

# Passagemakers Lite 46, 56, and 80

by Art Paine

First you have to formulate the question, then you have to find the challenges, then you have to identify the Essential Element, then you have to invent the solution.

I hope what they often say about art critics and book reviewers isn't true—that a critic is one who couldn't quite succeed at art and a reviewer is a writer who couldn't quite manage to get a novel published. Here I am, a reviewer of yacht designs for more than 15 years, and it makes me wonder. Does that mean I lack the ability to be a competent yacht designer?

For those who wonder, I did design boats a long time ago. I was young; I wanted to set the world on fire. I made the classic youthful mistake of hubris. Instead of paying my dues by working first under an established designer, I shot for the stars by setting off on my own. I was underfunded and inexperienced; worst of all, I didn't really have an all-consuming desire to be a designer. But I did design boats, and in the process unearthed two gifts that cannot be denied: the instinct to define the essential element that makes a design work and an ability to recognize extreme architectural brilliance when I see it. As a reviewer for *Maine Boats & Harbors* magazine, I am biased in favor of designs with what I term the "Essential Element" and in favor of designers with the instinct to discover and embellish it.

Here for the first time in *Maine Boats & Harbors* are designs from a largely unsung hero in yacht design, Tad Roberts, a name that I believe will soon enough be ranked among the greats.

Roberts did pay his dues, working for many years in the Bruce King office. I mentioned in the last issue that Roberts contributed materially to the improvement of the Covey Island Bounty ketch. More importantly, he was chief designer under Bruce King for most of the amazing large sailboats that have made King justifiably

famous. He also played a key role in Bruce King Yacht Design's first forays into powerboat design and was not an insignificant factor in the development of some of the most successful power designs in history, the Hinckley Picnic Boats and the Talaria motor cruisers.

At long last Tad Roberts has hung out his own shingle, although sad to say he's abandoned Maine in so doing by opening his office in British Columbia, Canada. We nevertheless will be able to rightly claim him as one of our own when his work deservedly ranks alongside that of such other major American designers as King, Rhodes, Herreshoff, Stephens, and...that other Paine.

Roberts has a lot of designs currently available, each extremely brilliant. Like all practicing yacht designers he suffers from the commercial anxieties of the moment, meaning that quite a few of his amazingly clever designs temporarily await customers. After having viewed them, I can say that they have in common an aesthetic refinement that elevates them above the flock. I have picked the Passagemaker Lite powerboats for review here, because they demonstrate best my concept of the Essential Element.

Let's state the obvious about the market for ocean-crossing powerboats: People will always wish to travel, and they will always want secure, cheap, long-term housing once they reach new horizons. For these needs, powerboats provide a lot more living space than sailboats of the same length. They remain on the level, go upwind amazingly well, and are far less physically demanding for older folks to drive. Economy, or the lack of it, is the wild card.

Right now there's a rather strong market for trawler yachts, but they have deficiencies caused by being high, short, and fat. Often, but not always, they either go very, very slowly or they go only moderately fast at considerable fuel cost. (There are even a few that go very slowly at unthinkable cost!) Tad Roberts targets a whole new clientele with

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his Passagemaker Lite series.

Basically there are three emerging markets for passage-making powerboats. There are retired sailboaters: anybody who has the faintest knowledge of those of us who wish to cheat motion from the wind knows we are notorious cheapskates. There are the burgeoning hordes of people who are environmentally conscious yet still prefer the turnkey convenience and comfort of powerboating. And there are those who foresee the day when fuel might be very scarce, very much more expensive, or even rationed. When Tad Roberts says he is "designing for the year 2015," it's hard to believe he isn't hedging his bets in favor of the latter category.

