

// There was a time when a bulging quiver was a sign of success. The truth is now that you don't need as many – so long as the ones you do have match the board. Harty in 1991 looking very proud of his packages.



ALL A QUIVER

Words PETER HART // Photos SIMON BASSET & HART PHOTOGRAPHY

HOW MANY? WHAT'S THE BEST GAP BETWEEN SIZES? CAMS OR NO CAMS? SHOULD YOU MIX THE BRANDS? These are just some of the questions facing you as you assess the rig market. **Peter Hart** helps you amass the bespoke quiver.

6 AM at Heathrow terminal 1 and it wasn't going entirely according to plan. Those normally very helpful people at the Air Portugal check in desk had no record of my request to take two sports bags and were immune to all the familiar tactics (charm, threats, crying etc). Long story short, they limited me to one 20 kg board bag and I turned up for a 2 week jaunt in Jericoacoara Brazil with a 94 litre freestyle wave board and a 5.5 wave rig.

Every morning turned into a running joke. "What are you using today Pete?" They'd ask. "Oh I don't know. I might try the old 94 with a 5.5." I'd say. How we laughed.

I guess you had to be there. But for 2 weeks, despite winds ranging from 12 to 28 knots, that's exactly what I'd use. A bit over-powered some days, a bit under others but most of the time about right. The experience reinforced a few notions.

Firstly a lack of choice can be very liberating. I am lucky enough to have access to a lot of kit but the happiest times tend to be winter when the van is packed just with the essential escape package of 2 wave boards and 3 sails.

Secondly, thanks to modern designs being so tune-able, the latest sails enjoy a huge wind range. Compared with ten years ago, a quiver of less can do more.

And I suppose thirdly, choice is easier when you target the conditions you're most likely to sail in and the type of sailing you're doing (not the ones you WANT to sail or the type of sailing you DREAM of doing). In Jeri it was pretty easy – wind always from the same direction, slightly side off to the waves; waves clean but slow and easy; big flat patches in between for manoeuvres. It was crying out for a fast manoeuvrable board – namely a just uphaul-able and 'bog-and-ride-able' 94 litre freestyle wave. Then for maximum efficiency, choose the rig that compliments the design and volume of that board - in this case a 5.5 wave sail. It's by finding that perfect match

that you can get them to perform in conditions way outside the recommended.

And talking about getting boards and rigs to perform – it's only by sailing a certain combo incessantly that you get super-sensitive to its tuning and feel and can make it perform across that wide range.

However, this is not a feature designed to persuade you to empty the contents of your van/trailer/garage onto the scrap heap bar one board and rig. Even in the earliest days we soon discovered that one board and rig, although convenient, wasn't enough, hence the immediate invention of the 'storm sail.'

The aim in this feature, with the help of learned colleagues, is help clarify some of the elements that affect the decision making and help you rationalise your sail quiver.

And just for the record, please don't expect a definitive quiver listing. A limitless mix of variable ingredients - sailor weight, competence, likely sailing venue(s), sailing disciplines and, not least, budget - ensure there is no one 'perfect' quiver. You are an individual, with individual needs and ambitions don't let anyone persuade you otherwise.

BUILDING A QUIVER - THE REALITY

It's like extending a home. You buy a little two up two down and then extend it as and when you get a bit of loot; then you convert the loft, build above the kids bedroom; add a conservatory etc. What you end up with (a small block with lumps hanging off it) may work but it's certainly not what you'd have chosen, if you'd been able to design it from scratch.

That's how many quivers are accumulated. The first board and rig are a bit of a stab in the dark when you have no clear idea which direction the sport will take you or how far.

As you progress you add a sail here, a mast there, a smaller board etc. Budget constraints dictate that the earlier purchases may be second, third and tenth hand – but then a well-timed bonus/lottery win/bank-heist permits the purchase of a dreamy rig.

