

9 Top Tips, Mistakes and Insider Secrets

You Must Know to Build The Worlds Best Aluminium Boats

Successfully launching a high-performance aluminium vessel is one of the greatest feelings you can experience as a Boat Builder. There is simply nothing else like it. That's because when you successfully launch your client's dream boat, you get to enjoy the boost to your bank account and ongoing growth of your reputation and order books.

However, there are many obstacles you will have to overcome before you can get there. Not only do you have to build to a high-quality vessel, stay on top of ridiculous deadlines and manage an army of welders, fabricators and suppliers – but you also must do this all within a limited budget, which can be the most difficult challenge of all. All of this can leave you at risk of falling well short of the mark and stop you from ever reaching launch day.

Fortunately, though, building a high-performance aluminium vessel doesn't have to be as challenging as you think. Far from it, in fact. Simply by implementing the right tried-and-tested techniques, you can reach launch day and beyond without experiencing any of the common frustrations.

How would we know? Because, at Global Marine Design, we're experts at helping shipyards and boat builders launch the best aluminium boats in the world. Over the past 35 years, we've helped 500+ clients reach their launch day without the years of hard work and trial and error most shipyards usually suffer through.

We've written this eBook to share some of the powerful industry secrets we've accumulated during our time in aluminium shipbuilding industry. The information you're about to read will help you build your custom aluminium vessel while making sure you avoid time overrun, budget blowout and class compliance issues that can plague even the best shipyards.

But why would we want to share this information for free, when our competitors could use it to their advantage? The truth is we love designing for aluminium boat building! The information to follow is all good for our industry and as they say, "A rising tide lifts all boats".

You're about to discover:

- 3 simple techniques you can use to successfully build a top-quality aluminium vessel – even if you're planning your first project.
- How to avoid the 3 most common mistakes made by shipyards – making even 1 of these errors could cost you hundreds of thousands of dollars and set your launch date back months.
- 3 insider secrets that will help you build better boats PLUS save time, money and stress
- The TRUTH about aluminium shipbuilding and why many shipyards never reach their ideal launch day.

By the time you've finished reading, you'll have all the information you need to kickstart your journey to success and build aluminium boats that blow away your competition.

Let's get started!



3 Simple Techniques to Help You Build the Best Aluminium Boats

Some days, launch day might seem like a faraway dream. But, if you implement the right strategies, you can get there far sooner than you think. We've outlined 3 simple, tried-and-tested techniques you can use to build a successful aluminium vessel.

#1 Know Your Client

If you're serious about building aluminium boats that blow away your competition one of the first things you absolutely must do is to gain a thorough understanding of your client. It goes without saying that most aluminium vessels are built to a list of desired specifications, but still somehow many builds will miss the mark. All boxes were ticked, so what could have gone wrong?

Too often when we ask a prospective builder or client, "What is the number one most important thing about this vessel build?", we are met with a blank look, shrug of the shoulders or silence on the end of the phone line.

Total understanding of the purpose of the vessel is the single most important technique a shipyard can employ to ensure successful builds and happy clients.

For example, say you achieve 5 knots above the nominated sprint speed by fitting powerful engines. Great! But the client was really wanted to prioritise reduced fuel consumption and longer range. They will run a reduced speed but carry the weight penalty of the large engines for the life of the vessel.

Or another case we seem to come across regularly... a catamaran is built light, low and slender to reduce fuel consumption BUT the low volume hulls and insufficient tunnel clearance result in woeful sea keeping, tunnel slamming and reduced running speed. The vessel owner is forced into a reduced operational window, losing out whenever conditions worsen.

A successful aluminium vessel build ticks all the specification boxes but does so with all of the right compromises to achieve the vessels true purpose. Here is a selection of initial questions you may ask your client (or consider for yourself if you are the owner/operator) to build a true understanding of the required build:

- What is the number one most important thing about this vessel build?
- Please describe what would make this build a success? What difference would that success mean for your lifestyle or your business?
- Tell us about your existing vessel/s? What are their limitations and where could they be improved?
- What is your motivation for enquiring on a new vessel now?

The list goes on... a top shelf designer will be able to assist with a template and guidance on how to gather this information.



