Project Moth - A New Toy 2017

After a long absence from dinghy and skiff racing in Australia, I decided on getting into the International Moth Class in the UK where I am based. From starting in 2017, I plan to share my experiences in the class up to the present day in further season editions. Enjoy...

Background

My name is Brad Gibson and I originate from Sydney, Australia. My interest and involvement in racing high performance sailboats goes back to my first experiences on the water aged 6. Born into a sailing family with a Sailmaker for a father and family links to marine fittings manufacture fortunately provided a natural pathway into the sport. My junior sailing years were spent in Sabots, Flying Ants and Cherubs, before progressing to International 14s and on to 18 foot skiffs.

Throughout these early years I was fortunate to experience the process of developing a project from beginning to end with some incredibly talented people from varying backgrounds. From hull construction in plywood through to vac'd composites to alloy and composite spar assembly and rigging, there was always something to learn. Time campaigning my own 18 foot skiffs over four of seven years in that class through the 90s taught me valuable lessons in not only general, but preventative maintenance and project management.

Above all, probably the biggest of those lessons was to look closely at whatever project you take on before going ahead to best match your aims and budget. Doubters of open classes are usually quick to label them as cheque book classes, where the newest and latest kit is all that is required to do well. While this has an element of truth to a minority of a given fleets best sailors, the reality is that for the wider fleet, the equipments capabilities will mostly outweigh the skills of the sailor.

Sure there are good reasons to buy new and leaving nothing to excuse, but there can be just as much (or more) satisfaction in seeking out good quality kit that has been overlooked or discarded long before its used by date. Improving on 'old fashioned' equipment and racing hard to get the most out of what you have will usually find you well up from the bottom of the fleet and regularly finishing ahead of the latest kit not being sailed to its potential. Both are perfectly good avenues into open class racing dependent on aspirations and individual circumstance.

Leaving skiff racing in the late 90s saw a return to the Cherub class for a couple of years of fun, balanced with design and manufacture of competition radio controlled yachts. As interest grew in my rc designs and sailmaking, dinghy sailing made way for a pursuit that has seen me travel to most parts of the globe racing at international level with a modest return on both a personal and business level. Radio sailing has seen a change in surroundings with me being based in the North West of England with my wife since 2006. This pursuit in competitive radio sailing design and competition continues to this day with my business BG Sails and Design.

It was not until 2016 though that it became clear I needed to get off the beach to test myself and enjoy some high performance sailing again. With a background in fast classes open to modification and development, the International Moth was the perfect choice for a project to get me back on the water. I had always kept an eye on the class's progress and development but other commitments up until now had prevented the opportunity to enter the class.

Getting into Moths - Which one?

Having decided on the Moth, the decision on what to buy came down to budget versus expectation. A lot of research had a consistent message of 'pay as much as you can' with reasoning given that the more modern the boat, the more modern the foiling setup and systems making the learning process simpler and more enjoyable through less breakdowns. Excellent advice for anyone less inclined to get into boat work or across what can initially be a testing learning curve regarding foil setup and general maintenance.

But what if your budget is well short of the figures given and you are capable of doing your own work on structure, systems and equipment to upgrade? Could that be an option?

I looked further into the idea and decided to search for a lightly used older generation package that I could upgrade as my skills warranted, over a well used newer package that would need possibly more work. A couple of options came up with a **Bladerider X8 (BR)** chosen that had sat virtually unused since new in 2007 over a well used Fastacraft **Prowler** that was tired with a sketchy history. Both boats were priced at well less than half of the figures suggested to enter into the class. That said, I was under no illusions that not only simple, but some significant upgrades with increased cost would be needed. Costs that not only prevent breakages, but keep the package ahead of my learning curve while accepting the reality being largely uncompetitive with any current designs.

Having followed the class with some ex skiff mates racing them through the era of both of these boats being at the front end in 07/08, I felt confident the raft of information available on the **BR** would be a good starting point. Original setup, modification and assembly sheets are still available, and combined with a healthy load of forum threads and social media help identified the many good and bad points needed to get the package in some kind of updated shape to begin with.

