

The Sailor's Wordbook, W.H. Smyth, 1867 and Nautical Dictionary, and A. Young, 1863 (Exactly the same definitions)

Primary Evidence

TOP. A sort of platform placed over the head of the lower mast , from which it projects like a scaffold. The principal intention of the top is to extend the topmast-shrouds, so as to form a greater angle with the mast, and thereby give it additional support. It is sustained by certain timbers bolted fore-and-aft on the bibs or shoulders of the mast, and called the trestle-trees; athwart these are the cross-trees. In ships of war it is used as a kind of redoubt, and is fortified accordingly. It is also very convenient for containing the materials for setting the small sails, fixing and repairing the rigging, &c. The tops are named after the respective masts. This top was formerly fenced on the after-side by a rail about three feet high, between the stanchions of which a netting was usually constructed, and stowed in action with hammocks.

TRESTLE-TREES. Two strong bars of timber fixed horizontally fore-and aft on each side of the lower mast head, to support the top mast, the lower cross-trees, and top; smaller trestle-trees are fitted on a topmast-head to support the top gallant-mast and topmast cross-trees.

McCann - Masts and Yards (Building a Ship Model - Sovereign of the Seas), page 86

Secondary Evidence

The trestletrees were set perpendicular to their mast and bolted there, as well as to the crosstrees, so they did not necessarily parallel the waterline. - and the trestletrees were fitted to the masts at an angle, such that the tops paralleled the load waterline. (contradictory)

I am not sure what he was trying to say here as the statements are in the same paragraph with only a sentence in between that bears no relationship to the contradictory comments?

Secondary Evidence

Longridge says that the trestle trees should be parallel to the water line, so the angle against the mast would increase as rake increases.

From <<https://modelshipworld.com/topic/7842-fitting-of-top-mast-in-a-raking-mast/>>

Secondary Evidence

An article titled '**Model of US Frigate Constellation**' by **H.W. Potter**, published in 'Popular Mechanics' of July 1942, at page 126 states:

"Next trestletrees are fitted to the top of the cheeks as shown in Figs, 54 and 58. Note the top of the cheeks are slanted equal to the mast rake to allow the trees to set parallel with the waterline."

Popular Mechanics - Google [Books](#)

Secondary Evidence

An article titled '**Build this Model of Flying Cloud**' by **James Tate**, published in 'Popular Mechanics' #149 No. 2 of March 1928, at page 496 states:

"Glue the whole assembly to the masthead, making sure that the top lies parallel to the waterline, regardless of the rake of the mast."

https://books.google.com.au/books?id=0t8DAAAAMBAJ&pg=PA496&lpg=PA496&dq=were+trestletr ees+parallel+to+the+waterline&source=bl&ots=wmpxb6HUU&sig=ACfU3U0IEKYj7Tp3_sLMB5_atK D7nrUPWw&hl=en&sa=X&ved=2ahUKewijyPGitLn8AhW4w3MBHelZBso4PBDoAXoECBwQAw

Secondary Evidence

An article titled '**Fitting and Rigging the Alert' Part II, by Frederick Aeschbacher**, published in 'Popular Mechanics' of August 1946, at page 161 states:

"Note that the holes in the latter slant so that the caps parallel the waterline despite the rake of the masts."

Secondary Evidence

'Ship Models from the Age of Sail: Building and Enhancing Commercial Kits.' by Kerry Jang 2022

"What this means is that the tops are to the mast at an angle to compensate for the rake so it is parallel to the waterline (Figure 390). The mast caps are also put on at an angle and ..." (Figure 391)

