

Nathanael G. Herreshoff

has the patent for the first sailing Catamaran in 1877.

This is a copy of a reprint from an article originally published in 1877 where Captain Nat tells of his sailing experiences with TARANTELLA the second catamaran he built. Nathanael Herreshoff also built 5 America's Cup yachts that won 6 America's cup races from 1893-1920.

[More information on Nathanael Herreshoff](#)
[drawing from original patent](#)

The Catamaran Chronicle by Nathanael Herreshoff

(Reprinted from The Spirit of the Times, November 24, 1877) Introduction by L. Francis Herreshoff.
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Introduction

I will make a few comments on this old article about catamarans, which was printed 77 years ago, or before there were regular yachting magazines in this country (if we except The Aquatic Monthly, which was mostly for oarsmen).

The general interest in catamarans of that time was caused by N.G. Herreshoff's AMARYLLIS, which competed with single-hulled craft in the Centennial Regatta held on June 22, 1876, off the New York Yacht Club's Staten Island station. AMARYLLIS raced in class 3, which was open to all boats between twenty-five and forty feet in length. There were eleven starters in the race, including the best of the large-sized sandbaggers of the time. In the first part of the race, the wind was light and AMARYLLIS did rather poorly. This put her in a place where she would have to pass most of the fleet if she were to win, but when the race was about half over, a nice sailing breeze sprang up and AMARYLLIS sailed gaily through the fleet to win by twenty minutes and two seconds over the next competitor, the famous sandbagger PLUCK AND LUCK. Some in the class were forty or more minutes behind.

While AMARYLLIS won easily boat to boat, she was protested by several of the competitors and subsequently ruled out, the prize being given to the PLUCK AND LUCK. At that time, the papers called AMARYLLIS a life raft and several things, but created all at once an interest in catamarans, so that during the next ten years there were about twenty of them on the Hudson River and the head of Long Island Sound. However, their popularity was short lived, principally because they were barred from all the regular classes, although the Newburgh Bay Yacht Club ran special classes for catamarans for a few years.

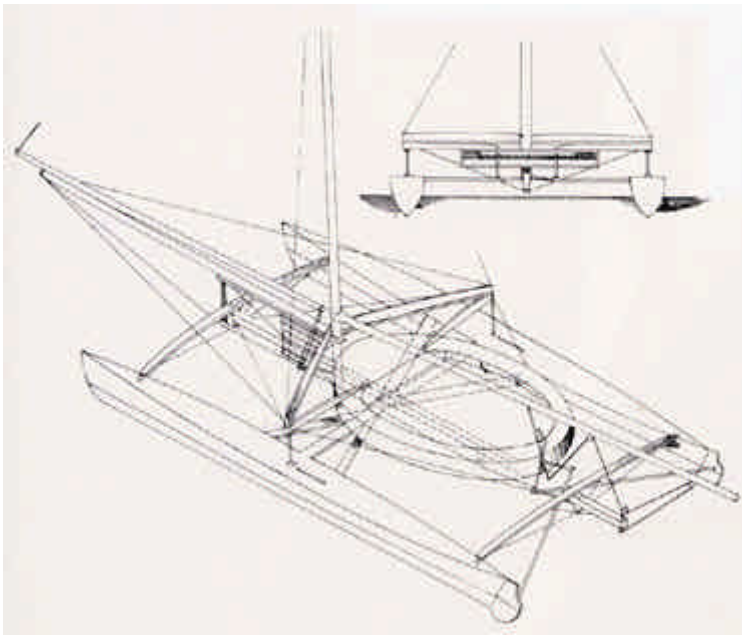
TARANTELLA was Captain Nat's second catamaran, and he had worked out some of the weak points of AMARYLLIS. By the time this article was written, he had probably had several hundred hours' experience in sailing these craft, for he made long-distance cruises in them.

The JULIA that is spoken of in the first part of the article was my grandfather's catboat, which had a shifting ballast car on rails and so was fast to windward. The WM.R. BROWN, the WM. T. LEE, and SUSIE S. and DARE DEVIL were crack sandbaggers of the time whose crews were fighting mad because AMARYLLIS and other catamarans had beaten them, for they thought they had the fastest sailboats of their time. The reader must remember that this was long before the automobile, or even privately owned steam launches made much over twenty miles an hour, so the catamaran under perfect conditions could make long runs nearly as fast as any privately owned carrier. While the horse could travel fast for short distances, it could not cover 150 miles very quickly, and the speed of the catamarn was worthwhile in those days, even if it is not now. Many of the prominent yacht designers of the past wrote a little. Dixon Kemp perhaps was more of a writer than designer. George L. Watson wrote quite a lot for the Scottish papers, mostly under a nom de plume. Colin Archer contributed copiously to the publications of the Society of Naval Architects, particularly on the wave-line theory. However, this article and one about the theoretical speed of iceboats are the only ones I know of written by Captain Nat.

