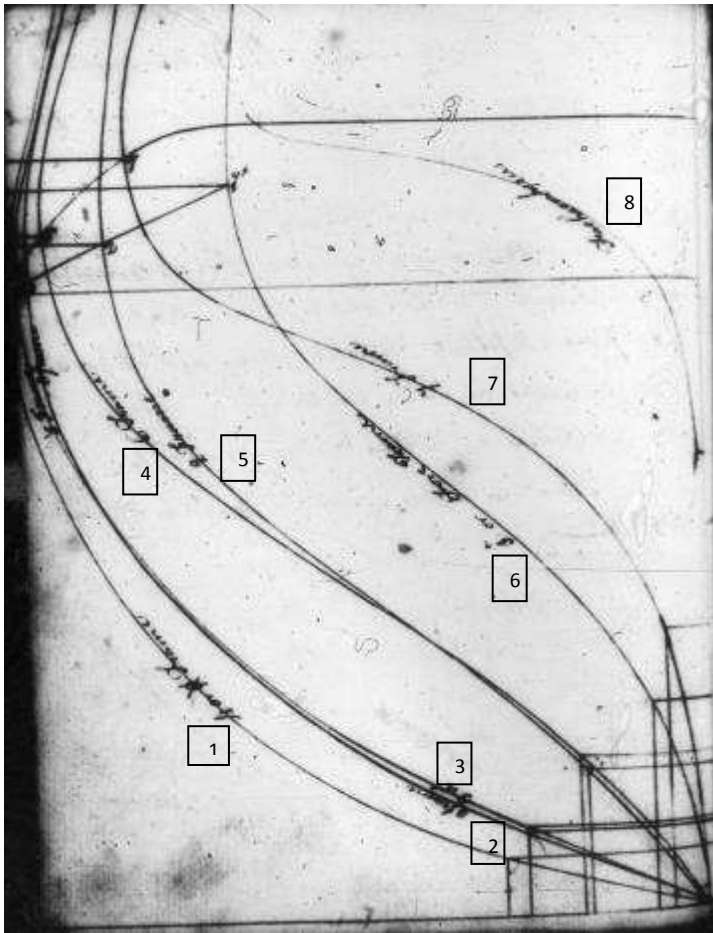
[Labels added by transcriptionist for clarity]

1. 4th or ⊗Frame
2. 5th frame
3. 3rd frame
4. 6th frame
5. 2nd frame
6. 3rd or fore frame
7. 7th frame
8. Fashion Pieces

	Ft	In	
Fore Frame	13	11	from the fore side of the stem
2nd	16		
3rd	25		
4th ⊗	26		
6th	23	5	
7th	26	6	

The South Carolina has 3 feet too much shear for a ship of war & is too sharp at both ends & too full in the middle which makes her strain & hog accordingly.
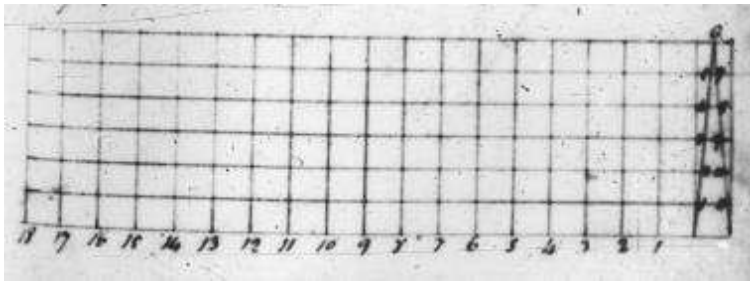
Plan of the Bellesarius built in New England and reckoned one of the fastest sailing ships that swam the seas. 93 feet & keel for tonnage 30 feet 6 in beam & 15 ft 6 inches hold to her gundeck.

Height of the cross beam 15 ft 10 inches. Height of the lower edge of the lower wale at the stem 15 ft 4 inch stem rakes 15 ft 4 inches Stern post rakes 2 ½ feet. Length of the crossbeam 20 ft 4 inches.
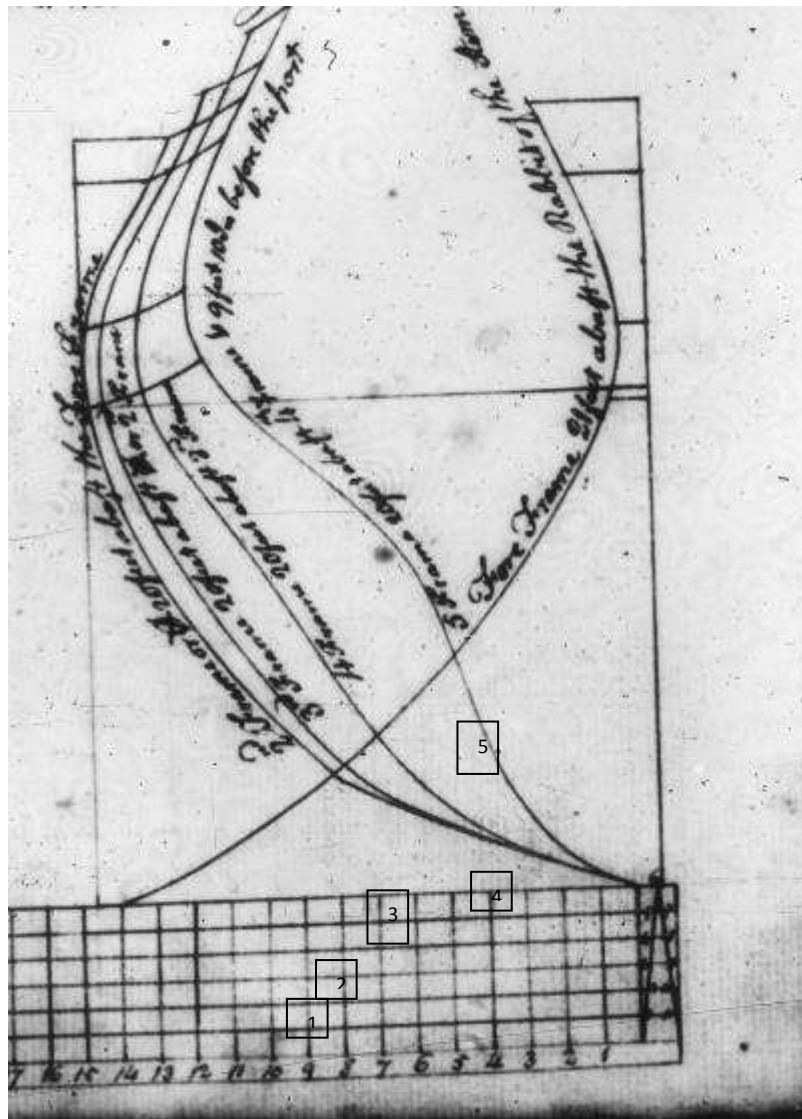
[Labels added by transcriptionist for clarity]

1. 2nd frame or ⊗ 20 feet abaft the fore frame
2. 3rd frame 20 feet abaft ⊗ or 2nd frame
3. 4 frame 20 feet abaft 3rd frame
4. 5 frame 20 feet abaft 4th frame & 9 feet 10 in before the port
5. Fore frame 21 feet abaft the rabbit of the stem

Drawings of a new constructed wheel for stearing vessels

Fig. 6
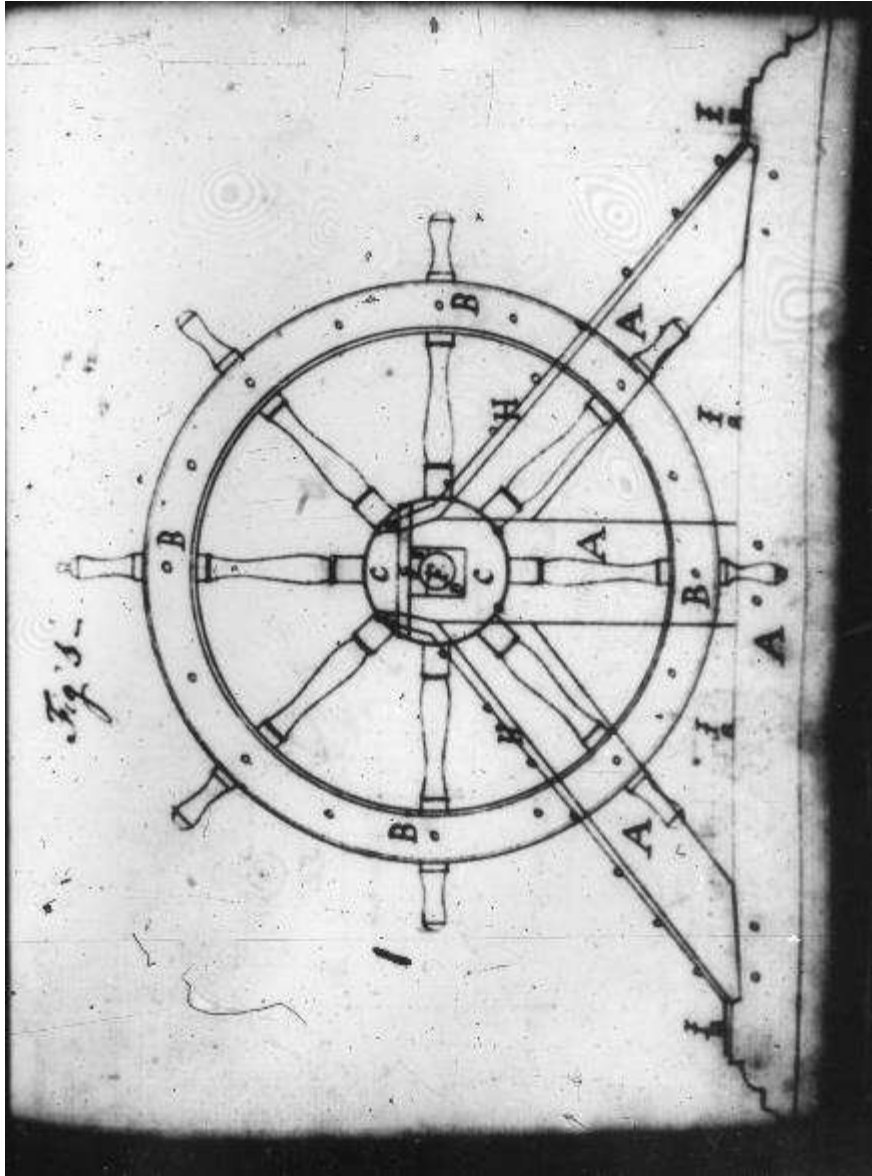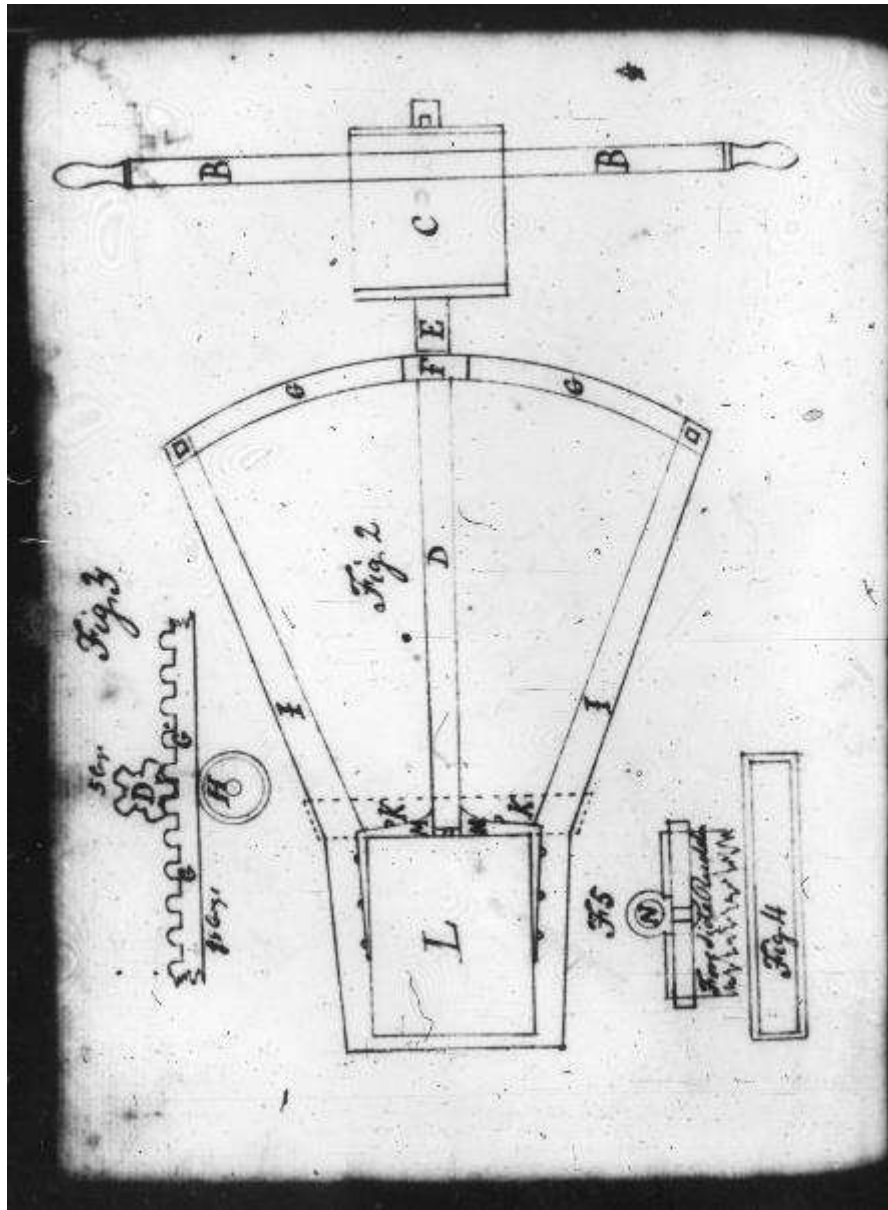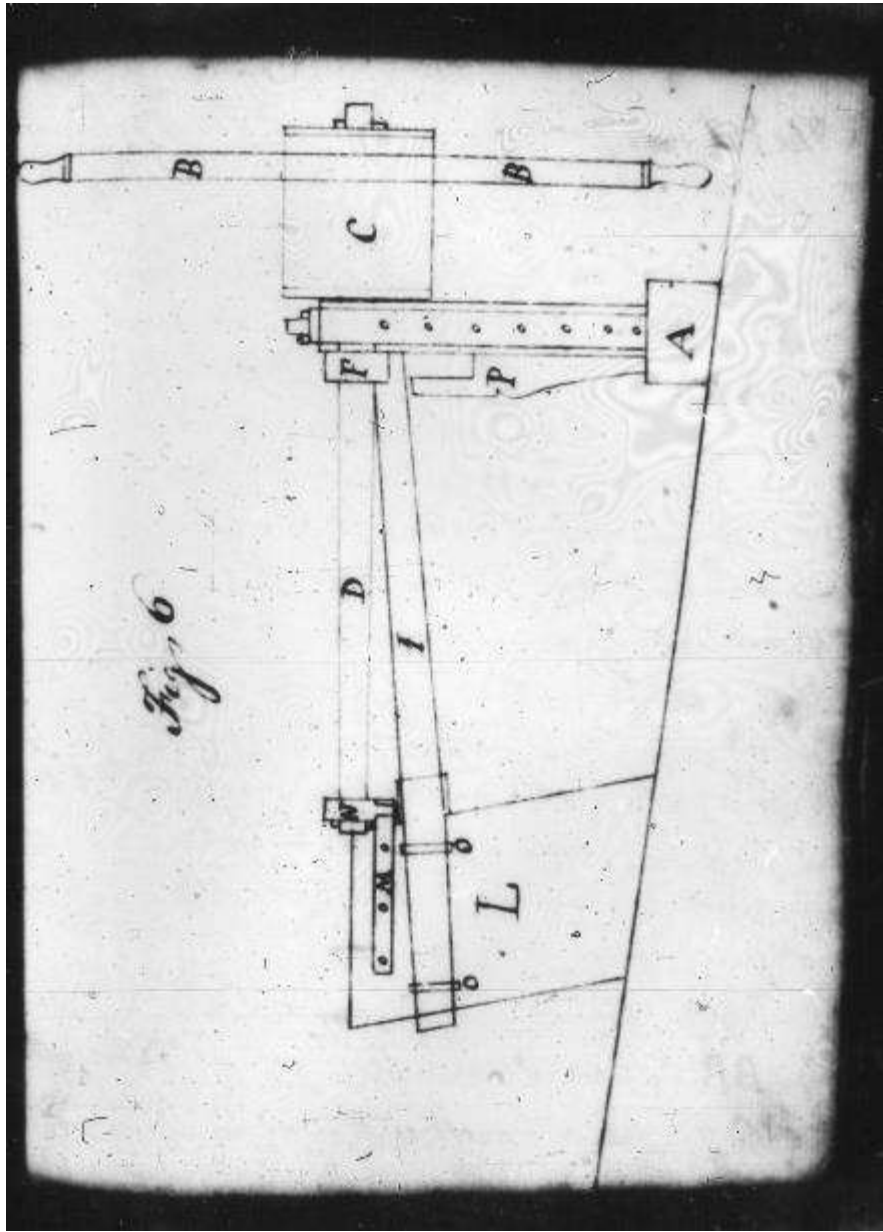
The description of a new constructed wheel for stearing vessels

Fig 1 represents a fore and aft view of the wheel frame &c

AAAA stand for the wheel, *BBBB* the wheel, *CC* the barrel of the wheel, *D* the lower cross box for the axletree to work in *E* upper crossbox to confine the axletree down, *F* the axletree, *G* an iron barr that goes over the head of the iron plates, *HH* and is for locked closed down to prevent the upper box from raising. *HH* iron plates to strengthen the frame as well as to secure the axletree from raising. *HH* four forelock bolts to secure the frame of the wheel to the deck, fitted in the sill, that in case any accident should happen the wheel a tiller may be fixed immediately.

Fig 2nd represents a horizontal view of the behind *BB* the wheel, *C* the barrel of the wheel, D the axletree

E the neck of the axletree that works in the stand or frame for the wheel, *E* the nuts or cogs of the axletree (five in number) that work in the cogs of the iron segment of the circle *GG* containing 18 cogs on the face or upper edge as represented in *Fig 3rd*. *D* the nuts or cogs on the axletree which when turned moves the iron segment *GG* from side to side. *H* a brass friction wheel to support & keep the iron segment from pressing below the cogs of the axletree *D*. Fig 2nd Iron arms *H* which goes round the rudder head and supports the iron segment which communicates the motion to the rudder head. Those arms are kept together by an iron hoop *KK* as represented by dotted lines, before the rudder and is put on afterwards wedged very tight the other section of this hoop is seen in *Fig 4th.* *L* the rudder head *MM* an iron strap that receives an iron swivel through and in which the after end of the spindle is fixed and works. The fore and view of winch is seen by *Fig 5th* and *N* is the hole in the swivel in which the end of the spindle works.

Fig 6th shews a side view of the machine *A* the stand or frame for the wheel, *BB* the wheel, *C* the barrel, *D* the axletree, *E* the nuts or cogs of the axletree, *F* the iron arm that communicates the motion to the rudder head. *L* the rudder head *M* the iron strap through which the swivel *N* passes, *N* an iron swivel to receive the end of the spindle. *O* two staples to secure the arms on the rudderhead on each side and to keep them steady.

