

# P Class Tuning By Nick Taylor

## Introduction

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Where do I start, well to be the best P Class sailor you have do lot of practice . I sailed the P Class for three years, the initial sails were full of nose dives and catapults, such fond memories. I was 35kg when I started and 47kg when I finished, but I have also been fortunate to work with many larger sailors since my days in the fleet. I have been asked to write this guide with the focus on the top end of the fleet.

When I was in 'P' I always wanted to be 55kg, but thinking about it today I would say that 52kg would be the optimum for a highly skilled sailor. But in saying so I have sailed against, seen and coached top P Class sailors from my weight to 65kg.

Sailing is all about balance the more balance the boat the faster it will sail and the easier it will be to handle. You are about to sail the most unbalanced boat in the world, but that what makes it unique and such a vital education for New Zealand sailors. Sailing is also very sailor dependent from weight, personal style, personal strengths and weakness. Therefore written below are mainly very general rules and principles to improve your P Class sailing speed and handling. Of course there are some give me answers but there is no substitute for time. Experimentation and personalization are key factors to top sailors performance in any class, basically you may have the same gear as the top guy but this probably means your still 5-10% from **your** optimum.

I recommend that you personalize rather than try and adjust your technique to find the go fast button. In saying this I am also saying that what I say is not god, you must try, think and decided what is best for you. This is also a good reason for keeping a log (book) of settings and experimentations and also why testing can find these settings more effectively than just racing.

Racing should not be used to find speed or improve boathandling it should be used to test speed and improve tactics and find weakness in your sailing package. Another reason for keeping a very comprehensive log. But in the same token all controls should have some basic markings so if a freak setting works then you have some idea where it is for further experimentation. I don't agree with sailing by numbers as slight variations can put this system in the drink, so sail with feel and take interest in odd variations to your set-up that work.

*"you must learn to sail slow before you can sail fast"*

## Mast

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### General

Keep as **light** as possible and any weight as **low** as possible. Keep clean (road film, salt) to reduce windage and to minimize disrupted air-flow over the sail. Simply clean aluminium masts with a steelo pad (lemon scented), and carbon with a warm soapy water. This is a good reason for mast covers especially when driving long distances.

### Stays

Keep as light as possible and in addition as small diameter as possible (windage). In order of optimum Rod rigging, Dyaform, Standard Wire. Stay heights vary on ability, preference and weight see Table 1.

### Mast Rake

I measure this in the old measurement style of inches. This is measured nine feet up the mast (from the deck) to the center of the transom (just above the top rudder pin, on the corner of stern and deck). I can't remember what the foot measurement is but you will be right when you first measure it, so just get the inch right.

Mast rake is a result of sailor's; body weight, style and preference, see Table 1. Table 1 gives you the basic outline for this. Today we see the P Class fleet sailing with a rigid rig set-up whether small or large sailor. My personal preference and recommendation is a more personalized and versatile rig set-up as the rigid is to general rule and conservative. For maximum performance a downwind rake is required, a sloppy rig gives you this. You may find this strange and to the left side (of the current fad) to handle but give it a good six

months before deciding. Make use of 'T' locks on stay ends or bend hooks quite a bit more than normal, I only had them fall out once, but no problem after the bend.

The bigger you are the less slop you need in the rig, I would say the maximum that you would want your rig to go forward is 8 ½ inches. If you decided that you want to use the stiffer set-up, then your probably looking at Table 1 plus or minus ½ an inch.

Body Weight (kg)	Mast Rake (inches)	Side-stay Height
Nick Taylor, 47kg (1994)	5 ¾ - 8 ½	Low
35-45	6	Low (minimum)
46-50	7	Low
51-55	7 ½	Medium
56- 65	8	High (maximum)

**Table 1 Mast Rake**

### **Stiffener** (Aluminium masts)

Very mast to sail and sailor dependent, comes in external and internal form. Recommend external, lightweights overlap with bottom of sail-track at least.

### **Gooseneck**

Extension allows for a more square boom on the run, eases outhaul off the wind automatically, lighter than a track gooseneck fitting and simplifies boat set-up. In my day 55mm, but I think this is now covered by class rules. Make sure well flanged to avoid failure by compression and lever arm.

### **Sail**

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### **General**

Similar to above keep clean (washed), look after with care and label to keep a record of which sail it is. You may want to record how many regattas, how much training and if you like it.

