

PropShaft



Magazine of the New Zealand Model Power
Boat Association Incorporated

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Full throttle at the Taupo 100..... turn TURN!.....



oops..... high-sided.....that one a bit.....



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Editorial

Thanks to those that submitted copy.

Presidents Report

September 2011

Hi folks,

I hope this finds everybody fit and well.

I am probably a stranger, and just a name, to a lot of you, but I hope this changes as time passes. I ended up in this un-usual position by attending at the AGM in Blenheim earlier in the year, and by a process of elimination I ended up on the committee. Then due to the disruptions at the committee level shortly after the AGM, again by a process of elimination, I ended up as the Acting President. The AGM was held in a lounge at a Rest Home, so the moral of the story here is, don't end up in a rest home, or you will find yourself on the committee.

I am a member of the Wairarapa Model Power Boat Club, and have been involved in nearly all aspects of model boating for nearly 18 years now.

The objects and aims of the Association are set out in detail in the constitution, but briefly, the aims are to promote model power boating within New Zealand, provide a structure for the setting of rules and classes which make for better racing, to assist individuals and clubs with the promotion of model power boating, and to provide a platform for the administration of the sport within New Zealand.

One very important point that we need to consider is that the Clubs are the grassroots of the sport, and without the Clubs, there would not be an Association. Conversely, without the Association, the sport would not be functioning as it is now, particularly in regards to the National Events Calendar, Presidents Cup, Speed records, National series etc, etc. The Association also provides uniformity throughout the country.

The Clubs need the Association, and the Association need the Clubs.

So let's get together and move to expand our sport and provide an enjoyable medium in which to enjoy our sport, and the companionship it provides.

There are challenges facing us at the moment, which need to be resolved. The committee is focused on, and working on, a number of issues at present. I will give you a breakdown of some of what we are at present working on.

One of our big priorities at the moment is updating the webpage. This is our 'window' to the hobby for attracting new members, and is also a source of information for all members. The site needs to

be exciting when logged into it. We need to convince potential entrants to our sport to choose model power boating, over rc cars, heli's, planes etc. It is also planned to make the webpage more of a 'one stop shop' for members to use for club activities, provide a platform for the exchanging of knowledge, updating of regatta results, scale registers, committee and club meetings minutes, speed records, Presidents Cup Points etc etc. The information on the current site will be transferred over. It is hoped that this will become a vibrant and valuable asset to the sport and its members.

The committee is at present considering remits for changes to the rules for the starting and milling procedures at the start of races. This is a problem area which was high-lighted by the starts at Blenheim.

A Complaints Procedure has been put in place for dealing with complaints. This has been circulated to the membership. Complaints need to be dealt with quickly and with decorum.

We are working on the IRMS to be able to print out results more quickly. The IRMS system is a great asset, and once all the 'bugs' have been ironed out it will be fine. We are also looking into a 'transponder' system, but this is simply too expensive, and is out of the question at the moment.

We have spent quite a lot of time at committee meetings discussing how to attract new members, get back past members who have left, and to retain the members we have. It is hoped that the new webpage will help here. We have also discussed involving family members, maybe in administration roles and as race directors and assistants. It can only be good. Membership numbers are growing which is a positive sign.

The Nationals are to be held in Tauranga next year, 2012. The Bay of Plenty Club are the hosts, and they have a wonderful new venue over there. Let's all get together and make this a memorable event. Being over Easter, and at a popular holiday spot it might be a good idea to look at organising accommodation soon.

Over recent years model power boating has taken giant leaps forward especially in the development of newer, more powerful engines, and big advances in hull design and building. This has raised the issue of modified engines exceeding their class rules. We are looking at putting in place a system to keep control of this, and to provide a level playing field. The modified motors mainly affect the T1 and T2 boats and the P2 – P3 classes.

The events calendar for next year will be decided later in the year. Have your Club give some thought on what they wish to host. The offshore series is always popular, and there is talk of a hydro series.

Like all hobbies and sports, there is a cost of participation. Not all people can afford the newest and the best, or have the knowledge and skills some of our members are lucky to have.

Entry level boating has always been an issue, and how clubs deal with this at the club level is really up to them, but we do need to be sensitive to inquiries from people wanting to participate, and do not want to scare them off with the high value of some of our boats, nor do we want to lower the standards to try to cater for everybody.

Take time with a new member, it can be daunting to come and join a group of obvious friends, who are all busy doing their own thing. Please take time with the new members and help where you can. They are the future of the sport. It can be disheartening to have a boat which is not starting or performing up to expectations, and to be just left on your own. Likewise, a little time spent on radio procedure and showing how to actually drive the boat goes a long way to making he or she feel welcome. We were all in that position once.

That's enough from me, but at the risk of sounding like a 'cracked record'. Do be conscious of noise levels, have well run and organised meetings, be aware of the livestock, and also people. The boats are reaching very high speeds and can be intimidating, especially if the public are close to the racing.

