

Tim and Becky's River/Canal Boat Terrapyn

While my submittal for Off Center Harbor's houseboat design contest is not a new design, our experiences with and plans for the boat that we already own should be of general interest to the followers of the contest, and the dreamers and doers who study the submissions. We don't expect to win anything. First, I'll lay out what we think would be the ideal boat for our cruising waters. I'll then introduce Terrapyn, our 1969 AquaCamper houseboat, comment on how well the stock boat meets our ideal requirements, and then show you some ideas of how I plan to alter the boat to better meet our needs.

Part One Our Ideal Houseboat/Canal Boat

General

- Inexpensive – we are of modest means – which implies a self build, conversion, or a restoration
- Trailerable, for moving between cruising areas, less expensive off season storage, ability to work on boat at home
- Primarily designed for an older couple, with very limited provisions for short stay, occasional guests (can carry a tent for extra folks to sleep ashore). Will adapt for grandkids when necessary
- Simple – no complex systems to maintain or repair, easy to learn how to operate, robust, and fun

Where to be used

We live in western New Hampshire. Reasonably nearby waters suitable for small, trailerable house-boating include:

- Lake Champlain (under good weather conditions)
- Champlain Canal to the Hudson River and Waterford, NY
- Erie Canal (NY State Barge Canal system) from Waterford to Buffalo, and including the Oswego Canal and similar tributary canals and lakes
- The Hudson River south to around the George Washington Bridge.
- The lower navigable sections of the Connecticut River from north of Springfield, MA to Long Island Sound (NH waters are severely restricted for overnight stays on boats, ruling out our big lakes and the upper sections of the Connecticut)
- Canadian canal and river systems
- *The Great Lakes and New England coastal waterways require boats with greater sea worthiness than what we have in mind.*

Likely water and weather conditions and built environment to be encountered:

- Protected river and canal waters, slow currents, roughest water likely from other boat wakes
- Open lake conditions on good weather days, up to small whitecaps, 30 knot winds -- stay away from open fetch areas where waves exceed a couple of feet
- Canal and river speed limits generally around 10mph
- Canal locks

- Boat ramps and typical marinas
- Shallow water anchorages, usually less than 25ft deep

Ergonomic Requirements for Later in Life Owners

- Ease of deck work -- anchoring and mooring without having to clamber about deck obstructions
- Solid, safe-height (at least 36") railings
- Easy to step on and off boat – different height boarding points to match varying pier heights, bow access to beach
- Few steps or ladders on boat – no steep climbs into and out of cabin – minimal use of cabin top, thus no flying bridge
- Easy access to the water for swimming and getting back aboard and for handling kayaks and dinghies
- Deck seating areas comfortably designed, or open for folding camp chairs
- Wide doorways and passages– we are not wide, but many older adults are these days

Creature Comforts

- Comfortable, well shaped seating – no straight up seat backs and seats with no back slope, as are often found on boats and RV's
- Standing headroom throughout – 6'4" minimum, 4'8" sitting clearance
- One full sized bed, 4'6" x 6'6" (convertible to sofa or settee) – nice thick mattress
- Head compartment:
 - On board head – composteer – we favor the C-Head:
 - <http://www.c-head.com/>
 - Small lavatory sink separate from galley sink
 - No inside shower necessary – prefer on deck shower, marina, and swim-bathing -- provide on deck shower canvas privacy screening, draining overboard through scuppers -- we have used the Duckworks version on camping trips, but there are others to consider:
 - <http://www.duckworksbbs.com/gear/shower/>
 - <http://www.roadshower.com/>
 - As well as many home-made units – see You Tube
- Nice sized galley meant for cooking:
 - Two LPG burners with oven
 - Microwave (small) when on shore power
 - Well insulated, large built-in ice chest – no power refrigeration (usually refrigerators are too small, and often found supplemented with a cooler that's always in the way...might as well just have a really good ice chest)
 - Deeper sink, good sized
 - Decent counter space
 - Good storage for utensils, cookware, and dinnerware
- Inside dining table for two, adaptable for four
- On deck gas/charcoal grill
- Book shelves
- Open, airy lockers for storage – avoid having to move something to get at something else
- Three season use – well insulated cabin, LPG cabin heater (nice to have a wood stove)
- Simple home type through the wall air conditioner for use when on shore power
- Good sun protection – favor shaded deck areas over sun decks

- Insect screened deck area for evening lounging
- Large, screened windows, with awnings for sun and rain blocking

Boat Performance, Systems, and Capacities

- Durable hull with substantial rub rails – lock conditions, novice operators borrowing or chartering boat
- Beachable -- should be able to gently drive the bow onto a sandy or coble beach without damage – provide substantial grounding shoes
- Shallow draft
- Trailerable, around 3000 lbs loaded
- No below water line thru-hulls
- Self draining decks
- Substantial ground tackle and mooring cleats
- Exterior work boat finish – common latex house paint for ease of touch up
- Cruise around 6 to 7 mph, fuel efficient displacement hull
- Suitably sized 4 stroke outboard engine – electric start and tilt
- Small, pull start kicker engine to get home on
- 18 gallons fixed tank fuel, with provisions for (2) 3 gallon portable spare tanks (sometimes one has to walk a ways to get fuel) – keep fuel tanks separate from cabin...no fuel fumes in cabin
- No pressurized or hot water systems – foot pumps at galley and lavatory sinks...stove top hot water...pump up sun shower
- 30 to 40 gallons fresh water
- 60% grey water tankage for sink drains in sensitive areas
- AC shore power system:
 - Air conditioner (5000 btu)
 - Microwave
 - Battery charger
 - Two to three receptacles
- DC power system
 - Starting battery, two house batteries
 - Navigation lights (LED)
 - Cabin lights (LED)
 - Charging ports – several
 - VHF radio and navigation devices
 - Bilge pump/s
 - Solar panel adaptable