Within a few years you've amassed an impressive hardware mountain. However, within that multi-generational collection there are double-ups and crossovers and combos, which simply don't work. Here are three examples spotted recently.

→ One guy had a fairly ancient 4.2 and a 4.7 from different brands – when we laid them over each other they were exactly the same size.

→ Rich found that his ten year old 6.5 got his old 275cm, 120 litre free-ride board planing earlier than his brand new 7.0.

→ Tom, a bit of speedster at heart, was keen to amend his 'straight-lining' ways and picked up a second hand 87 litre Quad wave board. He loaded it up with a modern 5.5 cam-less free-ride sail and spent the whole session going sideways. The individual parts were fine – but not together. The 5.5 was producing the wrong sort of power. So here we go ...

THE MEASUREMENT QUESTION

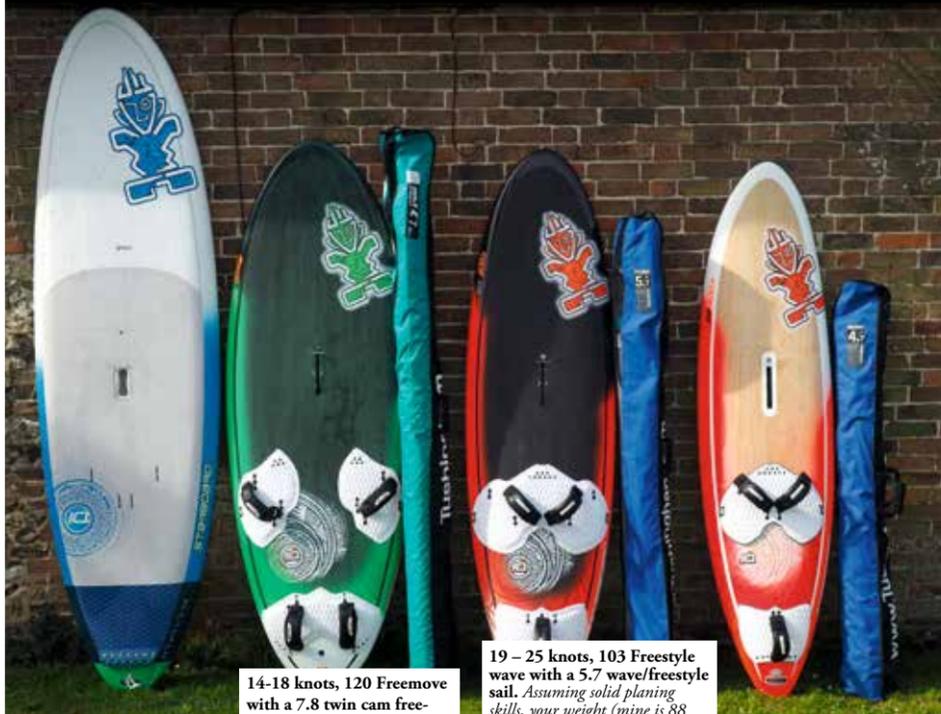
This feature was prompted by a query from an experienced reader from the States who was struggling to get the right spread of sizes and asked some very pertinent questions. Having noted one brand's 7.3 was a LOT bigger than another's 7.2, his first query was: "do all the brands measure their sails the same way?" (Apparently not.)

In the pre CAD days I have to say that sail measurements were at best random and sometimes downright deceitful. There was one brand in particular who would mark their race and speed sails with a figure as much as 0.5 sq m less than the reality to make them seem incredibly powerful and efficient. "Look at Roddy. He just won that leg using a 5.0 and everyone else was on 5.5s!" No he didn't. His sail just had smaller numbers.

However, now that all sails are at least recorded, if not 100% designed, on computer, the exact areas should be available at the press of a button.