Please, all enjoy your boating, and as I tell our guys down here, 'What happens on the water–stays on the water'.

Regards,

Wayne Mowbray.
Acting President,
September 2011

Presidents Cup, points standings

Up to and including, the Rotorua 100.

Andrew Colquhoun,	270 pts
Matt Gay,	120 pts
Daniel Steenhart,	110 pts
Dale Hopkins,	110 pts
Peter Collier,	80 pts
Matt Bindon,	80 pts
Nathan Bull,	60 pts
Malcolm Jamieson	60 pts
Malcolm Miller,	60 pts
Ant Schroder,	60 pts
Damian Baker,	50 pts
Graham De Pina,	50 pts
Dean Harris,	50 pts
John Belworthy,	40 pts
Matty Cook,	40 pts
Gavin Jamieson,	40 pts
Tony Rutledge,	30 pts
Bob Gutsell,	30 pts
Pieter Lokum,	20 pts
Grahame Haines,	20 pts

Engine Scrutineering.

In response to queries and questions from some of our membership regarding checking engine capacities particularly in the petrol classes the committee has been working on a format that we can implement for nationals events and records.

Many forms of motorsport now have mandatory scrutinizing of engines or components of same. Just ask a kart racer, rally driver or V8 supercar driver for example. It is nothing new.

Kart racers are frequently asked to disassemble an engine if they place at important race meets to check that they conform. Rally drivers often have Turbo restrictors checked pre race and if you place at a round of the NZ rally championships scrutinizing is mandatory and you are at the chief scrutinizers peril as to what he wants to check.

My Nephew placed 3rd at Rally Whangarei in 2009 and we had to disassemble the right rear suspension so they could measure components to make sure the fitted the homologated dimensions. At the same time we had to remove the inlet manifold of the engine so they could measure the bore of each port and also check for mods and finally we had to bust the turbo in half so they could measure the shaft diameter!!

The next rally we got 3rd again and had to dismantle the engine so they could measure the pistons and con-rods.

As you will see from the chart below there are a lot of combinations of strokes and bores that can be applied to a Zenoah engine for example that change the capacity and is important to know that, to make sure it conforms to a specific class.

With many of these combinations available off the shelf in modified and race ready forms it is very easy for the un-initiated to be caught out getting something they think complies with a specific class and finding out it is in another.

The Committee is currently putting together a basic kit of equipment to do a simple check of stroke and bore of engines with the view of implementing checks at the Tauranga Nationals.

The format of choosing who will be checked in each event is still to be ironed out but no one will be submitted to an engine check till the end of an event.

A refusal to allow an engine check will be seen as an admission of guilt and disqualification will be mandatory.

We are publishing this now so that boaters have time to check that their engines conform to the classes they race.

G Haines for the NZMPBA Committee

Modified Engines

	BORE	STROKE	CAPACITY
<u>Stock 23 cc Zenoah</u>	32	28	22.53 cc
1 mm Stroker	32	29	23.33 cc
2 mm Stroker	32	30	24.14 cc
<u>Stock 26cc Zenoah</u>	34	28	25.433CC
1MM STROKER	34	29	26.341CC
2MM STROKER	34	30	27.249CC
<u>Stock Chung Yang/ Sikk</u>	35	28	26.951CC
1MM STROKER	35	29	27.913CC
2MM STROKER	35	30	28.876CC
<u>STD STROKE 36 BORE</u>	36	28	28.513CC
1MM STROKER	36	29	29.531CC
2MM STROKER	36	30	30.549CC

Class

P1 **MAXIMUM 23.00 CC**

P2 **MINIMUM 23.01 CC ~ MAXIMUM 27.00 CC**

P3 **MINIMUM 27.01 CC ~ MAXIMUM 52.00 CC**

Wellington Offshore Update Rounds 2, 3 and 4

The May round of the Wellington was delayed two weeks as several key personnel were going to be out of town the subsequent club day was used by those present as a 'tune up' session in perfect conditions under sunny a sky. Two weeks later race day dawned and the Hutt River was in flood and conditions were miserable, a quick phone around and no trouble convincing those entered to stay home with a rescheduled race date for two weeks later.

When we finally did race on Queens Birthday weekend Sunday, conditions were very windy from the Northwest and drizzly. Fortunately the Nor'wester while strong didn't make it all that rough,

unlike a southerly, the wind did tend to blow boats over. Those with r/c trim tabs had an advantage provided they used them correctly otherwise blow-overs were always a risk.