An overnight trip to the Netherlands with a trailer in tow was planned and with sale agreed dependent on inspection, we set off...

Bladerider #43 **NED 3169** - Febuary 25th 2017
On arrival to look over the boat it was immediately obvious that it had had limited use since new. Spars and wings all in decent glossed shape bar the odd scratch. Very few hull bruises, mainsail without numbers and in as new condition. A couple of scratches on the mainfoil tip but nothing worrying.

After agreeing to buy, I decided to take to wings apart and gantry off to check for anything obvious, noting some rusting attachment bolts that were highlighted in the **BR** manuals. As it happened, the lower gantry stud sheared off at the transom and the forward wing bolts did similar with the internal fixings inside the bars dropping away. No drama for me to fix but a good case of knowing what you are looking for thanks to some prior homework. Had this boat gone sailing without checking these points it would have been catastrophic. A slight adjustment to the sale price and it was off home to the UK.

On getting the boat home everything was washed down and inspected closely with a job list started. Of course the wing points and lower gantry fastening point were priorities to repair but I had also prioritised a number of areas in homework that needed looking at if I was going to enjoy going sailing over spending my time chasing repairs. My goal was to get to the first training weekend at Datchet Water SC put on by the UK Class Association to have someone get me pointed in the right direction.

Bladerider NED 3169 as advertised and stripped down on return to the UK after purchase.

Let the Jobs begin

- First on the list was the lower gantry point.
  This fix had been covered in the **BR** manual with a simple hole cut in the rear of the deck to gain inside access to the transom. The existing bolt head was removed and a treaded stud roughed up, aligned and epoxy glued internally behind plate supports. This was then tied in with carbon tow and cloth to spread the load. A ledge was laminated over some mylar film, then trimmed and bonded under the deck to support the original piece of deck. All epoxy glued back in place with care to mask and clean around the join to make the repair barely noticeable.

- Forward wing attachments
  Internal carbon plates were laminated with M6 Studs glued to the rear face, secured with carbon cloth. These were the slid into place and glued inside the tube.

- Mainfoil strengthening.
  It was clear that early versions of the **BR** suffered from foil issues related to stiffness and strength. Looking at a bigger picture told me that these foils although virtually new and untouched, were largely outdated in design. Yet I figured, like the rest of the kit, it would be far better than i could sail it for a season given limited time to use the boat. I decided stiffening the mainfoil to avoid breakage would be best until I warranted anything better.

  The outer surface on both sides was sanded back to the carbon laminate and a number of 200gsm carbon unidirectional tapered layers were added through the strength zone. These were not only laid longitudinally but also added at 45degrees to help reduce the reported tortional twisting problems. All wet laid and peel ply'd, then faired with microlight type mix and repainted in a 2 pack polyurethane.

  The upper section bigger thickness needed the plastic hull insert to be removed and the fin waxed and set in position with an epoxy fillet in place of the plastic to keep the foil firm without any play or slop at the base. The rudder vertical was not stiffened as it was not reported as a known weakness, other than its length being too short for the boat to fly level.

- The next issue on the foils was to make sure the horizontals were secure. I read countless stories on how horizontals had been ripped off in crashes or just plain fell off after the short mounting bolt had stripped the thread inside the vertical. Heli-coils were suggested as a decent fix but still prone to stripping in my eyes so I used a system we have on our rc yachts that allows the lead bulb to be removed for travel. A simple drilled and tapped stainless rod insert similar to a toggle was fitted and glued through the foil up from the base that aligned with the now longer bolt inside the vertical foil.

  The next job on the mainfoil was to replace the plastic pushrod attachment at the top of the foil where it attaches to the bell crank with a brass one that left less thread showing. In looking at the **BR** upgrade notes I decided to reduce the bell crank height for faster gearing as specified.

- The hinge on the mainfoil horizontal was a known weak point from earlier years, being only done with a sika bond without any Kevlar fabric. The hinge join looked in good order but as a safety measure I covered the top face of the hinge in 50 micron mylar tape and faired this in for added peace of mind.