THE HART QUIVER

The choice of every quiver has to be personal and is informed by so many factors like sailor size, skill, habitat, sailing preferences etc. Abiding by the law that there's a perfect sail size for every board however, here are some examples in the 8-40 knot wind range. I live near the sea with access to waves and sheltered water. It's not set in stone but you can follow the thought process.



T5-13 knots, 9'8" wind-SUP with a 5.7. I don't want monster kit (it stresses the knee) so in the really marginal breezes, I'd rather be twiddling off the plane practicing a few skills, or mowing the lawn.

14-18 knots, 120 Freemove with a 7.8 twin cam free-ride sail. The kit is big and yet small enough to chuck about and carve hard – perfect for cruising the harbour. The 7.8 is as big as I can go without forking out for extra pricey hardware. It sets on a 460cm mast and the same boom as for my 5.2.

19 – 25 knots, 103 Freestyle wave with a 5.7 wave/freestyle sail. Assuming solid planing skills, your weight (mine is 88 kg) plus 15 and turned into litres represents your best all-round volume; hence this is my most versatile board and with a 5.7 covers a massive range. 5.7 is a great size. Large enough to really pump and yet small enough to hang onto in wild gusts. I got my best ever speed on a 5.7 in 40 knots wind.

26-35 knots, 82 twinsur wave board with 4.7 (perfect) The dream combo. There aren't many winds I can handle with a 4.7 (although I do have a 4.2... and a 92 wave board in the wings.)

On this matter, I pass the hot potato to Tushingham sail designer Ken Black.

"Tushingham sails are measured by calculating the actual area on the computer when the sail is being designed. If the sail is measured after being made it will measure slightly less (around 0.3%). As far as I know this is how most brands calculate area. There is definitely some variation between brands but in my experience it isn't consistent, even through a particular sail range. However, size variation isn't nearly as important as the sail's characteristic. Small variations (0.1 or even 0.2 sq.m) are irrelevant compared to the foil shape (power), position of centre of effort & general handling."

Obviously there is some variance. Apart from the risk of ending up with two sails the same size despite their markings, here are a few other points to consider as

you consider mixing brands.

CHANGING POWER – NOT FEEL

If you stick to the same brand and, just as importantly, the same range of sails within that brand, the feeling as you change up or down is that you haven't changed sails, but that someone has just turned the wind up or down. There is (should be) consistency within a range – same effort placement, same outline, same balance so that the power is delivered to the board in the same way. If the new sail is from another brand, it may be as good, but it will be different, forcing you to readjust and trim the board differently.

HARDWARE

Manufacturers are genuinely trying to make life easier and cheaper these days by rationalizing the hardware within a given range. For example in the wave range I

favour all the sizes from 6.0 down to 4.7 can happily set on a 4m mast. However, to recoup a little of the profit loss, the sails are cut around their own branded 4m mast and the sails will work best on that mast. A sail of a different brand may also work on that mast but it's a punt (there are differences between brand's interpretations of a constant curve for example). As Ken mentioned, setting and tuning the sail properly is key and the mast has the most influence of all.

DIFFERENT BRAND AND DIFFERENT ERA

A particular issue when people are piecing together wave quivers, is that they not only mix brands of sail but also ages. They assume the sails will get trashed, so when it comes to the small ones especially, they go old and cheap. There was a classic case last week in Ireland. A guy had a beautiful new 5.2 setting on a 4m rdm 'skinny' mast. Sadly/happily the wind cranked up to 35 knots for 2 days so he rolled out the 15 year old 4.0. He used the same mast but the 4.0 was designed around an old SDM. It set like a bag of smelly stuff. Sails have become a lot shorter and fatter over the years. Designs from different eras and brands rarely set well on the same masts. People's failure to get comfortable in strong winds is so often not down to the strength of the wind but to a disastrously trimmed small sail.

DIFFERENT POWER

The actual area of a sail is only a guide as to the sail's power. Top Irish based big wave sailor Rob Jones (more from him later), who spends much of his day actually unpicking different designs (he's a sail repairer), is especially mystified as to why people would have a mix of brands.

