


# Spray (sailing vessel)



The *Spray*.

Career (United States)	
Name:	<i>Spray</i>
Fate:	Lost at sea in November, 1909; cause unknown.
General characteristics	
Class and type:	oyster fisherman
Tons burthen:	12.71 (9 tons empty)
Length:	39 feet 9 inches
Beam:	14 feet 2 inches
Depth of hold:	4 feet 2 inches
Propulsion:	sail only
Sail plan:	sloop; yawl after 1885
Complement:	1
Notes:	[1]

The ***Spray*** was a 36-foot-9-inch (11.20 m) oyster sloop rebuilt by Joshua Slocum and used by him to sail single-handed around the world, the first voyage of its kind. The *Spray* was lost with Captain Slocum aboard in 1909, while sailing from Vineyard Haven, Massachusetts, on the island of Martha's Vineyard, to South America.<sup>[2]</sup>

## History

In 1892, a friend, Captain Eben Pierce, offered Slocum a ship that "wants some repairs". Slocum went to Fairhaven, Massachusetts to find that the "ship" was a rotting old oyster sloop named *Spray*, propped-up in a field. Despite the major overhaul of the ship, Slocum kept her name "Spray", noting, "Now, it is a law in Lloyd's that the Jane repaired all out of the old until she is entirely new is still the Jane."

Its days as a fishing boat, probably as a Chesapeake Bay oysterman, had come to an end by 1885, and it was a derelict, a slowly-deteriorating hulk sitting in a makeshift ship's-cradle in a seaside meadow on Poverty Point in Fairhaven, Massachusetts, when Captain Eben Pierce of that town offered it to Joshua Slocum as a gift. Slocum came to Fairhaven to look at the *Spray* (sorry sight that it was), and he undertook to repair and refit it over the next thirteen months.

In Port Angosto, Strait of Magellan, the *Spray* was re-rigged as a yawl by adding a jigger.<sup>[3]</sup>

## Seaworthiness

"Yachtsmen pleasuring in the 'lilies of the sea' will not think favourably of my craft," warned Joshua Slocum, anticipating the criticism of those who juggle with coefficients. "They have a right to their opinion, while I stick to mine."<sup>[4]:260</sup> It is worth reading the Appendix of *Sailing Alone Around the World* for Slocum's candid explanation of the *Spray* design and its seaworthiness.

An analysis by Howard I. Chapelle, curator of maritime history at the Smithsonian Institution and a noted expert on small sailing craft, demonstrated that the *Spray* was stable under most circumstances but could easily capsize if heeled beyond a relatively shallow angle. He felt that Slocum was merely lucky that his unstable vessel had not killed him earlier.

Despite this, and other criticisms of the *Spray* design, many hundreds of *Spray* copies and several *Spray* replicas, are presently sailing on all oceans of the world. Indeed, there has been no recorded incident of a *Spray* design having been lost at sea with all hands since Joshua Slocum and *Spray* disappeared in 1909, and the general opinion of that is that basic seaworthiness was not an issue in the vessel's fate. However, one of the many theories for the boat's disappearance suggested that her internal ballast may have shifted in a severe knock-down and thus unbalanced her. Only exact replica *Sprays* today would retain internal ballast. Frenchman Guy Bernardin is attempting a circumnavigation in a *Spray* replica *Spray* of Briac. With no weighted keel, the boat carries 1.4 tonnes of iron ingots as ballast – jig-sawed into position in the bilge, just like Slocum's *Spray*. Would they fall out if he rolled? "They might..."<sup>[5][6]</sup>

In his book "Captain Joshua Slocum", Joshua's son Victor Slocum stated that "the ballast was concrete cement, stanchioned down securely to ensure it against shifting should the vessel be hove on her beam-ends. There was no outside ballast whatever. The *Spray* could have been self-righting if hove on her beam-ends, a fact that was proven, since, by an experiment on an exact duplicate of the original boat and ballasted just like her. The test boat was hove down with mast flat to the water and when released righted herself."<sup>[7]:280</sup>

When commodore John Pflieger pointed out in *Spray*, the journal of The Slocum Society, that a long keel is harder to tack or go about in and that a boat similar to *Spray* foundered on a lee shore on this account, Peter Tangvald, competent ocean sailor who circumnavigated in his 32-foot cutter *Dorothea I*, promptly replied, "How much more should Slocum have done to demonstrate that the boat was seaworthy? I would not hesitate to claim that if one *Spray* was wrecked on a lee shore it was because her crew needed a few more hours of sailing lessons."<sup>[8]</sup>