Miscellaneous

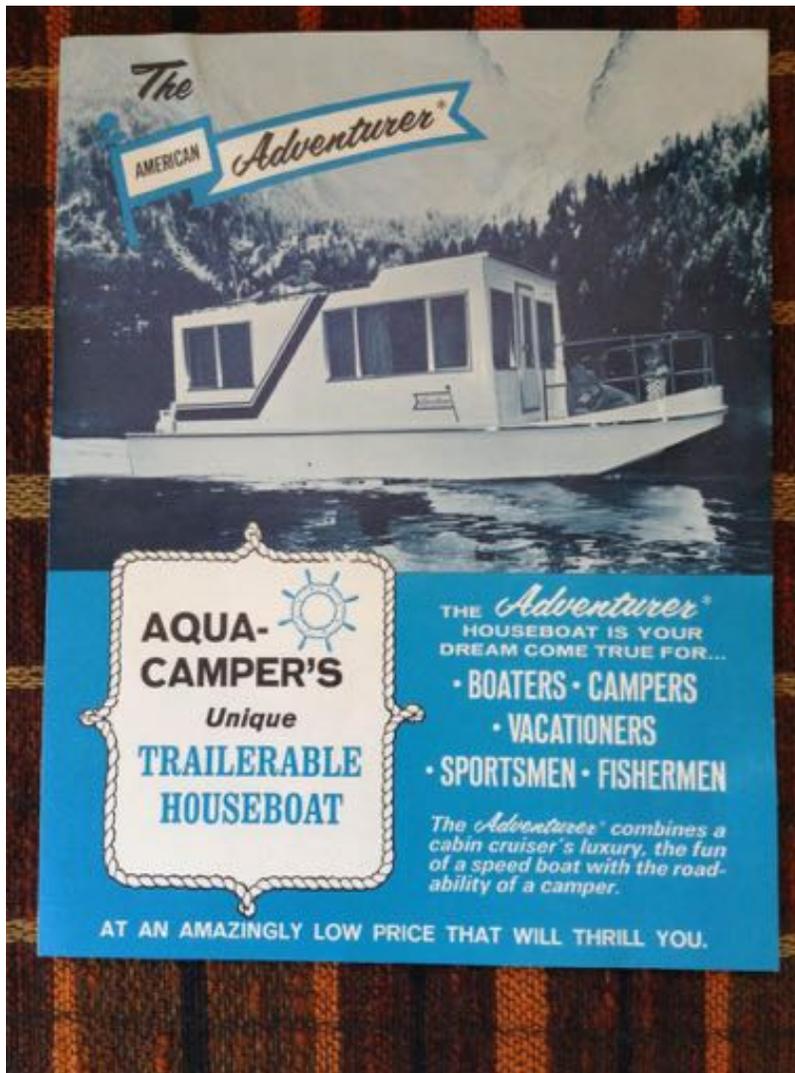
- Method of carrying (2) kayaks, which will serve as the boat's dinghy. Some thought given to ease of storage, launch and retrieval, and getting into and out of kayaks alongside boat.
- Prefer a hull and cabin aesthetic design that gives a nod towards river craft designs of the late 19th and early 20th centuries.

Part Two

Our AquaCamper

23' LOA, 20' 6" LWL, 7'-3" waterline beam, 8" to 10" draft to keel plus motor skeg
2700 lbs empty

The Find. In April 2015 I purchased a nearly new 1969 AquaCamper houseboat, built by the AquaCamper Corporation of Elgin, Illinois. I say nearly new, as the boat had sat for 45 years, un-used, in storage. Yup, this was one of those rare barn finds you hear about from time to time. The plastic wrap was still on some of the cushions. The original owner, according to his family and the boat's engine hour gauge, had used the boat about three hours on a lake north of Chicago, but then died that fall. The boat was placed in a barn until his wife passed away many years later, whereupon the heirs sold the boat to me.



Original manufacturer's brochure – note 1969 upholstery design.

The Reality of the Barn Find. All was not as peachy as it sounds. First, I feel like I paid too much for it, at \$7,500. But I did get \$800 for the 45 year new/old 80hp Mercury two stroke motor (it was better suited to a museum than being trusted behind my new boat, and way too much horse power, besides). There was no trailer, but I managed to cobble together a used one to fetch the boat from Illinois. Turns out that I should have bought a new trailer, as the trials and tribulations on the way back to New Hampshire cost me about the same (long story, but I'll tell you that just about everything that could go wrong with an old boat trailer did).

AquaCamper must have learned how to build boats well after they built mine. I think I have one of the first few hulls they produced. It's constructed of plywood, with a thin layer of glass fabric and polyester resin bonded to the exterior. Mild steel fastenings were used to hold the ply together until the glue dried. I found lots of Bondo filler for fairing. The more details I discovered about how the boat was assembled, the more I understood exactly why I could find just two other AquaCamper hulls still in existence, despite a lot of internet searches. The boats must have started to cause owners troubles within the first two years of purchase. If the owners didn't keep up with the paint coatings and hull repairs, the plywood would rot rather quickly. Moisture penetration by osmosis would have rendered the thin polyester resin covered hull useless in a few years.