#2 Costing the build

All successful aluminium boat builds will be accurately costed prior to a single piece of metal being cut. A clear understanding of the build budget between the client, builder and designer is fundamental to the realisation of the vessel build.

For example, the build is completed on time, to a high standard and the client is very happy. Unfortunately, in the background the build is over budget, having used more aluminium and required more labour than was expected.

You might think “That’s no problem, we only build ‘cost-plus’ contracts”, which is great for reducing your own risk due to cost overruns. The downside is the increased risk of the build stalling if the costs grow beyond the owner’s expectations or means.

The good news is that it is relatively simple to cost an aluminium boat build and only requires some time and effort. It pays to have your designer involved early to assist with items such as the required weight of aluminium, main engineering, shafting or waterjets.

Experienced designers will be able to offer estimates of metalwork assembly time based on similar successful projects, and even be able to provide a build costing template if you are starting from scratch.

A good costing template will capture all the obvious build costs like materials, machinery, labour and design fees but will also include the incidental costs of building, such as lifting fees, storage fees, customs duty, sea trials, class fees and the like.

It is vitally important that the vessel costing includes some percentage contingency to cover unforeseen costs that may arise during the build. These costs are generally driven by outside forces, such as the pandemic, international conflict, or materials shortages.

The vessel owner should also be aware that some contingency amount should be put aside on their end, even for a fixed price contract, to cover any necessary variations for the successful launch of the vessel.



#3 Choosing the right Designer for Your Shipyard

As a specialist aluminium vessel designer for over 35 years we're probably biased... we believe selecting the correct designer is vital for the success of your vessel build. But don't worry, this isn't the sales pitch!

Together, early in discussions with your prospective designer, well before getting to the design investment or technical details, you should try to answer these questions:

- Is the designer a good fit for this project? Have they completed successful designs for similar vessels?
- Does the designer have experience in this vessel's industry niche? Have they completed successful designs using the proposed class society rules?
- Does the designer guarantee unlimited construction technical support? Do they have a design team to back up that guarantee?
- Is the designer a good fit for your shipyard? Will they complement how your yard likes to work? Do you trust that the designer will work towards your success?
- Is your shipyard a good fit for this designer? Do you share similar values regarding quality, ethics and purpose? Do you place value on great design?

The reality is that sometimes we are not the best fit for a project, or that our values don't align well with a prospective builder, and that is OK.

We are in the fortunate position to be selective of the yards and clients we choose to work with, and this is most often the case for the shipyards we work with too.

The builder and designer share responsibility to the client and success of the build, to establish a long-term collaborative relationship. A little effort spent focussed on this prior to commencing the build can pay dividends for the immediate project, plus opens the possibility of future projects to complete together.



The 3 Most Common Mistakes Made by Shipyards And How You Can Easily Avoid Them

Sadly, when it comes to building aluminium boats, too many shipyards make simple mistakes which cost them dearly. If you're not careful, you could follow in their footsteps and end up falling well short of your goal.

But don't worry – we're here to help.

We've put together a list of the 3 most common mistakes made by shipyards (and designers too!) – as well as easy-to-follow tips on how to avoid them.

#1 Selection by Price

By far the most common mistake we see made by shipyards and vessel owners is the selection of design, materials or machinery based solely on price.

Budget pressure makes this a very easy trap to fall into and there are countless examples of “cheap” horror stories that circulate our industry. You have probably even heard of some like these:

- Cheap aluminium plate that had its certification revoked, leaving several builders with non-compliant construction, huge delays and thousands of hours wasted.
- Cheap second hand engines that resulted in vessel under performance, increased fuel consumption and operating cost, reduced range and fewer contract opportunities.
- Cheap vessel design that didn't include construction support, had few construction drawings and of poor standard, suffered plan approval delays, did not include shell plates, deck or brackets and created construction delays due to confusion on the workshop floor.
- Cheap pre-cut aluminium structural kit with rough cutting requiring manual cleaning, poorly packed scratched and watermarked plates, pen marking missing or incorrect, nested by the metal supplier with no consideration to which parts are used together. All creating construction delays.