Two pre-race incidents had an effect on the outcome. This year's Wellington Offshore race and round 1 winner Darrell Hansen had the misfortune to split the web on his hand on the while trying to catch his boat, lots of blood and a rapid pack up and off to A&E for a stitch up. He didn't return to race and given the weather, no surprises. Peter Collier while trying to start his modified ASP91 vee managed to over-rev it and blow a rod on the stand, exit another, however the back-up Tunnel was immediately put on the starting block and competed well in the event. Others didn't make the starting line-up and the draw was reduced to one heat per round and the 6 starters posted laps over the 50 minutes of racing (3 x 10 min heats and 20 min final) as follows. All this was completed by 1:30 pm and all concerned were happy to head away early for warmer homes.

The programmed Cat Scrap did not garner a lot of support given the conditions, so was not run.

Table 1: Round 2 results

Placing	Name	Total Laps
1st	John Belworthy	86
2nd	Peter Collier	72
3rd	Nigel Wong	70
	Leigh Marsden	57
	Wayne McNaught	30
	Mark Freeman	5

Round 3 on 7th August dawned a lot more favourably with sunny skies, no wind and calm water. Good to see some visitors from Masterton plus regular Leigh Marsden from Palmerston Nth making up the numbers so we could run 3 heats per round.

New boater Trevor Emerson from Masterton, in his first race, was tearing up the track in practice with a very quick P2 Tunnel, ideal tunnel weather it sure was. Come race time Trevor top scored for a single 10 min heat on 26 laps, Darrell next best on 25 with a cluster of best lap counts of 23 and 24 next. But as always it is consistency that prevails, it is time on the water that scores laps. That said Trevor provided entertainment burning up the straights and round the outside on turns looking for places to overtake, good to see as the day went on he was using his throttle a bit on the corners to keep it tight and line up overtaking manoeuvres.

Another new tunnel, Brian Anderson debuted his large own design (OD) offshore cat with RCMK 26R power, looking good but some development time to put into the new rig yet. Good to see that OD is still alive, very satisfying when they work out well.

Table 2: Round 3 results

Name	Place	Final	Plus Heats	Total
Peter Collier	1st	42	68	110
Pieter Lokum	2nd	16	66	82
John Belworthy	3rd	41	40	81
Wayne McNaught		25	49	74
Trevor Emerson		29	41	70
Darrell Hansen		11	42	53
Brian Anderson		22	26	48
Nigel Wong		19	19	38
Wayne Mowbray		0	22	22
Leigh Marsden		0	17	17
Fred Zinsli		0	7	7

And we did run a Cat Scrap, with John Belworthy running out a winner.

Table 3: Cat Scrap 10 laps

Name	Placing
John Belworthy	1 st
Peter Collier	2 nd
Brian Anderson	3 rd
Wayne McNaught	4 th
Trevor Emerson	5 th

The final (4th) round of the Wellington was held on 6th November in changeable conditions at first that by day's end had settled to calm warm and sunny.

The days racing began with the (jinxed) Cat Scrap on the basis of getting it out of the way before conditions got any worse. It was only 10 laps instead of 10 minutes to get a result and some did not even make the 10 laps but then raced their cats in the main event and definitely ran up many tens of laps, puzzling to say the least but it always seems to go that way. New competitor Tony Rutledge with his OD Zenoah tunnel for 2nd and had a consistent dialing in day till a rudder servo cried enough.

Table 4: Cat Scrap 10 laps

Name	Placing
Peter Collier	1 st
Tony Rutledge	2 nd
Trevor Emerson	3 rd =
John Belworthy	3 rd =
Trevor Emerson	5 th

For the final round the duration of the heats were increased to 3 x 15 minute heats and a 30 minute final, so effectively 50% more racing was on offer. Attrition meant that the three heats per round was reduced to two by the final round of heats.

The consistency of Darrell Hansen showed through at the end, he was not always racking up most laps in the heats quietly admitting that he was holding back a little to make sure he was still running so as to start the final. Results show that that strategy worked well without needing to win the final to top score. Ever consistent quiet achiever Pieter Lokum was also well placed going into the final, but then had some off water time. Peter Collier struggled a bit in the heats, but ended up being the only one to run the full 30 minutes in the final and claim second. John Belworthy scored most laps in the final despite having a flip and rescue in the dying minutes, but had had a horror run in the heats sorting out a new boat. Nigel Wong finally got his A90 powered Euro Cat to sing and run reliably and what a sight it was with Nigel and John taking it to each other in the final. Perseverance here getting it to go, but in the end all it took was correcting the direction of the cooling water and the correct choice of glow plug and the detonation and overheating problem went away. Terry Riddiford was well placed at the start of the final with a very quick monster DV, but unfortunately soon retired.

All told some of the best racing seen for a while.