This machine may be inverted to the aft side of the rudder to answer the same purpose, when there is sufficient projection at the stern of the ship and will take up much less room.

If any objection should be made to the junking of the wheel it may be fixed without cogs by making a barrel of the same size as the cogs of the axletree on which fix your tiller ropes letting one end of each rope pass through an eye at the end of each arm and to sett up with a lanyard, to find the size of your tiller rope you must say, as the common length of your tiller is to the common size of your rope, so is the length of the iron arm from the center of the rudder to the size of the rope required. If a tiller of 12 feet in length requires a 3 inch rope then a tiller of 4 feet will require three times as much strain on the rope consequently it must contain three times the quantity of hemp or flax.

The Frigate Delaware had ¼ & $^1/_{16}$ hang of the shear to 1 foot in length round the half breadth from the stem to the transom.

Proportion for mainmast - To find the length of the main mast of a ship multiply the moulded breadth by 24 and divide by 10 for its length *This makes the mast too long. Again 1 ¾ of the beam added to $^1/_5$ of the keel fors^l rabit will give the length of main mast.

Dimensions for the Masts, yards & spars of a Frigate of 44 guns,

whose length of keel is 147 feet. Straight rabbet, extream breadth of beam 43 feet, depth of hold 14 feet, depth of waist, between decks 13 feet.

As the extream breadth of beam of a ship is proportional to the Length of her keel, so is the length of the masts & yards calculated according that that breadth but as the formation of all Vessels bodies differ according to the purpose for which they are intended, it is absolutely necessary to vary in the mode of calculating the dimensions of the Spars, according to the Construction of the Body. The Diameter of all Spars here under the denomination of Masts are intended to be one inch in the partners to three feet in Length, & that of the yards are one inch in the Slings to four & three quarters feet in Length. The Mizzen Mast excepted that is calculated one inch to four feet & the Bow Sprit is the same size of the fore mast.

As the main mast, main yard and Extream breadth of Beam are here given, as the basis from which all the proportions are found – to find the Length of the main mast, I take twice the breadth of beam & 1/6 of the same & add them together thus Breadth of beam

	43 feet
	x 2
	6) 86
	14.4
the whole length of main mast	100.4

and to find the length of the main yard, I take twice the
 breadth of the beam thus

	43 feet
	x 2
The whole length of main yard	86 feet

The studding sail booms & small spars, not inserted here, must be regulated by the mast & yards, according to the plain & general rule.

NB to find the diameter of the mizzen top mast, or the top gallant masts, deduct off the partners and divide the length of the mast, from hound to heel, by 3.

The same principles of masting will answer in proportion for the thirty six gun frigates

	Ft	In		Foot
Main mast whole length as calculated	100	4	head	13
1/13 deduct from main mast & the remainder				
gives the whole length of foremast	92	8	head	13
Mizenmast the length of foremast	92	8	head	10
Main yard whole length as calculated	86	0	arms	4
1/20 deduct from mizzen yard & the remaining				
gives the whole length of foreyard	81	9	arms	4
Crossjack yard ¼ shorter than foreyard	61	4	arm	3
Bowsprit 1/3 shorter than foremast	61	10		
Gibboom ¼ shorter than bowsprit	46	5		
3/5 of main mast is the main topmast	60		head	8
1/20 deduct from main topmast & the				
remainder is the whole length of foretopmast	57		head	8
2/3 of mizzen mast is pole mizzen topmast	61	9	head	19 - 9
4/5 of main topmast is the main top gallant	48	0	head	16 in
4/5 of foretop g mast is the foretop gallant	45	7	head	15 in
Difference between 1/3 & ¼ taken from the main yard gives the				
length of main topsail yd	60	11	arms	5
Difference between 1/3 & ¼ of taken from the main				
topsail yard is main top gallant yard	113	3	arms	2 - 0
¼ taken from main top gallant gives the main top gallant royal yard	32	6	arms	½
Diff^{ns} between $1/3$ & ¼ taken from foreyard gives				
the length of fore topsail yard	51	11	arm	5 feet
Diff^{ns} between $1/3$ & ¼ taken from foretop				
sail yard is the fore topgallant yard	41	1	arm	4
¼ taken from fore top gallant yard gives				
the fore top gallant royal yard	30	10	arms	1½
Diff^{ns} between $1/3$ & ¼ taken from the crossjack yd				
gives the length of the mizzen topsail yard	43	5	arms	2½
Diff^{ns} between $1/3$ & ¼ taken from mizen topsail yard				
gives the length of mizen topsail yard	115	5		
Spanker or mizzen boom one & one third the length of gaff	57	11		
Ensign staff ¼ shorter than mizzen topsail yard	32	7		
Jack Staff half the length of ensign staff	16	3		
½ the breadth of beam & 1/20 of the beam is the				
Width of main top	23	7		
½ of the beam is the width of fore top	21	6		
2/3 of main top is the width of mizzen top	15	8		

NB In ships of the line you add the depth between the additional deck to the lower masts, the sprit sail yard is the same as the fore top sail yard, the sprit sail top sail yard the same as the fore top gallant yard

Signed Thomas Truxton

Letter to T. Truxton disputing calculations

Cap^n Thomas Truxton

Dear Sir

I have considered the principles by which you have calculated the masts & yards for the frigates & of the opinion they are just as to the length but the bigness vary. Mizen masts should not exceed an inch to 4 feet, top gallant masts 1 inch to 4 feet. Bowsprits 2 inch to 1 foot in length, but when I examine the principles respecting the yards I cannot help differing from you for the following reasons. That it is evident a longer ship (supposing her breadth and depth the same) than a shorter one will require longer yards, though the masts would be the same. Therefore in order to find the main yard, multiply the length of the gun deck by .525 which will find the length of the main yard.

Instance the gun deck

$$
\begin{array}{r}
173 \\
.525 \\
\hline
865 \\
366 \\
865 \\
\hline
90.825 \\
12 \\
\hline
99.00 \\
8 \\
\hline
7200
\end{array}
$$

These proportions may do for the main yard of a frigate but will not anywise for a double decked ship

Then I find the main yard should be 90.825 feet, or 90 feet 9 inches 7/8 & 200 parts of 1/8 of an inch. I think when you examine this rule you will be convinced of its propriety, to find the length of the main top gallant yard multiply the length of the main yard by 48 will produce 43,,686 feet or 43 feet 8 inches 1/8 & 836 parts of an eight. When these are found the other spars may be produced by your rule ascertain truly & systematically the length of yard arms which are the principles you must take the depth of the lower reef which I believe to be about one third of which would be the distance the lower reef will hall out & allow no more than sufficient outside the sheave to contain the eye bold in the yard arm. It is found necessary from the size & weight of canvas to vary the size of the yards lower yards should be 1 inch to 5 feet.

One general rule has been observed with respect to bowsprits to take the length of the beam for its length outboard but when a vessel is very sharp forward. I think they should be something shorter, in finding the length of the main mast I would suggest the idea of describing the method by saying double the beam added to 1/3 of its length will give its height.

[Transcriptionist Note: the above letter seems to be from Joshua Humphreys, the Memorandum below is apparently from Thomas Truxton (note the signature) explaining why there was a difference.]

Memorandum

The omissions to which you refer was omitted by copying. I have however interlined them & of course you only differ with me as to the yards in which I am convinced you think improperly on that subject, for nothing can be more detrimental to a ships sailing than over square yards for the reasons I have verbally given you.

Proportions for Masts & Yards

4/5 of the extream breadth is the length of main mast in yards

Main yard	7/8 of main mast
Do top mast	3/5 of main mast
Do yard	5/7 of main yard
Do Top gallant mast	½ main top mast These are bad
Foremast	8/9 of main mast proportions
Do top mast	3/5 of fore mast
Do Top gallant mast	½ of fore top mast
Fore Yard	7/8 of main yard
Do Top sail yard	5/7 of fore yard
Do Top gallant	3/5 fore top sail yard
Mizen Mast	4/5 of main mast
Do Top mast	5/7 of main top mast
Cross Jack yard	3/8 of main yard
Gaff	½ mize mast
Bowsprit	3/5 of main mast
Jibboom	2/3 of bowsprit

Diameter of masts &c
All masts to be 7/8 of an inch to every yard in length, except mizzen mast

Yards	5/8 of an inch to Do which is ¾
Bowsprit	1 3/8 Do

Twice the beam & 1/9 of the keel straight rabbit added together for the length of ships main mast

Dimentions of Mould Lofts

Mr. Perrys mould loft at Blackwell is in length	120 feet by 50 feet
Mr. Clewleys at Gravesend Do	100 by 50
Mr. Masters Rotherdale	80 by 40

This latter gentleman could not get his mould loft built larger as he was confined for room

Particular Dimentions of Schooner *[indecipherable name]*

Centers of the mast 15 feet 10 inches abaft the aft side of the apron and center of the main mast 28 feet 3 inches abaft. The center foremast dead rising 22 inches to 10 feet from transom, 9½ feet tuck from the upper part of the wale 3 feet the lower part of the tucks 8 feet 4 inches from the bottom of the keel, agreeable to the draught of water marks.

Dimentions of Ship Stern

	Feet	Inches
Length of gun deck from apron of stern	120	6
Keel for Tonnage	95	6
Extream Breadth	32	
Depth in the hold	10	6
Height of wing transom	17	1
Dᵒ Lower wale to upper edge forward	14	1
Midships	12	2
Abaft	16	9
Built by Thomas & James		
Breadth of Wing Transom	18	
Rising Midships Flat including Hollow Floor	1	7
Half Breadth of Floor	1	3
Tumbling Home of Top Timber	2	9
Hanging of Gun Decks	1	10
Ditto at Middle	1	6
Height between Decks	4	6
Waist at Midships	3	
Port Sills from the Deck	1	10
Up & Down in the Clear	2	2
Width fore & aft	2	4
Distance between Ports		
Number of Bits on Gun Deck 12 Exclusive Beak head		

Proportions of the French Frigate of Danae Masts of 32 gun

English Measure	length Ft:in:line	diameter
Main Mast	90:6:4	2:6:1
Mizzen Mast	67:-:-	1:8:3
Main Top Mast	36:1:3	1:4:1½
Fore Top Mast	36:1:3	1:4:1½
Main Gallant Mast	43:2:9½	:8: 7½
Fore Gallant Mast	43:2:9½	:7:9½
Main Yard	84:2:7½	1:8:3
Main top yard	59:3:8½	1:6:11
Fore top yard	59:3:8½	1:6:11
Cross Jack yard	36:1:3	:11:10½
Mizzen top yard	38:1:3	1:6:11½
Main gallant yard	38:1:3	:6:11½
Fore gallant yard	38:1:3	:6:11½
Mizzen Gallant yard	21:6	:5:4½
Main Royal yard	23:9	:4:10
Fore Royal yard	23:9	:4:10

Ship London Packett

75 feet keel 27 feet Beam 11½ feet hold & 5½ feet between Decks
Main Mast 62 feet Main Yard 50 feet

Proportions of Masts & Yards
Double the Beam & 1/9 of the Rail is the length of the main mast.

	Main top mast 3/5 of the Main Mast
	Main top gallant mast 1/7 of the top mast
	Fore mast 9/10 of the main mast (too short say 12/18)
	Fore top mast 3/5 of the fore mast
	Fore top gallant mast 6/7 of the top mast
pole	Mizzen mast same length as the fore mast
pole	Mizzen top mast 2/3 of the mizzen mast
	if no pole take half the length of main mast
	Main Yard one & 6/7 of the [below]
	Main topsail yard¾ of the main yd
	Main top gall t y 7/11 of the topsail yd
	Foreyard 12/13 of the main yard
	Foretop sail yard 5/7 of the fore yard
	5/7 fore top gallᵗ yd 5/7 of the topsail yd
	Cross jack yard¾ of the main yd
	Mizen topsail yd¾ of the main topsail yd
	Mizen top gallant yd¾ of the main top gallᵗ
	Royal yd¾ of their respective top gallᵗ
	Bowsprit (outboard) the length of the beam
	Main topᴵ½ the breadth of beam
	Foretop 7/8 of the main top
	Main top ¾ of the main top
	Sprit sail yard same length as the fore topsail yard
	Sprit sail topsail yard the same as the fore topgallant yard
	Gibboom one and 1/6 of the beam
	Main & foremast heads¾ of their respective topmasts
	Main mast head 6/4 of their respective top gallant
	masts first deducting the poles. This proportion gives the top mast head
	6/3 of the top gallant masts is the pole of the same

Mizzen topmast ½ of the

mizzen mast

United States Ship Delaware 72 ½ keel 28 feet beam. Main mast 64 & main yard 56 feet

United States Brig Scammel 57 feet keel 20 feet 6 beam

Weights of cubic foot of different woods
Weight of a cubic foot of live ash when cut three months eighty one pounds being kept in a counting house one year it weighs 70 lbs weight

Weighed in March 1795	81 lbs
Dᵒ in February 1796	70

Weight of a cubic foot of white pine taken green 40 lb½
Weight of a cubic foot of white oak dry 54 lb

Principal Dimentions of his Britannic Majesty's ship Squirrel, mounting 22 twelve Pounders on her gun deck & 10 ---- Pounders on her quarterdeck & forecastle, In all thirty two guns

	Ft	In
Length of gun deck	119 feet	
D^o　　　keel for tonnage	98	9 ¼
Breadth extream	32	9
D^o　　　moulded	32	3
Depth of hold	10	3
Burthen in tons	563 46/94	

This ship is said to sail remarkably fast

Dimensions of ships of war calculated to carry 44, 36 & 38 guns

Number of guns on main gun deck	30	
Weight of metal	18	
Length of gundeck between perpendicular	167	6
Length of keel for tonnage	140	
Moulded breadth of beam	40	too little beam
Depth in hold	13	6　　1822 S Humphreys
Height between decks	6	0
Height from gun to upper deck	6	9

Carpenters tonnage by the olde mode 1178 90/95

The above for a ship of 44 guns
　　　　　SH

Dimensions of a Ship to carry 38 guns

Number of Guns on gun deck	28	
Weight of Metal	18	Pdrs
Length between the perpendicular	155	7
Length of keel for tonnage	130	feet　　too little beam
Moulded breadth of beam	38 ½	feet　　S. Humphreys
Depth in the hold	12	6
Height between decks	5	10
Height from gun to upper deck	6	6
Carpenters tonnage by the olde mode	1014 16/95	

Dimensions of a Ship to carry 36 guns

Number of guns on gun deck	26	
Weight of metal	18	Pdrs
Length between the perpendicular	144	2　　Length of keel
Moulded breadth of beam	37 feet	for tonnage 120
Depth of Hold	12	3　　120 feet keel
Height between decks	5	9　　Too little beam
D^o from gun to upper deck	6	3　　Humphreys
Carpenters tonnage by the olde mode	804 60/95	
120 feet keel		

Dimensions of a Ship of War to carry 24 twelve pounders on her main gun deck

Number of guns on gun deck		24	
Weight of metal		12 Pdrs	
Length of thick straight rabbet		108	feet
Breadth of beam		34	feet Too little beam
Depth of Hold		10 9	Samuel Humphreys
Height between decks		5 6	

Last named ship ought ot be a corvette

Length between perpendicular	127
Beam moulded	37 9 - 33 9
Depth of hold	15 6

June 28th, 1798

Dimensions of Masts & Spars of Brig Venus of 60 feet, keel 22 feet, beam 12ft 5 in to upper deck.

	Feet	In		Feet	In
Main Mast	56		head	7	
Top mast	27		head	3	9
Main top gallant mast	23		head	8	
Fore mast	46		head	6	6
Topmast	29		head	4	0
Top gallant mast	25		head	9	
Cross jack yard	38		arms	1	6
Main topsail yard	30		arms	1	6
Top gallant yard	18		arms	1	
Royal yard	12				
Fore yard	42	6	arms	2	
Topsail yard	32	6	arms	1	3
Royal yard	16				
Bowsprit outboard	20				
Jibboom	24				
Main Gaff	22				
Boom	50				

Novem 8, 1798

[Scan of signature]

Dimensions of Schooner Gosport

54 ½ feet keel
Twenty one feet 9 inch beam
Ten feet hold

Principal Dimensions of the Frigate Philadelphia built by S. Humphreys

	Feet	Inches
Length of gun deck	157	
Keel for tonnage	136	
Beam moulded	39	
Depth of hold	13	6
Height between decks	6	0
Height between gun & upper deck	6	9

Measuring 1040 tons

To find the strength of new rope:
 Square the circumference & divide that product by five, which will give the weight in tons a rope will bear. Suppose a five inch rope, the square of which is 25, that divided by five will give 5 tons.

Note: It appears to me this notion will not hold good, I think a rope of five inches will not carry 5 tonnes.

J Humphreys   Nov. 4, 1804

Capt Wm Jones Proportions for Masting Frigates

Twice the beam & depth of hold for the length of main mast
Main yard 8/9 of the main mast
Main topsail yard 5/7 of main yard
Main topgallant yard 2/3 of main topsail yard
Main Royal yard ½ of main topsails yard
Main topmast 3/5 of main mast
Main top gallant mast 4/5 of main topmast
Pole of the top gallant mast 2/5 of the whole length
The foremasts & yards are 9/10 of the mainmast & yard
Mizenmast 8/9 of the main mast
Mizen top mast ¾ of main topmast
Mizen top g^t mast 4/5 of mizzen topmasts
The fore & main mast heads 1/7 of the whole length
Main fore & mizzen topmast heads 1/8 of their respective length
Mizenmast head 1/9 of whole length
Diameter of the masts 9/10 of an inch to every yard in length which is the British Rule for all ships from 50 to 32 guns inclusive.
Diameter of the yard 7/10 of an inch for every yard in length.

Cost of a pilot boat the Joseph Sims built down the River by Flanigan & Sons 31 93/95 tons

33 feet 9 inches. Keel 15 feet 2 inches Beam 5 ft 1 in Hold

Carpenter bill 600	Joyner 70	Cordage 211 yards	881.28
Canvas sail maker 292[89]	Blacksmith 130		422.89
Anchor 40	Mast maker 46	Boat builder 52	138.00
Runs for launching 10	Fitting 5	Rigging & leather 3	18.00
Paint & putty 12	Hoops & Hanks 13[56]	Serapor 5	30.56
Plumber 14[67]	Cambrose 8	Water casks 12	34.67
Spyglass 15[12]	Blockmaker 20	Stove 12[82]	37.94
Cabin Furniture 11	[burger] 6	Painter 8	25.00
Compass 7	Oakum 4	Ballast board 4	17.00
			1605.34

This boat was built – say in the early part of 1807

Dimensions & Cost of Sloop Diana built by Joseph Grice for a New Castle Packet 1807

Keel St Rabbit Beam Hold

Joseph Grice his bill	1800.00 Doll
P Brown Blacksmith	707.18
P Brown Sons for lumber	10.30
John [indecipherable] (Mast maker)	142.77
Lewis [indecipherable] (Ship joyner)	435.00
[indecipherable] Wilson (Boat builder)	61.30
[indecipherable] Shreeve (Rigger)	42.34
Ludlam & Voight (Plumber)	70.40
D King (Brass foundry)	12.75
Rush (Carver)	3.00
Fling (Painter)	120.00
Reynolds (Cooper)	6.25
Fish (Ironmonger)	69.28
Atherton & Boker D^o 8 $^{24}/_{100}$	8.24
Crockery Ware	26.40
Davenport (instrument maker)	2.25
Wainwright (Blocks maker)	83.06
Gaw (Chair maker)	50.44
Looking glass	14.00
143 ½ bushels of salt	127.60
Cordage & Ships Chandling	711.13
Cordage at this time was 16 dollar per CWT	
12 piece Holland Duck at 24 dollar	288.00
10½ D^o Linen Duck at 15	157.50
1 piece Holland duck	25.00
Sail Maker	107.56
[Can Boom]	33.25
2 ton pig iron	72.00
Cabinet maker	143.50

The whole cost of this packet was (exclusive of the cost of coppering) 6470 dollars. The coppering was say 1000 Dolls coppered to a sailing trim mark. There is a number of other charges against the packet such as mattress, blankets, sheets &c. which it was not considered necessary to put down here.

