

Pegasus Mini 40 Event

10 – 12 November



11 boats (28 hulls) turned up for the Mini 40 event at Pegasus, just north of Christchurch on the South Island of New Zealand. A lovely location and a perfect-sized lake to enable long enough legs for foiling, wind permitting. It was agreed this year that we would have a practice day on the Thursday, followed by 3 days of racing, with individual winners for each day and an overall winner for the 3 days, the reason for this breakdown of “winners” being – in the instance where we have significantly different wind conditions on different days – it may offer the opportunity for a boat that favours strong or light winds to have its day of glory, if not overall success. And as before, the club did not let a relatively small number of entries stop them from providing full support, with a race officer, scorer, and a rescue boat and mark-moving team. And for good measure, the sun shone every day!

The entry list saw possibly the most diverse collection of boats on the start line for quite a while. A number of tris, mainly built by Dave Burke in West Australia, which have the ability to use foils or just a centerboard; the lightweight Bingo tri (winner of the event last year) built by Dave Creed in the UK, and Paul Goddard’s much modified cat (been on a serious diet since last year), which can also be adapted to sail with either foils or centerboard. Then at the extremes were 4 cats: at one end of the spectrum were Dylan and Anthony’s F50-looking cats (now called the “Tauranga Cats”, with twin independently adjusted rudders with T foils, very fine foils and high aspect ratio centerboard. Then somewhere out in space were the cats of Bruce and Leon; Leon’s is twin masted (and heavily raked) with una rigs set on hulls made from refrigeration insulation, and because that is not extreme enough, for good measure steerable bow and stern rudders, each having the ability to have different size and shaped T foils on the bottom. He also had the option to fit a centreboard but since he lost that in practice on day 2 we’ll not mention that. Last but not least, Bruce arrived with his strapped up ultra-light cat with foils, topped off by twin swing rigs. This all led to an intriguing group of boats on the start line.

Friday dawned with most of the boats being rigged well in advance of the first race. For this year, the group had agreed to try a few new concepts, following some of the concepts used by SailGP: Anyone over the line had to stop to permit all other competitors to pass, and a course identical to the SailGP format was adopted for the first morning: a reaching start, a shortish downwind leg to a gate, a beat up to another gate, back to the first turning mark, then to the finish line. Lightish winds dominated the day, which did not suit the Tauranga Cats with all their underwater appendages, and instead the 4 “average boats” sail numbers 21, 82, 34 and 36 dominating the day, with Milton Bloomfield sailing the borrowed “white boat” tri (#193) working his way up the learning curve, which including testing some foils that he had designed and 3D printed earlier in the week, and obtained a well deserved win in the afternoon. At the end of the day, “Bingo!” (34) held a small lead over “Bad Habit” (36) with Paul’s cat (82) in 3rd and John Beavis with jukebox (21) 4th. All 4 boats won races and only 5 points separated 1st and 4th.



Saturday arrived with the promise of a decent breeze in the afternoon, and we were happy to see the forecast proving to be correct. And this brought Dylan’s “blue cat” into the reckoning with 4 firsts during the day, supported by a 2nd and a 3rd. Dylan fully realizes that his boat is not an all rounder and has the patience to wait for the conditions that suit his boat to. It is also a boat that requires constant attention and not just with the thumbs on the sticks but also the index fingers on sliders on the transmitter for adjustment of the rake of the 2 rudders. He probably experienced more capsizes than anyone else over the weekend as his boat is designed and built to push all the boundaries to gain maximum foiling speeds, but persevered throughout the three days.



Foils appeared on all the boats that had them in the afternoon and a zig-zag course showed off the boats at their most exciting. The day saw Bad Habit dominate the morning while Bingo came out on top of the afternoon set of races. Paul's cat was always in the hunt and enjoyed the afternoon breeze more than the lighter winds in the morning. The twin-masted-swing-rig cat sailed by Bruce had some brilliant moments, leading one race at the first 2 marks, and also demonstrating it can perform a 720 faster than most of us can perform a tack. At one stage a mast step in one of the hulls failed and he was down to just one rig, and was still foiling! Overall, for the day, Bad Habit was 5 points ahead of Bingo and had a narrow 3 points lead overall going into the final day. JukeBOX had a not so good day with a number of DNFs. With light winds forecasted by some websites and strong gusty wind from completely the opposite direct forecast by others, we went to sleep with total uncertainty as to how the overall results might pan out