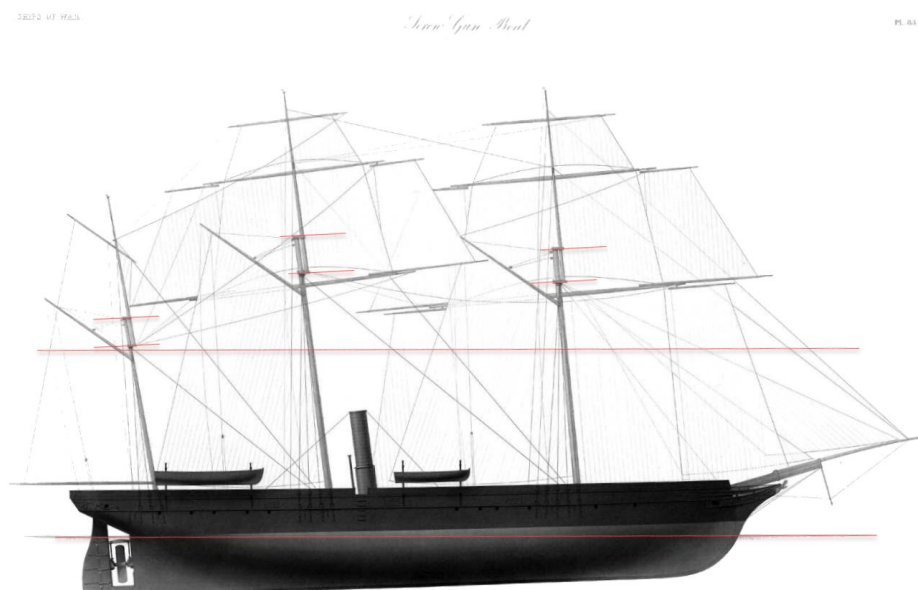
[Ship Models from the Age of Sail - Google Books](#)

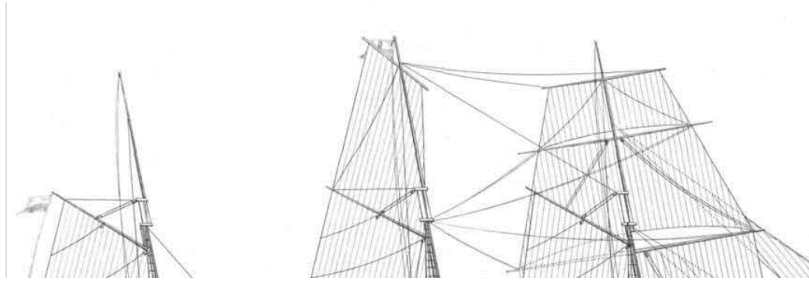
Primary Evidence

The following are from '**The Modern System of Naval Architecture**' by J. Scott-Russell, 1864

Plate 83 shows a contemporary Gun Despatch Vessel (HMS *Esk* - also a screw sloop) which is very similar in design to that on which the *Victoria* is based. Note the tops and cap are parallel with each other but not to the waterline. However, if the bow is driven down with wind in the sails this would make them generally parallel with the water.

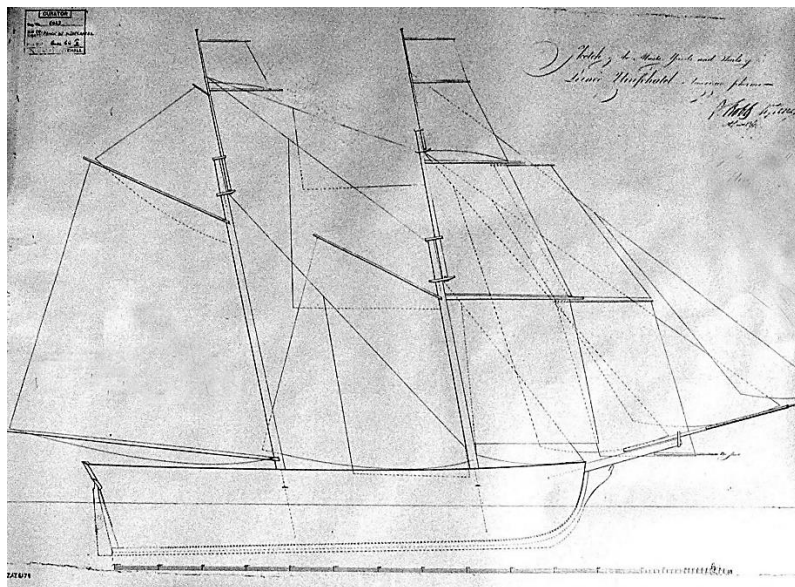
Generally, his drawings show the latter (all parallel with each other), even for more raked masts in schooners etc. as shown in plate 28 (crop):