Dimension of Schooner Stag

Her spars &c. Pilot boat built	72 feet keel	23 feet beam	9 feet hold
Mainmast 73 feet	Topmast 30 feet Pole 13		
Foremast 70 feet	Topmast 40 feet Pole 16 feet		
Fore gaft 26½ feet	main gaft 23 feet		
Bowsprit (outboard) 12 feet – too short			
Gibboom 30 feet	Flying gibboom 12 feet		
Main Boom 58 feet			
Foreyard 46 feet	foretopsail yard 32 feet		

This vessel was built by John Wilson for John Allen in the early part of 1808.

Dimensions of the Schooner Chance
Belonging to Nixon & Walker
47½ feet & keel 20 feet 3 inches, beam 8 feet 4 inches, hold full built- - -
Main mast 58 feet head 7 feet   Topmast 18 Pole 5
Foremast 55 feet head 7 feet   Topmast 24 feet head 7 feet
Foreyard 30 feet arm 15 inches   Topsail yard 20 feet arm 15 inches
Main boom 44 feet   Gafts 22 feet each   Gibboom 27 feet
Bowsprit (outboard) 15 feet

This schooner was built down the river

Cost of Schooner Humble built by J Humphrey & Sons

For Cap' Quinn & Strandridge

Joshua P Humphrey & Sons bill for hull & frame	1127.25
Adam [**indecipherable**] for iron work & anchors	367.52
Joiner complete	130
Plumber	77
Boar builder	63.08
Painter	32
Scraper	8
Rope maker & ship chandler	420.17
Block maker	72.40
Sail maker	117.21
Canvas	491
Rigging $21^{20}/_{100}$ Compass 8 naval stores $11^{15}/_{100}$	40.35
Wharfage 20, Launching expense 50, colors 20, portage 10	100
Ballast & pig iron	<u>200.00</u>
	3185.98

The above was the Schooner Humble
Ready to take in @ cargo Built in the summer of 1800

Dimension of the Queen Charlotte

	Ft	In
Length on the range of the lower gundeck from the rabbit of the stern to rabbit of stern port	190 ft	
Length from the aft part of the fife rail to the fore part of the figurehead	228	6
Length of keel for tonnage	156	5
Breadth moulded	51	7
Breadth extreme	52	4
Depth in hold	22	4
Perpendicular height from the underside of false keel to the upper part of the taffrail	63	4
Perpendicular height from the underside of false keel to the upper side of the figurehead	53	6
Length of foremast	113	
Diameter	3	2
Length of mainmast	123	
Diameter	3	4 ½
Main topmast	61	
Length of main yards	102	
Diameter	1	11
Length of bowsprit	75	4
Diameter	3	1 ½
Draught of water forward	23	11
Dᵒ Dᵒ aft	24	10

Guns

Upper deck	30 twelve pounders
Middle deck	30 twenty pounders
Lower deck	30 thirty two pounders
Quarter deck	2 twelve pounders
Forecastle	2 twelve pounders
Round House	6 eighteen pounders

Burthen 2270 tons

Dimension of Brig US Nautilus captured by The British in 1812

64 feet keel straight rabbit 23 feet beam
11 feet hold   87 feet between perpendiculars
Main mast   55 feet   head 9 feet   diameter 18 inches
Foremast   50 feet   head 9 feet   Dᵒ   17½
Main & fore topmasts 30½ feet head 5 feet   Dᵒ   9½
Main & foretop gᵗ mast 27 feet   pole 12 ft   Dᵒ   5½
Main top yards 48 feet   arms 2 feet   Dᵒ   10
Dᵒ   top sˡ yd 36 feet Dᵒ 7 ¼
Dᵒ   top gt yd 24 ft   Dᵒ 12 inches   Dᵒ   5 ¼
Dᵒ   royal yd 16   Dᵒ   Dᵒ   3 ¼

Bowsprit whole length 32 ft outer end 21 ft bed 17 inches
Gibboom 26 feet diam 8½ flying gibboom 28 diam 6
Main boom 48 ft diam 10 gaft 31 ft diam 10 inches

Signed
Navy yard Washington June 2ⁿᵈ 1809   A Sinclair

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Rules for masting Frigates 1809

For placing masts

Foremast 1/7 of spar deck from forward
Main mast 2/7 and 6/7 of 1/7 of spar decks rom the foremast
Mizenmast 1/7 and 2/3 of 1/7 of spar deck from mizenmast

Length of Masts

Main mast 28 1/3 the extreme breadth of the ship
Foremast 10/11 of the main mast
Mizen mast 7/8 of main mast
Main top mast 11/18 of main mast
Foretop mast 15/16 of main top mast
Mizen top mast 7/8 of foretop mast
Top gallant mast 9/17 of their respective topmasts exclusive of Pole –
Royal mast from topmost cap 1/10 hounds of top gt mast –
Skyscraper masts 3/9 of their royal masts above royal mast head when lowered down to step on top mast caps

Length of Yards
Main yard 10/11 of main mast
Foreyard 7/8 of main yard
Crossjack yard 9/10 of fore yard
Topsail yard ¾ of their respective lower yards
Royal D^o 2/3 of their topgallant yards
Sky scraper 2/3 of their royal yards
The steering sail yard 4/7 of their boom
Spanker boom same as bowsprit
Gaft same as main topsail yards
Bowsprit 1 ½ the breadth of beam
Gibboom 4/5 of bowsprit
Flying gibboom to go outboard 2/3 of what the
Gibboom is outboard the heel to come to bowsprit cap
a nonsteering swinging boom 6/9 of main yards
D^o D^o D^o yards same as main top mast

Steering sail yards
Steering sail boom ½ of their respective yards to which add 1/20 of their length for length of steering sail boom yard
Ringtail boom same as main top g^t yard

Length of Mast Heads

Main & foremast 1/6 of their length
Main heads & topmast 5½ inches for every yard in length

Length of yard Arms

Main & Foreyards 1/20 of their length
Crossjack yd sail yards 1/12 top gallant 1/17

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Royal yards 2 & ½ their diameter in sling
Top sail yards the same All steering s^l & yds twice their diameter
Main & fore masts 15/16 of an inch to every year in length
Main mast ¾ D^o D^o D^o
Main & main topmast 15/16 D^o D^o D^o
Foretop mast same as main top mast
Main & mizzen top g^t masts 1 inch to every yard in length
Foretop gallant mast same as main top gallant mast
Royal masts¾ of their top gallant mast
Skyscraper mast 4/5 of the royal

Diameter of yards

Main & foreyards 7/10 of an inch for every yard in length
Crossjack yard same as main top s^l yard
Topsail yard 2/3 of an inch to every yard in length
Top G^t Royal & sky sail yards 5/8 of an inch D^o D^o
Sprit sails yd spanker boom same as foretops' yd
Gaft same as main topsail yard
Bowsprit same as main mast
Gibboom 7/8 of an inch to every yard in length
Flying gibboom 1 3/8 of an inch to every yard outboard
Steering sail boom 1 inch to 5 feet
Ringtail boom 1 1/8 inch to 4 feet
D^o yard
Swinging boom 1 inch to 6 feet
Martingale ½ the length of gibboom outboard
Below the bowsprit cap to be made double

Dimensions of spars of US Frigate President

	Whole Length		Pole		Head	
	Ft	In	Ft	In	Ft	In
Main Mast	100	0	2	7 ¾	16	11
Fore Mast	91	4	2	4 ¼	15	3
Main Mast This mast must have **[slope]** on the Orlope	86		1	10	13	6
Main topmast (exclusive of heel block)	62		1	7	9	6
Fore topmast D^o D^o	58		1	7	8	6
Mizen topmast D^o D^o	50		1	3	7	7 ½
Main topgallant mast exclusive of pole	33		1	1		
Fore D^o D^o D^o D^o	30	6	1	1		
Main D^o D^o D^o	26			5 ½		
Main Royal Mast	22			7 ¼		
Fore D^o D^o D^o	20	4		7 ¼		
Mizen D^o D^o D^o	17	4		6		
Main skyscraper mast	16	6		5 ¼		
Fore D^o D^o D^o	15	3		5 ¾		
Mizen D^o D^o D^o	13			4 ¾		
Main Yard	92	1	1	0	3	10
Fore Yard	80		1	6 ¾	3	4
Crossjack yard	72		1	1 ¼	6	
Main topsail yard	69		1	3	5	9

Foretop sail yard	45		10	3	9	
Main top gallᵗyard	44	6		9 ½	2	7
Fore Dᵒ Dᵒ Dᵒ	40			7 ½	2	4
Mizen Dᵒ Dᵒ Dᵒ	30			6 ¼	1	3
Main royal yard	30			6 ¼	1	3
Fore Royal Dᵒ	26	6		5 ½	1	1
Mizzen Royal Yard	30		4 ¼		10 ½	
Main Skysail yard	20		4 ¼		9	
Fore Skysail yard	18		4 ¼		8	
Mizzen skysail yard	13	4	3 ½		7	
Sprit sail yard	60		1	1 ¼	5	
Bowsprit	65	3	2	7 ¾		
Jibboom	48		1	2		
Flying Jibboom	53		9 ½			
Spanker boom	69		13 ¼			
Gaff	45		10			
Ring tail boom	30		6 ¾			
Ring tail yard	15		4			
Lower Steering sail swinging boom	50	2	10			
Lower steering sail swinging yard	26	3	5 ¼			
Main top mast steering sail boom	47	6	9 ¾			
Main topmast steering sail booms	26	3	5 ¼			
Fore topmast steering sail booms	41	6	8 ¼			
Fore topmast steering sail yards	22	10	7			
Main top gt steering sail boom	35	6	7			
Main top gt steering sail yards	19	8	4			
Fore top gt steering sail boom	31		6 ¼			
Fore top gt steering sail yard	17	1	3 ¾			
Mizzen top gallant steering sail boom	23		4 ¾			
Mizzen top gallant steering sail yards	13		2 ¾			
Main royal steering sail boom	23		4 ¾			
Main royal steering sail booms	13		2 ¾			
Fore royal steering sail booms	20	9	4			
Fore royal steering sail yards	12					
Mizzzen royal booms	15	6				
Mizzen royal steering sail yards	8 10 main yards					

Dimensions of Spars of US Frigate Constitution

	Whole Length		Mast head		Diameter in Partners		Distance From the [Iron]		Diameter in [Stays]	
	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In
Main Mast	101		15		3		2	3	1	6
Fore Mast	96		14		2	10	1	1	1	6
Mizzen Mast	90	10	1	6						
Main Top Mast	61	6	8	9	1	7				
Fore Top Mast	59	6	7	9	1	7 ½				
Mizzen Top Mast	50	10	7		1	7 ¼	1	2		
Main Topgallant Mast	34	6				10				8
Fore Topgallant Mast	32	9								
Mizzen Topgallant Mast	26									
Main Royal Mast	18	6								
Fore Royal Mast	17									
Mizzen Royal Mast	12									
Bowsprit	62 or 64 feet									
Jibboom	5 feet								1	5
Flying Jibboom	60								10	
Main Yard	92				1	11				
Top Sail Yard	64				1	5 ½				
Top Gallant Yard	44					11				
Royal Yard 31 feet	31					6 ½				
Fore Yard	84				1	10				
Top Sail Yard	60				1	4				
Spritsail yard	60 ft		Stays 12 inches							
Spanker Boom	54 ft		Stays 10 inches							
Martingale	21 ft 7 inches square									
Bumpkin	20 ft 12 inches sq									

	Height		Width		Thickness	
	Ft	In	Ft	In	Ft	In
Main Trestle Trees	15		0	9 ½	1	7
Topmast Trestle Trees	6	10	ins	11		10
Crosstrees	12	0				
Main Top	16 ft		22 ft			
Fore Top	15		21	0		
Mizen Top	10		15	0		
Fore Trestle Trees	15		0	9 ½	1	6
Top Mast Trees	6	4	0	5 ½		10 in
Crosstrees	11	4				
Mizen Trestle Trees	10		7	0	1	1
Topmast Trestle Trees	4		0	6	0	8
Crosstrees	7	6				
Main Cap	6	8				
Topmast Cap	4	0	1	6		10
Fore Cap	6	8				
Topmast Cap	4	1		6		8
Mizen Cap	5					
Topmast Cap	3		1	2		7

Dimensions of Ship Madison Corvette

Built-Launched at Sacketts Harbour on the Lakes November 1812

112 Feet Keel   32½ feet Beam   11½ feet Hold
580 Tons   Mounts 24 thirty two pound Carronades

1834 June 19th—Alter the rule for Schooners Masts so that the head of the main Topmast shall be as high as the main topmast Trestletrees if rigged as a Brig and half the topmast head.

This rule gives a maximum Main Mast. If half the topmast head be not added the length of the mast will be quite moderate.

Proportions of Schooners

Main Mast
Take 1/3 of the Keel at Rabbet
   1/3 of the depth of Hold
   Twice the Beam

Sept 1814   A Better Rule

{Twice the Beam in moulded Breadth, one half the Keel at Rabbet from which Deduct half the depth of Hold-makes a good Main mast.}

[TRANSCRIPTIONIST NOTE: The above lines were x'd out in the original journal pages but were clearly legible and so included here]

The Length of a Schooners Mast should depend on the depth. Shoal vessels should carry longer masts than deep ones & hence by deducting the depth from any given proportion you make a better proportioned mast.

The US Ship Franklin

On the 17th of April 1813 Charles Penrose & Samuel Humphreys were appointed by William Jones, Secretary of the Navy to make improvements in the Navy yard & to build a 74 gun ship called the Franklin of the following dimensions VIZ

155.0³/₈ Streight Rabbit 50 feet moulded beam 19 feet 6 inches. Hold 7 feet 2 inches between lower gundeck & middle gun deck & 7 feet between middle gundeck & upper deck. No Round House.

The dimensions of this ship were altered from a draft drawn by Joshua Humphrey in 1799 & the draft of this ship altered a little forward & aft from the original draft. Her sheer was dropped at the upper wale 9 inches at each end-

This ships keel was in 5 pieces & was sided 20 inches & 23 inches deep, the top of rabbit was cut 1 inch below the top of the keel a deadwood of 7 inches was placed on the top of the keel. The throats of the floor timbers intended at first to be 22 inches were reduced to 20 inches on account of widening the ship this increased the depth of hold to 20 feet as the main hatch. The gundeck was raised at ⊗ 3 inches from the old draft. This ships outside bilge Strake were 2 of 6 inches thick 2 of 5½ in & 2 of 8 in & 1 of 7 inches. The foot waling of 4 & 4½ inches. Her inside bilge strakes were 2 strakes of 8½ 2 of 7 inches and 2 of 6 inches.

Her orlope deck clamps were 1 strake of 8½ and 1 of 7 inches thick – thick strake at 1st futtock heads. Insides 1 strake of 7 inches & 2 of 6 inches thick – Wale 5 strakes of 11 inches wide strake under the wale 7 inches thick Her frame principally of live oak The floor of ~~timber~~ live oak The 1st futtocks excepting 3 on each side near P Q & R were of mahogany 2 futtocks, 3d futtock of live oak. 4th futtock is of live oak top timber live oak.

This ship was called **The Franklin**

Main transom of mahogany in two pieces of mahogany

The improvement of the Navy Yard occupied a considerable time – a wharf was built, a blacksmith shop – a mould loft, a saw shed – a counting house, a mart yard & the ground leveled, a large quantity of live oak near 100 pieces was brought from New York overland from Brunswick all of which did not arrive in the Navy Yard until the middle of Jan 1814.

The keel was laid Aug 7th 1813
The stem was raised on the 12th day of August 1813 & the stern raised on the 16th day of August within the same year. The stern was raised without the main transom and weigh **[---]** tons **[---]** hundred to raise it one fall of white rope 9 inches with a pair of shears **[---]** feet long & **[---]** feet & 20 inches diamr at 4 feet & **[---]** inches from butt end.

TRANSCRIPTIONIST NOTE: [---] in the above and following paragraphs indicate a blank space in the original journal.

Another sett of carling blocks & a fall of 6 inches was also used to assist in the raising of the stern.

Lower gun deck clamps 3 strakes 8 inches thick at top & 6 ½ inches at bottom. Middle gun deck clamps 7 inches. Upper deck clamps 4 inches thick 3 strakes of strings & drift 4 inches thick. Upper gun deck sperketting 4 inches.

On the 29th day of August 1814 with the consent of the Navy Agent we suspended the work on 74 gun ship & commenced working on gun carriages for Fort Mifflin & other work for the defense of the port. On the 24th day of September an order was received to discontinue the work on the ship and on the 27th an order was given to recommence the work but on account of the want of funds it was put off until the 18th day of October when the work was resumed.

The upper deck beams were sided 14 & moulded 11 inches. Knees on this deck sided 8 inches & bolted with 1 1/8 iron.

Upper gun deck beams sided 18 moulded 15 with knees sided 10 inches & bolted with 1 ¼ inch iron. Lower gun deck beams sided 19 & moulded 16. Knees sided 11 inches & bolted with 1 ¼ inch. Orlope deck beams sided 16 & moulded 14 bolted with 1 1/8 copper. Knees sided 9 & 10 inches.

On the 11th day of December 1814 the upper deck being laid & caulked. Plank sheats on & the waist planked up. The work was suspended by an order of the Navy Agent. No other decks at this time were laid.

On the 25th day of February, 1815 (Saturday) received an order to finish the ship ready for launching & on the 21st day of August at 10 minutes before 3 o'clock the ship was safely launched.
The descent of her keelway¾ 1/16 of an inch to a foot & the launching ways lay 1 inch above the bottom of the false keel at the stern port & were 2 inches below the bottom of false keel

Width of launching ways at the fore block 18 feet
Play in 200 feet   18 - 8 5/8 at ⊗. This lessened the descent of the ways & lifted the ship as she moved. It took half an hour to sett the ship & take out half her blocks.

There were 4 cross lashings at each end & 2 lays upright – shores abaft the after blockings to support the ships buttock.