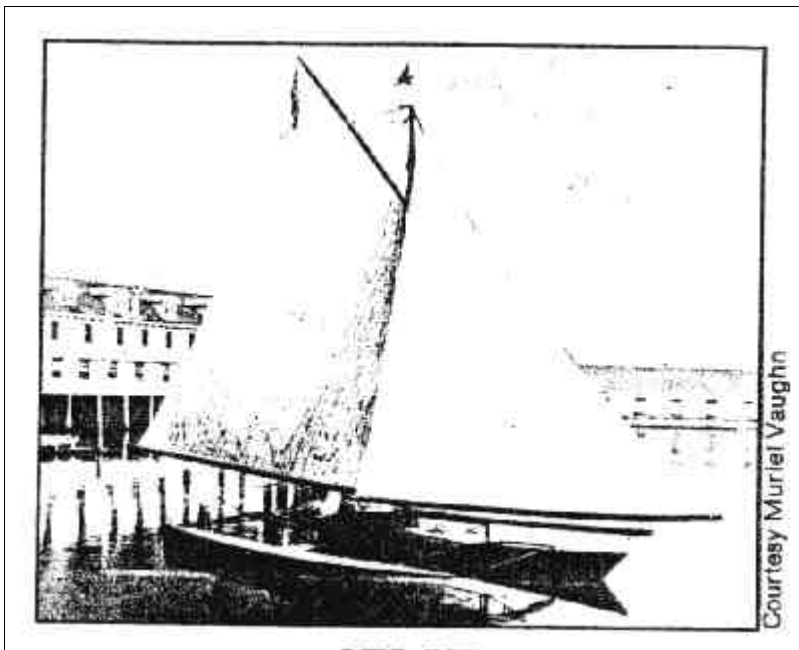
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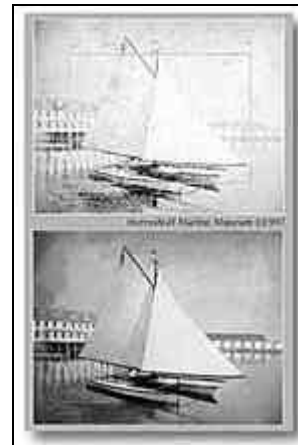
Amaryllis II, The 1933 Replica of Captain Nat Herreshoff's Pioneering Catamaran Amaryllis, Built in 1876



Drawing of Amaryllis



Courtesy Muriel Vaughn



Tarantella Captian Nat's second Catamaran

original article

Bristol, R.I. 1. Nov. 10, 1877

The day of our starting (July 26) was most pleasant and propitious. The high winds of the early summer had subsided into those pleasant breezes which the yachtsmen love best, and the fogs and rains of June were swallowed up by that invisible softness of the air, which makes a sojourn by the sea so delightful and so sought for. 'Tis our custom, when starting on a cruise, to race down the bay with the JULIA, a cat-rigged boat whose speed is always taken as a standard, and thus we can detect any error in trim that otherwise might escape us. The one that beats the JULIA is set down as all right. In this

case the wind was fresh from the south, and a beat dead to windward was the consequence. The four-mile point was reached by the catamaran in 43 minutes; the JULIA was then one mile astern. She turned back disgusted and we went on contented. And now let me hasten to put right the minds of many people, and particularly the yachting reporter of The Spirit of The Times, on the subject of windward sailing by the catamaran.

It is true that the enormous disparity of speed between the catamaran and an ordinarily built boat is most noticeable when sailing with the wind a little abaft of beam. Sailing to windward is a paradox at best, and a small amount thus gained is a greater triumph than much greater distances gained in the headlong, free wind sailing. Windward sailing is not a weak point of the catamaran. I can, with a good whole sail breeze, beat to windward faster, by a mile an hour at least, than any sailing vessel afloat, or I can beat the WM. R. BROWN, the WM.T.LEE, the SUSIE S., DARE DEVIL, or any other boat of that class that can be named, one-quarter, or five miles to their four, under the conditions before mentioned. I'm not making an idle, empty boast. I know well of what I am writing. I have sailed every class of vessel, from the small cat-boat up to the first-class yacht, and their performances are individually familiar to me. And further, if the owners of the boats whose names I have mentioned, want to be practically convinced of this, that is, of the speed of the windward sailing of the catamaran, the best way for them is to try it on. I shall be only too happy to do so anywhere and at any time.