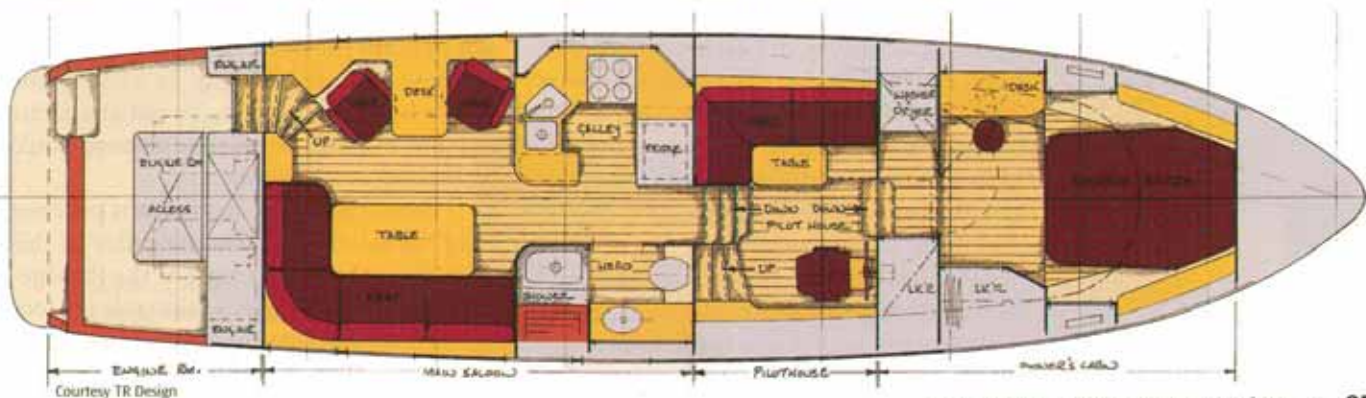
In the world of sailboating, Steve Dashew created an entirely new ethic for sail cruising with his ostensibly simple and fast

Deerfoot designs, but nobody has done a similar service for powerboating. That's what the Passagemakers Lite are all about.

There is nothing new to the idea of thin, light, seaworthy, and fast powerboats, and Tad Roberts has been inspired by several of those of the past. Before the stock market crash of 1929, there were the commuter yachts of western Long Island Sound. There was *Marlin*, built in 1930 for Edsel Ford to Walter McInnis's design. Twin 245-hp Sterling gas engines pushed the boat up to 24.5 knots at 1500 rpm. There was *Arielle*, a 42'6" powerboat with a 75-hp Baudoin diesel in which French marine artist Marin-Marie singlehanded across the Atlantic Ocean in 1937. Using 1,500 gallons of fuel, *Arielle* crossed from New York to Le Havre in 19 days, which ciphers down to 6.7 knots over

#### PL 46

<b>L.O.A.</b>	46'0"
<b>L.W.L.</b>	45'0"
<b>Beam</b>	11'6"
<b>Draft</b>	2'10"
<b>Displ.</b>	29,000 lbs.
<b>Fuel</b>	860 gals.
<b>Water</b>	200 gals.
<b>Power</b>	(2) Perkins M65; 59hp@2,600 rpm
<b>Speed</b>	11.5 kts. (top), 10 kts. (cruise)





Courtesy TR Design

### PL 80

L.O.A.	80'0"
L.W.L.	76'3"
Beam	17'6"
Draft	5'0"
Displ.	145,000 lbs.
Fuel	4,400 gals.
Water	600 gals.
Power	(2) Caterpillar 3306B; 355bhp@2,200 rpm
Speed	14.5 knots (top), 12.5 (cruise)

*Why didn't the whole world flock to these sensible and efficient pleasure powerboat designs?*

3,067 miles. There was L. Francis Herreshoff's famous *Marco Polo*, a motorsailer 55' long by only 10' wide that proved as efficient under power as under sail. And there was *Jim Hawkins*, 61' long by 13' beam, designed by Avarad Fuller working with Bob Derecktor. Two Volvo Penta MD29 diesels (only 64 hp apiece) gave the boat 9.5 knots top speed and a cruising speed averaging 8.3 knots at about 4 gallons an hour.