Draft of water when the ship was launched & with no ballast

		Height of the Franklin 4th port from aft
Aft	17..2	out of water when launched 11-8 1/2
Foreward	13..6	Height of Franklin 5th port from
		forward out of water
		with no ballast 13..4

Draft of water of the US Ship Independence built at Boston with 35 tons of ballast on board
Aft 19 feet   Independence had no bowsprit in
forward 14..6

Height of Independence when launched with 35 tons of ballast aboard

4th port from aft out of water	10 feet
5th port from forward	12 feet

Dimensions of Schooner Rollar Spars

Foremast 73 feet head 8 feet. Main mast 75 head 8 ft.
Bowsprit 17 outboard. Foretopmast 40 feet pole 15 feet.
Main top mast 38 feet pole 14 feet. Gibboom 41 feet outboard 24 feet
Flying gibboom 38 feet outboard 14 feet.

Foreyard 56 feet arms 2 feet top s[l] yard 38 feet arm 2 ft
Foretop g[t] yd 28 feet arms 12 inches. Royal yard 20 feet
Main yard 48 feet arms 18 inches. Fore s[l] yd 30 feet arms 18 inches
Main top g[t] yd 16 feet. Fore gaft 28 feet main gaft 20
Topmast steering s[l] booms 28 feet top g[t] booms 14 feet
Fore gunter mast 43 feet main gunter mast 42 ft

Dimensions of Schooner Revenger Spars

Main mast 79 feet 8 feet head. Foremast 77 feet head 8 feet
Foreyard 61 feet arms 2 feet topsail y[d] 36 feet arms 2 feet
Topgallant y[d] 26 feet arms 12 inches. Royal y[d] 18 feet arms 9 inches
Main yard 56 feet arms 2 feet top s[l] yd 32 ft arms 2 ft
Top g[t] yd 24 arms 12 inches. Royal yard 16 ft arms 9 inches
Foretopmast 40 feet pole 14 feet gunter mast 37 ft
Maintop mast 36 ft pole 14 feet gibboom 40 ft outboard 24 ft
Flying gibboom 38 ft outboard 14 feet fore gaff 28 feet
Main aft 26 ft ringtail boom 26 ft Ring tail gaff 14 feet

Dimension of Schooner Rollar
Built by Benjamin Phillips

74 feet keel at rabbit
24 feet beam

10 foot hold
Foremast 73 feet head 8 feet
Mainmast 75 feet head 8 feet

Dimensions of Schooner Revenger
98 feet on deck
24 ft 6 beam
11 ft 8 hold
Main Mast 79 feet
Foremast 77 feet

Dimensions of schooner hermaphrodite
built by Mr. Seguin 1814, bought by Savage & Dryan and sold to the United States and called Prometheus

82 feet Streight rabbit
27 feet beam
11 feet 4 inches hold
Fore mast 62 feet Head 9 feet
Fore top mast 34 feet, head 5 feet
Top gallant mast 28 Pole 12 feet
Main Mast 83 feet head 8 feet
Main top mast 36 feet pole 12
Fore yard 50 feet arms 2 feet
Fore top sail yard 38 feet arm 2 feet
Fore top gallant yard 26 feet arms 7 foot
Fore royal 18 feet arms 9 inches
Main yard 48 feet arms 2 feet
Main top sail yd 26 feet arms 18 inches
Main top gallant yd 22 feet arm 12 inches
Main boom 58 feet Gibboom 38 feet pole 10 ft
Fore & main gaft 30 feet

Dimensions of schooner built by Mr. Maynard & bought by T. Reilly 1814
61 feet straight rabbit
20 – 8 beam
8 – 4 hold
Main Mast 63 feet
Top mast 25 feet
Gaft 25
Boom 45 feet
Fore mast 59 feet
Top mast 25 feet
Fore year 42   top sail yard 25 feet
Top gallant yd 18 feet   gaft 25 feet
Square sale boom 36 feet

Dimensions of Schooner Calypso built by Mr. Seguin 1813

88 feet keel st rabbit
27 feet beam
11 – 6 depth of hold
Foremast 81 feet head 6 feet
Main mast 83 feet
Fore top mast stump 27 feet head 2½ ft
Fore yard 64 feet arms 20 inches slings 12 inches
Fore top sail yard 40 feet arms 18 inches sling 8 inches
    Gallant yard 28 feet arms 10 inches slings 5½ inches
    Gaft 30 feet diameter 8 inches
Main top mast 40 feet pole 16 feet cap 10½
    Boom 68 feet Diam^r 14 inches
    Gaft 30 feet
Square sail booms 31 feet Diam^r 11½ inches
Lower steering sail booms   33 feet Diam^r 6¾ inches
Top mast D^o D^o 33 feet D^o 6¼
Ring tail boom 22 feet Diam^r 6½ inches
Gaft top sail yard 44 Diam^r 5 inches
D^o D^o boom   5 inches

Dimensions of schooner Span built by Geo Eyre & bought by Cap^{tn} E McDonald

Main Mast 77   Fore mast 75 feet
Top masts
      Hoist   21
      Pole   13   both alike
      Head   <u>1</u>
             35
Main boom   57 feet
Gaft   29 feet
Bowsprit   17 feet outboard
Gibboom   34 feet
Fore yard   58 feet
Topsail yd   36
Top g^t yd   24
Cross jack yd 42
M topsail yd 28 feet
Top g^t yd   20

Rules for making Gun Carriages

Brackett to be the thickness of the caliber
Axeltree to size of caliber - After axeltree twice the size of calibre in width
Top square of brackett half its whole length.
Half the width of after log
After side of forward axeltree under centre of trunnion
The centre of trunnion Hole to be twice the Diameter of trunnion from the fore end of brackett.
Length of brackett to be from Centre of trunnion to the end of pomillion & twice the diam of trunnion added
Breast Board to be kept fair with the top of port cill
Transom- the upper part to be under the Centre of trunnion & the fore Part below to be kept fair with the fore part of axletree
Trucks- Thickness to be size of bore & say 3 times the diameter of trunnion to be the diameter of truck
The turned part of axeltree to be the same size as trunnion
For the height of bracketts allow the centre of the gun to be 3 inches below the centre of port and say the top of the bore to be in the centre of port

Commᵣ Rodgin Rules for Mastings Jan 3 1815

To find the length of the main mast add twice the moulded beam to the length of the keel for tonnage of which product take 5/11 for the length of the mast.
Fore Mast 9/10 of the Main Mast. Mizen Mast 7/8 of Main Mast.
For all Lower Mast Heads take 1/6 of their respective masts.

For the diameter of Fore & Main Masts in the main deck partners multiply the length of the mast in feet by 6 the product of which divided by 19 will give the Diameter in inches. This ratio is little less than one inch in circumference for every foot the masts are long.

For the Diameter of all Lower Masts at their smallest parts (say under the Hounds) or the neck allow 4/5 of what they are in the main deck partner.

For the Diameter of the Mizen Mast in main deck partners (exclusive of the fish) allow one inch to every four feet in length.

For the diam of all mast heads (in the wake of trestletrees) allow ¾ of the diam of the sizes on the partners & topmast in the cap. And for the mast heads in the wake of or under the cap 4/5 of their dimensions of the trestle trees.

By the above rule the square of the trestle trees for the head of the topmasts will be in the clear exactly ¾ of the size of their respective lower masts in the partners & at the same time allow sufficient substance at the mast heads to the square of the lower cap being exactly the same diam that the topmast are in the caps as also the top mast cap on their squares, exactly the same size of top gallant mast in the cap. All top mast heads at the upper part of 8 square of Hounds ought to be the same size that the top masts are in the Caps-

Note- The after part of the Mast heads in the Caps ought to stand perpendicular to the after parts of the square or holes in Trestle Trees. The Chocks therefore that form the forepart of the square of Trestle Trees ought to be as thin as the necessary strength will allow so as to admit of as little daylight between the [dowlings] as possible & to assist which all the extra diameter of the heels of topmast & top gallant masts fore & aft in the trestle trees (over what the masts are in the caps ought to be left on the fore part of the masts.

For the length of the fore & main top masts allow 6/10 of the respective lower masts.
For the diameter of the main top mast (in the cap) allow at the rate 1 ¼ inches for every four feet for their size in the neck 4/5 of what they are in the cap.

For the length of the Mizzen top Mast allow 5/9 of the length of the mizzen mast provided the mizen mast steps on the keelson. But if it steps on the orlope deck allow 4/5 of the extream length of the main top mast.

The diameter of mizen top mast in the cap allow at the rate of 2 inches for 7 feet. - By the before given dimensions it is calculated that the lower masts & top masts are to be made of southern yellow pine consequently if northern white pine is used for lower masts a difference of 1/20 more ought to be allowed.
For the length of all top mast heads allow 1/6 of their respective mast.
For the length of all top gallant masts from the Heels to the upper part of the shoulders or Hounds allow exactly one half of the length of the respective top masts to which they belong.

For the diameter of top gallant masts in the caps allow at the rate of 1 & 1/10 Inches for every 3 feet which the masts are long & for their diameter under the square of hounds 4/5 of their diameter in caps.

Royal Poles 4/5 of the length of their respective top gallant mast & for their diameter at the largest part of the masts the same as their respective top gallant masts are at the smallest parts under the Hounds.

Tops Main

Top to be one half the moulded Beam

Fore top

11/12 of main top, mizzen top 4/5 of Fore top. For the length of all tops & fore & aft allow 2/3 of their breadth

Trestle Trees

All lower trestle trees to be exactly the same length that their respective tops are long. For the length of all top mast trestle trees allow exactly 1/3 of the length of their respective lower trees

Cross Trees

All lower crosstrees – the same length that their respective tops are broad.
For the length of all top mast crosstrees allow 3/5 of their respective after lower ones.
For the length of middle corsstrees 5/6 of the after crosstrees.
For the fore crosstrees 5/6 of the middle ones.

Yards

For the length of the main yard take twice and 1/0 of the moulded beam
Fore yard 9/10 of main yard
Fore & main top sail yards 5/7 of their lower yards
Crossjack yard – The same length as main topsail yard. An extra addition however 1/16 of the whole length of the yards will be necessary to add to the yard arms as the crossjack yard arms bear no proportion to any other yardarms on the ship.
Mizen topsail yards 5/7 of the crossjack yard or main topsail yard.
All top gallant yards 2/3 of their topsail yards Royal yards 5/7 of their respective top gallant yards Sprit sail yard – same length as foretop sail yard For yard arms of every description (except crossjack yard) allow 1/8 for the length of their respective yards or 1/16 for each yard arm. For the diameter of Royal & lower yards in the slings (exclusive of battins) allow one inch to every 5 feet in length.
For the diameter for topsail & top gallant Yards in the slings (exclusive of battins) Allow one inch for every 4½ feet

Bowsprit

For the length of bowsprit take once & a half of the breadth of beam of which it is to house exactly one third diameter of Bowsprit at Main Gammoning Exactly the same size that the foremast is in the main deck partners.

Booms

For gibboom take 4/5 of the bowsprit & for its Diameter allow 3 inches for every 10 feet-
Flying gibboom same length as gibboom & for its diameter allow 2/3 the diameter of gibboom
Spanker Boom – same length as fore
Topsail yard & for its diameter allow 1 inch for every 5 feet.
Mizen Gaft 7/10 of the spanker boom.
For the length of top main steering sail boom allow 10/19 of fore & main yards & for their diameter 1 [8] inch for every 6 feet of their length.
For the length of all top gallant steering sail booms allow exactly one half the length of their respective yards (including booming) & for their diameter one inch for every 6 feet of their length.

The United States Ship Franklin

Left the port of Philadelphia June 24, 1817 at 8 o'clock A.M. The following information was derived from Leuit. Beltry

The Franklin's best sailing trim is

      22 feet 6 inches aft   21 feet 6 inches forw^d

Height of lower portside 5 feet 7 inches

This ship is considered sufficiently stiff at the draft of water mentioned above

United States Ship Franklin of 74 guns

 built at the navy yard in Philadelphia by Charles Penrose & Samuel Humphreys launched 1815

Launched August 21, 1815

	Ft	In
Length between the perpendiculars	187	10 ¾
Whole length of keel (say)	147	3
Beam shoulder	50	
Depth in hold	20	
Deadwood amidships		8
Throat of floor	1	8
Ceiling plank - allowed		4½
Siding of main keel	1	8
Depth below lower edge of rabbit	1	6
False Keel (thick)		4 ½
Number of pieces in keel	5	

Scarph from 8 to 12 feet long

Stem in 3 pieces sided 10 inches

Apron sided same size as stem & a piece of 8 inches thick the siding was brought from each side

Knight heads sided 18 inches & moulded at head 14 inches

House pieces sided 17 inches

Stern post sided 18½ inches

Moulded at keel 3 ft 3 at crossbeam 17½ inches

Main transom sided & moulded 22 inches

Crossbeam lined 11 inches down from top

Top of transom lined streght

Round of transom fore & aft was 6 inches

Deck transom sided 18 inches

The other transoms were sided 14 inches & 4 inches room

Wing transom knees sided 12 inches

In the hold were 2 asst hooks & 2 riders for the security of the stern

Counter timbers in the number 6

Moulded at arch board upper edge 15½

At upper end 8½ inches

2 windows in the stern   3   3½ athwartships

               3   6 up & down perpend

Keelson a double one sided 19 ½ inches

The floor and keelson bolts were 1 7/8 copper

Main wale 5 strakes 11 inches wide 8 ½ thick

Thicke stuff under the wales

1 plank	7 inches at upper edge	6½ below
2nd D^o	6½	6
3rd D^o	6	5½
4th D^o	5½	5
5th D^o	5	4½

Black strakes   1st strake above wale thick   7 inches
                 2nd Do   6 inches
Channel wale 3 strakes 5 ½ inches thick
Filling in plank between @ wales & black strakes 4 ½ inches
Planks between channel wale & fixing 3 1/3 excepting the two lower ones
Strings & drifts 4 inches thick
Butt bolts 1 inch
Limber Strake 8 inches thick
Next strake above 6 ½ inches
Inside bilge strakes 2 strakes of 8 ½ inches
Below them 1 strake of 6 inches
Above them 1 strake of 6 ½ & one of 5 ½ inches
Limber boards 3 inches thick
Strakes on first futtock heads 7 inches
One strake above & one below 5 ½ inches thick

Orlope deck clamps
One strake   8 inches
One Do   7 Do
One Do   5 ½ Do

Sperketting on orlope deck toggled
3 inches over the beams
2 strakes lower strake 8 inches upper and
6 ½ inches dubbed fair through
Orlope deck beams sided 15 & moulded 14
At the ends 11 ½ inches

Orlope Deck was kneed with one lodging knee and where they could be put in with one standard knee.
This deck had 3 tier of carlings or fore & aft pieces 8 by 10, ledges 6 inches square.

Stantions to the Beams in the Hold 9 $_2$ sqr. Planks on the orlope 3 inches thick
Breasthooks in the Hold 5 including the Lower Gun Deck Hook.
Lower Gun Deck Clamps in 3 Strakes. The upper edge of the upper strake 8 ½ inches & the lower edge of the lower one 6 ½ inches.

Between the lower edge of these clamps & the upper edge of the orlope deck spirketting there was a list or air strake of 5 inches which was the only one the ship had.

Lower Gun Deck Beams sided 15 ½ inch and moulded 16 inch deep at the ends 13 ½ inch jogged into the clamps & sided.
Lodging and hanging knees of this deck sided 11 inches & bolted with 1 ¼ copper & Iron. Coamings and headledges 18 inches above Deck.
Deck Plank 4½ inches Thick
Waterways Sided 10 inches and moulded 14.
Joggled down 1½ inches over the beam
An oak plank 6 inches thick was likewise joggled over the beams & bolted through the waterway & side & riveted to the inner edge of this plank

There were 2 strakes of oak 6 inches thick 11 inches wide joggled 1 ½ inches down over the beam & bolted together

Distance at centre of foremost of the of the joint of these strakes from the middle line 　　5 - 1 ½

Distance at ⊗ to joint of D⁰ 　　5 - 4

Distance at transom 　　5 - 2

Spirkettings 2 strakes 6 inches thick

Plank between lower gun deck ports & between spiketting & upper gun deck clamps is 4½ inches

Lower gun deck port hinges 4 inches wide

Centre of the hinge 6½ inch from side of port

Ring bolts for lashing port in ¾ iron size of the ring in the clear 3 ½

Distance up from Port cill 8 ½ Distance from side of port 7 inches

Ring Bolt for Lanyard 10 ½ inches from lower edge of port & 11 from side of port.

Small air port in large port 9 inches fore and aft & 6 inches up & down

Lower edge of small port above lower edge of main port

Stops of ports on the sides 2 ¼ inches

Stops on the lower part of port 2 ¾ above 1 ½

Upper gun deck - Upper gun deck clamp 7 inches thick on The upper edge & 6 inches thick lower edge

Beams sided 17½ moulded 15 at the ends 12 inches Lodging & hanging knees sided 10 inches & bolted with 1¼ iron comings. Head ledge 10 inches above deck A thick strake alongside the waterway & 2 binding strakes near the hatch directly over the binding strake of the lower gun deck sperkettings 4 ½ inches thick. Plank between the ports & between the sperkettings spar deck clamp 3 ½ inches the same outside on this deck as well as the lower gun deck. There were 5 tier of carlings or fore & aft piece 10 by 11 inches & 9 by 11 inches one tier in the middle & 2 tier on either side. The ledge on the lower gun deck were square Stations to support this deck 9 inches square.

Riding Bitts - After pair 20 inches square & 5 – 9½ asunder in the clear

Foremost pair 19 inches square and 4 – 4 asunder

The after pair of bitts came to the forestep

Oak cross pieces to bitts up & down 　　　　　　17

　　　　　　　　　　Fore & aft 　　　　　　17

Yellow pine on aft side

Bowsprit bitts 17 square

Asunder 2 – 1½

Hause Holes

Center of 1ˢᵗ hausehold from middle line on a square 3 – 8½

Diameter of 1ˢᵗ hole sided 18 inches

Distance between hause holes on a square

Diameter of outer hole 16 inches sided 16½

Spar deck clamps 4 inches thick

Beams sided 14 inches, moulded 11 inches deep at the ends 9 inches

Lodging & hanging knees sided 8 inches

Mast or port cell 9 inches deep

Comings head ledge 5 inches above deck

Plank of the bulwark inside & out 3 inches

Carlings & ledges – same as Orlope Deck

Main step formed by 2 floor riders to reach the main bilge strakes each sided 14 inches & kept 3 – 8 asunder bolts at the ends with 3 bolt of 1 3/8 copper on the keels

Fore channel has 10 shrouds & 2 back stays

Main channel 11 shrouds 2 back stays

Mizen 7 shrouds & 2 back stays with 2 iron bolts of 1 ¼ inch. The rider stayed close to the ceiling to the lower edge of the bilge strakes & from there to the ceiling was open enough to admit a man under. They were jogged on the side of the keelson 1 ¼ inches and 5 inches down & were 13 inches above the top of the

> A pine piece on the aft side 9 ½ inches fore & aft

keelsons. The fore & aft pieces that formed the side of the step were 13 by 18 inches & set 2 inches on the rider with a double jog. Beside this jog there was an offset of 3 inches left on the rider to assist in supporting the fore & aft pieces on the fore & aft sides of the riders were large cleats sided 14 inches 3 feet long & 13 inches deep let into the keelson 1 inch to support the rider the fore & aft way forestep the same as the main excepting that the riders were 4 feet asunder - -

Diagonal Riders – Three pair aft & 2 pair forwards

Heads lower part of lower cheek 17 inches above upper of wale cheek sided at the stern 11 inches distance between the cheek on a square 3 - 1½. Head rail moulded at after end 14 inches at fore end 7 inches.