Table 5: Round 4 results

	Final	Plus Heats	Total
Darrell Hansen	73	119	192
Peter Collier	79	90	169
Pieter Lokum	45	110	155
Nigel Wong	59	85	144
John Belworthy	81	38	119
Terry Riddiford	3	103	106
Neil Plumptre	33	61	94
Tony Rutledge	0	83	83
Trevor Emmerson	16	60	76
Paul Bretherton	0	51	51
Ian Godfrey	0	31	31
Wayne Mowbray	0	10	10
Leigh Marsden	0	2	2
Fred Zinsli	0	1	1
Mark Freeman	0	1	1
Wayne Mcnaught	0	0	0

Table 6: Standings at completion of 4 rounds

	Round 1	Round 2	Round 3	Round 4	Total
Peter Collier	55	72	110	169	406
Darrell Hansen	75		53	192	320
John Belworthy	22	86	81	119	308
Pieter Lokum	35		82	155	272
Nigel Wong	14	70	38	144	266
Trevor Emmerson			70	76	146
Tony Rutledge	48			83	131
Wayne McNaught	12	30	74		116
Terry Riddiford				106	106
Neil Plumptre				94	94
Leigh Marsden	4	57	17	2	80
Matt Gay	63				63
Brian Anderson	8		48		56
Paul Bretherton				51	51
Grant Binns	46				46
Steve Trott	46				46
Bob Gutsell	40				40
Jeremy White	33				33
Wayne Mowbray			22	10	32
Ian Godfrey				31	31
Fred Zinsli	-		7	1	8
Warwick Orsborne	8				8
Mark Freeman		5		1	6
Graeme Rose	4				4
Matt Cook	1				1

Results from Hamilton 100, 2011

Name	NZMPBA	Laps	Class	Class Placing	Overall Placing	Round Points
Dale Hopkins	210	207	P2	1st	1	400
Bob Gutsell	197	177	P2	2nd	2	300
Matt Bindon	99	142	C1	1st	3	225
Ian Jacobs	51	135	C1	2nd	4	169
Dean Harris	120	77	P2	3rd	5	127
Andrew Meek	79	68	P1		6	95
Graeme De Pina	8	61	P2		7	71
Tony Christiansen	106	58	C2	1st	8	53
Kerry O'Reilly	42	55	B	1st	9	40
Barry Kemp	135	46	P2		10	30
Steve Trott	232	9	C1	3rd	11	23
Leon Jacobs	49	9	P2		12	17
Damian Baker	108	8	P2		13	13
Bryan Taylor	27	3	P2		14	10
Tony Kockett	4	0	P2		15	7



BOPMPBC Hydrofest Regatta Report.

Labour Weekend 2011.

This was the first legitimate regatta the BOP club has put together and hosted in its yet short life.

The club has been concentrating on building a venue that we can truly be proud of and be a site that all that visit will enjoy.

While this regatta's entry numbers were a little low, when you consider the weekend clashed with the Rugby World Cup Finals then perhaps this outcome was inevitable.

Despite this, all events scheduled were run, and with the support of local clubbies that weren't racing, then we were able to run full fields for each race.

We made use of IRMS and trialed some aspects of this that had not been previously tried, I am pleased to report that all those outcomes were achieved and gives us an even better understanding of just how good this system actually is.

We also tried a practical test of some proposed start procedures, and again I am pleased to say that the competitors realised the benefits those offer and embraced the opportunity to try some different things, the consensus was that these procedures were definitely worth while having.

Saturday started with a reasonably stiff breeze blowing down the middle of the lake, with B Hydro up first conditions looked a little challenging, however, once racing started the conditions seemed not to dictate after all and full throttle action followed !

As the day progressed the wind gradually dropped to a virtual flat water condition and petrol hydro racing events that filled the rest of the day were a hoot either be in or just watch.

Philip S only had one issue with turning the top of his borrowed "Baker Boat" engine into a copy of the leaning tower of Piazza! (is that how you spell that ??!!)

Day 2 dawned fine and clear, Jason and Merv had made the trip down to run their 1/8 Scale Hydros for the day, both the electric and nitro versions, the electric versions really do impress and I am sure it wont be too long before we see others commit to building in that class.

C Scale Hydro saw 5 boats hit the start line each time, and there was some great battles with the lead and other positions swapped boat for boat on quite a few occasions.

Sport 45 was a re run of B Hydro given it was the same boats, except the water was flat now, Matt had a near perfect run winning all heats except 1 second placing.

C2 hydro came along and Steve pulled out the "Bruiser" 90 rigger, while the others were running their 1/8 scales again, the result clearly shows that you shouldn't bring a knife to a gun fight, all heats went to the rigger !

T1 Thunderboat was last up for the day and I have to say that this was some of the most fun racing I have had in a long time, the boats were all competitive and it came down to getting a good start and driving a great line, Philip managed 3 heat wins with new BOP member Mike Rockliffe right behind him with 2 heat wins.

Monday morning came about rather soon after a late night celebrating the All Blacks victory, but the weather was perfect and we were set to duke out the Open Oval event. Every heat saw different placings for all except that Steve's 90 rigger was a step ahead of the rest, taking 4 out of 5 heat wins. Everyone had a ball with some very close racing.