- Wings
  The wing bars were in generally good shape but were slightly different in lengths and didn't set together at the joints so well under load. I trimmed them up and also checked that they

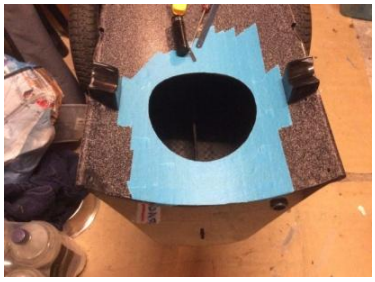
were airtight, filling any small issues at the ends. The tramps were in good shape but were in light weight Dacron that was prone to tearing. Worth keeping an eye on.

- Rigging
  This all seemed to be in great shape and as new, if a little outdated design wise. The mast was a 50mm diameter standard for the time, with a round 76mm diameter straight boom, all old specification but good enough to get going. Spreaders, wire shrouds and control lines and running gear were all in good order.

- Wand and foil controls systems
  To start, I decided to leave the fixed length wand as specified. I had read that an adjustable wand length and pushrod length (RHA/Bias) would be needed to make the boat far more user friendly and these would be looked at once the basics all worked.

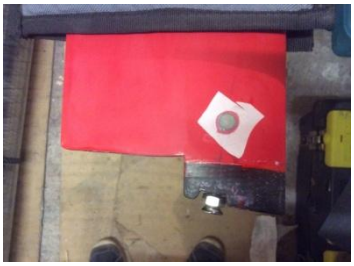
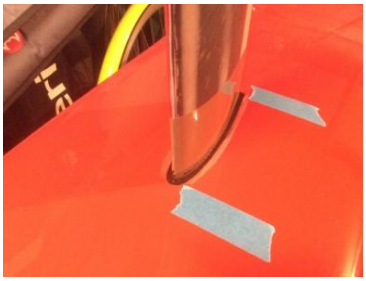
  The rudder box and tiller system to rake the rudder were in good shape other than some webbing packing being needed to take a lot of slop out of the fitted rudder vertical. From experience, the tiniest bit of slop in a skiff rudder when pressed was asking for trouble, so I thought at more height and speed any slop in a Moth rudder could be nasty!

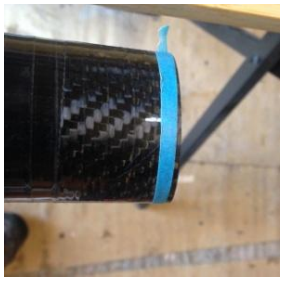
  The moulded gantry seemed stiff and in good shape. There had been a couple of instances of them breaking, but it was not something repeatedly mentioned across the board as a must fix. Other points listed as suspect in **BR** notes were the front wing tube mounts in the hull and the trampoline track around the gunwale, both of which showed no sign of problems.









Gantry stud replaced with captive nut bonded inside transom, Stiffening of mainfoil vertical and fairing, Stud in base of vertical, Fin set in hull, Plates glued inside front wing bars and trimming up of wing bars

Assembly - March 19th
I followed the order of assembly from the **BR** manual with it all being pretty painless. A small amount of packing in the front wing sockets took a small amount of play out and once the tramps were fitted everything came up nice and tight. The rear wing wire support was one I read was important to be tight to remove added flex on the rear bar. Control lines were added and retrieval elastics ran under the wings.

The kicker/vang controls were a test to attach to the low plate in the deck, that had been listed as a point of weakness and prone to ripping out. I planned on this also being a later job but for now I would run with what was there and not load the boat up to within an inch of its life.





Mast join trimmed to fix fitting miss-alignment as seen, Wings fitted and trimmed and tensioned with tramps

First Rig up - March 20th
It doesn't matter how much you think a boat is coming along, but once a rig is standing and you pull on a control line, you know it's getting somewhere. The rig went up and on with little problem and from that point I realised I had a boat. Naturally I wanted to start tensioning everything up to look over it. First impressions were that batten cams and luff curve versus mast bend would be a very different beast from tracked bolt rope sails. Great, a new challenge!

