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Electric Ship

rebuild-vs-new-build

Electric Ship Review: Boat Rebuild or New Build Strategy



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PDF Version of the webpage (first pages)

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<https://electricship.com/topics/rebuild-vs-new-build.html>

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Rebuild vs New Build

Voyaging at sea has been used for transportation, leisure, and work, for thousands of years.

Hull designs and propulsion methods have evolved with technology, but the basic premise of yachting remains the same. It's all about the journey.

With the recent explosion YouTube groups buying and repairing boats to sail the seven seas, a plethora of how-to series have explored all types of conversions, which may or may not result in any money savings, but have all shown extra costs, huge time drains, and mixed end results.

Which leads to the question of this article: Is it better to rebuild, or build new ?

Ultimately, it boils down to time, ability and resources. Your capabilities and ambition may result in some savings, but may also lead to other unforeseen costs. At what point does renovating old technology supersede starting anew.

We've all seen the never ending diesel engine repair, the leaky hull, and huge maintenance on old boats. But how can you organize yourself to do battle with the headaches, and win the war ? We'll approach those issues with a solid strategy in this article.



Research

Research on the front end of the project will save you lots of time.

Make lists to become more efficient, both in terms of developing tools and materials needed, but categorizing what needs to be done in what order.

Develop a strategy on how to do tasks and larger builds.

The strategy can be part of a overall methodology which gives you a good roadmap on how to approach problem solving, and project management.

Compress time by becoming efficient using techniques above. Less time working on the boat is more time on the water.



Ability Determines Cost and Time Savings

Your ability will determine your cost and time savings.

If you learn and develop new skills, your ability to handle many tasks will allow you to become more self-sufficient.

Try to learn and master basic tool handling skills. There are lots of methods to do this from skill-share apps, to YouTube, to books.

Get a mentor for larger and more difficult projects.

YouTube is a fantastic resource for establishing new skills, as well as learning from mistakes others have made before you.



Time is Money

Time is money. Figure out how to make your time efficient to reduce costs.

While your savings might seem like a good well to dip into, figure out ways to make money while working on your boat, or while cruising.

Advertising on YouTube may seem lucrative, but you're better off selling a unique product or service you develop, including swag.

Sponsorship seems great, but often hard to get freebies, or even paid.

Social Media and the web are some of your best sources for followers and income.



Strategy

Often wonder if it's better to rebuild an old boat, or build a new one ? We did too, so we researched the two methodologies and have some interesting conclusions.

Establish Goals: What do you want to do ? Cruise around the world, workboat, supply boat, dockhome, canal cruiser, speed racer, solar, sail, or motor ? Those are a few categories which will help you determine how to refit your boat.

Research: Oddly enough, YouTube provides a huge array of both refitters, and new boat builders. It also has great reference review examples of products, and how well they work in actual sea conditions. At this point, it's also good to review hull types (monohull, catamaran, trimaran, Swath, etc) to determine the best application. Also research your power type. Whether it's rebuilding a old diesel, sail, or replacing a internal combustion engine with a electric motor system.

Compare Refit Costs Versus New Build Costs: Having access to a spreadsheet, or a Filemaker database can really boost your decision making capabilities whenever you want to compare data. Old boats have lots of surprises, which often are very costly to repair. (filemaker.com)

Skills: What is your skill-set ? Are you willing to learn new things ? Whether working on a refit, or a new build, you'll need electrical, plumbing, fibreglassing, woodworking. There are lots of skill type YouTube videos, as well as web based information that will get you started. Ultimately, experience will be your best teacher.

Tools: Regardless of which route you take, you'll need the basic tool livery. That includes a reliable power supply, waste disposal, good lighting, and water. The most desired way to provide a small workshop would be a 20 foot, or 40 foot shipping container. This provides dry storage, small workshop space, and maybe even some living space. If you intend to have solar PV panels, mount them on top for power supply, then you can move them to the boat when ready. Some people prefer to live aboard during repairs and refitting, but it's messy and can really slow down progress. Separate living and working for faster work. If you invest in a battery powered toolset, you can take some of the tools onboard. Try to pick a reliable interchangeable battery system, with lots of tool options (e.g. Makita, Milwaukee, Ryobi, Dewalt). The batteries can also be used for backup power to charge USB devices, lights, etc. The ultimate battery supply is to mount several Lithium Ion batteries on a hand cart (which can be recharged by solar PV or grid power). It can easily be wheeled around, and can charge both battery devices, and provide 120/240 VAC by use of a inexpensive inverter. Build yourself a inexpensive tripod mounted LED lighting system (tool battery powered). You can take this with you on your vessel.



How to Start

Strategy: After you have gotten a good grasp on the above, now it's time to weigh out the positives and challenges for a refit or new build. Organizing a good strategy will help reduce anxiety, costs, and surprises. We recommend the following steps.

A. Infrastructure - Power: Whatever you do, you'll need power. Whether it's working in a warehouse, shipyard, at the dock, or onboard, you'll need reliable power. Most battery powered tools can easily be charged by solar PV or grid power (including generator). As suggested above, I recommend a hand-cart mounted Lithium Ion battery system that can charge tool batteries, and provide AC power. The cart can be wheeled aboard larger boats, or disassembled when you're ready to launch. It becomes a multi-purpose energy system for multiple platforms. Also consider multiple solar battery charging station (similar to Goal Zero). These units are Lithium powered, are very portable, can charge or power multiple devices and voltages, and most importantly, can be used onboard after the build.