Bound from Samoa to Australia, Slocum encountered gales and heavy seas that foundered the American clipper ship *Patrician* running a course south of *Spray*. A French mail steamer blown off course reported seeing *Spray* at the height of the storm and wondered what sad fate had befallen the little ship. Slocum's log records that, at the time that passengers of the steamer were up to their knees in water in the big ship's saloon, *Spray* was laying snug under a goose-winged mainsail.<sup>[8]</sup>

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Joshua Slocum, a classic sailor and a forthright, honest man, not being concerned by the controversy over the seaworthiness capabilities, said simply, "I have given in the plans of the Spray the dimensions of such a ship as I should call seaworthy in all conditions of weather and on all seas." He also stated: "I may some day see reason to modify the model of the dear old Spray, but out of my limited experience I strongly recommend her wholesome lines over those of pleasure-fliers for safety."<sup>[4]:267</sup>

## Self-steering ability

One of the most remarkable things about Spray was her ability to run before the wind under her regular fore-and-aft rig with the helm lashed, and hold her course for hours or days on end. If Spray had not had this ability, Slocum's performance would have been a physical impossibility.

On nearing the Cocos (Keeling) Islands, Slocum noted "I didn't touch the helm, for with the current and heave of the sea the sloop found herself at the end of the run absolutely in the fairway of the channel. ... Then I trimmed her sails by the wind, took the helm, and flogged her up the couple of miles or so abreast the harbour landing, where I cast anchor at 3.30 pm, July 17, 1897, twenty-three days from Thursday Island. The distance run was twenty-seven hundred miles as the crow flies. ... During those twenty-three days I had not spent altogether more than three hours at the helm, including the time occupied in beating into Keeling harbour. I just lashed the helm and let her go; whether the wind was abeam or dead aft, it was all the same: she always stayed on her course."<sup>[4]:197</sup>

Iconoclast designer John G. Hanna, known as the sage of Dunedin but perhaps better known as the designer of the Tahiti ketch, said of Spray, "I hold that her peculiar merit as a single-hander was in her remarkable balance of all effective centres of effort and resistance on her midship section line." Hanna nevertheless felt it necessary to warn prospective circumnavigators looking for a suitable vessel that "Spray is the worst possible boat for anyone lacking the experience and resourcefulness of Slocum to take offshore."<sup>[8]</sup>

Cipriano Andrade, Jr., engineer and yacht designer, said of Spray: "After a thorough analysis of Spray's lines, I found her to have a theoretically perfect balance. Her balance is marvelous — almost uncanny. Try as I would — one element after another — they all swung into the same identical line. I attacked her with proportional dividers, planimeter, rotameter, Simpson's rule, Froude's coefficients, Dixon Kemp's formulae, series, curves, differentials, and all the appliances of modern yacht designing, and she emerged from the ordeal a theoretically perfect boat. For when she is underway every element of resistance, stability, weight, heeling effort, and propulsive force is in one transverse plane, and that plane is the boat's midship section. I know of no similar case in the whole field of naval architecture, ancient or modern."<sup>[7]:281-299</sup>

Slocum himself said "I did not know the center of effort in her sails, except as it hit me in practice at sea, nor did I care a rope yarn about it. Mathematical calculations, however, are all right in a good boat, and Spray could have stood them. She was easily balanced and easily kept in trim."<sup>[7]:280</sup>

## References

- [1] Slocum, Joshua. *Sailing Alone Around the World*. 1919: The Century Company. p. 10.
- [2] Joshua Slocum and His Travels (<http://www.joshuaslocumsocietyintl.org/jshistory.htm>) Joshua Slocum Society International Inc.
- [3] Slocum, Joshua (1919). "Chapter X". *Sailing Alone Around the World*. New York: The Century Company. p. 127. "I also mended the sloop's sails and rigging, and fitted a jigger, which changed the rig to a yawl [...]"
- [4] Captain Joshua Slocum. *Sailing Alone Around the World*, The Reprint Society, 1949.
- [5] <http://www.tradeaboat.co.nz/View/Article/Adventures-in-Slocums-Spray/450.aspx?Ne=145&N=4294967237>
- [6] Slack, Kenneth E. (1966). *In the Wake of the Spray*. New Brunswick, N.J.: Rutgers University Press. ISBN 085937274X. For stability analysis by author see Chapter 5. For stability analysis by Andrade see Appendix II.
- [7] Victor Slocum. *Captain Joshua Slocum - The Adventures of America's Best Known Sailor*, Sheridan house, 1950
- [8] Charles A. Borden. *Sea Quest - Global Blue-Water Adventuring in Small Craft*, 1967. PP 111–114.

