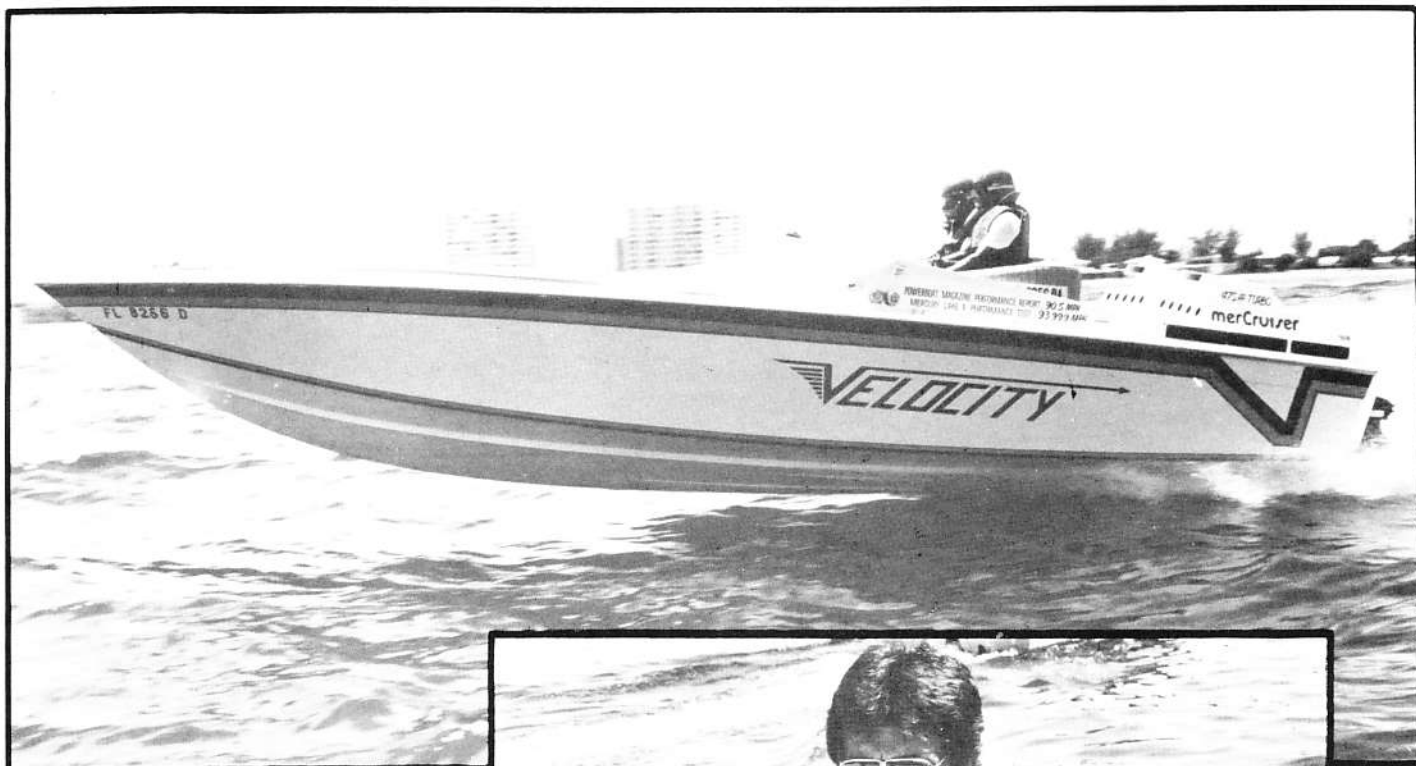


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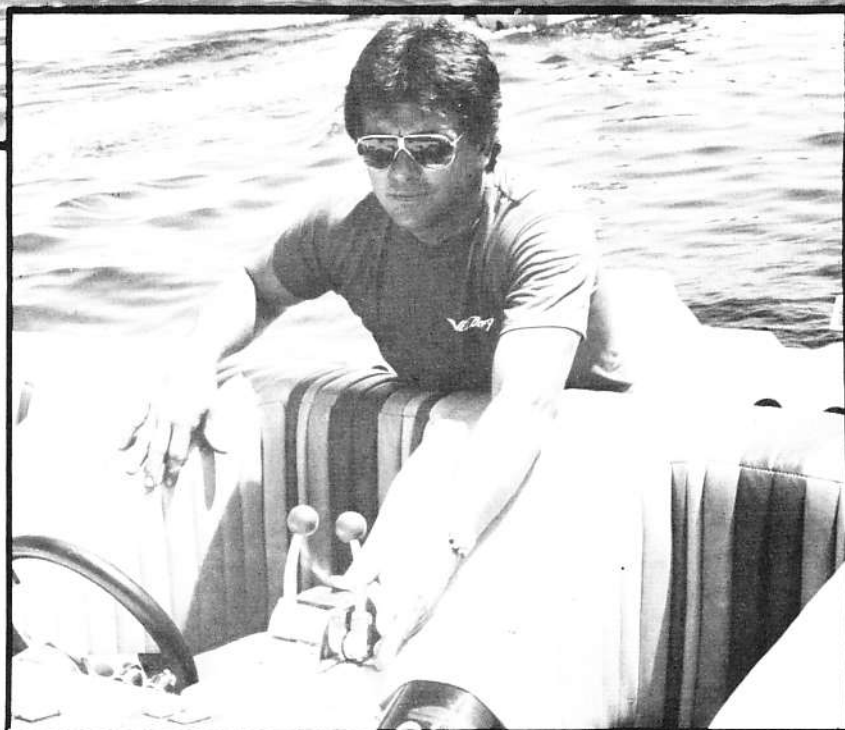


by William Holder

Boat designer Steve Stepp is an innovator. His mind is constantly prodding and thinking about the hydrodynamics and aerodynamics of the ultimate offshore hull design. And although the former Ohioan has never had any formal engineering training, his expertise belies that fact. Indeed, his capacity for marine design has made his dreams a reality.

The fledgling Pompano Beach, Florida boatbuilding operation, which goes under the name of Velocity Marine, Inc., has parlayed the Stepp engineering savvy into one super offshore swiftie. And to prove that the design is up to it's advertising claims, Steve has been putting the