All in all the racing was very clean, there were no collisions and no damage to speak of. Everyone by and large respected the penalties and consequently not one marker bouy was damaged beyond a slight scuff of the paint work !

The new drivers stand and beach is perfect for what we do and it will be trialed again on 27th November 2011 when the BOP Club hosts a 1 day Open Oval fest, don't miss it !!

My thanks to all that attended and helped out, especially those that simply came to help rather than boat, it all made for a very easy to run event.

Bring on November and especially Easter 2012.

Regards,
TUI.

Here is a link to some videos <http://forums.rcboats.co.nz/viewtopic.php?f=19&t=834>

Results.

B Hydro

1	M Lee	1750
2	S Trott	725
3	B Gutsell	25

P2 Hydro

1	B Gutsell	1225
2	S Trott	1219
3	M Rockliffe	1200
4	P Stilwell	775

Sport Petrol Hydro

1	P Stilwell	1525
2	S Trott	1169

3	M Rockliffe	925
4	B Gutsell	700

T2 Thunderboat

1	B Gutsell	1275
2	P Stilwell	1100
3	M Rockliffe	925

C Scale Hydro

1	S Trott	1105
2	M Lee	975
3	B Gutsell	775
4	M Sowden	400
5	J Lester	0

Electric 1/8 Scale Hydro

1	M Sowden	800
2	J Lester	600

C2 Hydro

1	S Trott 2000	
2	M Lee	925
3	B Gutsell	850

Sport 45 Hydro

1	M Lee	1750
2	S Trott	675
3	B Gutsell	366

T1 Thunderboat

1	P Stilwell	1525
2	S Trott	1275
3	M Rockliffe	1044
4	B Gutsell	850

Open Oval

1	S Trott	1850
2	P Stilwell	1225
3	M Rockliffe	975
4	M Lee	757

Club News

Wairarapa Model Power Boat Club Race Day

Reported by Wayne Mowbray

We had the first of our 'official' race day at Henley Lake, Masterton on Sunday the 28th August 2011.

This has been a long time coming for us, but we did finally get there. Model Power Boat racing has been held on Henley Lake for many years, but not recently. NZMPBA Nationals in 1989 and North Island championships about 3 times

We had lovely weather, with all of our local club members attending. We managed to start with five boats in each event, but there was some attrition so we were down to three boats on the water for the later part of the day.

It was a big learning curve for us, but everything went really well and we managed to get 8 races completed.

We ran a mixture of small marathon type races over the 'M' course and some 5 lap oval sprint races.

We would be one of the luckiest clubs in NZ, with our venue. We are also so fortunate to have one of our members purchase a dedicated rescue boat which he operates for us during race days. A dedicated rescue boat operator.

We had some members who had not raced before and they did really well, one of them, Dean, coming through to win a race.

We had signs out on the road, and with the public address system, boats racing, rescue boat on the water, we attracted a good crowd of spectators.

The "M" course had the desired effect of levelling out the playing field, so we had deep v's competing with the cats. The oval sprints featured sports hydro's and shovel noses.

We have set our official day as the second Sunday in the month, so will run on this day starting in September.

We are a friendly lot, and the afternoon was good natured with the usual bantering. A lot of fun.

We can only grow from this, so please feel free to come and join us.

Contact Wayne Mowbray, Organiser,

Email Wayne.Mowbray@xtra.co.nz

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Bay of Plenty MPBC UPDATE

In the short time since the local club got final sign off from Tauranga City Council, a massive amount of work with facilities at the lake have been undertaken. Firstly a culvert with vehicle track was installed to get us across the boggy grassland and across the ditch. Then the entire lake surround had all the gorse mulched back, it was standing head high ! Then the bank line was cleared of the rest of the waters edge growth and we set about erecting the profiles for the “beach” and drivers stand. The contractor came in and excavated the beach, laying a mat first then back filling with various grades of fill and finished with pea metal, this effectively becomes our “hot pit” area.

The drivers stand area was then excavated, with posts all concreted in and retaining installed, earthworks are still work in progress, the final surface of the stand will be a hard cobbled all weather finish. At one end of the drivers stand we have especially elevated this for wheel chair access and visibility.

All this work by TCC is in support of the BOP clubs aspirations to finally grow and host fantastic events, drawing many more visitors to our fine region.

Some aspects of this are already occurring where we have had a number of new members, of which some are already up and running, so to all those guys, Welcome !

We run our Club Race day on the 1st Sunday of the month and a Practice / fun day on the 3rd Saturday each month, 10.30 am thru 3pm, if you are in the area around those times, bring a boat and join in, we welcome visitors to enjoy our new venue.

We are looking forward to hosting the Hydrofest at labour weekend, the Ovalfest in November and ultimately the NZ Nationals Easter 2012.

Please see some of the images of the work so far...we call it “Thunder Valley” !!!