"Wave sails in particular are so different these days and you develop your style around a particular feel. Some like a powerful sail (I do for one), others like that super light on/off feel. This is not a criticism of either sail but for example, I reckon a 4.5 Ezzy creates as much power as 5.0 Gaastra Manic. So if you had both those sails in your quiver, you'd be deeply confused!"

So to sum up, try and be consistent within your sail ranges (if you are lucky to have more than one). For example the early planing/speedy sails can be one brand – and then the wave/manoeuvre oriented sails that are to be used on a different board and different mast, can be another brand – but perhaps avoid mixing the two.

THE SIZE SPREAD

This is a subject with no straight answer – so many elements to factor in. Excuse me if I talk around the subject but that's only way I know how.

THE PERCENTAGE DROP

I'm not a Math's whizz but I can state with some confidence that the difference between a 3.5 and 4.0



Planing comfortably with a 7.8 twin cam in 14 knots. If you have to work a bit to get going, then on the plane you know you're going to be relaxed. Although the kit is relatively big, the accent with the thin railed Freemove board still lies on manoeuvring. Tooling up for slalom in the same wind, I'd be carrying at least an extra square metre of sail. Choosing your big sail(s) you have to factor in not only how little wind you want to plane in but also the intensity of the experience when you're on the plane.

sail represents a much bigger percentage drop than between a 9.5 and 10.0. It stands to reason that there can be bigger gaps between your big sails than your smaller sails – but how much? So much depends in which wind band you really want to plane. It might help at this stage to define marginal and strong winds.

There is a very interesting barrier around the 15-18 knot mark (force 5).

I have mentioned this before in last year's feature about power but an increase in wind speed is not proportional to the extra pressure it produces. The pressure gets exponentially greater with every knot of wind to the extent where force 5, although only 6 knots greater than a force 4, actually creates twice as much pressure. So it is that around the top end of a force 5, pretty much everything planes. Although slalom sailors may still be hanging onto an 8.5, you would see freestylers strutting their impressive stuff with a 4.7.

For most people, to plane under 15 knots, they need a big sail (7.0 plus) – but how big depends on many things - sailor weight, brilliance, board size and design, but primarily how far down the wind scale you want to plane. Now the worms crawl from the can...

MINIMUM WIND PLANING

The way wind pressure works, you can spend a HUGE amount of money tooling up to plane in that narrow 9-13 knot wind band. It may be necessary. If, thanks to geographical chance, marginal winds are your specialty (in Pattaya where Starboard do a lot of their big board testing, a blowy day is when you change down to an 8.5) then your quiver may well be 9.5, 8.5 and 7.5 (for those crazy days!) If you enjoy a wider range of conditions and like a

bit of big sail blasting but are not bothered about pumping your botty off in zephyrs, then your biggest sail could be an 8.0. That would cover the 14-18 knot seabreeze range; then as you hit the magic force 5, you could be straight onto a 6.5 or even a 6.0. (I'm assuming an 80kg pilot here.)

Bjorn Dunkerbeck's retirement from slalom is down partly to the lowering of the PWA wind minimums to 8 knots which he says makes it impossible for a man of his size (95 kg) to be competitive. Now if he, with his massive experience, strength, skill as well as the best kit money can buy (including a 9.8 rig), can't perform in that wind, what chance have the rest of us? Be realistic about the wind you want to plane in.

TESTING TIMES – MARGINAL WIND QUIVERS

I did some experiments with regular sailors recently to test a few early planing myths. On the beach lay a range of sails from 10.0 down to 7.5. The wind was 10-14 knots – a classic puffy seabreeze. The boards used were 125-135 racy free-ride boards.

And here's what we found.

→ above 9.0, the extra area didn't seem to have any bearing on early planing. But when planing the sails above that performed better on the extremes of up and down wind (where course races are won and lost).
→ in the bigger gusts (by big I mean 14 knots) most sailors planed earliest on the 7.8 twin cam because they found it easier to handle and pump.