Our first night we anchored in Newport Harbor, and hoisting our tent, made ourselves as comfortable as could be. The tent is pitched under the boom, which is hoisted well up overhead, and the whole of the car, which is 16' long by 8-1/2' wide, is covered by it. Under it there is plenty of room for several to sit or stand protected from wind or rain. Our preparations for sleeping were short and simple. Our beds of blankets were made, and the air cushions on which we sat by day, we dreamed on by night.

Camping out in a catamaran is pleasanter than one would think. The tent affords such perfect shelter, and the floor of the car is so broad and flat, that it seems more like a little house on the land than a veritable flying machine. In the midst of our sleeping, a fresh northeaster came whistling in the rigging overhead. We aroused a little, only to give her more cable, which she took with great promptness. A fair wind induces an early starting, and, at six next morning, we were off, with a fresh breeze from the north and the sky slightly overcast. The run from the Torpedo Station to Fort Adams was made in true catamaran style. Thought I, were there only a straight course to New York, we would get there in ten hours. But, at the Fort Wharf, turning before the wind, everything became calm and quiet.

If, in a catamaran, you are sorely pressed by wind or wave, turn her bow to leeward. There you will find comfort and consolation, so light she is, and presents so little resistance, that the wind blows her along like a bubble floating in the air. We laid to off Point Judith at seven, for breakfast, after which reinforcement we continued with the wind gradually dying. When off the Connecticut River we decided to steer for the Long island shore. We had not gone far on that course when the wind hauled back to east and commenced blowing. Now, with the wind east in Long Island Sound, and blowing a single-reef breeze, it does not take long to kick up a sea, especially with an ebb tide. At least it did not that day, and soon the TARANTELLA commenced to race, lifted and borne on the crest of a wave, she should shoot forward with incredible speed. We settled away on the peak halyards and made, in effect, a leg-of-mutton sail from the mainsail. This made a very easy rig, and one particularly adapted for off-wind sailing.

And now, whilst we are flying along, with the waves lifting and breaking high under the after tie-beam, let us overhaul another of the alleged failings of the catamaran, to wit: their tendency to turn over endwise or pitchpole. Now, the center of effort of the sails of the TARANTELLA is 14 '6" above the

waterline. With the wind abaft of beam, the tendency to bury the bows of the hull is quite obvious. This desire to bury forward is corrected, in a measure, first by having more than an ordinarily large jib, which, on account of its inclined position, lifts strongly that part of the boat. Then the midship link, at which point is imparted most of the press of the sails upon the leeward boat, is so placed in relation to the displacement of the hulls that the downward push (to which the force of the wind on the sails is resolved) presses more toward the stern, so the leeward boat always keeps in good fore-and-aft trim. The trouble then lies only in the lifting of the stern of the windward hull. Of course, if you lift the stern of the boat, and thus make the bow bury itself, the effect is just the same, and just as unpleasant as when the bow sinks for want of buoyancy with the trim of the stern where it should be.

Building the catamaran high in the bows cannot remedy this fault in the least degree; the only thing to be done is to take care of the stern, and the bow will take care of itself. Having stationary ballast will keep the stern down, but this is against my principles. I want to have everything about the boat as light as can possibly be; so when the stern of the TARANTELLA looks light, my companion sits on it, and says it is one of the best seats on the whole boat. It is almost always dry, and one gets there a real sense of the speed with which she tears along.

At 6 p.m., we drew near Port Jefferson, which I have always found a pleasant halfway stopping-place. The tide was nearly out, and a strong current setting in against us from the harbor. But in a catamaran nobody cares about those little places where the tide runs swiftly, and where you are mounting a little hill; the sails are so large, compared with the whole weight, that I really believe the TARANTELLA would climb the side of a mountain, if her element would only arrange itself in the position of one. The proportion of superficial area of the sails to the weight of the whole boat complete is one square foot for each 4 lbs. of water displaced, in a raceboat, say, 25' long, with a large rig and ballast to carry it, the proportion is 1' of canvas to 8 lbs. of water displaced. In a first-class yacht, such as the IDLER, the proportion is 1' to 28 lbs. of displacement. Why shouldn't the catamaran sail with such power? But what seems wonderful is that they should carry it so long and so well. The TARANTELLA will carry her sails, and carry them as well and safely as any fairly rigged yacht afloat. But their masters are apt to err in carrying sail beyond all reason. The sense of safety makes them reckless.