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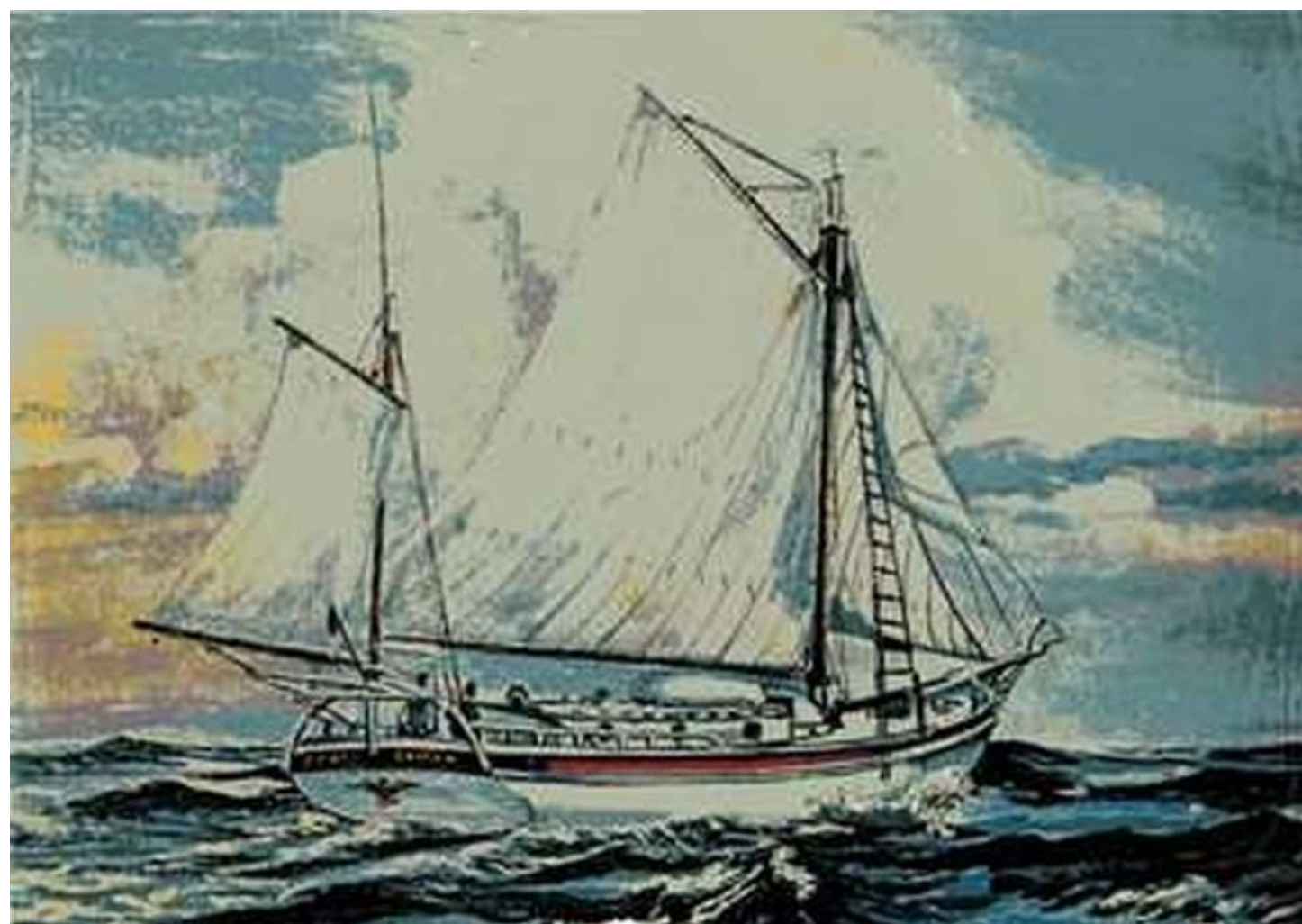
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*Somewhere in South America? 1895?*



Hauled out, Miami, Florida, 1908. Photo by Vincent Gilpin.



Washington, D.C., 1907. Photo by Winfield Scott Clark.



MEMOIR OF  
CAPTAIN JOSHUA SLOCUM



THE LIFE OF  
CAPTAIN JOSHUA SLOCUM  
BY  
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