The older type setup had a larger diameter lower mast with a sail that set up deep in the lower section and flattened off to nothing in the upper sections, much like a sailboard rig. The sail shaping was also quite deep aft when powered up. This contrasted markedly from the current rigs that appeared to set up quite deep forward and flatten consistently over the full sail when tensioned under high loads.

All a bit old school in the rig department but it was all in very good condition and would be more than good enough to get me sailing. I felt that going forward if I could make any small improvements to get the best from what I had without cost I would do so but for now this was not a priority.

Sailing - Day 1 - March 24th
I had anticipated that West Kirby Marine Lake close to home would be a great place to start. A man-made lake with just over chest depth water level seemed perfect. Easy rigging on the apron and gentle walk in was ideal. I rigged staring at an offshore 8-10 knots, checked over everything a couple of times and set off. Lighter and easier to carry in than I thought which was pleasing.

Making sure I was out deep enough, I climbed on the fin being careful not to push on the side panel of the to avoid bruising the foam in the hull. Came up easy, one leg over the wing and kept my weight COG low and sailed off. To be honest it wasn't my first time in a Moth having tried a few low riders some years back. I'm pretty fortunate to have a reasonable sense of balance which is a big help and imagine anyone who has sailed higher performance boats or sailboards, surfed, skated, snowboarded or ski'd will feel at home pretty quickly.

The wind was a little light but after quite a few years away it was good to be back on a boat again. After about 20 mins a bit more puff came through and I reached away to lift and sail maybe 50 metres foiling, knelt on the tramp on one knee...a pretty awesome sensation. Came

down, went back again and this time a similar run but tried a gybe. An instant reminder that if you thought you could handle a boat ok, then think again. Like on a dinghy or skiff, I went in at full speed and moved as the boom was coming over my head after beginning the turn. WRONG!

Thinking back to videos and pics of Mothies out on leeward wings with the boom before turning it hit home. As with any board sports you I needed to lean a little into the turn and carve on the mainfoil. Turn without shifting my weight over the foil and I got thrown off in a harsh windward capsize/crash.
Lesson... anticipate and move into and with the turn, not after!

The wind then started to fade and that was it for Day 1. The boat foiled and nothing broke. I realised even in limited foiling wind that I had loads to learn and that my equipment was far better than its operator. Time for some coaching...

First sail at West Kirby Marine Lake

Upgrade #1 - Adjustable Wand
With a couple of weeks until the coaching weekend and the boat in good shape, I got started on my first planned upgrade. I had toyed with getting an adjustable wand made and then decided it was an easy enough job to do myself. I built it with a range at the longest **BR** recommended length to suit my mainfoil and then added the ability to shorten by 220mm. I used the existing ratio geometry to attach it to the bow and linkages and built it from a mixture of carbon round and square hollow tube sections.


New adjustable wand with shaped paddle with the original fixed length version seen on page 2

Coaching weekend at Datchet Water SC - April 8th 9th

The forecast didn't look that great with light winds and sunshine one the Saturday and a building Westerly on the Sunday. One of the UK's top end skippers Dave Hivey was coaching for the weekend and even counting for no wind on the Saturday, the time was well worth it just for the Sunday sail.

Saturday was spent discussing the basics of rig setup through to breaking down manoeuvres and settings through them. A notebook full of tips and a good chance to look over other boats there for ideas and trends in how things had changed with my boat sat beside newer platforms. It reinforced just how much rigs had changed in the 8-9 years since my boat was somewhere close to the norm. I even contemplated some spreader chopping work back at the hotel until I reminded myself that spreaders at this point will not make one difference to me.

Sunday came and after a small delay the wind filled to around 7-8 knots and we went sailing. First time on some deep water with it and got foiling reasonably easily. I was foiling pretty low but all working ok for a first proper sail. A few attempts at foiling gybes and finally managed one which I was pretty stoked with.