*Adventurer** STANDARD EQUIPMENT

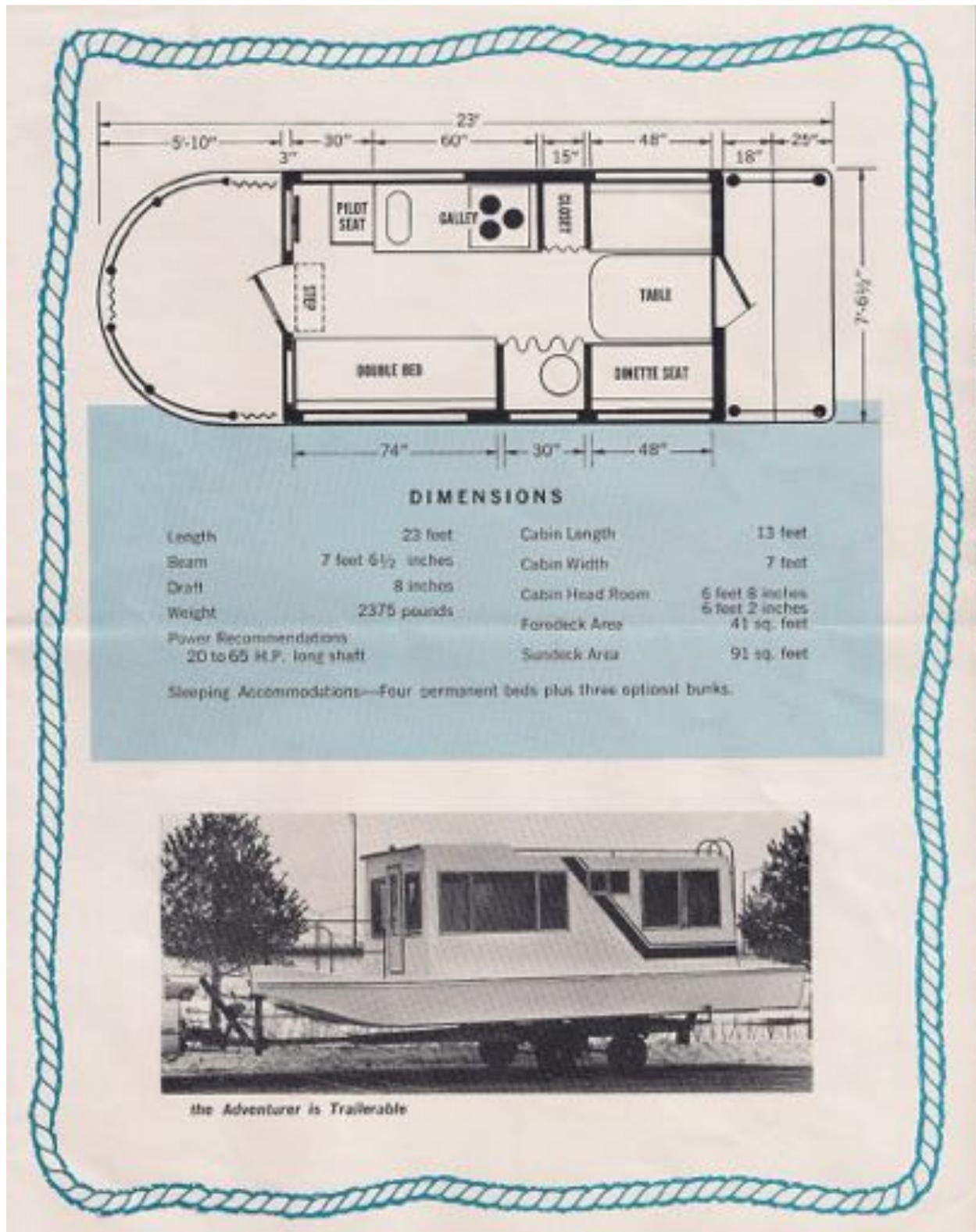
<ul style="list-style-type: none"> Formica finished galley Three burner L. P. range Stainless steel sink Manual water pump 20 gallon water tank Deluxe ice box Five 12-volt ceiling lights One L. P. lamp fixture Navigation lights "Gaucho" foam double bed/lounge Formica top dinette table/converts to double bed decorator fabric/vinyl dinette foam cushions Portable marine toilet Folding head door Five sliding aluminum windows with screens Two fixed aluminum windows 	<ul style="list-style-type: none"> Two aluminum cabin doors with locks Deluxe helmsman's steering wheel Helmsman's cushioned seat Full length hanging closet Galley drawer storage Propane bottle and regulator Shore electrical power outlet Textured, washable interior paneling Vinyl floor covering Storage under fore and aft decks Storage under dinette seats and lounge Fore, aft & sun deck railings Sun deck ladder Mooring cleats
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*Adventurer** OPTIONAL EQUIPMENT

<ul style="list-style-type: none"> Indoor-outdoor carpeting L. P. gas oven L. P. gas refrigerator 	<ul style="list-style-type: none"> L. P. gas space heater Adventurer* tandem axle trailer
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Lifejackets anyone?





There are some good things about my barn find, the most important of which is that the boat is essentially new, and has been kept in the dry all this time. No rot, no deterioration, very little fastening rust. If I can fix the sins of the original builders, I should be able to get many years of use out of her.



In Illinois, getting ready for the eventful trip to New Hampshire.

The hull bottom is two layers of 5/8 ply, the sides 3/4 ply, and the decks 1/2 ply. Fortunately, back in those days they still used the really good but nasty glues between laminations. If I can keep the plywood dry inside and out, I should have no issues. While I was a tad concerned about the lack of abrasion resistance of the thin fiberglass bottom coating, I felt that waterproofing the hull below the water line was most important. I'm pretty careful about not running aground. Many hours of original bottom paint scraping later, I had the fiberglass exposed. The difficulty of applying additional coats of fiberglass fabric and epoxy resin to the flat bottom, working from underneath, led to some research and a compromise that I think will be quite suitable. I applied a layer of 8 inch heavy fiberglass tape and epoxy resin to the chine all around. Next I coated the bottom up to the waterline with 10 mils of Interlux 2-part epoxy Interprotect HS barrier coat, a product used on production fiberglass boats to seal the gel coat, followed by two coats of Interlux Bottomkote NT paint. Although I now have an osmosis proof bottom coat, I will carefully inspect the hull at the end of each season and repair any dings and gouges that might tear through the thin fiberglass.