B. Infrastructure - Living: Providing shelter during a build for eating, sleep, bathroom, and shade is imperative for efficient building. I recommend a induction based cooking system for both land based and water based living. It's very efficient and can use a solar PV panel or battery for charging. If you need refrigeration, use the chest mounted portable types, which can run from battery or AC power. For a bathroom, use a composting toilet and use potash which eliminates smell. Use a solar powered vent to continuously vent the bathroom. Use a black colored watertank mounted above the shower area for solar hot water for basic shower duty.

C. Infrastructure - Water and Icemaking: Water is not only important for hydration, but needed for a multitude of boat projects. Ice might seem like a luxury, but is very useful not only for drinks, but for extending pot life of epoxy curing. Inexpensive tabletop icemakers are available on Amazon, and can easily be powered by inverter AC power from batteries or solar. They can be run on-demand.

D. Infrastructure - Build Environment: Keeping your build, or your workshop out of the weather will decrease build time. Whether if the vessel is under cover, or putting up temporary shade, will increase your comfort level, while decreasing the need to build in a weather dependent situation (i.e. rain, winter, extreme heat). Keeping your build organized and reducing clutter is difficult to do, but in the end makes for faster build time. Try to make any tool carts, platforms, storage containers, or other build helpers caster or wheel mounted. Most builds become an exercise of moving material.

E. Documentation: Part of being organized is documenting where you've been, and what you're doing. Not only does this help develop a to-do list, but allows you to project parts and tools needed for your next project. I recommend a simple database like FileMaker (filemaker.com), which allows you to develop lists, tasks, and accomplishments. On the most basic level, you can use simple paper and pen, or a spreadsheet. The nice thing about a easy-to-use database like Filemaker is that you can reuse fields, to form into other lists, projections, pdfs, or even for blogs. I use Filemaker in this blog (in fact this is a Filemaker layout that I developed that not only allows me to write articles, but to automatically format text to put into a .pdf and WordPress). Because the text is stored in fields, I can use it and reformat it in the future for other applications. Filemaker has a IOS based free app as well. That means you can develop a database as an app, then share or sell to others (the FilemakerGO app is on the AppleStore, but you can have control over your app and make available as a download on your web hosting service). Developing apps for iPad and iPhone have universal appeal, and a great way to develop a following, and additional income. You can develop your Filemaker database (app) anywhere, including at sea.



Where Do I Start ?

On any refit or new build project, the overwhelming task is to figure out where to begin. The first is infrastructure. If you don't establish a good power, tool, and work environment, you'll find yourself repeating operations, which can really extend build times. Reduce or eliminate duplication as much as possible. Start from the hull, and work inside to out. If your vessel is operated within inland lakes, or on the open sea, you may have waste disposal regulations that you need to comply with (i.e. sewage and greywater).

A. Establish A Vessel Power Strategy: What will you use for primary vessel power ? What dock power supply options will you have ? What will be the vessel power outlet voltage ? Also consider hybrid technologies, or even electric outboard. If you've ever had to rebuild a internal combustion engine in a bilge, you'll understand the challenges and hassles of working in cramped spaces. Also determine type and number of helm stations, or going with more automated (iPad steer anywhere on the boat) systems and one helm.

B. Determine A HVAC and Plumbing Strategy: Reduce plumbing runs, and options, to reduce costs. Consider reviewing a flush toilet system, versus a composting toilet, or a potash toilet. If you have ever had to unclog, or take apart a sewage system, it will make you seriously consider other options. If you go with a composting or potash system, you may be able to circumvent lots of holding tank regulations. Remember for each gallon of water and sewage onboard, your hauling around 8.3 pounds of weight that your engine or sails have to move. For HVAC, do you want a centralized heating/cooling system, or point-of-use ?

C. For Sailboats - Rigging Strategy: For those working on a sail vessel, determine best rig, and any re-rigging options.

D. Solar Electric and Solar Thermal Power: Dump the propane/butane (hard to resupply and explosive), and go induction electric for cooking and heating. If possible, use solar PV or solar thermal hot water heaters for on-demand supply of hot water, and also water-making. Is a solar electric water heater more efficient than solar thermal hot water ? The benefit is that electric point-of-use hot water is available any time, while a solar batch heater system may or may not be available when the Sun is not out, unless you use the new Zeolite heat storage pellets (they can be recharged by direct solar heating in a solar vacuum tube, or by electric heat).

E. Galley (Kitchen) Options: Consider HDPE countertops (white), top opening freezer/cooler chests (fixing refrigeration at sea is very difficult), induction cooktop, portable microwave and oven. Insta-Pot for efficient pressure cooking. Bread machine and countertop ice machine for on-depend supply. Small electric washer-drier. Small luxuries really add-up to a more pleasurable voyage.

F. Flooring, Wall, and Overhead: Consider peel and stick or glue down vinyl, or FRP. Consider zoning cabins or sections using the solar power charging stations listed at the beginning of the article. This makes electrical redundancy easier to manage.

G. Vessel Operation and Living Flow: Give some consideration to developing a strategy on the flow of the vessel. Make access to critical systems easy, and watch YouTube videos on cruisers to see where difficulties persist (typically cooling/refrigeration systems, engine systems, prop fouling, water ingress in the bilge, fresh water making, and storage. Develop a habit on shore that you can easily adapt at sea.

H. Food and Fresh Water: Consumables will take up major time segments at port, so try to minimize as much as possible. Some forethought into developing ways to make freshwater will go a long way to reduce filling and carrying jerry cans onboard. Install a water maker, or solar water still (may be a more expensive front-end cost option, but will

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