If its windy then pull every de-powering device till you not dumping (which is impossible) this is the theory you should take in the breeze, don't be afraid to pull them on (even get your dad to do it if you can't cunningham, outhaul)

## **Outhaul**

Good to use, I often see the under use of outhaul, you should never have vertical creases in the foot of your sail, these should always be pulled out with outhaul. A firm setting is good (just before the shelf appears). But once again slight variations on conditions can increase speed, so testing and experience will help you discover these. An important de-powering device so make sure well purchased.

Release slightly off the wind.

## **Batterns**

Just have one set that sails through the range, the only exception to this may be in the very windy conditions, when the breeze is not going to die, you lighter sailors may want use a stiffer (flatter) batten in the top

## **Number** (for the super hardcore)

In my day you could pick your sail number, if still the same today then go for what ever is the shortest. In the case that your just over they hopefully can't read your number.

## **Reefing**

For the under 53kg a mini-reef is faster than a full sail in a solid 20 knots up. In my last year I was sailing with one, this allowed me to be competitive with the heavies and with my weight I still flew off the wind. A mini reef is about midway on the maximum, say 200-250mm.

## **Hull**

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### **General**

On minimum weight (within 100grams), keep ends as light as possible, water tight (not gaining weight through the days racing) and keep smooth and clean. Repair dents, scratches and remove road film after long trips (where a bottom cover can be good).

## **Level**

One of my biggest speed gains was this forty dollar investment, my Dad would constantly tell me that my boat was not flat when I was out there, I of course would dispute this, till the day of the **level** and the video camera. What I thought was flat was five degrees off. As I said before balance is the key, reduce the constant turn on the helm means reducing the brake that is holding you back.

Make sure that your boat is level when you are fixing it to the boat. Buy the bubble type with the plus or minus five-degree measurement. This device is not legal for regattas, but after a seasons use you will not need it any more.

## **Traveller**

Short traveler bars are a good idea, as they allow you to sail more comfortable and effectively and lighten the end. The actual windward leeward adjustment is not required as this benefit has such a minute wind range while the benefits are second to none. The only thing to note when incorporating this system is the stress you put on your transom, as there is no structure to support this. The best way to over come this is to build the bar with the flanges on the outside so that it still fixes in a strong position.

Block position, stand at the transom of the boat, sight a line from the inside edge of the cockpit, raise the block 20-30mm to the windward side of this line.

## **Bailers**

You must be able to bail upwind and downwind, in my boat I was set-up with three bailers, yes three! two for upwind one on each side of the center case on the cockpit sides right in the front and one on the top of the seat (downwind). The back was a larger flatter bailer, while the front ones were skinner with a large flicking part. All of them were attached to bungy and Velcro. Handles for these should be on the top in center as this makes it easier to flick and handle and the front bailers were in a raked position with handles on top so from hiking it was easy to grab.

At this level you must be able to flick bail in any condition, be able to flick out the leeward side as well. Should be able to go under 10 seconds per side (Bail in the lulls).

## **Boat Colour** (for the super hardcore)

To minimize the chance of being picked up colour your boat the most common colour (generally white), this may not work at your club scene level or regional, but with unfamiliar officials and large fleet sailing will help you in disguising yourself.

## Foils

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### General

Once again keep well maintained, no scratches or dents any of these disrupt the water flow eliminating the affect of the foil, i.e. increasing drag. Covers are a good idea well padded.

### Rudder

To reduce the whether helm (reduce drag) the blade must have the top rudder pin packed to the maximum (see class rules) and the lower rudder pin as close as possible to the stern, this may make it difficult to get on and off. In order to get the most minimal lower pin you will have to get it custom made.

The same can be achieved with the rudder itself (check yours, pretty common) make sure that the position of the rudder cheeks and blade position maximize that same tilt action within the gig/ template.

### Tiller

The curved type is essential, as allows you to turn more quickly in the breeze when bearing away and after nose diving (allows tiller head to come over knee, as you are hiking out the back).

### Centreboard

For general rule on the position see Table 2, but once again trailing can quickly conclude on these positions.

Wind Range	Position
Light air	Front down
Medium air	5 finger back from the front
Medium - heavy air	Pretty close to the back
Heavy air	In the back and raked

Table 2 Centreboard Position

The centerboard is a very good tool (pretty much the best) for keeping the boat in balance and de-powering.

## **Fitness**

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### **General**

Very important, and you cannot cheat fitness it takes time to build but when your sailing over your opposition half way through the race or at the end of the series you will not regret those hours of training. As you get tired your brain does not make very good decisions. Fitness also helps your body recover faster, from racing day in day out like at a big regatta, it is also very important if your sailing two regattas very close to each other like the Tanner and Tauranga Cups. For you small sailors, this is one of the only ways you can compete with the bigger sailors in the breeze.