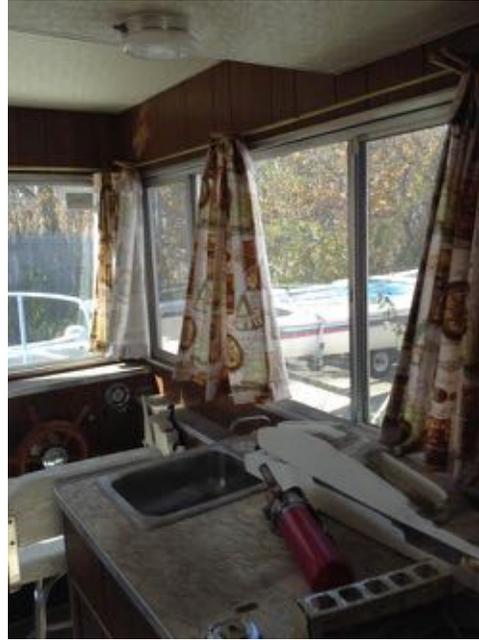
Nice new bottom...glad that job is done.

This spring I will install reinforcing knees at the 1 ½ inch thick plywood transom to beef up the area where my used 30 hp Honda outboard will be mounted. I'll also fillet and resin tape the exposed interior chines at the stern and bow. All hull plywood that I can get to from the inside will be sealed. The decks and cabin top will be coated in a suitable epoxy.



Trying out a new color scheme...maybe not sea foam green...we'll see. Latex house paint is cheap!

The interior finish work is all 1960's dark ply paneling with mild steel fastenings. The cushions and upholstery are like new, and a color that Becky can work with. The Herr windows are actually very good quality for a houseboat. The doors, though narrow, are watertight and function well. I've decided that despite my inclination to rip out the cheap interior furnishings, we are going to use the boat as is for at least the first season. Let's see what the original designer had in mind. Maybe after a few weeks of cruising his reasoning will become apparent, and our needs better confirmed.



Gotta love this late 60's décor. My goodness we created a lot of awfulness back in those days. Can't you just see a leisure suit hanging in the locker?





Lightening things up a bit with white wall paint and aqua blue accents.

The simple shore power system is a plug, fuse, and one receptacle (replaced with GFCI), and works fine. The DC power system is rudimentary, but it works. I will add a battery charger for use on shore power. I replaced the flimsy water tank with (8) 4 gallon water jugs. Moving the galley hand pump suction tubing from jug to jug is a simple matter and fool proof. A jug under the sink will serve to collect grey water when we can't use the thru hull drain. I removed the LPG piping and tank as these are nowhere near compliant with modern boat safety standards. I figure to use a portable butane stove until I can engineer a proper propane locker. Upgrade the deck fittings and replace the railings and away we go.

Part Three

Does She Fit the Bill?

We think *Terrapyn* is going to work out great. Yeah, she's kind of plain, maybe even ugly in some ways, but she will be our waterfront camp without the taxes. She's relatively inexpensive, even after the work to date, the trailer, the motor, and the work to come. Of our list of requirements for an ideal boat, she meets most, but we do have the following issues to address:

- No beaching the boat until I can beef up the bow for abrasion resistance.
- Will have to come up with some ideas for easy swimming and kayak access.
- The cabin is roomy, but the built in straight backed benches and sofa are wicked uncomfortable, the bed is narrow, ice box poor, and so on. I will take care of these and other creature comfort issues when remodeling the cabin. The good thing is that all of our requirements can be met within the existing cabin envelope.
- The stern deck is tiny, so having a screened in porch might have to be reconsidered.

I think the boat will perform well for the intended cruising waters. She's not that much different from other scow type hull designs I've seen. I found a used 30 hp Honda outboard, which I think will provide sufficient power to get her to hull speed without strain and with good fuel efficiency, and with enough reserve push to handle cross currents and winds in tricky close quarter maneuvering. We will see.