Regs, Steve T.



Nationals 2012 venue -Thunder Valley, Lake Taurikura, Tauranga. Looking Good!!!

Wellington Model Power Boat Club

The club is in good heart having just concluded a well supported four round offshore series. The 'one boat only required' formula keeps everyone involved and that works well for us. That is not to say we don't do anything else, a steadily growing group are meeting up for an hour of electric boating on Avalon Pond prior to club night during the daylight saving months.

Taranaki, Taupo, Wairarapa, Central Club, Hamilton, Marlborough, Manukau, Manawatu, SUHA, Christchurch?

Technical: Design of Mono Hulls by John Belworthy.

A mono hull is a hull with one ride surface.

Classes of Mono Hulls:

Naviga, Matrix, Endurance, Offshore, Speed and Electrics

The basic requirements of the above hulls are as follows:

1. Naviga. This should be as short a hull as possible to take the power of the motor, be able to turn very tight (approximately 2.4metre diameter) and be fast.
2. Matrix. These hulls do not need to turn as tight as a Naviga hull, so can be longer to take rougher water conditions. They must be fast, stable and reliable.
3. Endurance. Basically similar to a Matrix hull. Be very easy to drive, ultra reliable and maybe not quite as fast as a matrix hull.

4. Offshore. These are generally modelled off full size offshore hulls with a minimum 15 degrees vee with the propeller and rudder(s) behind the transom.
5. Speed. Any mono hull. The fastest hull in NZ is the delta hull but a deepvee hull set up correctly will be very close. The faster a hull goes the more instability you get because less hull is in the water. This is where the delta hull has an advantage as it gets some stability from the air.
6. Electrics. These are similar to matrix hulls. The more power available the bigger the hull needed to carry the extra weight of more batteries and bigger/heavier motors.

Design criteria needed to obtain the characteristics mentioned above:

Tight turning boat

This requires that a hull is short in length and has a high degree of bow steering. This bow steering is achieved best by having a min. 40 degree vee bow (or fine entry) similar to a Skuai or the old Contestor hulls. To assist in obtaining these high vee degrees, move the bow curve further towards the bow from the transom i.e. Normal bow curves start at 60% hull length, use 65% to 75%. If the hull doesn't have this fine entry then a dagger plate/sheg/turn fin can be used. This adds extra drag though as its running in the water all the time., giving less speed but tighter turns. Positioning the rudder close to the prop gives more turning effect because you are changing the direction of a larger area of water off the prop thrust. A minimum of one prop diameter clearance between prop and rudder. If closer, then too much pressure will be generated in the water between the prop and rudder when the rudder is turned. Too much pressure causes cavitation which is a loss of thrust.

Reducing the above:

This is achieved by:

1. Lengthening the hull
 2. Reducing the fineness of the bow.
 3. Move the start of the bow curve towards 60% of hull length
 4. Giving the rudder more clearance from the prop.
-
1. Lengthening the hull gives you a hull that will handle rougher conditions but does not necessarily mean that it will be slower (this will be covered under prop set ups)
 2. Reducing the Fineness of the Bow reduces the possibility of bad ricochets when running across waves or deep wakes at a tangent.
 3. This has the same effect as 2.
 4. More clearance to the rudder will reduce the tendency of spinning across wakes or rough water when turning.

The above 4 gives you the difference between a Naviga hull and a matrix, endurance and electric hulls.

Stability: There are two categories to stability and are trimmed in completely different ways. One is torque and the other is balance/centre of gravity.

1. Torque: I now believe that there are two torque reactions that need balancing. The 1st one is balanced by weight on the left side (looking from the transom) to counteract the twisting of the hull when the hull becomes airborne (sudden increase of motor speed). The 2nd one is balanced in part by the weight and the remainder by the size and position of spray strakes for when the hull is running in the water. Smaller strakes on the left side or closer to the keel than the right side.
2. Balance/Centre of Gravity: The balance position of the Matrix/Endurance/Electric type hulls should be 40% of hull length forward of the transom and 30 to 35% for speed and Deepvee hulls. These balance positions make the boat bounce level when launched off the top of waves and wakes with little wind about. The more wind/rougher the water the further forward the balance position should be.

Centre of gravity is another aspect of balance. It is total balance somewhere on the fore and aft position (say 40%) and a height up from the keel and slightly to the left of the keel (to balance the torque weight) is a point where the hull is in complete balance. You will

realise that the higher you mount the motor, fuel tank, radio and tuned pipe, the higher this total balance point (centre of gravity) will be.