Middle Rail moulded at after end	7 ½
at fore end	
Head timbers number	4
After timbers placed 4 inches before the foreside of the stern	
~~The rabbit of the arm~~ & sided	8 inches
Foremost timber sided	6 3/8
Gammoning holes in Number	2
Fore & aft	12 ¼ inches
Up & down	3 inches
Counter ports – in Number	2
Inside of 3 port from middle line	2 feet
Width of port	2 – 9
Height of port	2 feet perpendicular
Rudder a round head diameter	23 inches
Upper brace placed on the 3d transom	
6 braces 5 inches wide	
Diameter of Pintles	
Channels in Breadth	2 – 11
Thick at the side	6 ¾ inches
Thick at the outside	5 inches
Gallery	
Lower rim sided	8½ inches
Upper rim sided	7½ inches
Upper stool	6½ Do
Lower stool	8 Do

Lower rim outside distance from side	2 - 10
Distance between upper & lower rim perpendicular in the clear	5 – 10
Distance between lower rim and stool perpendicular	1- 2
Distance between upper Rim and stool	1- 3
Scuppers on Lower Gun Deck	
In Number	7
Size after being leaded.	3 by 6½

Aftermost Scupper 3ft before the fore side of 4th port

Scuppers on Upper Gun Deck	
In Number	7
Size after being leaded	3 by 6½

Aftermost Scupper 15 inches before the fore side of 5th port from

galley door wide 3 feet deep	3 - 5
Cill from Deck 19 inches	
Distance from after side of door at the height of the lower edge of strip	
to the aft side of counter timber	6 feet

The other Scuppers were out the same distance

Fore Sheet Block was cut between 10th & 11th port from aft – this block was too far forward

Main Sheet Block was cut between 3 & 4th Port from Aft

Illustration of Franklin Gallery
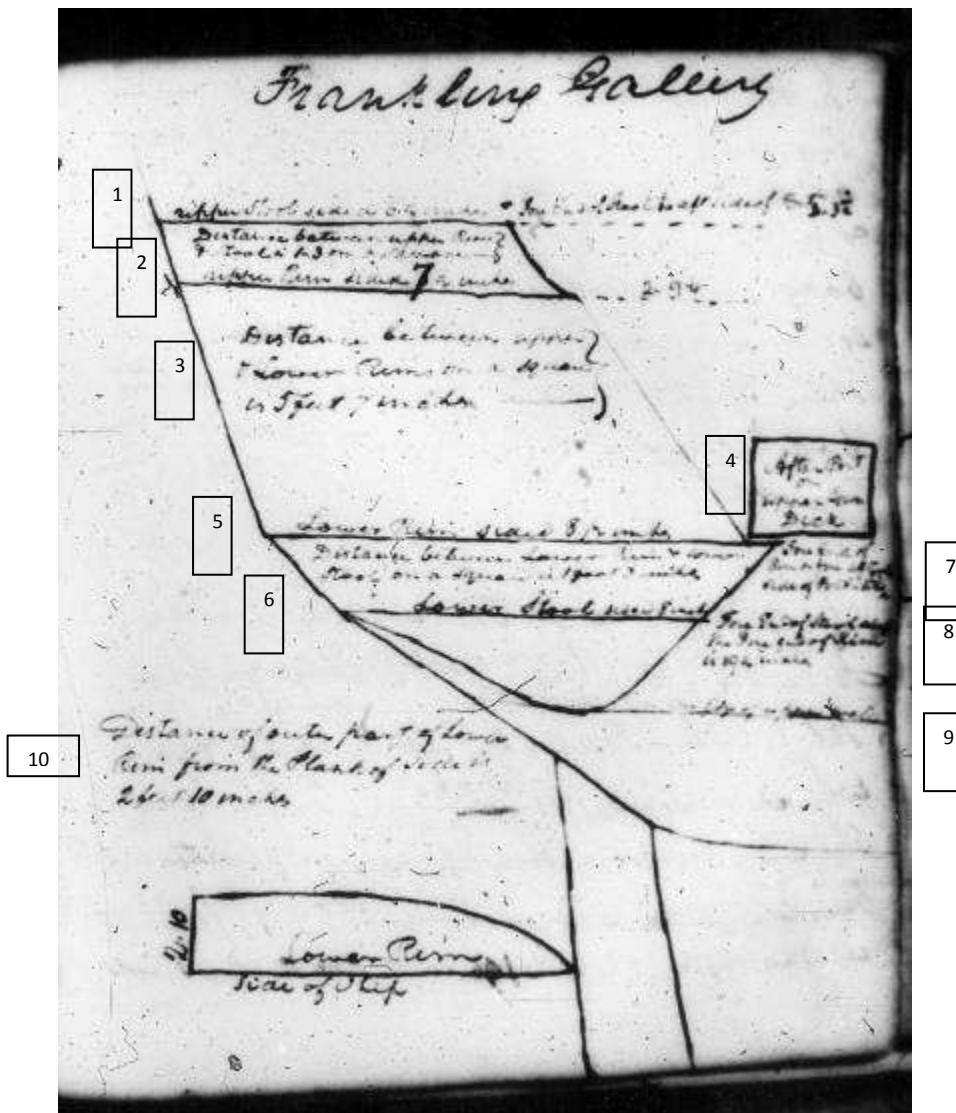
[Labels added by transcriptionist for clarity]

1. Upper stool sided 6 in head fore end of keel to aft side of **[indecipherable]** 5 19/32
2. Distance between upper rim & stool 1-3 on a square. Upper rim sided 7 ½
3. Distance between upper & lower rims on a square is 5 ft 7 inches
4. After port on upper gun deck
5. Lower rim sided 8 inches
6. Distance between lower rim & lower stool on a square is 1 foot 3 inches
7. Fore end of rim on fore side of port is 11 ½
8. Fore end of stool of the fore end of rim is 19 ½ inches
9. **[indecipherable]**
10. Distance of outer part of lower rim from the plank of side is 2 feet 10 inches

In the lower gun deck hanging knees there were generally 5 bolts in the body beside the throat bolt, which made 6 bolts & in the arm 4 bolts. However, in the body of some hanging knees there were 6 bolts exclusive of the throat bolt. There ought to have been 6 bolts in the body exclusive of the throat bolt & 5 in the arm.

Franklin left Philadelphia June 24th 1817 at 8 o'clock AM. July 17 The Franklin took in 29 long 32 pdrs which weighted 1781 cwt. This weight settled the ship 3½ inches. Her draught of water after these guns were taken in was Aft 23 – 1, forwd 20 – 3. At this depth it required 19½ tons to settle the ship 1 inch.

Iron Tiller for US Ship Franklin of 74 guns

Whole Length of Tiller
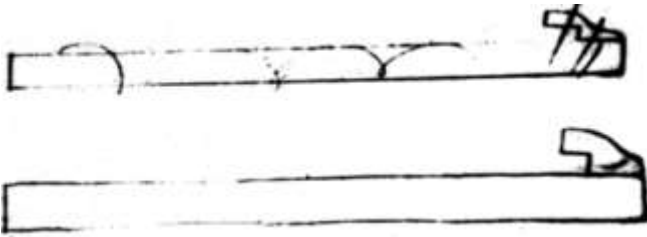
Lignum Vitae Rollers on Sweep 12 inches apart
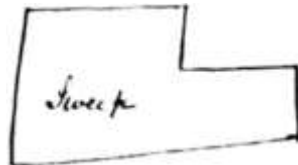
Iron Tiller for Frigate Guerrier
Whole Length of tiller 13-6 ¼   Size at after end 5 by 4 ¾   Size at fore end 4 by 4

Lignum Vitae rollers distance asunder from center to center is 12 inches

Iron tiller for US ship Franklin
Whole length of tiller

Capstan for Frigate Guerriere – scan of original drawing
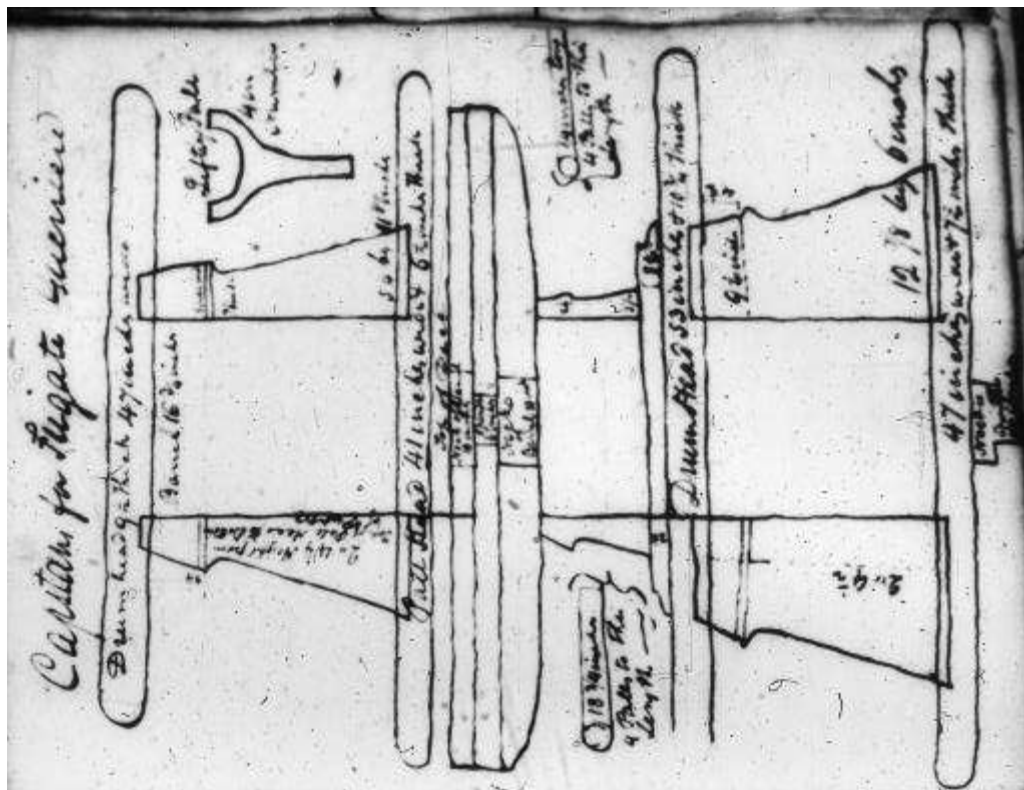
Computer drawn capstan for Frigate Guerriere
by Brett Platt - added for clarity, obviously not part of the original journal.

Drumhead 9 ½ inch thick 47 inches wide

Barrel 16 ¾ inches

3

1

2

Paul head 41 inches wide & 6 inches thick

Top of Deck

4

5

6

7

9

8

Drum Head 53 inches wide 10 ¾ inches thick

9 ¼ in

2 ft 4 ½ in

$12 \, ^7/_8$ by 6

47 inches width 7 ½ inches thick

10
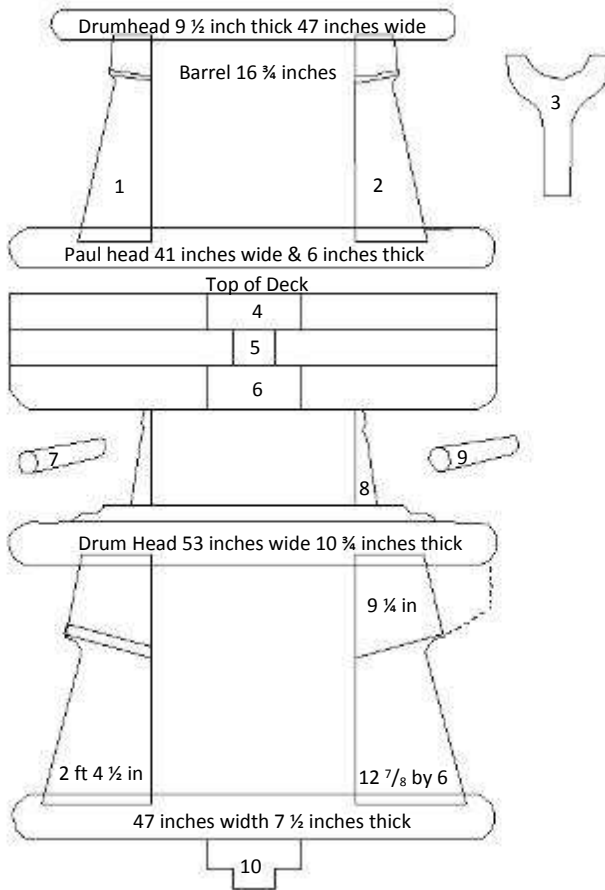
TRANSCRIPTIONIST NOTE: Numbers added by transcriptionist for clarity

1   2 ft 4 in height from top of pall head to bottom of pumps
2   5 ½ by 11 inches
3   Lifter Pall – 4 in number
4   Neck of barrel 10 in
5   6 inches
6   Neck of barrel 10 inches
7   18 ¾ inches, 4 palls to this length
8   4 at top, 5 ½ at bottom
9   14 inches long, 4 palls to this length
10 Neck is **[indecipherable]**

Rules for the measurement of ships & vessels to be built in Philadelphia as agreed on by the Shipwright Society January 3rd, 1811

For all plain built ships with two decks - allow 3/5 of the extreme breadth for the rake of the stem beginning to measure twelve inches before the rabbit at the middle of the rale with should determine the point of straight rabbit forward; from that point to the after part of the stern post allowing one twelfth of the extream breadth for its width clear of the rabbit shall determine the length of the keel for tonnage. The breadth for tonnage shall be ascertained from the inside of one rale to the outside of the other in the widest part of the vessel. The depth of hold from the top of ceiling next the keelson (allowing the strake next the keelson the same thickness as the running plank) to the top of after beam amidships & the height between deck from plank to plank amidships then multiply the length of keel by the extream breadth & that product by the depth of hold added to half the length between decks which last product divided by 95 shall give the number of tons required.

Single decked vessels on the double deck plan with about 12 inches waist, when depth does not exceed half the extream breadth, measure & multiply length & breadth as above & that product is the depth but when the depth exceeds half the extreme breadth then add that difference to half the extreme breadth for the multiplier for measurement & divide as aforesaid.

Single deck vessels primed out on the wales measure & multiply length, breath & depth & divide as above.

Frigate built with two flush decks long quarter decks & forecastle with a tier of ports - multiply the length by breadth & make product by the height of the gun deck from the ceiling, as aforesaid added to half of the height of the waist amidships which last product divide as above.

Ships with 3 decks & a tier of ports multiply the length & breadth as aforesaid & that product by the height of the middle deck from the ceiling as aforesaid added to half the height between decks which product divide as above.

Single decked vessels with a long quarter deck & forecastle deep ^& light waist with a tier of ports multiply the length with the extream breadth & that product by the depth from the ceiling as aforesaid to the top of the beam amidships added to half the height of the wait amidships which last product divide by the common divisor as above.

Comparison of Independence and Franklin

Comparison between the US Ship Independence launched at Boston in the summer of 1814 and the US Ship Franklin built & launched at Philadelphia in the Summer of 1815. August 21st 1815.

	Ft	In
The Independence when launched drew aft	19	
The Franklin D° D°	17	2
Independence drew foreward	14	6
Franklin D°	13	6
Independent 4th port from aft above water	10	
Franklin D° D°	11	8
Independence 5th port from foreward above water	12	
Franklin D° D°	13	4

The Independence had 25 tons of ballast on board which could not have settled her more than 2 inches. Her Bowsprit was not in.

The Franklin had no ballast on board but her Bowsprit was in.

Franklin launched 21st August 1815 at 10 minutes before 3 o'clock
Left Philadelphia June 24th 1817 at 8 o'clock
Left the Cape of Delaware October 28 1817 at 10 o'clock PM
Drawing at Bombay Hook 23-8 water aft with 13 inches of draft of water (differs by as much)

Capstan for 74 Gun Ship Franklin launched at Philadelphia August 21 1815
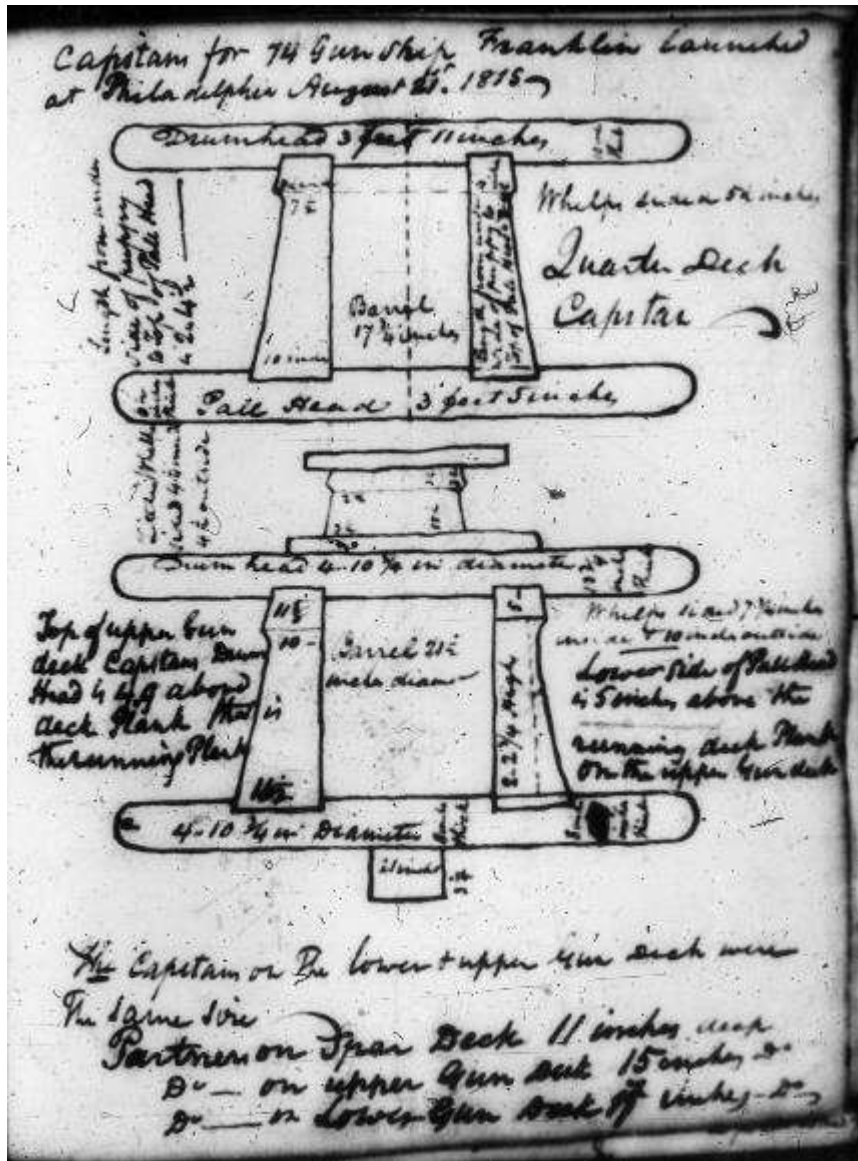
**Capstan for 74 Gun Ship Franklin launched at Philadelphia August 21 1815**