A break for some lunch after a couple of hours saw the wind build to the mid teens and gusting a little higher. I was a bit more nervous, but its only water and wind. Once launched the wind freshened in the middle of the lake to a point where going upwind and staggering around was ok, but at some stage you have to get back. Eventually I decided to have a run downwind. I wouldn't say it was pretty or that I had any great control, but it was a 100+ metres of madness that ended in trying a round up without any windward heel and throwing myself off the wing missing the main.

Swimming back to the boat Dave was laughing pretty hard in the RIB asking me if it was like skiff sailing... No, not as I remember it! A good weekend and a pretty good realisation that this thing was going to take me way past any comfort zone I may have had racing boats in the past and but it was going to be the best fun finding the limits.



Marginal conditions at Datchet on the Sunday morning

Open Event - Grafham Water SC - April 23rd 24th
I entered the event at Grafham with the Forecast looking good for Saturday and marginal for Sunday. Good to meet up with new people with everyone very welcoming. A couple of comments on where did i find my vintage foiler in such good condition were funny but not out of line looking at some of the seriously fancy kit in the boat park. We waited a couple of hours for the wind to arrive then set off for 3 races. I was filled in on how the Grand prix finish system worked to score anyone who completed a lap within the time limits, with obviously the top boats scoring a lap higher in their place over the line.

I managed 3 finishes from 3. Upwind I was terrible, tacking badly, totally missing shifts to the extent I had to tack more than I should have. Downwind I felt ok, some foiling gybes, minimal capsizes overall and a boat with everything working with a couple behind me on the course. Good day finished with beers at the local and plenty of banter and tips from other skippers.

Sunday was light and marginal as we headed for the start. A split of foiling and non foiling off the start heading in different directions. What i did find was that in low riding conditions I was fast! I managed to lead a couple of times at the windward mark, only to get run down by boats bringing new pressure and foiling. A day of ups and downs, but a good result for my first event. I left content that I had got back sailing again and enjoyed it with a good bunch of people.

Looking at the weekend, it was telling that I was quick when not foiling. Given that newer boats are designed for foiling and that racing is largely not held in low riding conditions, my sweet spot of performance meant very little in the bigger picture. Rounding in the top 3 in one race and popping onto the foils close to the leaders, only to watch the sail away deeper and at near twice the speed was a little sobering...

Event Report - https://www.yachtsandyachting.com/news/195603/Moth-Inlands-at-Grafham-Water

Upgrade #2 - RHA
It was pointed out that I was foiling way too low on the Saturday upwind for a **BR** and possibly a fraction high on the Sunday which pointed out that I needed a RHA- Ride Height Adjuster barrel to alter the length of my hull pushrod on the fly rather than having it pre set. I was aware that this was going to be something to add, but it's not until you start being restricted by a race where you are stuck with a poor setting that you need it adjustable.




RHA - Ride height adjuster on hull pushrod first in black acetal then stronger in brass barrel after breakage

Upgrade #3 - Mast
Another look at the rigs at Grafham had me convinced to see if my lower mast could benefit from bending more to flatten my lower mainsail with the amount of lower luff round cut into it. I'm sure a stiffer boom and boat setup to take more kicker/vang load may have helped bend the lower section, but that was a stretch so for now my aim was a softer mast. A visit to a sailboard shop worked well with a number of different tubes there for a nominal price to choose from. With the van filled with an assortment it was back to the workshop.

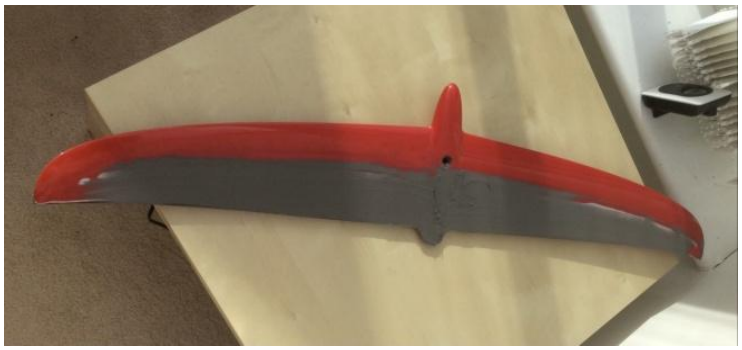
What eventuated was a tube of similar diameter but less stiffness in the bottom section. The top section needed a little carbon unidirectional added to stiffen it to what I was looking for but ended up ok. The mast did take up the luff curve lower down with the same loading of kicker than the other mast so was worth trying and cost next to nothing.