Primary Evidence

A search of the NMM does not throw up many images of the masting for contemporary vessels. I must admit I am not comfortable with the new NMM search functionality and may have missed some. However, the following is of *Prince of Neufchatel* – 1812 (posted on MSW by Michael Sutton)



Primary Evidence

A lithograph (c1856) and photograph (c1865) of the *Victoria* were drawn/taken from slightly differing aspects forward of the beam. Unfortunately, they have some perspective distortions due to the aspect, but are sufficiently side-on enough to determine a rough alignment of the caps and the top.

The masts and tops were replaced in 1860/61 so the top and cap arrangement may have been changed; it certainly appears that way in the following screen captures from the imagery. It appears a heavier iron cap was fitted on build and a much lighter one by 1865.

From the above evidence it was impossible to positively determine the correct alignment of the caps as most are parallel in the photograph but not quite in the lithograph, although the tops are all shown parallel with the waterline (when viewing the full image).

Note, that in the photograph crops, close inspection shows some of the masthead protruding past the cap. These 'gaps' appear parallel inferring they were perpendicular to the mast, while visually they appear parallel to the tops. An alternate interpretation is that the gap is actually a close fitted iron cap, and the roller has been moved to a separate masthead hoop immediately below.

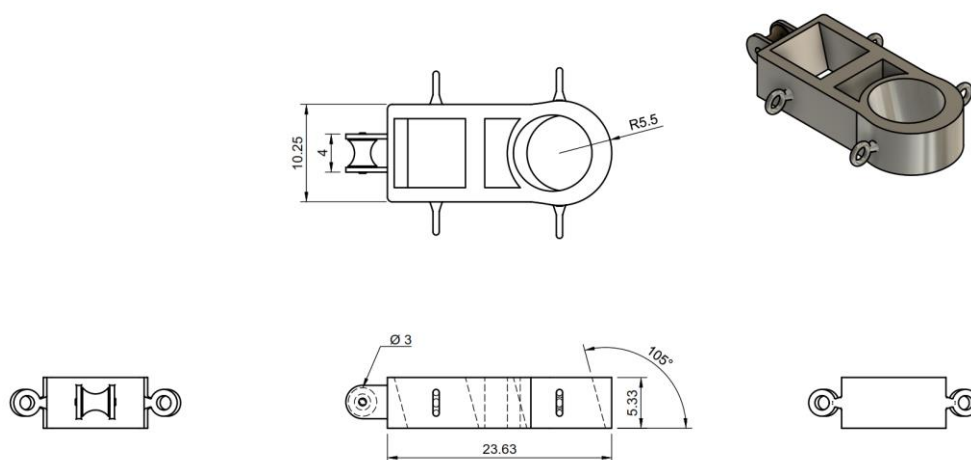


Fore, Main and Mizzen masts from the Photograph



Fore, Main and Mizzen masts from the Lithograph

A friend drew up the following render for me; it is for the Mizzen mast raked to 15 degrees aft. This will have been a cast iron fitting so the intricacies of the design should not have been an issue in manufacturing them.



(Copyright Chris Ramsay – 2023)

Conclusion

I am reasonably confident in the alignment of the tops being parallel with the waterline, but I am not so confident with the caps.

The principles authors I have consulted are uncharacteristically silent on the alignment of the caps for some reason (includes Lees, Underhill, Nares, Kipping, Burney, and Fincham). Generally, based on the imagery of *Victoria* alone, it could be argued the caps are parallel to the waterline (if we allow for some distortion). However, I cannot say what degree of distortion is to be accounted for.

This would seem to conform with most imagery/drawings of clippers, and ships post mid-19th century. J. Scott-Russel (a renowned naval architect of the time) consistently shows the tops and caps parallel with each other in all his contemporary (to *Victoria*) vessels. However, there are some original drawings by designers/naval architects that show the cap set perpendicular to the mast, although these are generally earlier than the mid-19th century.