Computer graphic of Franklin's capstan
**by Brett Platt Added for clarity**

Drumhead 3 feet 11 inches

Whelps diameter 5 ½ inches

Diameter | 4 inches

Quarter Deck

Capstan

1

7 ½

1

Barrel17 ¼ in

10 in

2

Pall head 3 feet 5 inches

3

36

5 - 32

3 ½

Drumhead 4 ft 10 ¾ in diameter | 15 ½

Barrel 21 ¼ inch diameter

11 ⁵/₈

5

10 -

4

6

2 ft 2 ¾ high

4 ft 10 ¾ in diameter

8 in thick

21 inches

3 ¼
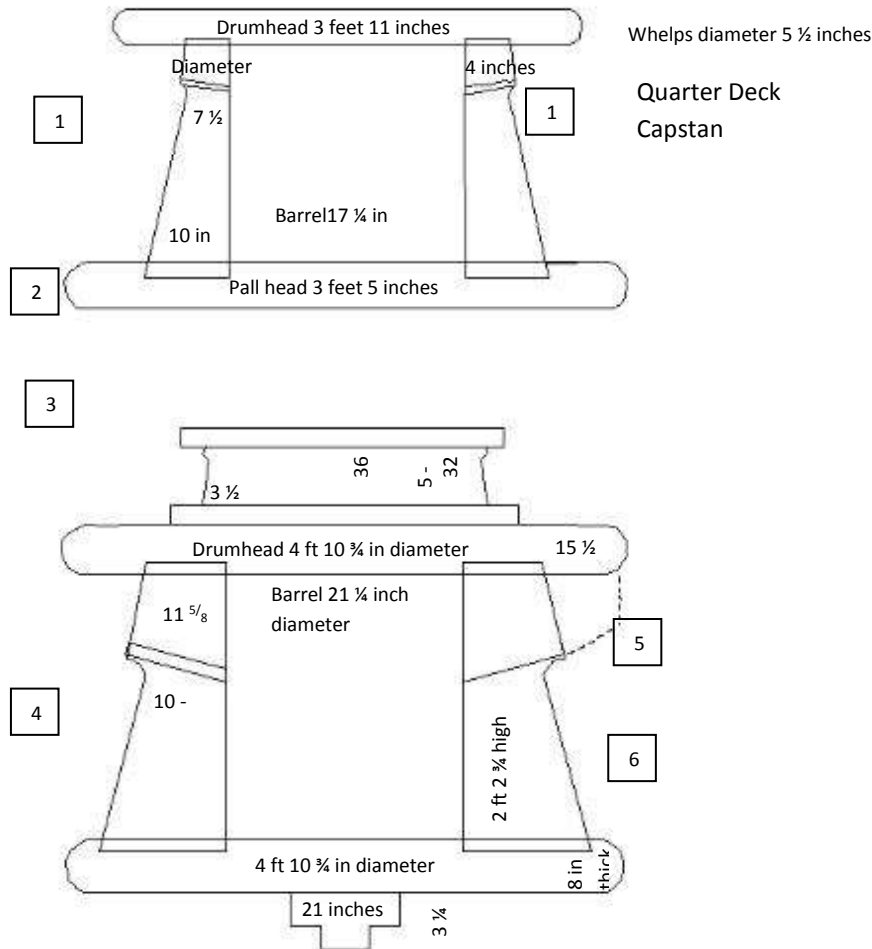
TRANSCRIPTIONIST NOTE: Numbers added by transcriptionist for clarity

1. Length from underside of puppy to top of pall head is 2 ft 4 ½ inches
2. 6 ½ inches thick
3. Littlest whelps sided 4 ¼ inside & 4 ½ outside
4. Top of upper gun deck capstand rum head is 4 ft 9 above deck plank that is the running plank
5. Whelps sided 7 ¾ inches inside & 10 inches outside
6. Lower side of pallhead is 5 inches above the running deck plank on the upper gun deck

Size of Capstan Spindle for Franklin 74 Gun Ship Franklin
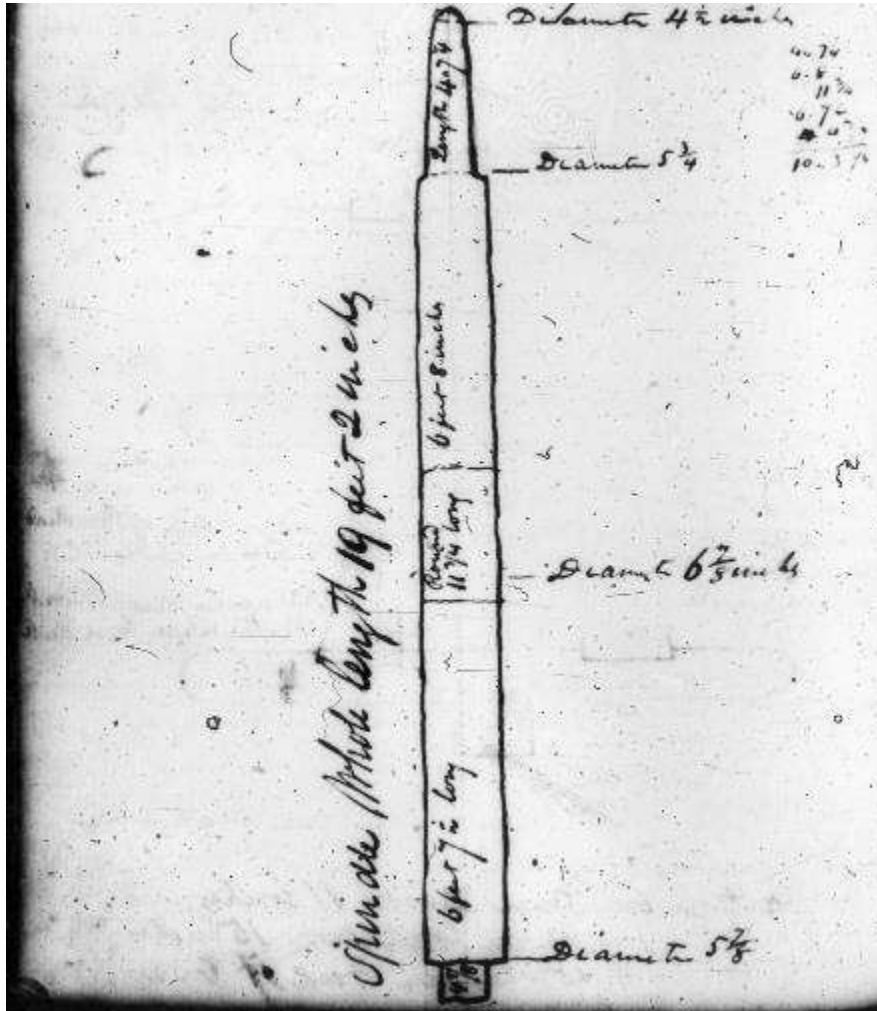
Spindle whole length 19 feet 2 inches
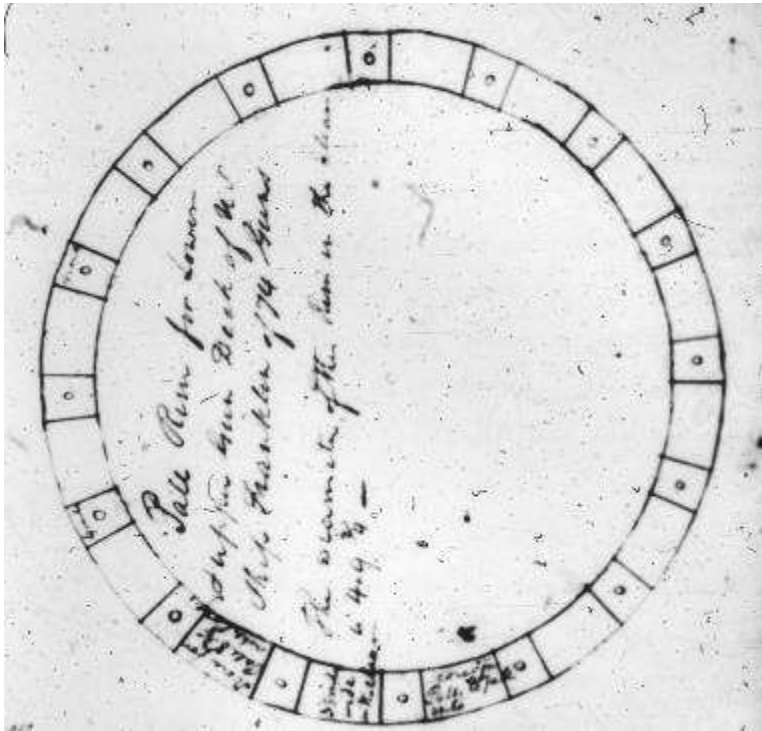
Pall Rim for lower & Gun decks of US Ship Franklin of 74 Guns

The diameter of this rim in the extreme is 4 – 4 ½

There was a Pall fastened to the Pall Head opposite the centre of each Whelp. There were 8 Whelps to each Capstan. The Palls were alternately long & short. The Band on the Pall Head ½ inch thick. Distance from outer part of Whelp to outer Part of Pall Head Bands is 5 ½ inches

Puppys 5 inches up & down. Bar Holes 5 ½ x 3. There was 12 Bar Holes

Outer flat hoop on top & bottom of drum head 1¾ inches from outer edge. Hoop 3 inches broad & a bolt between each bar hole. There was also a hoop inside the outer ones. The top of the cast iron pall iron pall ring was 3½ inches above deck plank. The deck inside th rim was filled up fair to the top of the rim to prevent the water & dirt from collecting there. The main piece of partners on lower gun deck on which the spindle rested was 1½ inches above the deck, 17 inches deep. The rest of the partners were 11 inches deep. The whelps were bolted to the barrel with 2 bolts. Lower part of bar holes were 4 feet above the deck plank.

Upper Gun Deck Capstan

The capstan was the same size as the lower one, it had 8 lifting palls to force up the messanger placed between the whelps about 2 1/8 inches squared. Outer part of lifting pall from out part of pall head is 3 inches. Bar holes same as lower gun deck capstan.

 There were plates of iron set into the top & bottom of the pall head round the lifting palls 6 ½ inches in & out and 4 ½ inches wide.

The outer part of the plate came fair with the outer part of the pall head, partners of the capstan were 1 ½ inches above deck and 15 inches deep.
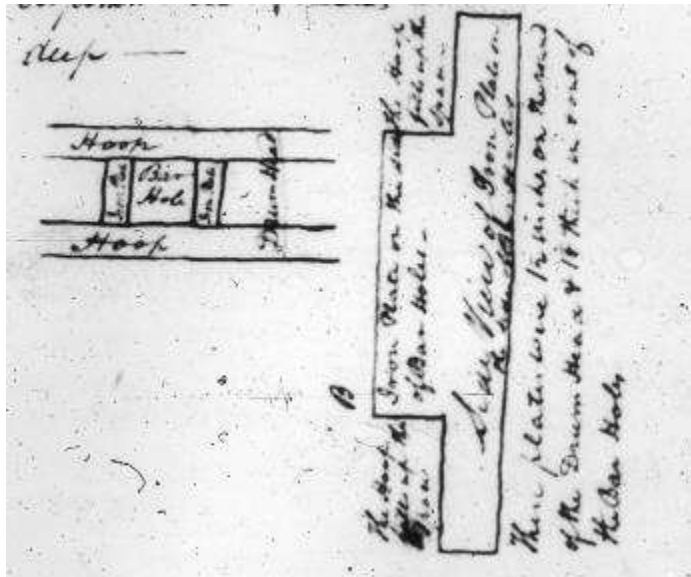
Large scupper cut after the ship was launched to admit the water pass out under deck was cut oval 6 by 9 inches

Misc. Measurements
A cubic foot of powder weighs 54 pounds
A cubic foot of salt water, say ocean water, weighs 64 $^{375}/_{1000}$ pounds
A cubic foot of copper 552 687/1000 pounds
A cubic foot if iron 387 pounds
A cubic foot of steel 389 pounds
A cubic foot fresh water 62 ½ pounds
231 cubic inches in a gallon
A gallon of fresh water weighs 8 355/1000 lbs
100 gallons fresh water weighs 835 ½ lbs
Winchester bushel 18 ½ inches diameter, 8 deep

Dimensioning of ship building at Sacketts Harbour on the Point 1815
Length between perpendiculars	204 feet
Extreme Breadth (see page 17)	56 feet
Depth of hold to lower gun deck	21 ft 6 in

Ship Superior built at Sacketts Harbour
Length between perpendiculars	180 ft
Beam	43 ft
Hold to lower gun deck	17 feet

Ship Mohawk building Sacketts Harbour
Carried 26 long 24 pdrs on gun deck. This ship had a spar deck.
Length between perpendiculars	155 ft
Beam	37 ft 6 in
Hold	15 ft 6 in

Ship General Pike – Sacketts Harbour

Length between perpendiculars	145 ft
Beam (corvette built)	37 ft
Hold (this ship had poop & top gallant forecastle)	15 ft
Waist	5 ft 8 in

Brig Jones & Jefferson (Sacketts Harbour)

Length between perpendiculars	121½ ft
Beam	31 ft 6 in
Waist	5 ft 4 in

Dimensions of the New Orleans at Sacketts Harbor, in a letter from Sailing Master Ford May 1843

Length of keel	183 ft 6 in
Length lower gun deck	200 feet
Moulded beam	55 ft 3 in
Beam Extreme	56 ft 10 in
Depth of keel to lower gun deck	17 ft 9 in

Cost for Raratan

Carpenter	148560	Dllrs	21813.74
Laborer	5230		4557.97
Sawyer	3510		6911.00
Joiners	1308		1573.37
Smith	2868		3334.00
Caulker	40		60.00
Painter	147		207.00
Turner			16.00

Supposed necessary to complete the ship

Carpenter	3000	days
Caulker	2304	
Reamer	768	
Joiner	3720	
Sawyer	320	
Laborers	1200	
Painter	350	

Dimensions of masts & spars 70 feet

	Keel straight rabbit	23 – 5	Beams 11 ft
74	Main Mast	73 feet	Head 7 feet
72	Fore mast	70 Do	Do 7 Do
36	Fore top mast	32	Pole 12
14	Bowsprit outboard	13 feet	
52	Main boom	55 Do	
53	Fore yard	50 Do [mast] 6	
	Fore sail yard	34 Do	1 – 4
	Fore gaff	20 feet	
	Main gaff	24 feet	
	Jibboom	32 feet	Pole 11
	Main top mast	30	Pole 10

I remain yours most
respectfully

Schooner Dolphin

June 23rd 1820

James Sexton

TRANSCRIPTIONIST NOTE: This page was very faint, I cannot vouch for the accuracy of the transcription. Also please note that the figures at the left of the page appear to have been added after the original entries were made, and other than the first 6 listed are completely indecipherable.

Dimension of Schooner Bellona
Built in Baltimore in 1812 for Francis Brewer of Phila

Length	103		
Beam	25		
Hold	11	7	Custom house measurement

Dimension of Schooner General Widner
Built in 1818 in Talbot County, Maryland

Length	94	6	
Beadth	22	6	
Depth	10	3	Custom House measurement

Dimensions of the Lord Nelson, Caledonia & Prince Regent - Three Deckers

Length of lower gundecks	205
Keel	170
Beam	53
Depth of Hold	24

Dimensions of the Commerce de Marseilles — Three decker

Length between the perpendiculars	208	4
Keel	172	
Breadth	54	9½
Depth	25	

San Joseph — Five decker

Length between perpendiculars	194	3
Beam	54	3
Hold	24	3

Experimental method of finding the tonnage of a ship

Construct an accurate model agreeable to the drawings f the proportioned ship, about one-fourth of an inch to a foot & let the light load water line be marked on it. Then put the model & load it until the surface of the water is exactly at the light water line & let it be suspended until the water drains off & then weigh now since the weight of similar boats are in the triplicate ratio or as the cubes of the homologous dimensions the weight of the ship when light is therefore equal to the product of the cube of the number of tons the ship exceeds the model by the weight of the model with is to be reduced to tons. Hence if the model is constructed to a quarter of an inch scale, multiply the height of the model by the cube of *48 or 110592 which will give the weight of the ship - - If the multiplier be ounces the product will be ounces, if pounds it will be pounds & is to be reduced to tons accordingly

Example:
The cube of 48 = 110592
multiplied by <u>30</u> lbs or 480 oz
3317760 = 1481 oz 320 lb
*one fourth of an inch being equal to 1/48 of a foot

Again the model is to be loaded until the surface of the water coincides with the load water line. Now the model being weighed, the weight of the ship is to be found by the preceding rule, then the difference between the weight of the ship when light & loaded is her tonnage required.

June 27, 1820. Having finished the model of a ship of the line (intended for a three decker) of the following dimensions 210 feet between the perpendiculars, 56 feet 9 inches beam, 23 feet hold. I put it into the water & loaded it also as to bring the lower port sill 5 feet 6 inches clear of the water, after which the ballast model were weighed at 23 CWT 2 qtr & 20 lbs = to 2652 multiplied by the cube of 16 which is the number of three quarters inches in a foot thus:

Displacement fresh water	4849	16
add difference between salt & fresh water	<u>145</u>	<u>16</u>
Weight in tons is	4994	96
Salt water with the port sills 5 feet		<u>16</u>
		256
		<u>16</u>
		1536
		<u>256</u>
		4096 The cube of 16
		<u>2652</u> Weight of model in pounds
		8192
		20480
		24756
		<u>4192</u>

2240) 10862592
<u>8960</u>
19025
<u>17920</u>
11059
<u>8960</u>
20992
<u>20160</u>
832 = 7 cwt
<u>784</u> 1 Qr
48
<u>28</u>
20 lbs

Tons	Cwt	Qr	Lb
4849	7	1	20

Weight of the ship according to the model when fully equipped with the lower port sills 5 feet 6 inches clear of the water

Allow the keel 2 feet clear of the bottom plank

The above displacement was made in river water. There is 145 tons difference of displacement between fresh water and ocean water.