beautiful 30-foot machine through a rigorous speed-test program at several locations. To say the least, the results have been raising eyebrows on the offshore set.

Steve has been pushing the evolutionary skimmer at Mercury's Lake X and Sarasota, Florida, flirting with the elusive three-figure



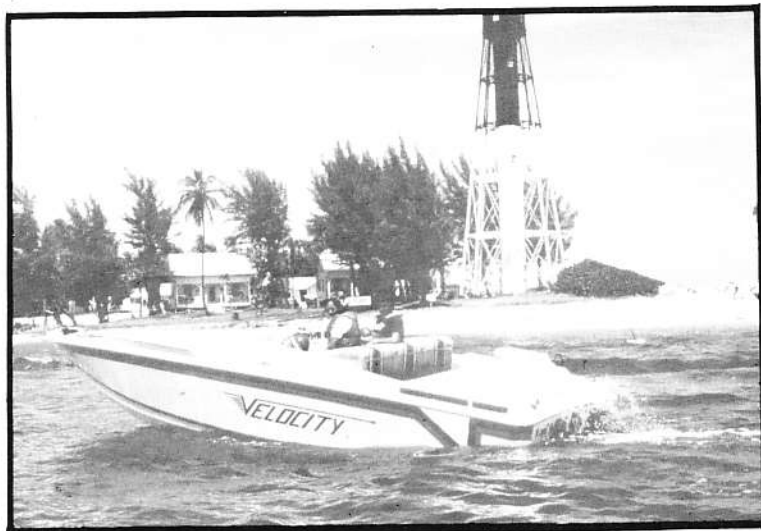
Photos by Harry Dunn

In the Velocity 30, designer and builder Steve Stepp has produced one of the most radically different offshore designs to date.

speed. The 36 year-old, ex-OPC racer gave his reasons for all the testing: "The current offshore Open Class record is held by Bob Nordskog at about 90 miles per hour in a very light boat with big turbocharged engines. And I also think that some of the big tunnel boats have run in the mid-90s.