Part Four

Future Plans

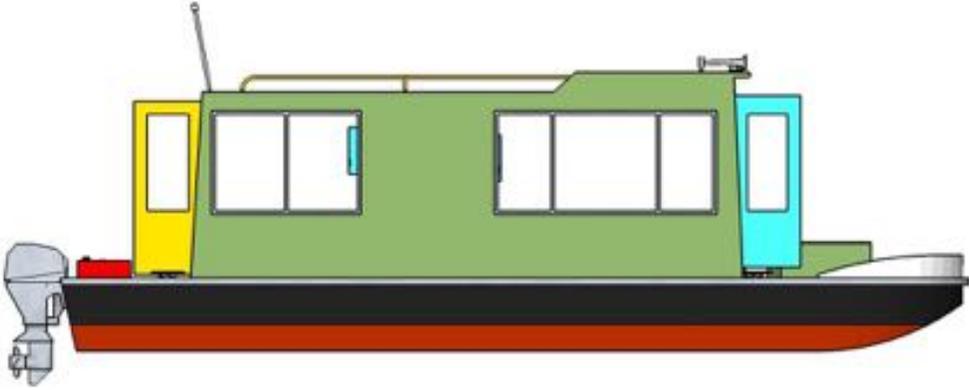
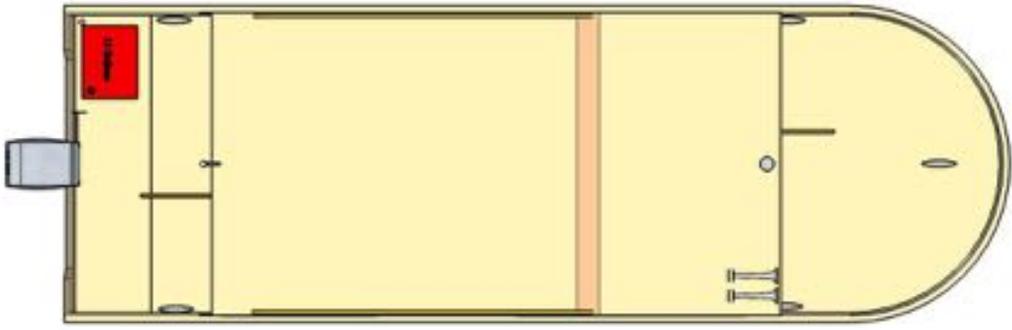
One can do a lot with this houseboat to make it more comfortable, seaworthy, handy, and safer. It's just a big plywood box, easily adaptable. But, as I stated before, I ain't touching a thing until we've had a season or two of use. We need to find out how she handles and trims. We need to discover her strong and weak points. We need to reach conclusions on creature comfort modifications based on real experience. Our previous boating experience with a chartered Nimble Nomad trawler (probably the most uncomfortable boat I've ever operated), and many river and canal trips in our own freighter canoe camper has taught us a lot. Keeping things simple is paramount.

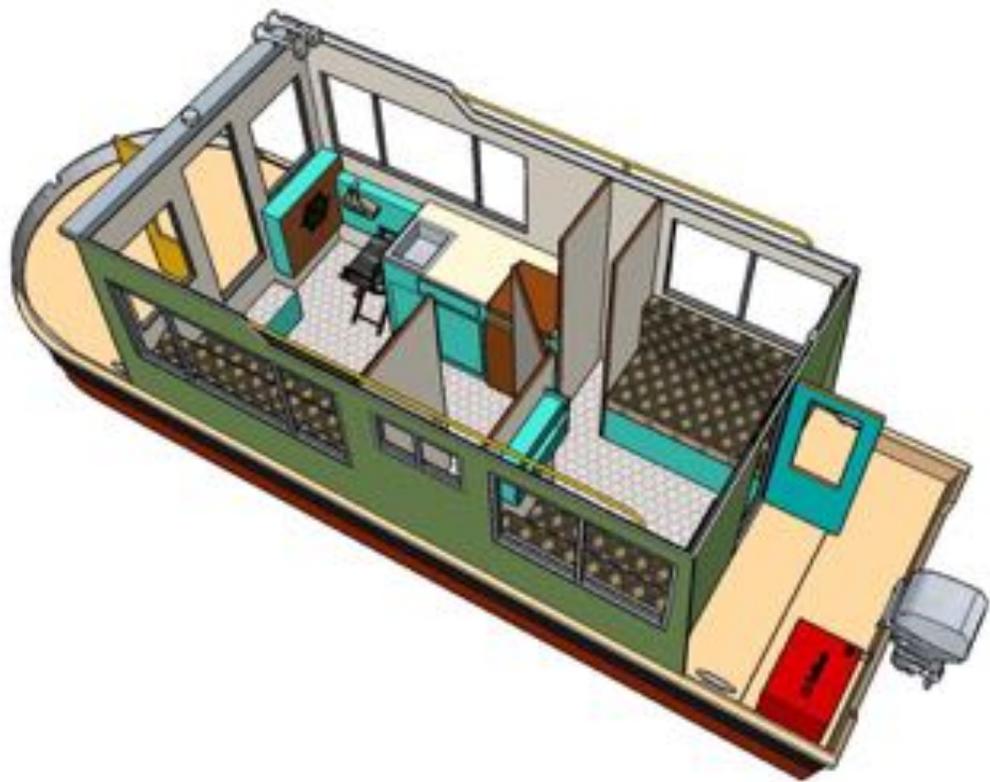
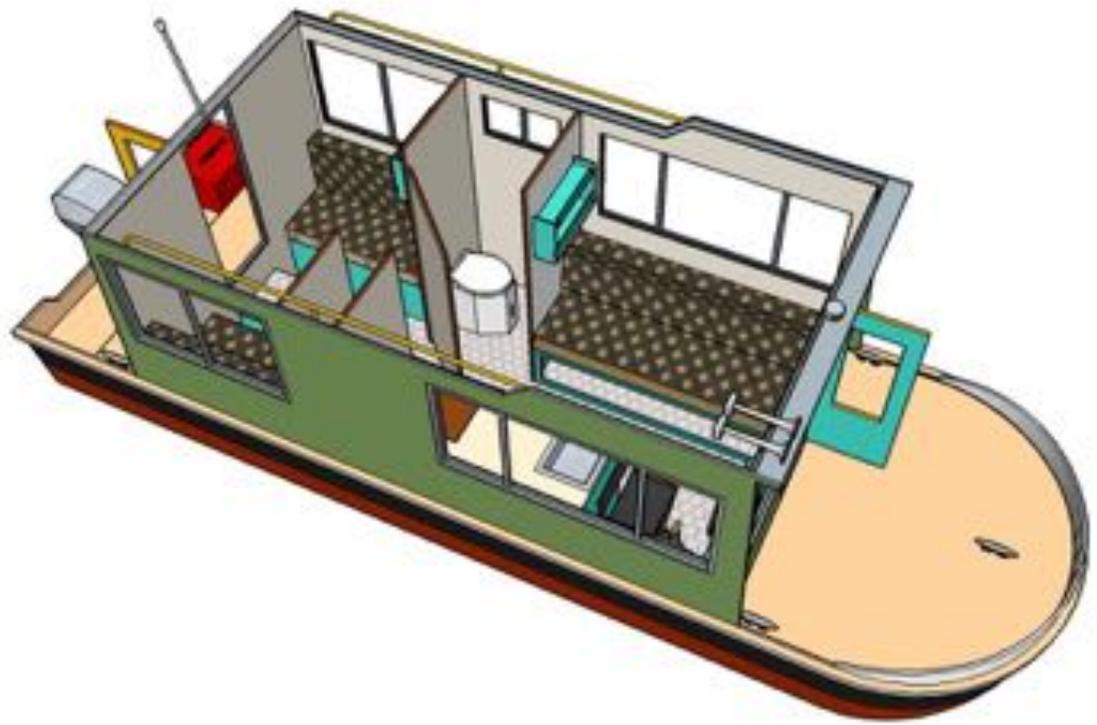