There are three things that are shared by these examples. **What started out as a cheap option ends up costing the shipyard time, money and reputation.**

Thankfully, the solution is simple. As easy as shifting our mindsets from one of 'lowest price' to one of 'greatest value'. This allows you to make design, material and equipment selections based on a balance of quality, performance and price. In the long run this approach will save time, money and stress during the build and set you on the path to success.

To quote John Ruskin:

“It is unwise to pay too much, but is also unwise to pay too little.

When you pay too much you lose a little money, that is all.

When you pay too little you sometimes lose everything, because the item purchased was incapable of carrying out the task you bought it to do.

The common law of business balance prohibits paying a little and getting a lot. It can't be done.

If you deal with the lowest bidder, it is as well to add something for the risk you take.

And if you do that you will have enough to pay for something better.”



#2 Waiting Too Long to Engage with Suppliers.

This one may seem like not such a big deal, but it can lead to some of the most expensive and time-consuming problems.

When building an aluminium vessel, late engagement with suppliers can lead to non-compliance, huge delays and rework that can cost you thousands.

All too often assumptions are made based on how it was last time, but the risk is that our industry is moving and changing all the time.

There are examples of this catching out unsuspecting shipyards right now:

- Big name engines or gearboxes that are typically held in stock? Now they have a 12-18 month lead time.
- Conflict, material scarcity and energy shortages have driven the price of aluminium to increase by over 50% in less than 6 months, plus long lead times to replenish stock.
- The cost of shipping has jumped up to roughly 3x what it cost prior to the start of the pandemic.
- Selling a repeat of a previous successful build, only to find the design requires significant modifications to meet the client's requirements.
- A designer's lead time can vary week by week and top tier designers typically operate with a wait list for custom design. Don't get caught out!

By engaging with your suppliers early you give yourself the luxury of time to counter these common traps. Knowledge is power!

Your trusted designer is in an excellent position to offer guidance as they will be working with a range of builders on various projects, so will have an awareness of challenges currently facing the industry.

Your designer will also be able to offer suggestions for vessel design features or build approaches that suit the current market, such as selection of engines to suit required lead times or optimum metal supplier selection to save money while maintaining quality.



#3 Chasing Efficiency at All Costs

We've been designing custom aluminium vessels for over 35 years and there's one design mistake we see time and time again. It seems to draw in unsuspecting designers like a magnet, those who believe they have cracked the code that gets them something for nothing.

Designing and building a super lightweight low volume aluminium vessel certainly has its appeal, which is why this trap is so effective. A superlight vessel will be more efficient, using less power for the same speed. They will burn less fuel, require smaller fuel tanks and have improved range.

That's all great right? So what's the catch?

As with all things in life, designing and building a great aluminium boat requires carefully considered compromise.

Very slender low volume hulls will tend to have poor sea keeping ability in all but the calmest seas, which can make them uncomfortable for passengers and crew, increasing sea sickness and fatigue, reducing the vessels effective operating window and damaging your reputation.

It can be simple to achieve rule compliance with ultra-light scantlings, large frame and stringer spacing and thin shell plate, but this can be a recipe for disaster. Over the years we have seen repairs under warranty of structural failures on lightly built class approved vessels. Super light aluminium structure removes any margin of error during fabrication or operation of the vessel.

We find there's nothing sadder than seeing a brand new aluminium boat covered in welding distortion, buckled and dented because the structure was too light and sparse to keep fair during construction. All before the hull has met a single wave. There's no simple fix for an unsightly "waffle boat" and they generally get covered with large amounts of panel filler prior to painting, which adds back the weight the designer was trying to avoid in the first place.

An experienced designer understands the balance between efficiency, sea keeping and robustness. They will also have the necessary experience to balance material use, ease of fabrication and quality of finish.



3 Insider Secrets Which Can Give Your Shipyard the Advantage by Saving You Time, Money and Trouble

At Global Marine Design, we've got our fingers on the pulse of the aluminium boat building industry, and we've picked up a secret or two during our 35+ years of working towards our clients' success. Here are just a few gems that you can use to give your shipyard a competitive advantage while avoiding some expensive pitfalls.

#1 How Much Should the Design Investment Be?

Sometimes when speaking with a prospective owner or builder for the first time we will be asked "How much for the design?". The short answer is "It depends", the longer answer is that the design investment will be proportional to the size and complexity of the vessel, desired survey or class, required design labour, travel costs and number of vessels to be completed.