Sunday – light winds, which thankfully grew to give relatively stable easterly breeze and permitted foiling for the lighter boats, Bruce’s cat in particular foiling on just about every leg of the course at some stage or another. Dylan’s cat was seen foiling upwind and on the reaches but his attempts at zig-zagging down the runs to keep airborne did not pay off as there was always a hole in the wind somewhere to drop him off his foils. Bad Habit had a good morning but failed to win a race in the afternoon, with Bingo having the opposite, a below par morning but winning all but one of the afternoon races. To add to the mix, the recently anointed Commodore of Pegasus, Chris Kostela was working his way up the fleet to take 3rd place for the day. So when the final race was over none of the competitors knew who had won, and had to wait for the prize giving to find out. On the day, Bingo was first, this taking out the daily wins on Friday and Sunday, but overall, Bad Habit managed to hang on to a very slender lead of just two points from Bingo, with Paul’s cat 3rd.





Thoughts on the technical aspects of boats at the event.

On the last day of the Wattle Farm event 3 weeks ago, Bad Habit had found extra performance upwind after accidentally experimenting with what was thought to be an over-size centerboard. This idea was copied by Paul's cat and Bingo for Pegasus.

John Beavis with jukebox was banging the corners upwind, permitting him to sail slightly freer away from other boats and had good speed. He was suffering from a leak somewhere in the main hull on Sunday otherwise might have done better.

Milton had printed an interesting set of foils for the white tri (193) and later in the afternoon was sailing without a centerboard and was pleased with the performance.

On the breezy Saturday afternoon, Bad Habit was using a set of foils half the size of the standard, the logic being that they would produce enough lift to stop the lee float from burying but have less drag upwind. Not as fast on the foiling legs compared to boats using full size foils, the upwind performance was good enough to keep the boat at the top of the table at the end of the day.

By contrast, we can expect Bingo to turn up to the next event with smaller foils

By Sunday, Bruce's cat was predominantly held together by tape but was still foiling on legs where it had no right be foiling and it is hoped that Bruce continues down this path to see how competitive he can make his fascinating boat. Both Bruce and Leo have demonstrated the significant benefit of a twin masted rig, lowering the centre of effort of the rig significantly, reducing the heeling moment which helps the foils to work properly



The general consensus in the fleet is that trimarans are more forgiving to sail, and easier to sail in light winds so long as the main hull has sufficient volume and rocker to assist tacking.

What next? It is hoped to continue to hold two events a year in New Zealand, plus Pegasus is growing a nucleus of the boats that could enable some club racing to start up. Dylan is going home to have a think about how he can move forward. The concept works well in a steady breeze, and has shown he can manage 100% foiling time round a course if the wind holds steady. But when the wind dies there are too many appendages in the water to let him stay competitive. More volume and rocker in the hull are thought to be beneficial and more chord at the top of the foils. Lets see what he comes up with next. Bad Habit has been sold and will be based around Auckland so hopefully can race with John at Wattle Farm. Next will be another Bingo from Dave Creed with a different configuration for the foils. Hopefully Dave Burke will one day build another Bad Habit. John is planning to produce a new main hull for jukebox. And we all hope Leon finds the enthusiasm to build carbon hulls and a more rigid platform for his twin rigs, to continue his experiments. Finally, there are rumours that Paul and Milton may produce a 3D printed multihull (or parts of one anyway).

Thanks once again to the Pegasus members who gave up 4 of their days to give us a great event. I sincerely hope we are invited back again next year.

*Photos courtesy of David Williams and Olive Brown. Apologies but I have got a bit confused as to who took what and just hope you can forgive this blunder. There are also videos on facebook on the **NZ Mini40 Group** page and the **Mini 40 multihull** page*

<https://www.facebook.com/100009029411835/videos/pcb.727922015339657/7400108546265>
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For the record. Builders:

Dave Burke (West Australia): Bad Habit, the white tri, jukebox, the red tri (sistership to jukebox) and the Box that turned up on Sunday afternoon

Anthony Sisson and Dylan: The blue cat and the white cat

Paul Goddard: designed and built #82

Bruce Edgar: His (extremely light) twin masted swing rig cat. Repair tape option extra

Leon Talaic: his twin masted cat with thanks to the fridge that donated its insulation

Dave Creed (UK): Bingo