	Tons	Qr	Lbs
Freshwater	4894	7 – 1	20
Add Difference	145		
	4994	7 – 1	20

74 Gun Ship No 2 North Carolina

	Ft	In
Length of main rim of gallery on the side of ship	16	10½
Length of upper rim on the side of ship	14	9½
Length of lower stool Dᵒ Dᵒ	13	9
Length of upper Dᵒ Dᵒ	13	3

Main rim sided to show   9 inches
Upper rim Dᵒ   Dᵒ   8 $^3/_8$ inches
Lower stool Dᵒ   Dᵒ   6 ¼ inches

Perpendicular height between rims   4 feet 7 inches
Height between main rim & lower stool   1 foot 8 $^5/_8$ inches
Height between upper rim & upper stool   1 foot 3 inches
Quarter pieces sided   16 inches

Head
Distance on the bowsprit (underside) from for side
Of rabbit to the sweep of foreside of bust 20 [2]

Caliber of guns and weights

42 pdr cannonade weighs 25 CWT 32 pdr weigh 22 CWT
24 pdr weigh 18 cwt
18 pdr cannonade weigh 12 CWT 12 pdr canon weigh 8 CWT
caliber 3.113

Caliber of guns & pdr

| A 4 pdr | Caliber 3.20 | 6 pdr | Caliber 3.668 |
| | Shot 3.053 | | Shot 3.498 |

An 8 in gun weight 3 CWT a 10 inch gun weighs 86 CWT

9 pdr	Caliber 4.200	12 pdr	Caliber 4.623
	Shot 4.000		Shot 4.403
18 pdr	Caliber 5.292	24 pdr	Caliber 5.524
	Shot 5.040		Shot 5.547
32 pdr	Caliber 6.410	42 pdr	Caliber 7.018
	Shot 6.105		Shot 6.684

Dimentions for a sloop of war capable of Carrying 30 long 24 pdr corvette

165 feet between perpendiculars
37 feet beam – say for corvette 39 beam
17 feet hold
Distance between the port 7 feet   [is a little too short SH]
Ports fore & aft 3 feet – this for say 3 feet 3 inches
Foreside of foremost port abaft from perpendiculars 12 feet
Afterside of afterport before after perpendicular 10 feet
If to be a frigate built ship, increase the beam to 43 and its length to 175.

The following information was derived from Captn John Elton US Navy Hampton Roads April 17, 1820

Draught of water aft	25	6½
Do Do forwd	24	5½
Starboard bow port	5	10
Larboard Do	5	9

Stores provisions & water all in – ninety guns mounted & 720 men & offices on board

Midship port	starboard	4	11½	
D Do	larboard	4	9	US Ship Columbus from [Samuel] Hodge
Afterport (mean)		5	11	76.174 gallons of water

North Carolina Capstans

This ship has three capstans – the two lower ones worked together & the spar deck capstan was calculated to work with the lower one or separate as may be required. There were palls fixed to with whole amount of days work for building them & fixing compleat say three hundred fourteen 314 days work.

Dimensions of Frigate Macedonia

Taken from the British

Spar Deck	162	4
Gun Deck	158	
Beam	35	6 from inside to inner
Extream Breadth	39	6 from outside outer

Count de Bordas rule for ascertaining the stability of ships of War

Count de Bordas has indicated a method both easy & simple to ascertain the degree of stability of any ship of war of all rates before going under sail with all stores on board & the sails bent. That is by placing on starboard side of the ship on the broadest part of the deck close to the bulwark between the main tack & main sheet such a number of men as the beam measures decimeters, taking care that the remaining part of the crew be equally dispersed throughout the ship so as to be certain of the experiment – the equilibrium through the dispersing of such a number of men being found the rise of water at starboard must accordingly increase. You must then mark exactly to what height of the ship side it terminate & that being done make them go over to the other side in like manner the number of men which have cooperated in this experiment The change of position will cause a fall of water at starboard side of which you must also be very exact in marking on the ship side the termination of this fall & if the intervals of the marks were between the rise and fall be twenty centimeters the ship has the desired stability and will prove to be too crank if the distance between the rise & fall be twenty five centimeters & too stiff if it be less than fifteen centimeters - - French measurement

English rule for ascertaining the stability of ships

On lower deck guns, run in on one side and not on the other side & the guns on the other decks to be out on both sides – the men at quarters on all the decks on the side on which the lower deck guns are run out. If the ship heels over 12 inches she is wanting stability.

Dutch rule for ascertaining the stability of ships

All the crew placed on Main gun deck, close to the side between the main tack & main sheet. If the ship heels more than 8 inches Dutch measurement, she is considered as wanting stability.

Extract of a memoranda read before the Royal Society at London, November 27, 1817 by Sir Robert [Seppings]

The Nelson, St. Vincent and Howe in form & dimension are precisely the same as their frame, beam & external planking of the same scantling. The two former were built according to the old plan & the latter upon the diagonal system. After the Nelson was launches she was found to have altered nine & a half inches; the St. Vincent nine & a quarter inches while the Howe altered only 3 inches & 5/8. The whole machine in the case of the two former ships were generally disturbed. The Howe exhibited no such symptoms.

The rise of tide where these vessels were launched could not have been less than 18 feet.

S. Humphreys

Dutch Ship Wassenaar 80 guns
Ballast 353 tons

Lower gundecks		28	30 pdrs
Main Dᵒ		30	18 pdrs
Quarter Dᵒ		14	8 pdrs
Forecastle		8	12 pdrs
		80 guns	

Height of the poop

between the planks		7	2
Under the beam	6	6	

Gundeck

between the planks		7	-
under the beam	6	1	

Between decks

Between the planks		7	3½
Under the beam	6	2½	

Cockpit

Between the planks		7	7
Under the beam	6	2½	

Depth of Hold

16 – 9 under deck		16	9
under beam		15	9

[Note: The measurements made in Amsterdam post of 11 inches the depth of hold is taken from the top of keelson once one measures]

Draft of water aft		24	2	
Dᵒ forward			22	4
Difference of draft		1	10	

Height of midship lower gundeck port				
from the water		7 feet		
Forward Port		8	2	
After Dᵒ		7	7	
Width of main deck port			3	2
Height		3	0	
Width of lower deck ports		3	7½	
Height		3	2½	
Distance from upper part of lower deck port				
to upper part of gun		1	0½	
Distance from lower side of gun to lower hull	6 ¾			

Gunpowder

One pound of gun powder measures 32 inches
A cubic foot of gun powder weighs 54 pounds
a cubic inch of gun powder weighs half an ounce

Dimensions of Ship New Orleans

The following dimensions of the ship of the line New Orleans were taken in the spring of 1842 by the Naval Officer commanding at Sacketts Harbor & being different from those recorded at page 1 are here recorded

Length of keel (supposed to be the whole length)		183	6
Do lower gun deck	200		
Beam moulded		55	3
Do extreme		56	10
Depth of hold to lower gun deck		17	9
From lower deck to underside of main deck beams		5	6
Ports on lower gun deck		34	
Do main Do		36	
Do spar Do		36	

Gun Powder

A cubic inch weighs half an ounce
A cubic foot weighs 54 pounds
One pound gun powder measures 32 inches

Gunpowder

A cubic foot of gunpowder weighs 54 pounds
A pound of gunpowder contains 32 solid inch

A cubic foot of bread (hard) will weigh 19 pounds made with ale

Dimensions of the ships Hibernia & Caledonia

	Hibernia		Caledonia	
Length between perpendiculars	201	4	205	
Breadth	53		53	6
Hanging of the gundecks	2	3½	1	8
Depth of keel - main	1	8½	1	8
. - false	1	1 1	0	
Depth of hold	22	4 23	2	
Height from the upper side of the main keel				
to lower side of midship port	26	11½	27	9½
Draft of water when completed				
to 5 months - aft	29	9	26	
. -foreward	25	7	24	10
Broke from the sheer when launched	3		2½	
D⁰ when loaded	7		5	
Lower side of midship port above				
water when compleat	4	8	5	6
Displacement of water by the				
inch at the height of 14 feet 5 inches	20 $\frac{16}{35}$ tons		20 $\frac{6}{35}$ tons	
Displacement at 22 feet 3½ inches				
as above	23 $\frac{14}{35}$		23 $\frac{10}{35}$	
Total displacement per plan at a				
height of 22 feet 3½ inches from the upper				
side of main keel	4647		4557	
Entire displacement or weight				
of the ship and all its contents				
when completed to 5 months	4701		4506	
Weight of the hull when launched	2561		2456	

Iron used on the US Ship North Carolina

196 - 3   length between perpendiculars
53   moulded beam
22   depth of hold

226.596 lbs round iron
92.863 lbs flat Dᵒ
25.470   lbs square Dᵒ
21.943 lbs foreign iron
336.872 total of iron used on the North Carolina
               for plumbing & equipment &c
               See 2 leaves ahead

Iron & copper used in the Frigate Susquehannah was on the stocks 175 between perpendiculars 45 beam

NOTE – The ship is on the stocks finished as **[empty]** 14 stakes of bottom plank on each side. The butt bolts are not drove. The false keel is not on, neither is the center step. The decks are all laid – the rail on & the ship finished empty as before mentioned

Round iron	99.3654	Round Copper	26.204
Square iron	2.011	Spike copper	13.661
Flat iron	4.182	Total copper lbs	39.465
Spike iron	4.928		
Total of iron	110.485 lbs		

The additional for comings for the bilge strakes are not in nor are those for thick strakes at first futtock heads nor the 7/8 bolts intended as a substitute for trenails, augering thru for scarph & drifts which are in.

427 patent augers used

Novemb. 1823

Cancer

John Goring had been for some time afflicted with a Cancer on his underlip. He applied to several physicians in Philadelphia who gave as their opinion that there was no use for him for him but by cutting the Cancer out this he refused to submit to. In the month of February he took dry Spanish Oak Barke and burnt it to ashes which produced about one peck which he put into a tow linen bag & then into a pot & covered the bag with water and boiled it till all the strength of the ashes was boiled out. He then took out the bag with the ashes and boiled the lye down to about half a Pint & of the consistency of molasses which he then spread on some lint the size of the Cancer and kept it on ¾ of an Hour. He removed the plaster four (4) times keeping each Plaster on about 45 minutes. Which effects the Cure. He then applied a poultice of bread & milk with a little flax seed which extracted the cancer nearly the size of the small end of a mans little finger as black as a Coal, he then applied some healing salve & in two weeks he was perfectly cured.

The above facts were related by John Goring to Thomas Humphreys of Delaware County in the Spring of 1823.

<div align="center">Samuel Humphreys</div>

Cancer

A Physician recommended in the London Paper as an ascertained Cure for Cancer the application of a strong vegetable ointment with Hemlock to the scirrus tumour a vegetable diet exclusively and the copious use of Sarsaparilla & other vegetable beverages.

Weight of Iron Tanks for Water put on board US Ship North Carolina 1n 1822. (Tank for the Pennsylvania weighed more

25 Tanks Weight 24.027 lbs contain 9364 gallons, equal to 2 56/100 lbs weight to each gallon of content

One tank containing 163 gallons weighed 494 lbs

One tank containing 656 gallons weighed 1399 lbs

Tanks for the Pennsylvania weighed 3 32/100 lbs to the gallon

The North Carolina had on board 147 tanks weighing 157.848 at 18 each 28412 64/100 lbs
These tanks held 63000 gallons of water.

For your tanks say 2 ½ lbs of iron for one gallon of water, water casks say 9/10 lbs of cask for one gallon.

The tanks on board the Brandywine weigh about 2 lbs to the gallon

Size & Weight of Iron used on U.S. Ship North Carolina

Round iron ½ inch auger	4351		Flat Iron brought over	20,584
5/8	8640		5 ¼ by 7/8	5098
¾	52548		5 by ¾	10.856
7/8	11.171		4 ¾ by	1112
3/8	274		4 ½ by 7/8	1997
1 inch	5826		4 by 7/8	2460
1 1/8	25.072		4 by ¾	1339
1 ¼	43.496		4 ½ by 5/8	5192
1 3/8 inch without drift	20.600		4 by 5/8	2387
1 3/8 inch auger	30.951		4 by ½	1840
1 5/8	721		3 ½ by 3/8	1152
1 ¾	.2472		3 ½ by 5/8	432
1 7/8	15437		3 by 1	2963
2 inch	1030		3 by 1 ¼	928
2½	1068		3 by ½	5954
2 ¾	702		3 ½ by 7/8	2184
2 7/8	338		3 by ¾	340
3 inch	1821		3 by 1 1/8	6132
3 ¾	1005		2 ½ by 3/8	1813
4 inch	1268		2 ½ by 1 ¼	1765
Assorted	2286		2 ½ by ¾	4532
Total Round Iron	231.077 lb.		2 ½ by 5/8	412
Flat Iron 6½ by ½ inch	698		2 by 1	1765
6 by½	632		2 by ¾	579
6 by 1	7666		2 by ½	2071
5 ½ by 1	10.531		1 ½ by 3/8	5014
5 by 5/8	645		Total Flat Iron	92.731
5 ½ by 3/8	412			
	20,584			

Square Iron		3 Inch 1789	Waste Iron	802 lbs
2½	4640			
2	1078		Rod Iron 7108 lb	
1 ¾	1262			
1½	4381		Nail Rods 560 lbs	
1¼	7214			
1 1/8	927		Steel 1372 lbs	
1	2853			
2/4	2795			
¼	11793			
¾	4733			
2½	4417			
2	1000			
Total	48687			

[2 lines unreadable text]

Round Iron	231077
Flat	92731
Square	48087
Plating Rod & Steel	9902
	382397 Equal to 170 ton 14 Cwt 1 qtr 1 lb

Obtained [this information from discussion with the contractor] Sept 14, 1832

Samuel Humphreys

Weight of Round Iron

1 7/8 weighs 9 lbs to the foot		1 5/8	6 67/100
Weight of round iron		1 ½	5 75/100
Weight in 12 inches lineal measure		1 3/8 iron	4 86/100
Do		1 ¼ Do	3 98/100
Do		1 1/8 Do	3 46/100
Do		1 Do	2 60/100
Do		7/8 Do	2 06/100
Do		3/4 Do	1 56/100
Do		½ Do	75/100
Do		5/8 Do	1 12/100

12 nine inch spikes weigh 7 lbs. 8 inch spikes 2 to the pound, 7 inch spikes 3 to the pound

Rule for the weight of Anchors

 500 lbs is allowed for every hundred tons of a ships measurement for a merchant vessel.
Ships above 500 tons do not require so great a proportion.

Proportion for Cables

For each foot of half the extreme breadth of the ships Beam allow one inch of circumference
for the Best Bower Cable. Thus a ship of 32 feet Beam will require a 16 inch Cable.

Hawse Holes

Twice & one half the diameter of the Cable
3/15 inch cable

5	3/24
2	8
10	16
2½	20 inch hole rather small
12½ inch hole rather small	

Dry Measures

The standard Gallon dry measure contains 268 4/5 cubical inches.

The bak or Trinchester Bushel 2150 2/5 inches.

The Dimensions of the Trinchester Bushel are 8 inches deep & 18½ inches wide.

The Ale & Milk Gallon contain 282 cubic inches.

The Wine gallon contains 231 cubic inches & it is remarkable that the Wine & Ale gallons have the same
proportion to each other as the Troy & avoirdupois pounds have – that is as the pound Troy is to one pound
avoirdupois , so is one Wine gallon to one Ale gallon.

English Rule of measurement
Rules observed in measuring the tonnage of ships in the Kings English-Merchant service.

1st Let fall a perpendicular from the fore side of the stem at the height of the Hawse Holes & another perpendicular from the back of the Stern Post at the height of the wing transom.

2nd From the length between these perpendiculars deduct 3/5 of the extreme breadth ⊗ likewise as many 2 ½ inches as the wing transom is high from the upper edge of the keel & the remainder is accounted the keel for tonnage. Then multiply the keel for tonnage by the extreme breadth & that product by half the extreme Breadth; then divide by 94 the quotient will be the burthen in what is denominated Builders Tonnage.

⊗   By the extreme Breadth is meant the Breadth taken From timber to timber outside with the thickness of the bottom on each side added on which is the same thing, the thickness of the bottom plank added to the moulded breadth

Proportion for the depth of throats of floor timbers moundling size of heads for vessels from 100 – 400 tons and depth of throat in inches equals one half of the beam in feet, floor head 2/3 of the throat. This rule applies to vessels having thus floor length equal to half the beam.

A vessel of 24 feet beam will have 12 inch throat and 8 inch at floor head. Vessels more than 400 tons will require less throat than this same rule.

Weight of Round Copper Bolts

1½	6 78/100
1 3/8 inch round copper weighs	5 6/10 to the foot
1¼	4 7/10
1 1/8	3 724/1000 to the foot
1	3 lbs
7/8	2 225/1000 to the foot
¾	1 5/10 to the foot

Size of the Water barrel

	Length of Staves		Diam. Bilge		Head	
	Ft	In	Ft	In	Ft	In
400 gallon cask	5	4	3	1	3	5
300 gallon cask	5		5		3	4
200 gallon cask	4	8	3	6	2	
150 gallon cask	4		2	10	2	6
100 gallon cask	3	6	2	10	2	4

Powder Barrel (1853)
A Powder Barrel calculated to hold 100 lbs of Powder is 23 inch long & its greatest diameter including the Hoop is 16 ½ inches.
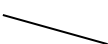
(DuPonts Powder Barrel made in 1835 21 inches long 17 inch bilge & 15 inch head)

42 pdr Carronade port
A 42 Pdr carronade requires the depth of the Port to be 3 ft 7 or 43 above [cell] above the bed when at its greatest elevation & allowing for the difference that may arise in the height of the ports. Let the under part of the upper side of the port be 2 feet 5 inches aboce the bed or top part of the cannonade carriage.

2 ft 3 inches above the bed or carriage say	2 ft	3
Add thickness of skids & bed	1	2
Allow the gun to be diam of the rail		1
Depth of port	3	6
Portside from deck		8
Under side of rail above deck	4 ft	2 in

January 1836

A 42 Pdr carronade weighs

A 32 Pdr   Dᵒ   Dᵒ   about 1 ton

An English Long 18 Pdr weighs about 37cwt 12 qr

A Bushel of English Coal weighs 88 lbs

To store powder barrrels according to DuPonts rule as above will require for one height of barrels 1 ft 6, two heights bilge head [tiers] 2 -9 ½ - three high 4 – four high 5 – 5, five heights 6 feet 8 ½ inches, six heights 8 feet

 (Jan 1842) Boxes proposed to carry powder in cylinders 2 feet long 17 inches square

Proportions for Long Iron Guns

The length of the Gun calculating from the hind part of the Base ring is 16 calibers
The length is then divided into 7 equal parts.
The length of the first reinforce two of these parts.
The length of the second reinforce is one & 15/16 of 76 caliber
The chase is four wanting 15/16 of the caliber
Center of trunnion is 3/7 of the gun length from the **[indecipherable text]**
The length of [pomiglion] or [caseable] is one & 13/16 of a caliber
The caliber of the gun being divided into 16 equal parts

The thickness of metal at the bar ring from the base is	18 5/10
At the end of first reinforce	17
At the end of second reinforce	15
At the same place for the beginning of the chase	13 75/100
At the end of the chase [**indecipherable**] muzzle the moulding is sided	9
At the swelling of the muzzle/meaning the extra is reinforce	12

US Frigate Guerriere

Draft of water	Forward – bowsprit in	11-2
Do Do Aft		16 -6
Height of middle port		17-5
Height of midship port		13-7
Height of aftermost port		13-5

Frigate Brandy launched at Washington

Draft of water when launched	Aft	16-6
	Forward	12-6
Depth of Keel clear of Bottom plank		2-4

Boats of US Ship North Carolina with the cost of wages paid for each boat.

Boat	Length	Breadth	Depth	Cost
Launch	38	10 – 6	4	285
First Cutter	36	8 – 10	3 – 6	195.50
Second Cutter	32	8 – 3	3 – 6	181.75
Third Cutter	29	7	3 – 4	110
2 Quarter Boats	27	6 – 6	2 – 10	138
Gig	30	5 – 3	2 – 10	144.30
Stern Boat	29 – 6	7	2 – 11	120.57
Life Boat	27	7	3	<u>165</u>
				1340.12

The Launch, 1st, 2nd & 3rd cutters are Carvel built, the remainder are clinker work. This includes pay of master boat builder.