→ On the 125 board, the 7.8 planed earlier than the 8.5 – proof of the importance of matching board to rig. The 8.5 over-powered it.

→ in some hands, the 7.5 no cam sail seemed to plane earlier than the multi-cammed all dancing slalom sail. What?

CAMBERED AND CAM-LESS – IN THE SAME QUIVER

I draw your attention to the short interviews with Ken Black of Tushingham Sails and Monty Spindler of Loft Sails elsewhere in the piece, who distill crudely the differences between multi, twin and no cam sails.

The amount of cams, how solid the foil is, how much the sail 'bags out' has a massive bearing on the low end power (acceleration) and top end (speed). Hence, if you're amassing a big sail quiver, it's unwise to mix up those designs.

Furthermore, whether a specific design makes you plane earlier and what size you need depends also what type of sailor you are.

A good while back before the PC police kicked in, I was present while Robby Naish was extolling the qualities of two slalom style ranges to a collection of dealers. "This," he said pointing to a full bellied 3 cam design, "is for brain dead sailors."

But this," he said pointing to a soft cam-less design, "is for active sailors."

By 'brain dead' he implicated those who like to hook in in the car park, get on, sit down, feel power and go. The inference was that were not going to work the sail – it had to do all the work. And because of that you needed to go big.



THE JOY AND ANGST OF CHOICE

Packing up after two weeks in Kerry - I know it was a good trip because I used every bit of kit I brought, which included the following sails 7.8, 6.5, 6.0, 5.7, 5.5, 5.2 (X 2 one 4 batten, one 5 batten), 4.7 and 4.2. I really didn't need that many but out of the goodness of my heart I brought them for others to try and in case of breakage – note how the sizes are really packed in between the crucial 5-6 sq m area. But when you're staring at the sea agonising over whether to take a 5.5 or 5.2 on the 82 or 87 wave board, you know you've gone for overkill. Windsurfing kit, and sails in particular are beautiful things to own – but like chocolates, you can have too many.

THE BLACK VIEW

Ken Black of Tushingam, has been designing windsurf sails for ever. His knowledge is encyclopaedic – a very good man to quiz on quiver matters. Which designs will get the average sailor planing earlier. Cams or no cams? “Cam sails in theory give better bottom end as they don’t depend on the wind to create the aerodynamic shape. However, this is not always the case as many multi-cam sail ranges are designed exclusively for top end speed and handling.” Is there a point at which big no cam sails stop being efficient? “Bigger rotational (no cam) sails tend to need proportionately more wind to get the sail into a good aerodynamic shape. Our experience is that 7.5 is the tipping point. The next size up is significantly more efficient with two cams giving earlier planing and more stability.”