When you turn a boat it has a natural tendency to bank into the turn. Now when you turn the boat to the left, you have the natural banking tendency, but, against this you have motor torque, plus a centrifugal moment of height x the centre of gravity both combining to tip the boat outwards. So the higher the centre of gravity, the more unstable the hull will be. This is why most boats will turn to the right ok. The natural bank is helped by torque with only the centrifugal moment trying to tip the boat outwards. The centrifugal moment is increased by increasing the vee of the hull, the addition of skeg/turn fin, additional area to the prop tube support and the angle/area of the side of the strakes. These all reduce the amount of side slip a hull has in a turn, hence increasing the centrifugal moment/tipping in the turn.

Prop Shaft Angle and Position: If the hull is dead true over the rear half then the variations in propshaft angle and position, have quite a noticeable effects.

First you must realise that the thrust from the propeller is cone shaped. When the top of the cone hits the hull it generates a lifting force. If you draw it out you will see by reducing the angle of the propshaft to hull, keeping the prop depth the same. The cone will hit the hull sooner. This gives more lift because (1) the thrust intensity is greater closer to the prop and (2) the angle that the cone hits the hull is greater giving a high lifting force. This lifting force pivots about the c of g and therefore pushes the bow down. Deepening the prop and/or steepening the propshaft angle shifts where the cone hits the hull further away from the prop, reducing the lift force which allows the bow to ride higher. This reduces drag-increasing speed. The same affect will be noticed by shifting the prop towards the transom, but only when the cone starts to miss the hull will the bow start to ride higher.

Further thoughts on propshaft angle and position:

There are another two forces which I believe affect the running of a hull on the water.

1. I now believe that small changes of shaft angle around 7 to 10 degree mark balance themselves out. The lift generated by a flatter shaft angle prop thrust cone at the transom end is counteracted by the increased momentum between the c of g and the flatter shaft angle giving increased lift at the bow. A greater bow lift over prop thrust cone lift is generated when shaft angle of approximately 3 degrees to parallel with the keel are used. The further the rudder is aft of the c of g the greater the drag moment. (ie) closer to the transom) Have you seen a hull dipping its bow, gluing itself to the water? Moving the rudder forward/reducing its' size – generally cures this problem.

Propellers: For submerge running, props with pitch/diameter ratios of 1.2 to 1 to a maximum of 1.4 to 1 can be used. The heavier the boat is the lower the pitch/diameter ratio. The low pitch/diameter ratio props are Agnews (AMPS), Octura 1200 series and Graupner plain. Octura 1400 series, J.G. and Graupner x series are the 1.4:1 P/D ratio props.

Propellers mounted behind the transom have P/D ratios of 1.4:1 and higher. Octura and J.G. being the most common producers of these props. Ed Hughey in America has high P/D ratio props also but only a handful of these props have been tried in NZ.

Tuning Propellers, Balancing, Truing Pitch;

Sharpening the leading edge and thinning of blades are the items checked/altered when fine tuning a prop. Some makes of props require more work than others, but performance will be increased if the above work is done correctly. Truing the pitch and/or making each blade equal is done with the aid of a pitch gauge as manufactured by Ed Hughey. This is the only time the thrust side of the blades are touched apart from minor polishing. All metal removed for balancing or thinning is from the side of the

blade facing the bow. By placing a prop on a straight piece of shaft with each end supported on a level surface, the heaviest blade will always be at the bottom. As little metal as possible is then removed off the top blades front face to sharpen the leading edge. Metal may then be removed off the heavy blade until the blades are balanced. You may find when rolling the prop that it always stops with the blades level (horizontal) but the same half of the hub is at the bottom. Remove metal off the hub until the prop will stop in any position. You then have a balanced prop.

Rudders

The basic size of the rudder has a depth equal to the prop diameter, $\frac{1}{2}$ of the depth across the top of the blade and $\frac{1}{3}$ depth across the bottom with a small rake on the leading edge. A quarter of the blade area should be in front of the rudder shafts centre line to reduce the effort required by the servo. Cutting the top trailing corner of the rudder off at 45 deg, or moving the top of rudder shaft forward (up to 15 deg from the vertical) helps hold the bow up when turning (reducing bow steering effect.) If a boat has a tendency to spin-out then using an oversized rudder with small throws will reduce the tendency of spinning. Sharpening the leading and trailing edges of the rudder will reduce drag.

Rudders used in conjunction with props behind the transoms usually have a triangular cross section, have a depth of approximately two prop diameters and raking the top of the rudder shaft forward lifts the transom pushing the bow down in the turns.

Reliability

At this stage we will assume that the boat has been built with the correct materials and glue. Here are some suggested items to check before a meeting and checking some of these items before a race starts will help ensure that you finish.