Couldn't help but show you our Scott Hudson Bay freighter canoe river camper, ODONATA. We've spent many days and nights aboard this boat on the Connecticut River and the Erie Canal. The fun we've had on ODONATA has informed our plans for TERRAPYN.

The drawings that follow show Terrapyn's existing conditions.

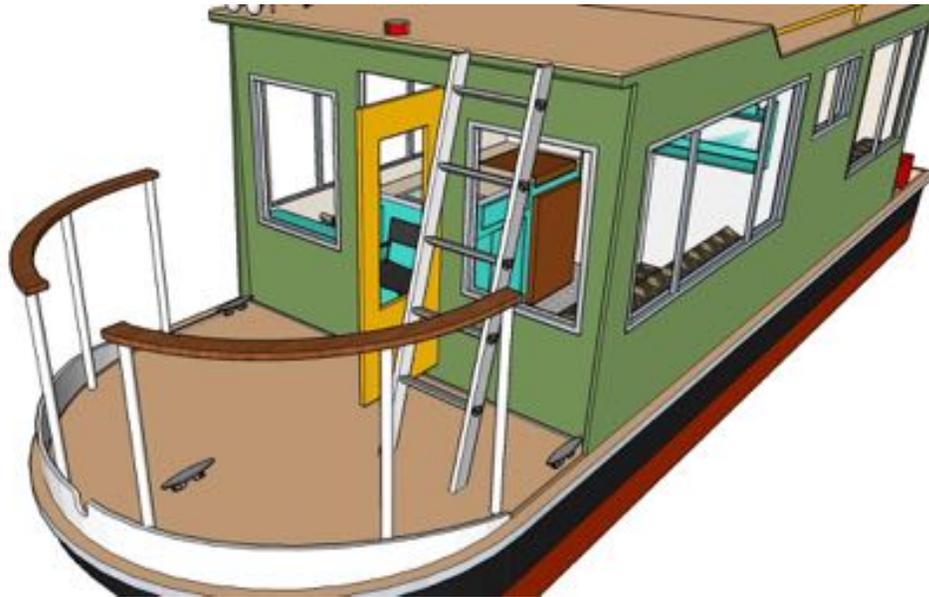




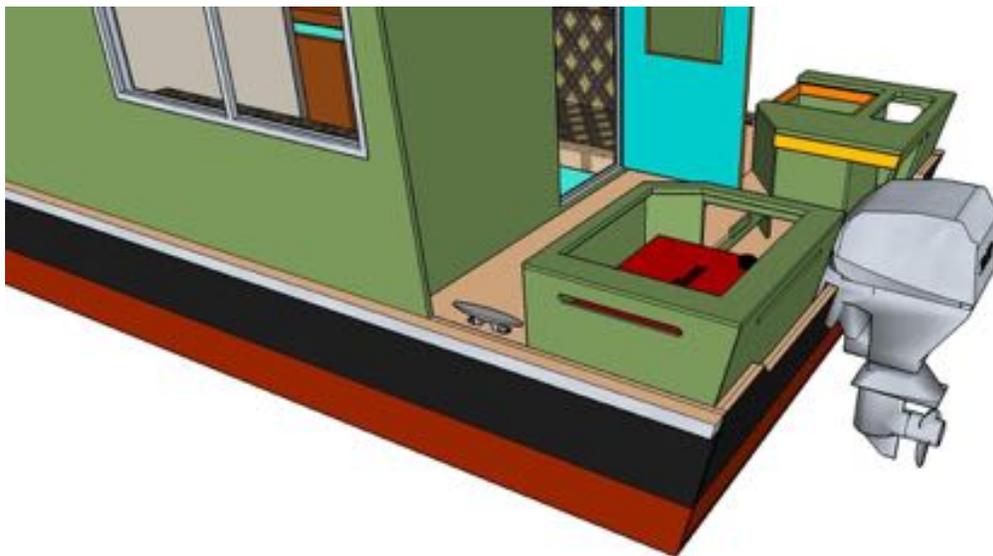


Must Do For First Season

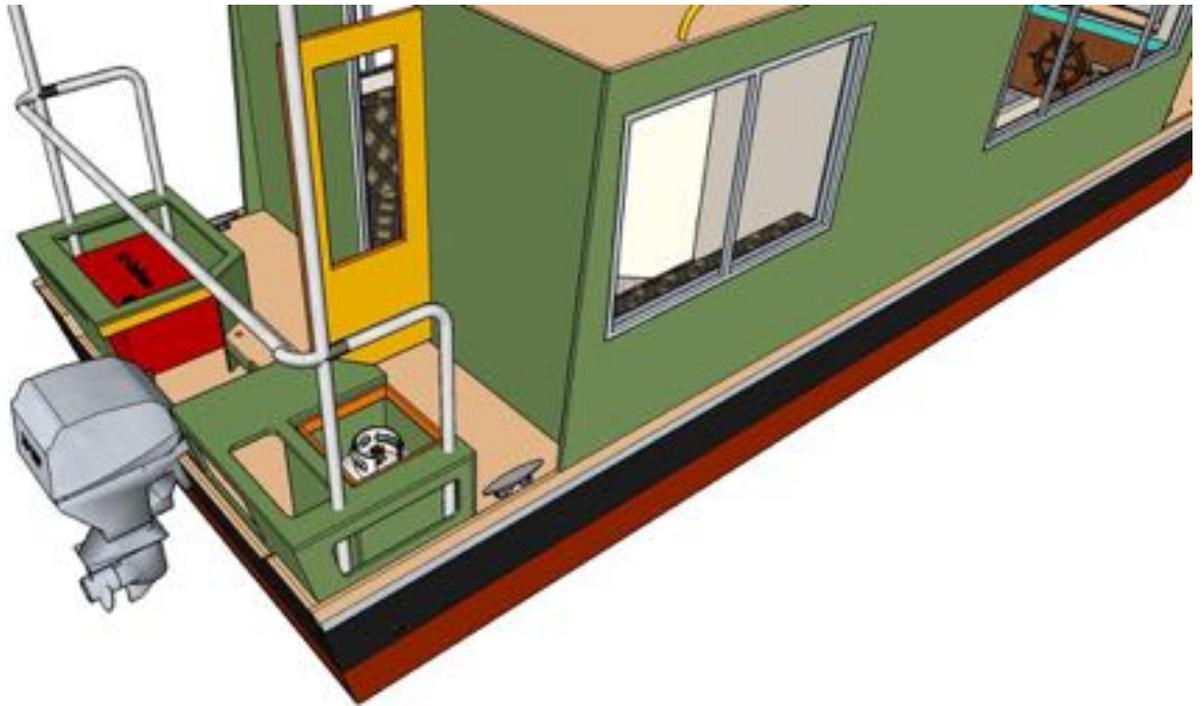
- Install new bow rails.