The focus during early discussions should be regarding the vessel purpose and technical requirements. There's no point pricing a vessel that isn't going to do the job.

We truly believe that investment in good design is just good business. Design is the foundation that holds together the thousands or even millions of dollars of equipment, material and labour that go into a custom aluminium vessel. In the grand scheme of an aluminium new build the money invested into design will typically be less than the construction labour, material cost, engines and gensets, painting and fit out.

There is some economy of scale. As a rule of thumb, you could expect the design investment on your project to be:

- 7% - 15% of a trailer boat build total build price.
- 4% - 8% of a 15-25m total build price.
- 3% - 5% of a 35-40m total build price.

Please be cautious of designers who sets their actual fee based upon a percentage of the total contract cost.

This arbitrary pricing method gives no consideration to the actual amount of work required from the designer and encourages the dangerous "lowest price" mindset for the entire build. Say your shipyard prefers to use high quality metal, top tier engines and coded welders... your designer's job just got easier, but your design fee increases? That doesn't sound right.

It is wise to treat the vessels design as an investment in your success, just as you would for quality materials, equipment and workmanship.



#2 Beware of Dishonest Designers

This is something that can surprise many shipyards when we tell them about it – but once we do, their surprise quickly turns to delight as they realise how simple it is to prevent. Perhaps you have experienced the pain of dealing with this at your own shipyard.

The truth is that the Naval Architecture and Marine Design industry is unregulated, plus has a very low barrier to entry. Nearly anyone can get a computer, prepare some 3D boat rendered images, make a webpage and start taking cut-rate design orders. All without having a physical office, insurance, a design team or a single proven design to their name.

Thankfully, most designers out there are trying to do the right thing but unfortunately there are rogues within our industry who reflect poorly on all of us. The following are REAL experiences we have heard from shipyards who have been burned:

- A shipyard purchased a design for a 24m ferry, having been convinced the design already existed, based upon a 3D image. It turned out the design didn't exist, and the designer was not able to deliver anything of substance in 12 months. The project suffered huge delays and was damaging to the shipyard and vessel owner.
- A boat builder purchased cheap cutting files for a project, only to find the 'comprehensive kit design' did not include shell plate, deck plate, pre-cut stringers or brackets. It was revealed that these items could be added for an inflated price, or the builder could hand cut them for themselves.
- Lastly and probably most common... A shipyard received a design but found it was impossible to contact the designer for technical support, causing long construction delays! In other cases, the build support was not included as part of the design and can only be had at an extortionate hourly rate.

Here is what you must do to protect your shipyard from dishonest designers while not putting trustworthy designers offside.

First, you must be provided proof that the designer has a history of REAL successful projects (not just 3D renders), complete with builders and vessel owners who are happy to vouch for the designer long after the build was completed, once they have had time living with their new vessel.

Your designer must provide you UNLIMITED technical support for the assembly of the structure that they have designed. We can not stress this enough. A designer who is confident to stand by their product will have no trouble doing so. This guarantee of unlimited support must be detailed in the designer's contract, so that it is binding. If they are not willing to do that, you have to wonder, why not?

Finally, you must be 100% clear on what you will be receiving in exchange for the investment you make in the vessels design. The individual drawings you will receive must be documented in the designer's contract, as well as any other items you may require like stability testing/manual, site visits, Computational Fluid Dynamics (CFD), tank testing, Finite Element Analysis (FEA) or the physical pre-cut aluminium Marine Kit. Be aware, for an aluminium Marine Kit to be 'comprehensive', it must include 100% of the structural aluminium necessary to build the vessel and be pre-cut where possible.



#3 Money Invested in Design Pays Dividends at the Shipyard

Often aluminium shipyards find it difficult to believe just how much time, money and effort can be saved by focussing time, money and effort on good design.

For example, let's examine a very simple and abundant soft toe bracket. In our design office a single custom tripping bracket to suit the exact angle between the frame and stringer can be quickly drawn, labelled and nested for around AUD \$7.30. Add to that the cost to pre-cut this part and we get a total of about AUD \$8.60, ready to weld into the vessel.