Original mast and sail combination in above pictures and experimental mast in bottom row showing quite a bit more bend under similar load

Upgrade #4 - Rudder horizontal modification

The ease that the leaders just ran away downwind at Grafham was an eye opener. I knew I'd be off the pace by some margin, but this was serious straight line speed. Short of stumping for a new foil set possibly costing more than my boat, I looked through notes to see what could be done to help in some way.

In the end I chose another route to sand and grind the underside of the rudder horizontal trailing edge, then fill a section of the hollow in for a higher speed, less lift section. The chord thickness did come down a little and the shape a little smoother after removing some very thick paint. I'm sure any gains were only minimal but I find it hard to continue sailing with something I know I could modify to make better with little effort.



Rudder horizontal re shaped to a slightly thinner and smaller section

Repairs #1 - Mainfoil

An evening practice in a building wind at West Kirby ended as quickly as it began on the first run of the day by hitting something about a foot under the surface at pace. Thankfully it didn't get the rudder as well but climbing back on the fin the crack in the lower leading edge was pretty major. I managed to make it back to the ramp without loading it up and risking it snapping.

A bit of an eye opener to a hollow fin full of vac bag release film that needed drying out and grinding away of crushed carbon. I was able to bond a carbon solid rod internally along the leading edge then managed to build up laminate layers on the ground down outside skin.


The repair had no problem seeing the year out and showed no signs of weakness

Upgrade #5 - Wing Trampolines
Given the original tramps were light Dacron and the realisation that I am the only **BR** in a UK fleet, there are a few areas where I felt I needed to be self sufficient. A ripped tramp is not only a day lost, but an evening of trying to find a sailmaker to repair them to spend a couple of hours putting it back together for the next morning's start. No fun in that!

I decided to order a set or new tramps in black from Hyde that advertised them. I asked for a couple of extra webbing loops and all arrived in good order. The only downside was trying to fit them the day before the Nationals and realising the bolt rope was too big for the hull track! After an amount of cursing, then a trip to the hardware store for some 6mm diameter polypropylene and some hand stitching saw the tramps on late that evening for some peace of mind for the weeks racing ahead.

UK Nationals - Paignton SC – May 30th June 4th
After witnessing a storm on the seafront in Paignton a couple of years previous I entered for the Nationals with a little reservation. I headed off early hoping for a chance of a practice sail but sadly that was blown out by a large on shore sea state. Plenty of rigging space on the green with a decent entry of 40+ turning up. A good chance to look through the fleet for more tips and ideas, meet skippers and enjoy a few days away learning.

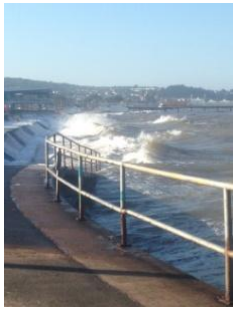
Having the oldest boat in the fleet I still felt pretty hopeful that I would race around with a few others at my level and that proved right. Over the event I had moments where I was ahead of more than I hoped, and others where I was all but last , with the difference near everytime being me. If I sailed well I was near others. If I sailed poorly I got what I deserved. My aim was to get better throughout the event and learn, which I managed on both counts. I was a few scores up from the bottom of the fleet and enjoyed having the odd race within a race.

It had been over 15 years since I had sailed a National Championship in a full sized boat and it was great to get back into it. A few beers, perfect hosts that couldn't do enough for the fleet, a good bunch of skippers happy to offer advice when asked was a bit of a reminder of younger times racing for the fun of it.