"We felt our boat, which is powered by twin 454 ci, 475 hp turbo Chevis, could easily top 100 mph. We were right! In salt water, we've had her up to 101 at Sarasota, and almost 99 mph in fresh water at Lake X ... But there's a bit of a formal procedure that we have to go through before we can go for the record officially. What is

INNOVATION IN OFFSHORE DESIGN



only the small wetted area of the pad touching the water. It's a technique that Steve learned earlier when he designed small high performance fresh-water fishing boats.

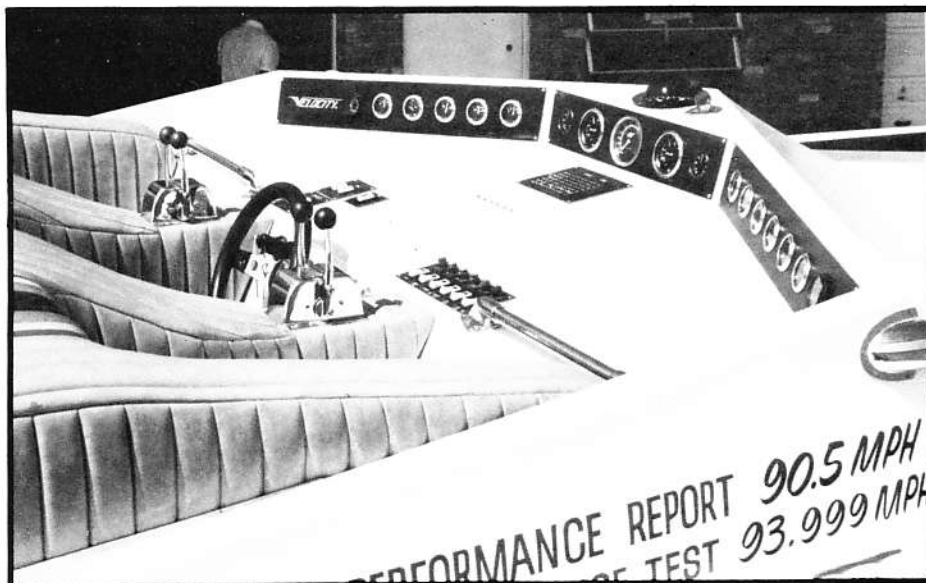
Continuing the discussion on the design, there is also another incorporation which Stepp likes to call a "progressive lifting system", which does wonders for the ride in choppy waters. He explained, "When the bow of the boat starts over a wave, the

required is to run the boat in an Open Class race and finish in the top three, then it will be qualified to officially run in sanctioned speed trials. We plan to do that next year."

As of this writing, the test boat had made about a half dozen runs at over the magic 100 mile per hour clocking. Steve added though, that "One thing that really hurt us were the 95 degree temperatures which significantly cut into the turbo performance. This fall and winter, though, the lower temperatures should really help us out. I really think that there is a lot left in the boat, maybe as much as 110 to 115 mph...There is also some additional speed possible when we get the prop size....And finally, there always is the case of getting the engines just a little nearer optimum tuning."

The performance of Steve's Open Class boat is also quite evident in the five Production Class Stepp boats that are currently running in the offshore circuit. His success is hard to argue with, since Velocity boats have won eight of the eleven races in which they were entered to date.

Stepp thinks his brilliant aquatic performance comes mostly from one aspect of the design - the bottom. "I've come up with a completely new bottom design," he said. "It has a pad in the center and a strake at the back