- Install a detachable, lightweight aluminum ladder for access to the cabin roof via the bow. Mounting the ladder on the bow permits it to be angled (no room on the stern), thus making it easier and safer to climb. It should be able to be used on either side of the front door, and slid up on top of the cabin roof when underway. It might be useful for bow access to a beach.



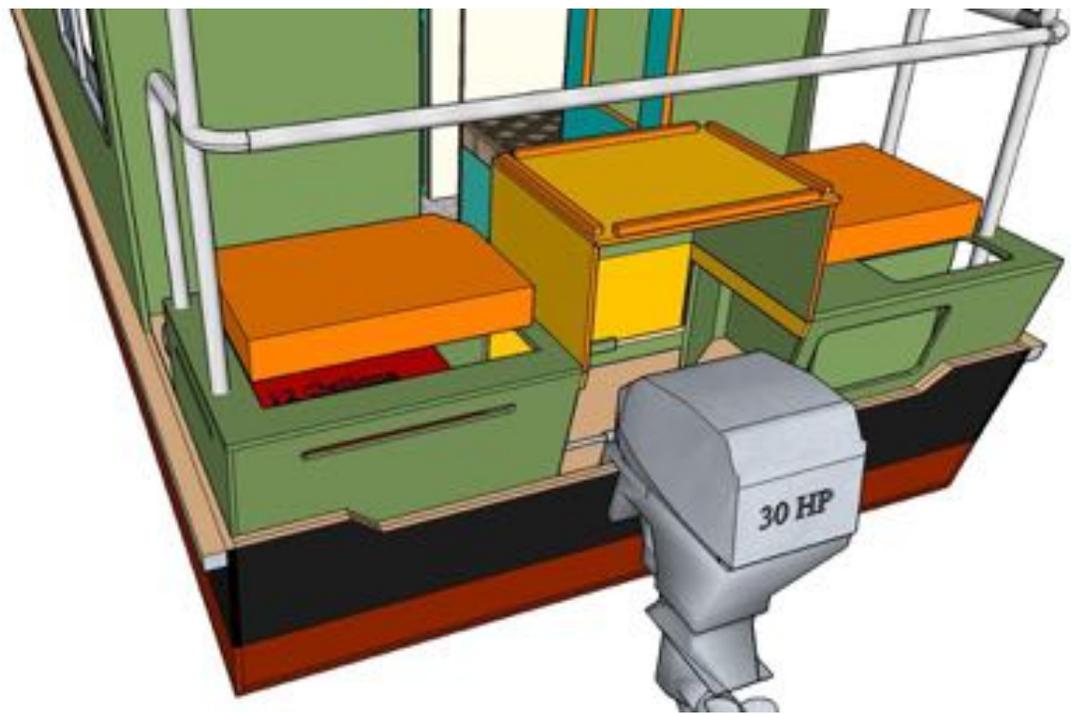
- I have to do something to make the after deck more useful and safe. Here's an idea I'm toying with to make some seats and a motor box, plus railings.