Now let's compare that to hand cutting the same bracket on site in the shipyard... The fabricator goes to the location of the required bracket, takes measurements of required depth and angle of the bracket, goes to find some plate of the correct thickness, scribes desired bracket shape, cuts out the part and cleans up the edges with a flap disc. Conservatively, this would be a 10-15 minute process FOR EVERY BRACKET! You can apply your shipyards own workshop rate here but in Australia this would typically mean each bracket is costing around AUD \$20-30.

In other words, time and money spent on comprehensive design can save double that amount on the workshop floor!

Keep in mind that some designs may have hundreds of brackets, so the savings multiply! Also consider that the pre-cut part will have a more attractive machined finish plus be free of hand cut notches or stress concentrations and will be as the designer intended, which will save hassles with the surveyor.

Similarly, savings can be recognised during design by:

- Pre-cutting any and all parts that could possibly be pre-cut. (We regularly see shipyards hand cutting brackets, stringers, deck plates and shell plates. Even entire vessels in some cases!)
- Shaping clever hull forms that can be plated without pre-forming or rolling compounded shell parts.
- Knowing where extra plate tolerance (green) is required on pre-cut parts and where it is redundant.
- Designing shell plates to match the available sheet stock sizes.
- Thinking in build modules that can be built side by side to compress build schedules.

This is just the tip of the iceberg, and we encourage you to engage with your designer early to recognise more potential savings.



The TRUTH About Aluminium Boat Building and Why Many Shipyards Fall Short of a Dream Launch Day

Have you ever tried to do something difficult without help? It could be something as simple as trying to move a heavy piece of furniture – like a desk. You probably knew in the back of your mind that it was better ask a strong friend or family member for help – but you became impatient and gave it a go with the nearest person on a whim.

Frustratingly, shortly after trying, it became clear that you just couldn't do it. The desk was WAY too heavy for your helper. Not only did you knock over the nearby lamp during the struggle, but you've now got a stabbing pain in your lower back... and the desk is still stuck right where it was.

If only you'd asked for help.

Well, the truth is the aluminium boat building industry is a lot like that. It can be very difficult – or even impossible – to complete a successful build without the right assistance.

Of course, there is one huge difference. Building an industry leading aluminium vessel isn't as simple as moving a piece of furniture. No, there is a LOT more to it than that. And the consequences could be far more costly than hurting your lower back or putting a scratch on the wall.

Not only could you cost yourself hundreds of thousands of dollars, but you could also set yourself back months on your journey. For many shipyards a single bad project can be the difference between break even and profit, or even keeping the doors open.

Sadly, this is something that happens all too often to shipyards. Instead of seeking expert help, they use the cheapest design, or the designer they are used to, and fall well short of achieving their goals.

That's why it's imperative that you ask for expert advice to achieve your goals. And in the design of aluminium boats, there's no one better than Global Marine Design. We have over 35 years of experience as specialist in aluminium vessel design – during which time we've helped over 135 builders achieve 725+ dream launch days.

We can help you avoid the common pitfalls, steer clear of the costly mistakes and successfully launch your aluminium vessel in less time with less stress. Why risk build delays, non-compliance, structural failures or worse when you can use our expertise and proven systems to build aluminium vessels that perform in the workshop and on the water? To find out how we can help, get in touch with us below for a free, no-obligation consultation.



Claim Your FREE No-Obligation 60-Minute Consultation and We'll Help You to Build Aluminium Boats that Blow Away Your Competitors

Thank you for using your time to read this eBook – we hope you've found the information helpful and can use what you've learned to launch top shelf aluminium boats for happy customers.

If you're truly serious about building the best possible vessels, then we have excellent news. For a limited time only, we're offering you a free, no-obligation session with one of our aluminium marine design experts.

During your 60-minute session, we'll discuss your current situation, what your goals are and how we can help you achieve them using our proven system.

We'll also cover a stack of valuable information together, including...

How you can be ready to cut metal for your build in less than a week, what you should never do when building a successful custom aluminium boat, and how to avoid all the most common mistakes that some shipyards make that sabotages their success.

There's no cost or obligation to move forwards with our service afterwards if you feel like it's not for you. It's simply a free information session designed to educate you and provide value to you in advance.

To claim your free consultation or find out more information about this limited-time offer, all you have to do is click the link below.

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