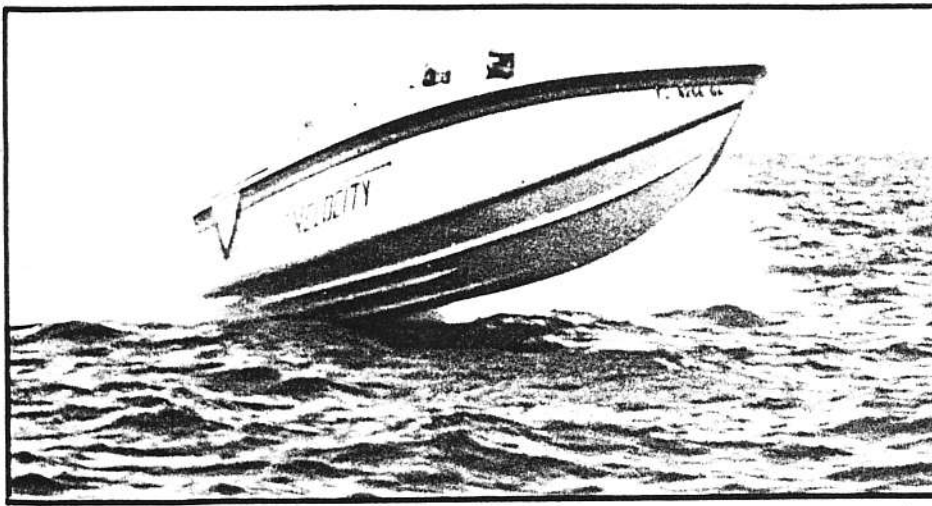


which comes forward a little more than halfway. Then, there's a second strake that's a little larger which goes from bow to stern." And, needless to say, there are a few other little tidbits that Steve isn't passing along. He actually spent a year coming up with the unique design.

The strakes and pad act together to lift the stern and level the bow in order to keep the sharp leading edge low enough to slip past oncoming waves. He explained further, "As the boat's speed is increased, it is lifted higher out of the water with no loss in stability." The Stepp goal is to have the entire boat riding at speed with

lift increases as the wave passes under the boat. Then, when the wave gets back near the transom, there is maximum lift. The boat shows an amazing level-ride capability." From a high speed ride that this author took, that miraculous bottom actually acts like a suspension system in the way it gobbled up the shock of an impact.

But there's more! There's also the unique Stepp deck design, which is a showplace for some new things on top of the water also. "It's the slope of the deck we worked on," he said. "The center slope is slightly steeper than the outside slope. It's designed to get the air over the drivers' heads and



Design refinements in the hull and deck areas have helped push the Velocity 30 to elusive three digit speed figures.

then wash it to each side. And I also believe that the design gets rid of about 75 per cent of the air to the people in the boat ... Another positive fall-out of the design is that there is a certain amount of down pressure on the boat that the deck creates."

"We also had to put the back hatch higher so that the turbos could breath.

And finally, the back corners of the boat are beveled off such that the air will be pulled together behind the boat." The Stepp innovations sometimes sound more like they should be incorporated on a high performance military fighter aircraft than a boat!

To date, Steve's eight-man operation has produced some twenty

boats at his modest facility in Pompano Beach, where the work is lovingly accomplished in a 7200 square foot unmarked building.

But the head man wanted to point out that not all of his beautifully crafted boats have felt the thrill of competition. "We've built several for use as high performance pleasure boats," he added.

The Stepp technology is far, far ahead of the competition. There's certainly not much mistake about that! He thinks that he has entered an industry that has stayed rather stagnant for a number of years with very little new technology put into new boats. "Those other companies just don't understand what I've done with my boats and the principles of my design ... My boat design has more lift in the back where the biggest part of the weight is. Theirs many times have the opposite situation. And also, our rough water capability is much better."

But Steve Stepp isn't ready to say

that this is the ultimate design. Far from it! He's always thinking about that tiny change that might result in another mile per hour. "We're always working on a number of new things," he said. "Right now, we're looking at some new trim tab arrangements."

The man is justifiably proud of his aquatic brainchild, but he hopes to keep his innovations as secret as possible. He admits, though, that it's pretty tough to do when the boat is on display at a boat show. "We keep the bottom covered up as best we can at shows, and we certainly don't allow any strangers in the shop."