### **Hiking Machine**

A hiking machine is a very good way to simulate the exact positions. The hiking machine is a land version of your 'P' same size. Basically if the wind changed so the leg became a lay through you would want to be able to hike the whole leg without breaking, which would be around 15-20 minutes straight. The following training program (see, Table 3) includes endurance work (sets 2 &3). This program is for ultimate fitness and should be started twenty weeks before your goal regatta.

Week No.	Set One Time (min.)	Set Two Time (min.)	Set Three Time (min.)
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	5	6	6

7	5	7	7
8	5	8	8
9	5	9	9
10	5	10	11
11	5	10	12
12	5	10	13
13	5	10	14
14	5	10	15
15	6	11	16
16	7	12	17
17	8	13	18
18	9	14	19
19	10	15	20

Table 3 Hiking Program

Set one is what I call the start line stack, its full extension as straight as you can for the whole time. It's for when you coming off the start line everyone is dragging out, especially if one side of the course is very favored.

Between sets you can include some press-ups and pull ups (3 sets), to help increase strength in your upper body. Once week 19 is reached just maintain, I'm sure that you agree this is enough, you will find it quite painful and once again individually dependent. For me I passed the pain barrier at around 7 ½ minutes, from then on it becomes a lot easier (kind of painless!). I would do this twice a day once before school and again just before bed. This included training nights, but the night before minor regattas and club racing I would give it a miss.

### Running

At least 30mins, I joined the school athletics team, which made it a lot easier to train, my teacher was quite aware that I was not interested in running for the school, just as training. He was quite happy to have me and the rest of the P Class fleet from Murrays Bay that went to the school. This was two mornings a week before school so these mornings I would miss the hiking. We would run up to an hour but also do sprints, hill running all good stuff for hiking legs and general fitness.

## Coaching

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Not that I'm trying to make my wicket look good, but coaching is one of the only ways that you will get to the top of the P Class fleet (or any fleet for that matter), unless you have a lot of time. In my three years I had plenty of coaching, this allowed me to pinpoint weaknesses and enhance them a lot faster than trying to figure it out for myself.

There are plenty of good coaches out there, and I would really recommend that you try and get yourself a coach on a regular basis. In my last year I had a coach (John Rogers, ex wgn) three days a week after school, plus occasional weekends, with John's regular contact we were able to build up a really good relationship which meant more effective time on the water.

## Program

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To achieve your goals you need to plan well in advance. For example an Olympic campaign may be planned eight to four years before the games, my big hit at the 'P' was planned around eighteen months in advance and Americas Cup well who knows, a decade?

In your plan you need to work out training (boat handling, speed work & coaching) regattas, fitness, downtime (not sailing) and most importantly goals. I would recommend that you consult with a knowledgeable person in your program & goals.

### **My Program for the last year of 'P'**

In my last year I did not stop sailing through the winter. Before commencing a full program I was probably ranked about 7<sup>th</sup>–10<sup>th</sup> nationally. We planned a full winter of two boat testing with John, as I still had my first boat (P903 Air Supply) after buying a new one in the summer (P963, Mirage). Through the winter we tested mainly sails and rigs as well as centreplates and rudders. I was lucky enough to have full support from a sail maker (Lidgard Sails) and we developed a really fast rig. We also worked on boathandling and tactics. In mid winter I sailed just the weekends but once it became warm enough I was sailing three days a week as well. Before the Tanner and Tauranga we had won every regatta except one (most of them convincingly). Unfortunately the ones we wanted didn't go our way. Just wasn't our week.

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Anyway I hope this has helped, all the best with your sailing

Nick

### **P Class 1991**

1st Tanner Cup Trails ( Auckland West )

1st New Zealand Winter Champs

1st North Shore Champs

1st Secretarys Cup

1st Eastern Beach Champs

1st Murrays Bay Sailing Club Champs

1st 'A' Division Points

1st Tamaki Series

1st P Class Wakatere ( team )

2nd Auckland Champs

2nd North Island Champs

2nd P Class Wakatere ( individual )

2nd Bay of Plenty Opening Regatta

3rd Freshwater Champs

3rd Endurance Race

### **P Class 1992**

1st Invitation Race - Tanner Cup

2nd Tanner Cup

4th Tauranga Cup

### **Starling 1995**

1<sup>st</sup> Starling Nationals

### **470 1998**

1<sup>st</sup> New Zealand 470 National

**470 2000**

2<sup>nd</sup> New Zealand Olympic Trails