July 28 was one of those perfectly dead, quiet days that I have often experienced at the head of Long Island Sound. It was particularly so this day, and a decent day's work could not be made, not even in a catamaran. We anchored in Cow Bay in the early evening, pitched our tent in a sullen rain, and consoled ourselves with the idea that we were better there than in a worse place. The 29th was a little better, and we found ourselves at Hell Gate, at 10 a.m., with the lightest and most untrustworthy of breezes from SE, and the tide half flood. However, we put her to it, and by good luck, and that ability of hers to go upstairs, we got through, and finally anchored in Gowanus Basin.

On the morning of the 30th, there was a fresh breeze from the north, and we commenced the ascent of the Hudson. I kept a sharp lookout, expecting every moment to see Captain Meigs in his METEOR, and I thought then, as I have often since, what has become of him? In *The Spirit of May 26*, Mr. Meigs has much to say about the comparative merits of the flexible joint system, used in the connection of my catamaran, and the rigid or partly rigid plan that he pursues. For illustration, he makes use of a most happy simile, which, I think, serves my purpose better than it does his. 'Twas that of two drunken brothers wending their way through the streets, arm-in-arm. So long as they keep walking on a smooth, level plain, their connections are undisturbed, but if, in their erratic course, one of them would step off the curbstone into the gutter, the other one, if he undertook to keep his brother on the same plane as

himself, would find it very irksome, and after several repetitions of that sort of thing, I think they would be glad to part company.

But the laws of nature, which Mr. Meigs talks about, have made most admirable provisions for this emergency. She has placed in the shoulder of each brother a perfect ball-and-socket joint, which allows one to raise himself over an obstacle, or sink into a depression, without disturbing their union, or the laying out of any strength on either side, which would tend at last to make the bond tiresome and injurious.

In the afternoon, as we were near the head of Haverstraw Bay, there came a squall from the east-ward, and a peeler, too. We furled the jib, and settled away a little on the peak of the mainsail. The catamarans seem to possess a remarkable ability to steer well under any disposition of sail. I have beat them to windward, coming about surely every time with the jib alone, or with nothing but the mainsail. With mainsail at double or three reefs, they always work well; but what seems oddest of all, I have worked the TARANTELLA under the storm-jib alone, a little sail containing only a hundred square feet. With it I could beat to windward, and come into stays every time. When the wind and rain had ceased, and the great black clouds with their thunder had rolled away to leeward, I discovered two catamarans a short distance ahead, and on coming up with them, I found my first-born, the AMARYLLIS, and the CARRIE, a smaller one. We sailed along in company for several miles; and as we approached the old Donderberg, there came yet another squall from the same direction. There was more wind than in the first, but as for the rainfall, it defied all description. There fell nearer whole water than I've ever seen either before or since. An obstruction in the scupper of the car caused the water to collect with such rapidity that I think it must have filled it, had it not been cleared.

The TARANTELLA and AMARYLLIS stayed near Peekskill that night, and the CARRIE elsewhere, for we saw nothing of her after the squall.

The next day commenced with a calm and an ebb tide, so the navigation of the Hudson became rather tedious. The beautiful scenery of the Highlands, however, fully compensated for the lack of wind and our consequent slow progress. Farther on, toward West Point, a fresh breeze sprung from the north, and the rest of the trip was made most pleasantly. As for the regatta next day, nothing here need be said, for it has been most fully described, [we assume that TARANTELLA won. — Eds.] I can only regret it was not a dead to windward and leeward race. In that event, the minds of many reporters would have been put to rest in respect to the TARANTELLA in comparison with the other racing boats. On the morning of August 2, we started on our homeward trip and found the sailing on the Hudson just as treacherous as ever as far as the old Donderberg. A fine breeze from the eastward, and backing to the northeast, made the rest of the trip to South Brooklyn very short; for, as we neared New York, the breeze became unwarrantably fresh, and with all jib, and the mainsail partly settled away, we flew along at more than steamboat speed. Now and then a more than usually strong flaw would strike her, upon which her bows would be lifted in air, like the taking flight of a great bird who was uncertain which to make her favorite element, the sea or sky. Once comfortable at anchor at the Gowanus Basin, and sitting quietly under our tent, we talked of the folly of many people who make an effort to combine the catamaran and the cabin yacht.

