Berth Deck Area Activity

How big was the berth deck on board Constitution and how many sailors could sleep on it at one time? In this activity, calculate the surface area of Constitution's berth deck, and use the size of a hammock and how much room a sailor was allotted to sleep to find out how many sailors could sleep at the same time.

The Dimensions of Berth Deck, with space available for sailors to sleep was 87 feet (length), and 39 feet (width, maximum beam).

(Note: These dimensions are only the space for sailors and marines to sleep. These dimensions do not include the Wardroom (where the officers slept) or Midshipmen's steerage quarters aft, or Sickbay forward. These dimensions also do not include hatchways or other intrusions. In reality, the Berth Deck was much larger than 87 by 39 feet.)

What is the surface area of Constitution's berth deck in feet?

Hammocks were sailor's beds. They are made of canvas, and while when they are laid out flat are about 6 feet long by 3.8 feet wide, they take up less space when hung with a body in them, approximately 3 feet long by 1.2 feet wide. However, the clews (lines which suspended the hammocks from the beams) might add another foot on each end, making the hammock about 5 feet long in total when hanging with a body in it.

What is the surface area of a single occupied hanging hammock, with and without its clews?

On American ships during the War of 1812, the width between hammocks when hung tended to be 18 inches (meaning that a single sailor had about 9 inches on either side of his hammock).

In the British Royal Navy, it was commonly stated that each sailor was “allowed a space 14 inches broad for his hammock” (Brian Lavery, The arming and fitting of English ship's of war, 1600-1815, P. 181). In David Steel's 1794 Hammock Plan (provided below), the diagram shows a British Royal Navy ship of the line with a “full complement”. These ships crammed many more sailors into almost the same size space than American naval ships did.

Calculate the width (in feet) that an occupied hammock would take up, including the space on either side

Now calculate the square footage that a single occupied hammock would take up on the deck:

Now, how many hammocks, and therefore sailors, could hang and sleep at the same time on Constitution's berth deck?
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What is the surface area of Constitution’s berth deck in feet?

87 x 39 = 3,393 ft²

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What is the surface area of a single occupied hanging hammock, with and without its clews?

Without clews: 3 ft (length hanging) x 1.2 ft (width hanging) = 3.6 ft² (area hanging)
With clews: 5 ft (length hanging w/ clews) x 1.2 ft (width hanging) = 6 ft² (area hanging with clews)

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18 inches = 1.5 ft; 1.2 ft (width of hammock) + 1.5 ft (width of space) = 2.7 ft of width/hammock

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2.7 ft (total width) x 5 ft (length of hammock hanging space) = 13.5 ft²

Now, how many hammocks, and therefore sailors, could hang and sleep at the same time on Constitution’s berth deck?

3,393 ft² (area of berth deck) / 13.5 ft² (surface area of hammock hanging area) = 251 hammocks or 251 sailors