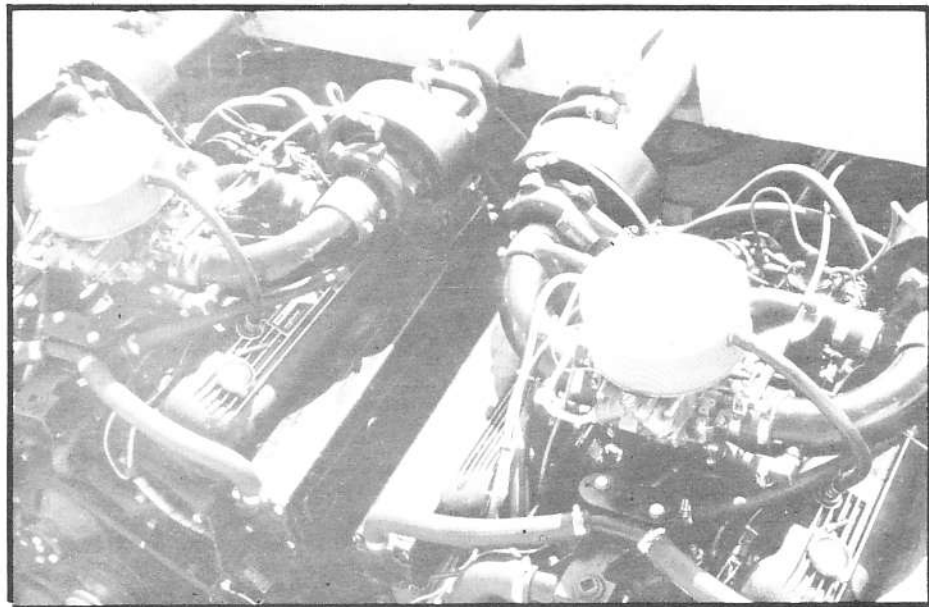
There is an abundance of OPC technology embodied in the Stepp boats. And that's not too hard to understand. His racing roots, starting in 1964 and lasting for more than a decade, were with the shifty OPC twin hulls. He did well in them, and has three APBA and three UIM records to show for his efforts, along with two devastating barrel rolls that he'd just as soon forget!

It was his experience with both racing and retailing small high performance boats that led him to the idea of "upsizing" the same principles and incorporating them into an offshore boat. But he couldn't do it in Ohio, so about four years ago he sold out everything and made the southern trek. It looks like that was one smart move for him.

Besides the performance of his boats, Steve demands that they look as good as they run. The quality is second to none. "If something is not exactly right," he said, "we tear it out

and do it over. It takes about a thousand man-hours to put one together and our current production rate is about two per month. I don't think that I would really want to get much higher than that figure because I think that our quality might suffer ...

boat were very evident. The three foot waves of that day were smoothed as if by a giant hand. And that old "suspension system" made things as smooth as silk. Our test boat had Performance First Marine turbo accessories and superb technical en-



The twin, PFM turbocharged Chevis used in the test boat.

With the OPC-type construction, we attempt to lighten the boat up in a number of different areas. And I guess if we really tried, we could lighten it up a lot more, but I like to stiffen it up in certain places to make sure it will be super strong."

"How about a ride?" Steve asked during our recent visit to the plant. It was something else!! And even though the 75-80 mile per hour jaunt was far below its capability, the handling and stability of the 6800 pound

engine assistance from Bill Barnhart and Bud Gilbert.

Talking with Steve, you have to keep reminding yourself that this self-taught technologist is not an engineer. "I just sort of do things by trial and error - the University of Hard Knocks," he modestly said. "But as the speeds continue to increase, I know that things are going to get a lot more complex, possibly requiring us to turn to wind tunnels and the like."

Not surprisingly, he feels that he could set up this boat to also run competitively on just one of the turbocharged Chevis. "If you cut one of the two engines off, she would only go about 40 miles per hour. But if we just put one engine on the transom, and optimized everything, I think we could get her up as high as 85."

What works well at thirty feet in length, reasons Steve, should also work at 38 feet. So at this time, an eight foot longer version is being contemplated. There's that old upsizing criteria again!

"Velocity" is a good name for this unique undertaking. After all, it's what Steve Stepp does best!