To Roberts, these boats and others brought to mind a glaring question: Why didn't the whole world flock to these sensible and efficient pleasure powerboat designs? He answered that question by identifying the elements that limited the type, and, in his Lite designs, addressed them.

People are not avoiding this type of boat out of concerns about ultimate stability (meaning capsizes). In fact, ultimate stability can be had more easily in a light, low, and smaller volume boat than the popular and common trawler-type. The real bugaboo is motion. The high, heavy trawler with wider waterline beam has both static and dynamic roll inertia that somewhat dampens lateral motion; as you move down the scale toward lighter displacement and narrower beam, motion gets worse. To understand this better, you could compare a battleship against a destroyer, or better yet, against a light, unarmored destroyer escort. Roberts points out that the motion problem can be countered with flopper-stoppers, active stabilizers, or even daggerboards or bilgeboards; to some degree, even with ballast and steadying sails.

The only other significant argument against long, light, and thin powerboats is that they yield much less room for accom-

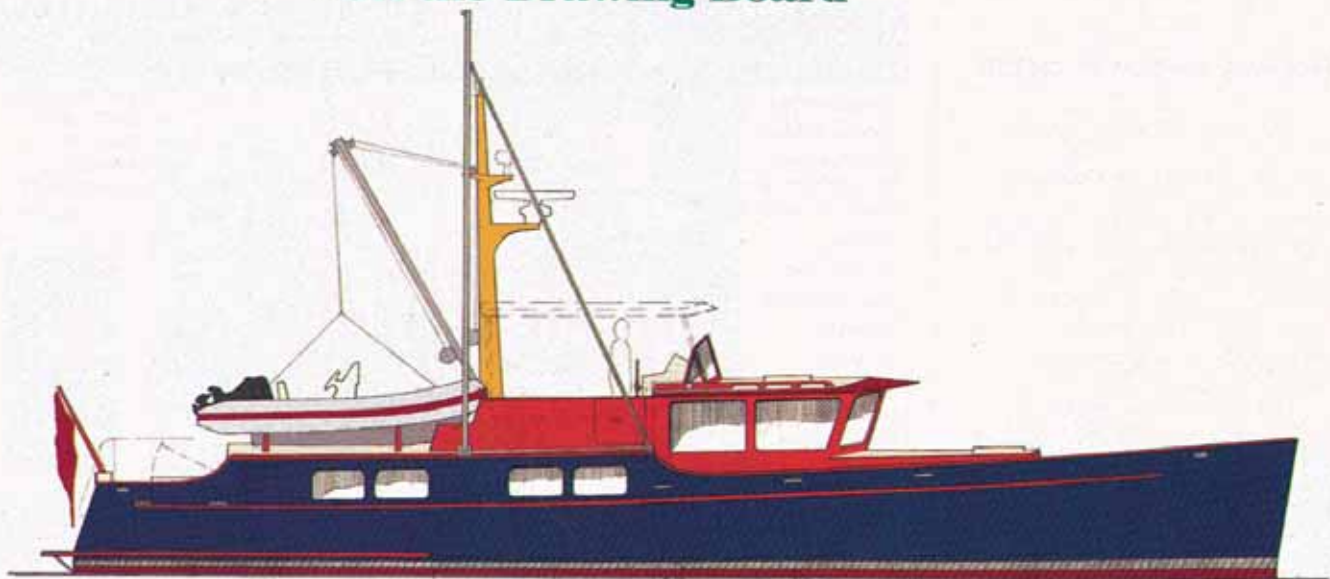
modations.

There it is. The Essential Element. People expect a lot of room in a powerboat, and they couldn't get it in a long, light, and thin design. Roberts found the problem and then fixed it.

A long-standing proviso of design has been that there must be walkways down both sides of a boat. If you expect a comfortable walkway, say, two feet wide, then you're wasting *four* feet of width in an enclosed space just for the occasional stroll down the side deck. Credit is due a few of the Nordhavn designs for eliminating the walkway on at least one side, under the assumption that the owner could hire a slip with a side-to berth. Thus the saloon is two feet wider, meaning it is as large as that of a trawler that's six to twelve feet longer!