// Ken Black

ROB JONES – THE HIGH WIND SPECIALIST

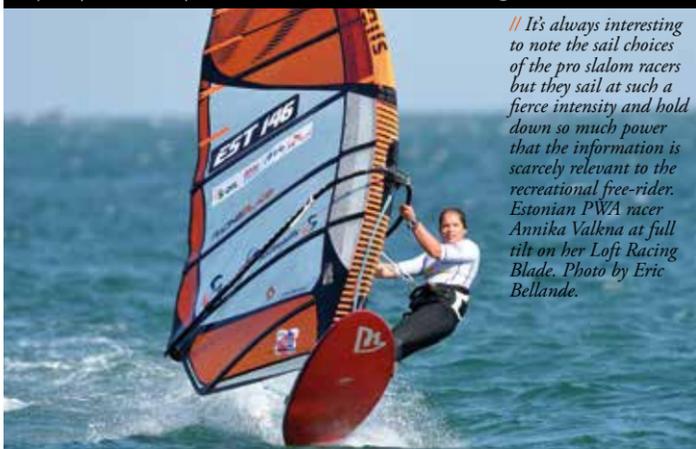
Rob Jones, has lived on the shores of Brandon bay in Kerry Ireland for most of his adult life and has enjoyed much competition success in waves notably on home shores – but his considerable reputation (apart from being an ace sail repairer) is primarily earned from going out in winds that even some of the best brand as ‘unsailable.’ At 68kg, he’s not huge but neither is he a midget but he still regularly uses a 2.5 to tame the crazy storms that batter SW Ireland notably in winter. Although most inhabit a different world, it’s nevertheless interesting to note the specialist’s view on sail selection, which is minimalist to say the least. “I don’t like having loads of gear. I have 0.6 gaps (mostly). 5.1, 4.5, 3.9, 3.2, 2.5 and 1.9. I have the 5.1 for contests. Sometimes I use it at Mossies (a reef break) to help me upwind but most of the time 4.5 is my biggest. I use sail size as a way to test myself. For example at Gowlane (beach break with gusty side-off wind) I’d use the 5.1 on marginal days – but it was pretty easy. I’d catch anything I wanted – so I’d drop board size and use the 4.5 to really make myself work.” Now what about this 2.5? “My mates call it my kiddy rig! I made it myself. I got it to set on a 290 cut down mast and a 130 boom. It takes a lot of work to get it right – but the key, even in 50 knots of wind, is to make it powerful – that’s true of all small sails. Don’t pull the crap out of them or they just don’t work.” What tips do you have for people selecting a quiver? “Invest in the sail (and board) you most want to use, then you’ll use it and make it work. Having said that, I have one important tip ... colour! When I was a young dude keen to impress, I always went for the 4.5 because ...wait for it ... it was red and matched my board. So now I make sure all my sails are the same colour so I make a more sensible size choice!” On the subject of making things work and the tune-ability of sails, one year he did the whole Irish slalom circuit with an 84 slalom board, 2 fins and a 6.2 race rig in winds from 12-35 knots – and he won!



// Rob out on his 1.9M ‘kiddy rig’ in 50 knots of wind in Brandon Bay. “Easily the windiest day I’ve ever experienced on or off the water.. Horrific.. And that was just the driving!” Rob Jones. Picture by Tim Wyers.

MONTY SPINDLER

Monty, owner of LOFT SAILS has also been in the game right from the beginning both as competitor and a designer. For a long time he was the brain behind ART sails (and invented the ‘cutaway’). No one has more experience or is more hands on. Barely a day goes by when he’s not to be seen out on the home waters of Tarifa testing with his team. What better man to ask questions about sail selection? When it comes to gaps between sail sizes, what do you recommend? “Gaps between sail sizes I would say best around 0.7 - 0.8m for big sails over 6.5, however this depends on the rider’s board situation. These days it seems there are “slalom norms”- for example 8.6m2 with boards around 125L, 7.8 with boards around 115L, 7.0 with boards around 100L, 6.3 with boards around 92L- at least for competitive slalom sailors. **Which designs offer earliest planing?** “In my view no-cam designs can be earlier to plane than cammed designs... but it depends on the trim! Trimmed well for the low end (soft), a no-cam slalom design can exhibit much larger lungs than a cammed design that may be over-trimmed (firm trim). No cam designs have a certain elasticity that may allow you to pump onto the plane before some cammed designs.”



// It’s always interesting to note the sail choices of the pro slalom racers but they sail at such a fierce intensity and hold down so much power that the information is scarcely relevant to the recreational free-rider. Estonian PWA racer Annika Valkna at full tilt on her Loft Racing Blade. Photo by Eric Bellande.



// Rob Jones cherishing his beloved but almost comically small 2.5, that gets a lot of use in Irish winters. It’s unusable by most people. But crazy winds are his speciality. The more you use a certain size, the better you get at using it!