In my opinion, the catamaran is a perfectly distinct variety of vessel, having its own peculiarities and characteristics, and any attempt to cross it with the old form of yacht results only in a mongrel production having none of the advantages that make the catamaran so attractive, and retaining all the bad qualities of the single-hulled yacht, with unwieldiness and ugliness combined.

The catamaran should be preserved always in its pure form. 'Tis a light, airy, fantastic machine for flying and floating, and if one attempts to inflict a cabin on her, all the lightness is lost, and I feel sure that such a craft will prove in every respect unsatisfactory. At least it shall always be my aim to develop the characteristics that belong purely to the catamaran, and make the gap between it and the old craft wider and wider.

I have demonstrated, at least to my own mind, that cruising in the catamaran is both pleasant and practicable. To those who are truly in love with aquatic sports, the tent affords sufficient shelter, and if anyone wants a cabin, it is clear in my mind he doesn't want a catamaran. The outlook on the next morning (the fourth) was most promising, and we started at six on the front of a fresh northwest breeze. Then commenced a most magnificent day's sailing. Off every point we were greeted with flaws that would send us flying at such a pace as to almost annihilate distance. Points ten or fifteen miles ahead were made and passed in an incredibly short time. But, after all, it was not a day to make continuous fast time. The wind was so unsteady, and our speed, consequently, so variable, that the fastest time made between any two points was seven miles in 28 minutes. We ran from Stratford Light to Faulkner's Island at the rate of thirteen miles an hour.

After passing the Connecticut River, the wind hauled more toward the west and became much lighter, so our hopes of reaching home that night almost failed us, but again between Watch Hill and Point Judith, fresh flaws favored us, and we turned into our home sailing ground at four in the afternoon.

The sail up Narragansett Bay was most lovely; though its banks were not as high and as boldly beautiful as those of the Hudson, the islands, now alight with the glow of the declining sun, had a peaceful beauty of their own. As is common here in summer, the northwest breeze departs with the sun, and that evening at eight o'clock it fell a perfect calm, leaving us a provoking 100 yards from our landing; however, that day's sail, though it closed in ignominy, was a great triumph. A 140-mile run in 14 hours, or in easy daylight in the summer season, was enough to suit anyone's fancy: at least I was fully contented. I have made lately several trials of windward speed in the TARANTELLA, the best of which was a beat to Newport from Bristol, a distance of 13 miles. The wind was so nearly ahead that the sum of the length of the port tacks was 7-3/4 miles, whilst that of the starboard was 8-1/4 miles. This run was made in 1 hour 53 minutes. The tide was fair. From this and several other similar trials, I have rated the maximum speed of the TARANTELLA, dead to windward, at 6-1/2 miles an hour. Of her speed, in free wind sailing, the fastest I have actually measured was 18 miles an hour, though on one other occasion I am positive of sailing over 22 miles an hour. It was at the first striking of a squall, and the water was nearly dead smooth. Unfortunately, I was not near any point where I could take time. These extreme speeds are by no means made every day in the week. In our average summer winds, say, about three-fourths of a whole sail breeze, the catamaran, sailing free, will go 15 or 16 miles an hour. As the season advanced, and the winds became stronger, I had several opportunities of trying the TARANTELLA under shortened sail. With a three-reefed mainsail and storm-jib, I made as fast time in smooth water as under any condition. With adouble-reefed mainsail alone, she worked admirably to windward. But what seemed to me most surprising was that, under shortened sail, she would make remarkably good time, even faster than the common style of yachts, and that in breezes when all sail might be carried. One day, late in September, the wind in force and direction chanced right for me to race with the RICHARD BORDEN, our fastest bay steamer. I lay in wait for her as she was making her daily trip to Providence and pounced upon her off Papoosesquaw Point. I passed her with the greatest ease, and at Rocky Point I was a full half-mile ahead, notwithstanding the breeze, which over the last part of the course became quite moderate. The distance sailed was 4-1/2 miles. In regard to next season, and what it may bring forth in the further development of the catamaran, I do not at this moment see where I should change the construction and arrangement of the catamarans that

I have built this year. I have always in view improvement, and to that end have devised a new rig, which I shall try on my next catamaran. ***

Yours,

N.G.HERRESHOF