The boat worked perfectly in its setup. No breakages, a score in each race without a retirement and being much further around the course at the end of the week than early on before being lapped showed progress. The RHA worked a treat with so much more control over the levels of flight between it and the wand length adjuster. Plenty of good tips and reasoning on how to coordinate the two to work best in waves downwind with the preferred being to shorten the wand and keep the boat height governed by the RHA. Short wand moves quicker at its fast point to have the flap keep you in the water and not breaking out.

The new mast was used in every race and seemed to let the lower mainsail flatten a little more without blowing the boat up with kicker load. Good to learn things..

Event Report - https://www.yachtsandyachting.com/news/196219/UK-International-Moth-Nationals-overall
Yachts and Yachting Interview - https://vimeo.com/219504406



Launching was a bit exposed on practice day. Rigged in the park with more modern setups and some fun sailing conditions.
Sailing pic: Mark Jardine Y&Y

Upgrade #6 - Rig

Following the Nationals and what I had learned with the rig, I took the opportunity to grab a more modern mast, boom and sail to upgrade. The mast was a C-Tech 03c, the boom a C-Tech straight and the sail a North H13. If anything the mast was a little on the softer side of what most were currently using. The sail still on the deepish side and a bit draft aft but a more consistent shape from top to bottom instead of the full down low, bladed head sailboard old type I had. The mast being 40mm instead of 50mm would get rid of a little windage and the stiffer boom allowed for more kicker/vang to be used without bend.

Upgrade of mast, sail and boom with some tweaking to do and numbers to wash off and replace

Scottish Open - Loch Lomond - September 2nd 3rd
After a summer break and some radio sailing events, next up it was a weekend event at Loch Lomond. I turned up at midday on Friday keen to get out for a sail in 10-12 knots of wind. It was first time out with the upgraded rig and an instant improvement. Everything just felt a little smoother through gusts and just a little easier to handle. Take off was also smoother. Raced around for a bit and seemed pretty well matched to a Ninja, if a bit higher upwind.

Saturday had us sailing in a perfect piece of open water for 3 races. Out of a fleet of 9 I managed some lower scores and felt like I was actually racing within the fleet. Plenty of mistakes but gybes were good and boat going well. A good party in the evening at the club with a BBQ was a good finish to the day.

Sunday had a different course in a different part of the lake. Some marginal foiling at times but I managed a couple of good downwind runs to avoid potholes and keep me in the races. I felt for the first time I had time to look for shifts on the course with it coming together.

It was a good weekend with the new setup that improved performance of the boat. Still struggling to understand ride heights and get the boat foiling comfortably upwind but small steps there. I have some pretty safe limits on setup and am rarely crashing out or capsizing. Thinking that tells its own story in that i'm being too safe with my limits..

Loch Lomond is amazing part of the world with massive open water and awesome mountain scenery. A world away from Sydney Harbour on a Saturday afternoon, even if it was a bit colder...

Event Report - https://www.yachtsandyachting.com/news/198294/International-Moth-Scottish-Championship

A noticeable improvement in the newer rig setup at Loch Lomond in Scotland. Needed more rake though..

Upgrade #7 - Foil AOA
Following the event in Scotland I looked at ride height and trying to better understand the relationship between the horizontals of the mainfoil and rudder AOA- Angle of Attack. I had originally set these up as standard **BR** notes suggested but learned that more AOA was used on the mainfoil to level the boat out with the horizontal in a more neutral setting and not rely on a slightly flap down setting to give the required amount of lift in light to medium range foiling. I decided to increase the mainfoil AOA by near 1 degree and also do the same with the rudder to see if there was any change in behaviour at the next outing.

UK Moth Open event – Bala SC, Wales October 7th 8th
Only just over an hour away, this was as close to a home event as I would get this year. I arrived on the Friday to get in some practice and see if the AOA changes were ok or needed changing back for racing. I very quickly found in a gusting 12-15 knot wind and very cold water that my rudder AOA was too much leaving me at the end of my tiller twist adjustment and that the **BR** rudder just lets go at 18-19 knots when the boat fly's higher. Thinking that this was just a confirmation of the rudder vertical being too short, I lowered the ride height only for the same thing to continue happening.