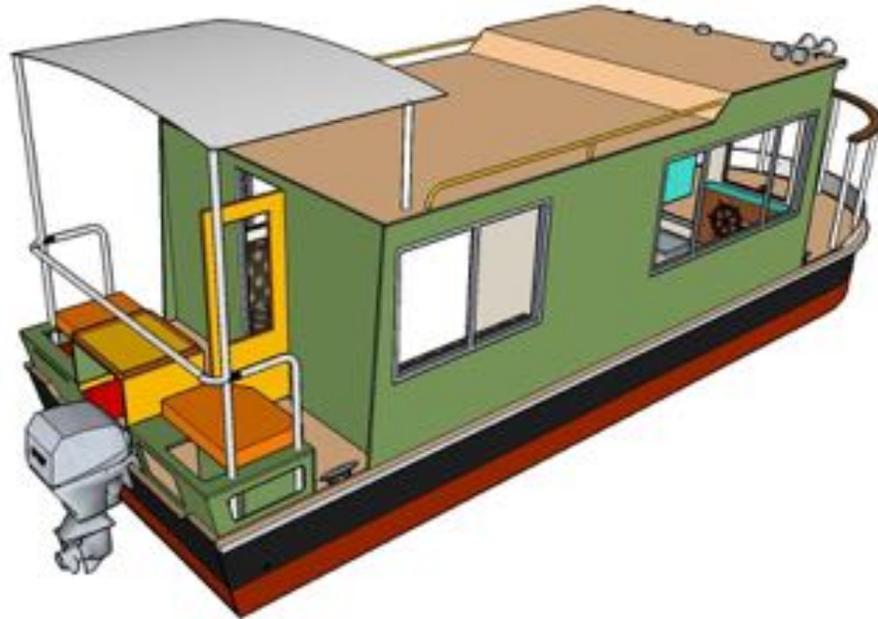
I should be able to create a sealed propane gas locker with overboard drain under the starboard side bench.



The motor box cover should make a nice table and will deaden engine noise considerably.



And all of this makes a stern canopy possible.



Some Big Ideas for Terrapyn's Future

- Box keel – not sure of all the benefits, but I think it could increase the water line length to the full 23 ft, thus improving hull speed, increasing roll stability, providing a place for tankage and storage and floatation, and reducing the likely wave slap noise at the bow that scow hulls experience.
- Add transom extension sponsons to either side of the engine – would increase water line length to 26 ft, enable a slight hull bottom curve upwards for better stern wave passage, and create a larger back porch.
- Add a short tunnel at the stern to enable the engine to be raised for reduced engine skeg draft. This would have to be done in conjunction with the engine sponson work.
- Add side sponsons (6 inches wide) running fore and aft on both sides and made of rigid foam and plywood, the bottoms of which would be just above the water line. I think these could increase rolling stability, much like an ama, and provide additional positive floatation.

These big ideas would take some careful thought and serious work, and would keep the boat out of service for a season. It would take some courage and determination that I'm not sure I have, and might not be worth the effort for the good they would accomplish,

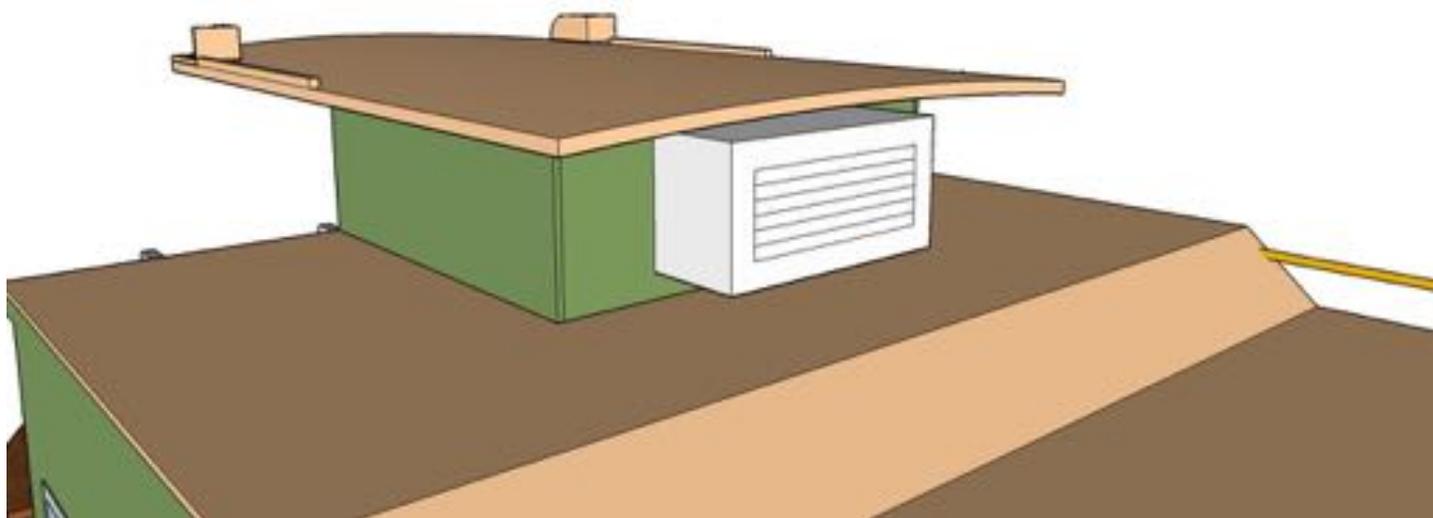
But here's an idea that I think would be fun to do, could be built at home and installed on the boat while it's in the water.



Provides a handy storage space for lifejackets...



...and a swell location for a standard air conditioner when on shore power. A hole would be let in the cabin ceiling to access the AC controls from below and allow cool air to blow into the cabin.



Epilog

So there you have it. We are launching in late May. The boat will be based in Whitehall, NY at the entrance to the Champlain Canal. I'll be looking forward to report what we learn from our first season aboard *Terrapyn*.

Tim and Becky Jennings
Enfield, New Hampshire