1. Motor and mount – The use of locktite on the following joints will help to hold the motor in one piece. Front and rear housings to the crankcase, exhaust manifolds to the crankcase, carb to front or rear housing and any screws that hold the carb together. Locktite the motor mounting screws to the mount.
2. Fuel tank and lines – If you have a metal tank then check it for leaks and rust. Pressurise the tank and submerge it under water to find and leaks. If there is any rust then replace the tank. Check the fuel lines for any splits or holes and check/clean your filter regularly.
3. Radio – Is the box water tight and securely held in place? Is the receiver mounted in foam rubber and the servos on their rubber grommets. Make sure the aerial is not just bundled up in a corner, coil it up on a tube or dowel so that it doesn't cross itself. Check all the aerial wires and connections that there are no frayed wires, no loose connections and that the whip aerial will not become disconnected.
4. Drive Line - Check your propshaft for straightness, connections both ends, drive dog set screw is tight, loctited, and on a flat filed on the shaft. Check for any abnormal binding when turning the shaft around and is lubricated sufficiently.
5. Linkages – Make sure all linkages are sound, secure, as straight as possible, loctite where necessary and insulated. (No metal to metal joints). Metal to metal joints can cause radio interference.
6. Water Cooling – Is the water pickup secure and positioned correctly? Are the water line connections fastened with tie wraps or something similar at the motor, exhaust manifold and the tuned pipe cooled. They should be on .40's and larger motors. Tie wrap the silicon exhaust joint will lengthen it's life.

7. Starting –Is the starting belt or chord sound, not worn, melted or have frayed sections. Is the starter battery/ies fully charged, starter working properly. A good glow plug with spares handy and the right crystals in the transmitter/receiver should be a long way to helping you finish every race you start.

(This is a re-print from 1980 Propshaft. I have some different thoughts now (2011) which will be the subject of a later article.)

Bright Ideas –

None submitted

NZMPBA 2011 Calendar of Events

Sanctioned Events		
Date	Event	Venue
November 6	Wellington Offshore Round 4 (NZMPBA Round 8)	Hutt River
November 27 th	BOP Model Power Boat Club Invitational Oval-fest	Lake Taurikura, Tauranga
November 26 th & 27 th	Round 4 South Island Handicap Series.	Christchurch
November 30	Finalise 2012 Calendar	
December 4 th	Christmas Invitational Club Day	Lake Hakanoa
April 9-12	NZMPBA Nationals-see website for further info	Lake Taurikura, Tauranga

Club Running Days		
Manukau Model Power Boat Club	2 nd and 4 th Sunday of each Month @ 9:00 am Informal running every second Sunday	Wattle Downs, Manukau City
Central Model Power Boat Club	1 st Sunday of each Month @ 8:30 am	Lake Hakanoa, Huntly
Bay Of Plenty Model Power Boat Club	3 rd Saturday of Month @ midday	Lake Taurikura, Tauranga
Hamilton Model Power Boat Club	Club Race Day 1 st Saturday of each Month @ 9:00 am Informal Running every Saturday morning.	Hamilton Lake, Eastern Side
Napier Model Power Boat Club	Every Saturday @ 1pm	Anderson Park, Napier
Taranaki Model Power Boat Club	1 st Sunday of each month @ 9:00 am	Lake Cowley, Waitara
Masterton Radio Yacht Club	2 nd Sunday of month @ 2:00 pm	Lake Henley, Masterton
Wellington Model Power Boat club	1 st Sunday of each month @ 1:00 pm	Hutt River, Sladden Park
Marlborough Model Power Boat Club	1 st Sunday of Month @ 9:00am	
Christchurch Model Power Boat Club	Nothing planned	
Ashburton Model Power Boat club		

For more up to date info and entry form downloads go to website www.nzmpba.co.nz



Application for New and Continuing Membership

NZMPBA #

Name:

Address:

Postcode:

Phone numbers:

Home:

Work:

Mobile:

E-mail:

DOB / Age:

Occupation:

Preferred Frequency..... MHz Alternate Frequency..... MHz

Signed.....Date:.....

Subscription Fee Structure (Financial year starts 1st January each year)

Senior Membership

Full Rate \$40.00

Family Membership

Full Rate for 1st Senior member, 50% of full rate for each other family member living at the same address.

Junior Membership

50% of full rate for up to 20 years of age.

Full Time Student

50% of full rate.

Senior Citizen

50% of full rate for 65 + years of age.

Only one set of mail will be sent to a family group membership but each member will have an individual registration / race number and have full voting rights.

First time / New memberships.

New membership subscriptions accepted on or after 1st July each year will only pay 50% of the applicable rate above.

New membership subscriptions accepted on or after 1st October each year would be at the full correct applicable rate BUT will also be valid to include the next full financial year.

Amount enclosed \$ (cheque, cash, direct credit) delete as required.

Please circle the membership type you are joining under.

Return form and subs to:

NZMPBA Secretary/Treasurer:

Grahame Haines

PO Box 764 Blenheim

Blenheim

Mob: 027 226 2922

E-Mail: wobblz@xtra.co.nz

Payment may be made by direct credit to BNZ 02 0600 0007986 00 instead of including with posted form or emailed form. Be sure to include your name and note you are a new member or if an existing member include NZMPBA race # to identify payee.