Hammocks Netting for the North Carolina
4 feet 9 inches asunder, 2 feet wide & as high as the poop deck.

Hawse pipes for chain cables

Multiply the diameter of the wire by 4 to which add one inch will make the diameter for one inch iron of 5 inches.

Dufeif 1826

The present system of French Measures

Present measure weight	Substitution	Value in American Measure
The mrylametre or new [league] 10.000 meter or 10 miles		32509 feet 2 inches or
		6 miles 11 ½ feet 2 inches
The mile or kilometer	1000 metre	3280 feet 11 inches
The present [puck] or decimeter 10 metres		32 feet 9.07 inches
The metre	one forty millionth part of a meridian of the Earth	39.3702 inches or about three and one third feet
Corrected Metre	39.3927 inches	
The palm or decimeter	one tenth metre	nearly 4 inches
The doight or centimeter	one hundredth of metre or 10 milimeters	nearly four tenths of an inch

Nails for making moulds
Quantity required for making a set of
44 gun ship molds
28,000 of 4 penny
<u>52,700</u> of 6 penny
80,700 Total required for one set of frigate moulds

Error: It cannot take 80,700 nails for the set of frigate moulds

290 nails 6 penny weighs one pound
933 nails 4 penny weighs one pound

Nails expended in making a set of frigate moulds excluding after fan & after deadwood mounds in the [end plan]

Two thousand 6 penny
28 pounds 4 penny

Weight of Lead used for Frigate Guerriere

Cwt	Qr	Lb
222	1	1.9

Siding & moulding size of Schooner Shark

Timbers

Timber & room	21 ¾ inches
Floor sided	7 ½ inches
Futtocks sided	7 inches
Throats of floors	10 inches
Floor heads	8 ½ inches (too big)
Gunwale	3 ¾ inches (rather small)

Mast Timbers for Sloop of War Vandalia

		Upper End	Lower End
Main Mast	1 piece 80 feet	9 by 17 ½	26 by 26
2 cheeks	each 76 ft long	7 ½ by 20	4 by 12
1 Paunch	76 feet long	5 by 12 ½	5 by 12 ½
Foremast	1 piece 72 ft long	8 by 17	23 by 23
2 cheeks	each 68 ft long	6 by 19	3 by 11
1 Paunch	68 feet long	4 ½ by 11	4 ½ by 11

One pound of light drawing nails or sheathing nails will completely fasten 8 feet of sheathing. That is a vessels bottom measuring 2400 feet will require 300 lbs sheathing nails.

Dimensions of the Santissima Trinidad, Spanish three decker – in English measure.

Length between perpendiculars 204 feet 9 inches, beam moulded 54 feet

What is the momentum of a ram falling from any given height?

Answer- the square of the height of the fall in feet multiplied by the weight of the ram in pounds. Suppose the fall of the ram is 20 feet, the weight of the ram 1500 lbs. What weight would a pile thus drove be capable of sustaining without moving perpendicularly

$$
\begin{array}{r}
20 \\
\times\ 20 \\
\hline
400
\end{array}
\qquad
\begin{array}{r}
400 \\
\times\ 1500 \\
\hline
200000 \\
400000 \\
\hline
600000
\end{array}
$$

600000 pounds = 217 tons (doubtful)

Tonnage of Ship of the Line Pennsylvania
Made out for Comm Stewart- June 1829

Keel for Tonnage Custom House Measurement	183 feet
Beam for Dᵒ Dᵒ Dᵒ	57 ft 9
Burthen in tons Custom House Measurement	3212 18/95 (say 3241 tons corrected tonnage)
Burthen in Tons Sheer carpenters (old) measurement	2940 83/95 Tons
Length between perpendiculars from the aft side of Rabbet of Stem to fore side of Rabbet of post at crossbeam	210 feet

Deduct Thickness of apron & Transom   3 feet 6 inches will leave the length of Gun deck 206 feet 6 inches.
Length of Spar Deck 220 feet 8 inches Tread of the deck.
Length between perpendiculars 210 feet
Beam moulded   56 ft 9
Depth of Hold   22 ft 3
Length of Keel Carpenters tonnage   173 feet 6 inches
Beam   Dᵒ   Dᵒ   56 feet 9 inches

Custom House Measurement of Ships & other Vessels 1799

To measure the tonnage of any Ship or vessel the surveyor or such other person as shall be appointed by the Collector of the district to measure the same, that if the said ship or Vessel be double decked take the length thereof from the fore part of the main stem to the after part of the Stern Post above the upper side the Breadth thereof at the broadest part above the main [wales] half of which breadth shall be around the depth of such vessel then deduct from the length three fifths of the breadth - multiply the remainder by the breadth and the product by the depth and shall divide the last product by 95, the quotient whereof shall be deemed the true content or tonnage of such Ship or Vessel and if such Ship or vessel be single decked the said Surveyor or other persons shall take the length and breadth as above directed in respect to a double masted ship or Vessel shall deduct from this same length Three fifths of the breadth and taking the depth from the underside of the deck planks to the ceiling in the hold shall multiply and divide as aforesaid and as the quotient shall be deemed the tonnage of such Ship or Vessel.

March 2nd 1799

Ship of the Line North Carolina

Height of Eye Bolt for gun tackle of cannonade above spar deck 1 foot 8 inches
Height of Center of Scupper for breaking above the spar deck 2.5

Dimensions of Vessels from the Treasury Books 1829

	On Deck	Beam	Hold	Tons
Brig Georgianna	77	22 ft 1	9 ft 1	134
Brig Pilot	83 ft 6	20 ft 10	9 ft 6	147
Schooner North Branch	81	24	7 ft 7	127
Brig Shawmut	76	21 ft 2½	9 ft 8½	137
Schooner Only Daughter	60 ft 4	18 ft 7	7 ft 4	70
Brig Sea Island	82 ft 5	23 ft 11	12 ft 5	212

The above are Eastern Vessels belonging to Boston

	On Deck	Beam	Hold	Tons
Schooner Eclipse	87 ft 6	22 ft 6	9 ft 3	163 Built on the Eastern Shore of Maryland
Economy	76	22	8	116 tons Built in Delaware
James Monroe	60 ft 5	20 ft 9	7	73 Cape May
Mount Vernon	69	22ft 10	8 ft10	115 Salem Mass

Swedish Weight
A Skeppund, iron weight, is 320 lbs Swedish

18 Skeppund iron weight is equal to one last of 5700 lbs Swedish

Gun Powder
A pound of gun powder measuring 32 inches
A cubic foot of gun powder weight 54 pounds
A cubic inch of gunpowder weight half an ounce

Live Oak Frames

A ship of the line 2400 tons takes	13 cubic feet of mountain timber to pull from				
A 44 gun ship 1600 tons takes	12 Do	Do	Do	Do	Do
A sloop of war of 700 tons takes	12(12) Do	Do	Do	Do	Do
A schooner of 180 tons takes	10(10) Do	Do	Do	Do	Do

Oakum

A ship of the line 2400 tons takes 14 lbs oakum to the ton = to 33,600 lbs
A 44 gun ship 1600 tons takes 13 lbs oakum to the ton = 20,800 lbs
A sloop of war of 700 tons takes 11 lbs oakum to the ton = 7,700 lbs
A schooner of 180 tons takes 7 lbs oakum to the ton = 1,260 lbs
The Store ships in Phila about 12 lbs to the ton

1832

Frigate Vernon (British) 175 foot gun deck- -52 foot Beam projected by Captain Symond surveyor of the Navy

The ship with her masts, shot &c (no guns) draws 3 inches more water forward than aft --- She is to sail against the Castor a 32 gun frigate projected by Sir Robert Sepping former surveyor of the Navy.

Dimension of the old Frigate Louisiana

	Feet	Inches
Depth of head of gundeck	138	8
Breadth extreme including both wales	39	8
Distance between gundeck ports	7	
Height of ports	3	4

Frigate Congress

	Feet	Inches
Depth of the head of gun deck	165	4
Breadth extreme including both wales	41	1
Distance between gundeck ports	7	6
Height of ports	3	4

Memorandums taken on the dimentions of Frigate Constitution September 1833

From aft side of apron (14 inches thick) on gundeck to center of foremast	22	10
From center of foremast to center of main mast	77	9
From center of main mast to center of mizenmast	48	5
Height from the thwarts of floors to top of birthdeck below its main hatchway	14	7

The deck had sagged about 2½ inches

Height from top of birthdeck beam to top of gundeck riser	7 feet	
Height at main hatchway from thwart of floor timber to port side	23	11

Height of port sills of gundeck   foremost port   25 inches above deck

2nd	Do	23 Do	Do	Do
3rd	Do	22 Do	Do	Do
4th	Do	22 Do	Do	Do
5th	Do	22 Do	Do	Do

The ports abaft the 5th port were about 22 inches. The hang of sheer of ports sills fore about 17 inches

Top gundeck beam as it now stands is	21	9
gundecks planks to be		4½
	22	1½
The old beam springs only 2½ inches add 2 ½ inches more for the men	2½	
	22	4
Height of port sill from thwarts of floors	23	11
Decks below port sill	2	.
	21	11
Add spring of beam		5
	22	4

Height of present deck, say from top of gundeck plank to underside of spar deck beam at ⊗	6	1
Height forward at bowsprit bitts	6	3

See letter to Commn Jesse D. Elliott September 16, 1833

By act of the legislature of Pennsylvania –
Bbl flour head 16½ inches at the head the staves 27 inches long – 196 lb flour
Half bbl of flour head 12½ inches at head staves 23 inches long
Corn meal holds 800 lbs
Diameter of head 27 inches   Diameter at bung 31 inches   Staves forty one inches long

Dimensions of a flour barrel   26 inches long   This is the entire dimensions
20½ inches diameter at bulge
18½ Do Do Do at head

Whole bbls diam head 17 inches   length staves 27 inches
Half bbls length of staves 22 inches   diameter hd 13 inches

Iron Spikes

6 inch spikes	4 to the pound shank 7/16
Half crown nail	4 inches long 8½ to the pound
20 penny nails	¾ inches long
Deck nails	5 inches long 6 to the pound
Two shilling nails	4 inches length 12 to the pound
Tenpenny nails	2¾ inches long

Dimensions of US Brig Spark

Length between perpendiculars	100 feet	
beam moulded	26 feet	
Depth of hold	11	6

Dimensions of US ship Hornet

Length of gundecks	106	
Beam moulded	29	7
Do extreme	31	4
Height between decks	5	3

Ship Wasp

Length of gundecks	117	11
Beam moulded	31	4
Hold	14	6

The English estimate that their ships carry to sea only 2/5 of the timber purchased for their construction

Annotated Maritime of 1824

The timber necessary to put a vessel in frame is about 1/3 of the whole quantity required for her

White Oak   Difference between the rough quantity & that put into the Ship is as 97 to 42

Yellow Pine   Difference between the rough quantity & that put into the Ship is as 76 to 43

Live Oak   Live Oak frames after being cut to moulds the proportion is as 42 to 36----- better multiply the rough quantity by .83

Timber produced (that is cut to moulds) from trees is about one fourth of the contents of the trunk of the tree

Live Oak Trees & their produce
It is supposed that in live oak land south and west of Cape Florida there is only two trees to one acre of land & that each tree will produce 30 cubical feet of moulded timber flat for the Navy (say for ships of the Line, Frigates & large Sloops of War) equal to 60 cubical feet to each acre.

Schooner Guerriere

Draught as originally drawn by Mr. Eckford	
Length between perpendiculars	92.2
Distance on gun deck from the perpendicular to centre of foremast	16.3
Distance on gun deck from the perpendicular to center of main mast	54.6
Distance on gun deck from center of main mast to after perpendicular	37.5

182

Length between perpendiculars   92.2

Parabolic Method of Calculation

3 feet

2 feet

2   2

24 feet
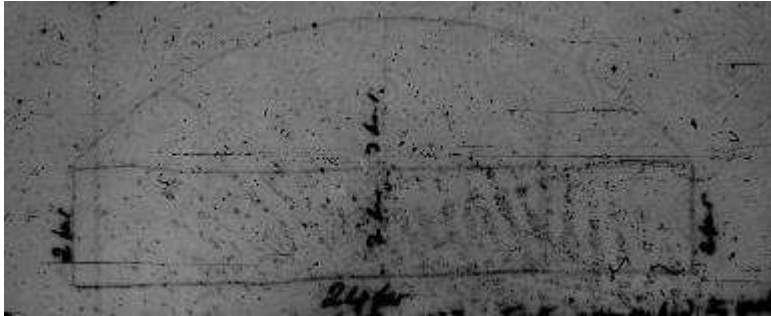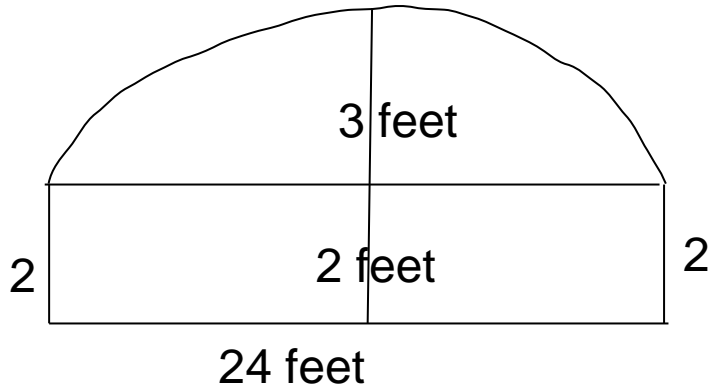
Take half of the first, twice the second & half the third, add them together & divide by 2. The product will then be multiplied by the distance between the first & third cosine multiply the verified sine 3 feet by the chord & take 2/3 for the cosine

```
       4
  3  )12            24          The parallelogram 48 feet
     4x 24=96       72          The Segment-------48
```

Dimensions of masts and spars of Sloop Peacock as she was fitted for the Polar expedition 1828

		Length Ft In	Diam^r	Mast & Yardarm	
Main	mast	70 0	23	12	2
"	topmast	42 0	13 $^2/_{10}$	7	
	topgallant	21 0	7 $^9/_{10}$		
	Royal	16 2	5 $^9/_{10}$		
Fore	mast	63 0	20 $^7/_{10}$	10	10
	Topmast	37 9	11 $^9/_{10}$	6	3
	topgallant	18 10	7 $^1/_{10}$		
	Royal D^o	14 5	5 $^3/_{10}$		
Mizenmast upper end of mast on a level with					
	Main X trees		15 $^3/_{10}$	9	9
Mizen	topmast	33 7	9 $^2/_{10}$	5	7
	topgallant mast	16 10	5 $^5/_{10}$		
	royal mast	12 11	4 $^1/_{10}$		
Main	Yard	57 8	13 $^2/_{10}$	2	11
	topsail yard	27 6	6 $^1/_{10}$	1	5
	Topgallant yard	18 4	4 $^1/_{10}$	11	
Fore	yard	51 3	11 $^9/_{10}$	2	9
	topsail yard	38 5	8 $^5/_{10}$	3	3
	topgallant yard	24 5	5 $^6/_{10}$	1	3
	royal yard	18 3	3 $^6/_{10}$	10	
Crossjack	yard	43 3	9 $^2/_{10}$	4	2
Mizen topsail yard		30 11	6 $^9/_{10}$	2	
Mizen topgallant yard		19 8	4 $^4/_{10}$	1	10
Royal yard		13 1	3	0	8
Sprit sail yard					
Bowsprit outboard					
Gibboom					
Flying gibboom					
Spanker					
Mizen Gaft					
Fore Gaft					
Main Gaft					
Lower swinging boom					
D^o D^o yard					
Fore topmast steering sail boom					
D^o D^o D^o D^o yard		115	3		
Foretop gallant studding sail boom					
D^o D^o D^o D^o yard					
Main topgallant steering sail boom					
D^o D^o D^o D^o yard					

Main top breadth	15 feet, fore & aft	10 feet	
foretop D^o	13 6 D^o D^o	9	
Mizen	10 10	7 3	

Main trestletrees in depth	11½ inches thickness	5¾ inches
Fore D^o D^o	10½ D^o D^o	5¼ D^o
Mizen D^o D^o ~	7¾ D^o D^o	4 D^o

Foretop mast trestle trees in depth	6 inches	thickness	3 inches	
main D⁰ D⁰ D⁰ D⁰	6 $^6/_{10}$	thickness	3 $^3/_{10}$	
Mizen	4 $^6/_{10}$	D⁰	2 $^3/_{10}$	

Foretopmast trestle trees in length	3 1		
Main D⁰ D⁰ D⁰ D⁰	3 5		
Mizen D⁰ D⁰ D⁰ D⁰	2 5		
Foretopmast X trees	After crosstree in length	8	1
	Middle D⁰	6	9
	Forward D⁰	5	8
Main topmast X trees	After crosstree in length	9	-
	Middle D⁰	7	6
	Forward D⁰	6	3
Mizen top X trees	After crosstree in length	6	6
	Middle D⁰	5	5
	Forward D⁰	4	6

This ship Peacock was hauled up in the Brooklyn Navy Yard & rebuilt by a new draught.

J Humphreys Aug 3rd 1828

Ship of the Line Ohio

At 25 feet draft of water she will displace 4120 Tons
15..2 forward 19..4 abaft 17..3 in 2170 Tons
Had in then 200 tons kentledge, keel & false keel

At 24 feet water it requires 22 tons 164 pounds forward to settle her one inch
At 20 feet 6 inches it requires 20 tons, 1643 pounds D⁰

A comparison of the foot & other measure of length

in different countries, namely the number of feet &c in each place corresponding to 100 English feet; & also the length of a single measure of each denomination in English inches & hundreths of an inch.

	Number of each Equal to 100 English feet	Length of a single measure of each sort
Amsterdam	107.62	11.15
Antwerp	106.76	11.24
Berlin	98.44	12.19
Copenhagen	97.17	12.35
England	100	12
France (pieds de roi)	93.89	12.78
Russia	87.27	13.75
Spain	107.91	11.12
Sweden	102.66	11.69
		This column is English Inches
Hamburg	106.28	11.29
Lisbon	92.78	12.96

Remarks of Mr. Buchanan of Pennsylvania
on the Tariff bill in Congress April 1828

Let us now Sir examine the calculation which the gentleman has made for the purpose of proving that our navigation cannot sustain the additional duties proposed by the bill upon foreign hemp iron - -

House in January 1, 1821 addressed certain questions to the Mercantile Society of New York two of which with the answers I shall take leave to read to the committee:

"Question – What is the cost of a British ship of say 300 tons, what of an American of the same force & burthen; & generally the difference is the price of shipping by the ton in each country completely equipped?

Ans: A British ship of 300 tons equipped for sea will cost 24, 000 dollars or 80 dolls per ton. An American ship of the same quality will cost 18,000 dolls or 60 dolls per ton.

"Question – The quantity of iron & cordage to the 100 tons of shipping Answer: It will require 4 tons of iron 1500 lbs copper bolts 4¼ tons of cordage & 20 bolts of duck to the 100 tons—

In answer to another question to the same society state that "foreign vessels would not have a preference in our ports over American built vessels unless at a reduction in freight of 25 percent or [advantage] equivalent at the port of destination