Rather than waste a good practice, I came ashore and changed the rudder AOA and roughened up the surface with some pretty course 240 grit sandpaper. Back out on the water and the boat foiled higher than normal with a decent range in the rudder AOA again. The rudder venting problem improved a little but anything over 21 knots was a trip into no mans land. As hinted much earlier, the rudder length and profile was identified early on as an area where big improvements in control were made, where many of the UK owners added Ninja/Rocket rudders for a big jump in control and performance of their **BR**s.

Saturday and there were 4 races in tricky gusty winds from 8 to 12 knots with the odd stronger puff thrown in. My racing efforts were poor and the harder I tried the worse it got near the start line. The course itself I did better on and made up plenty of ground on the Mach 2s and Ninjas I was racing against, given the two Exocets and a lone Voodoo. I felt overall I sailed a little better than my result for once.

Sunday was sadly cut short with the prospect of little wind decided on early by skippers as a way to head home early. A lesson in being a little patient was that within 2 hours the wind was in and good to go. Opportunity missed...

In all the AOA change had the boat riding higher without a speed drop and a whisker more AOA twisted on the rudder to find its nice spot. Again the boat held up well without breakages as it did all season. The club pulled out all the stops for a Saturday meal and entertainment and the venue is one I look to get to when I can in the future.

Event Report - https://www.yachtsandyachting.com/news/198978/International-Moths-at-Bala

Boat was going well at Bala with a bit more height. Still some way to go with changes due for 2018.

The Season Wrap Up
In the very beginning my aim was to get back on the water with a new challenge that would remind me why I grew up loving sailing. In every way this project ticked that box and more. I'm back thinking about sails and rigs and trying to better understand how they work in harmony. I'm learning about foils and how to not only get the best from a given shape but what to look for in improvements and handling. I'm looking at how I can improve my sailing skills in a new discipline to get the best from the setup I have. I'm getting fitter than I have been for a long time and most importantly, I'm enjoying going racing again.

As for my choice of equipment and level of entry...
I don't think I would change too much really given finances and time available. At all times the boat was better than its 46 year old driver that hadn't raced anything on the water since the early 2000s outside of the odd day or two. The package never let me down with breakages after a program of preventative maintenance based on information freely available, and a good degree of homework. The package's performance improved with every upgrade. Some upgrades outright speed based, and others improved handling that in turn improved the overall speed.

All performance upgrades were from either used equipment available on the many class buy & sell platforms or made and modified in house. The total cost to me was significantly less than figures widely recommended as a starting point that buys you something that will likely need a similar amount of work, upgrade and maintenance applied also.

Would I recommend this route to any newcomer to the class? That answer is Yes and No
Every individual and situation is different, but anyone considering this route needs to be totally honest with themselves when answering the below questions:

- Are you time rich in that you can devote often countless hours to working on your boat?
- Are you competent with workshop tools?
- Do you have a basic experience in composite boat building and repair?
- Do you have a garage/workshop with all year access to work on your equipment?
- Do you have the drive and desire to see a project through?

If you have answered only one of the above questions with a NO then I would seriously think about whether this approach is for you and instead take the well considered advice of buying the best setup you can for your budget. Moths are not fun if you are regularly breaking stuff and even less fun if your hand is going in your pocket every time to get things fixed on old well used kit.

If you answered YES to all of the above then why not jump in and have a go. The amount of information and experience out there to help you is large and it one of the most rewarding things you'll ever do in sailing.

A very big thank you to all who have offered advice or encouragement over the year. From home builders to professionals and skippers across every level, your assistance is most appreciated.

Coming Up...

Project Moth - Time for Upgrades 2018
I run through a list of upgrades made, with explanations on how and why, as well as events and what was learned along the way...

Cheers
Brad Gibson