Roberts took this a logical step further. He eliminated walkways on both sides of the main living space. To keep this space low—for many reasons but let's just mention one: for passage OVER it rather than down either side—he diverged again from convention. The engines are not beneath the saloon, but aft under the cockpit. The end result is unmistakable and unique. The "living room" of the Passagemaker Lite 46 might vary slightly according to the material chosen to build the boat, but at best it should come very close to being as wide as the boat's beam of 11 feet. To get the same amount of room in a classic Trumpy you'd be looking at a 75-footer.

I should mention that Roberts puts not only the saloon but also the galley in this wide space. In the example of the Passagemaker Lite 46, the galley's cabin sole is a foot below waterline, whereas in almost any mod-



Courtesy TR Design

### PL 56

<b>L.O.A.</b>	56' 0"
<b>L.W.L.</b>	55' 0"
<b>Beam</b>	13' 0"
<b>Draft</b>	3' 6"
<b>Displ.</b>	51,000 lbs.
<b>Fuel</b>	1,100 gals.
<b>Water</b>	400 gals.
<b>Power</b>	(2) 75-hp John Deere 4045DFMs
<b>Speed</b>	11.5 knots. (top), 10.5 (cruise)

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ern trawler it might be two to five feet higher. This means that whatever the amount of roll, the people occupying that space, and the chowder cooking on the stove, will be moving through a significantly smaller arc.

The basic design advantage of the boats in the series (46, 56, and 80 footers) is that they are long and light. This gives them the advantage of a low ratio of displacement over length, which is the key to being economically driven.

Putting the engines right aft is a bit of a wild card in terms of performance prediction, since it necessitates drawing hull volume abnormally far aft. But Tad Roberts is that unique individual—part artist, part scientist—and he claims to have analyzed thoroughly the data in particular of Roger F. Compton. Compton worked with hulls that were light enough to be termed “semi-planing,” in which it is assumed that water would break away cleanly from a transom-sterned hull at very low cruising speeds.

Even though Roberts would only make definitive assertions after tank testing or actual trials on a built boat, the guesses are most impressive. The Passagemaker Lite 56, for example, uses a pair of John Deere 4045DFM fours, naturally aspirated. These each produce a completely reliable 75 brake horsepower at 2,400 rpm. Reduction gear is supplied with the engines which yields a maximum of 970 rpm to the shafts. With the right props this boat will exceed 11 knots with that small horsepower and cruise just under 10 knots at 4 gallons an hour—almost unheard of economy that will push this 56-foot long home some 2,000 miles on 900 gallons. At customary sailboat speed, fuel economy continues to drop to downright stingy levels. Because of the relatively

higher displacement/length in the 80-foot version, thus higher speed/length, astounding economy is expected for that version.

There are other matters not related to the Essential Element that Roberts has so deftly found and mastered. I happen to love the ergonomics of these boats. I like the forward anchor-handling pits and the forward-raked pilothouse windows. The pilothouse itself is just close enough to the bow for a practical view beyond it, but low enough to be protected from green seas. There's a perfect place for the inflatable dinghy and a practical means to deploy it. The aft cockpit is right-sized, meaning small. And there are sailboat elements I love, such as the way the forward accommodations are situated down low, fitted to the hull as they are in a sailboat, and the way the little fore cabin makes possible a large head (in one version with a fiberglass bathtub).

All in all, the Passagemaker Lite series is masterful work.

Tad Roberts got a bit of a late start going out on his own. But consider Frank Lloyd Wright: at around age 60 he seemed to be washed up, played out, discouraged. He'd about given up, the way the story goes. Then late one night he got a phone call, which led to the building of Falling Waters.

Tad Roberts's intellect lies in wait. I for one am placing my bets on justice being visited upon this master of the Essential Element. ✨

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