JOHN SKYE - DESIGNER AND PRO

"I am very lucky that being both a pro rider and the sail designer for RRD I pretty much have every single sail style and size in the whole line up. All that said too much choice is worse than not enough. If I was going minimal I would go for the classic 5.3/4.7/4.2 quiver, together with an 82L wave board. For me 0.5 is a very good step in size of wave sail as it allows for gusty winds. Modern sails have a huge range, but so to do days on the water. A 4.7 day will at times be light for 5.3 and strong for 4.2. Bigger gaps would work well if the wind was perfect, but it rarely is! For the board I weigh roughly 82kgs, and always say a wave board litreage around your weight is the best one board option. 5.3 is normally the first sail that really feels like a wave sail, and at the upper end, I can hold a 4.2 down in a lot of wind. Add a 3.7 to that quiver and you are covered for everything. I would also stress it's really important to have the same sails through the whole range. It doesn't matter so much what they are (although best if they are RRD), but having a consistent feel makes changing up and down simple. When time on the water is limited, you don't want to have to spend anytime getting used to your gear. When travelling I change my quiver according to conditions and to not get stung too hard at check in. South Africa for example it's generally windy, so I take 5.0/4.5/4.0, plus add a smaller board with an 82/74L combo. Maui is nearly always around the 5.0 size, so my standard Maui quiver is 5.3/5.0/4.7/4.2. I cover the normal wind with close sizing and have the 4.2 as a storm sail. Look at what you use the most and have closer sizing in this range. I also have my light wind slalom set up that I leave in the UK. It lives at my parent's house, so when I am home and there is a little breeze I can get out. It's based around a 114 X-fire slalom board, which for me is the largest slalom board that feels fun to sail. The 114 takes an 8.6 and with some pumping I think I can plane in hardly anything. For sure around a race course a larger board would be beneficial to keep planing and drive upwind, but for cruising up and down the coast or going for a blast, the 114/8.6 set up is perfect. With an additional 7.8 or even 7.0 you can cover pretty much cover everything until it's time to get on the wave board with a 5.3.



With the cam-less sail, he said, you have to work. You need to sheet in hard to make the sail form its foil. It bags out more, creating potentially more power at the expense of stability. But it's lighter in the hands, easier to depower and you can potentially get away with a smaller sail.

If you class yourself as a brain dead sailor (or modern equivalent), you benefit from cams because you need to be powered up. But I assert right now that not everyone who uses cammed sails is brain dead. That would mean all racers are stupid. The other factor is board size and that bigger boards react better to the grunt offered by cams.

The warning though is that the really specialist slalom sails which are designed to be used 'fully fully powered', may not have great bottom end – and that a smaller cam-less, or twin cam sail may actually get a recreational sailor planing earlier.

Our pro slalom sailors should be applauded for their extraordinary physicality, skill and daring – as well as for bringing such incredible kit onto the open market. But they're using their sails so completely on the edge of control that copying their quiver choice can be something of a distraction for the recreational sailor.

AND AT THE SMALLER END

With sails under 6.5, you can't go wrong if you drop down in 0.5 increments. If that's beyond budget, just make sure you're shored around the sizes you most

want to use. An 80 kg bloke joined me last year on a wave clinic and his sizes went 6.5, 5.7, 4.7, 3.5.

Really not good – 5.7 to 4.7 is a massive gap. In waves and sea sailing in the most desirable force 5-6 winds, 5.0 or 5.2 is your most crucial size. The 3.5, for him, was an irrelevance since he had neither the board nor the hardware to make it work.

FINDING THE FAVOURITE

As a slalom racer I always seemed to have my best results on a 6.0. I can't explain it. When it comes to wave sailing these days, I love 4.7 weather. It means I'm on my smallest board; and it's windy but not crazy. Of course all your sails should have a place in your heart but amongst them it's not wrong to have a favourite. If you feel that a certain size and design suits your size and style, then you're going to have special days. When you're on your favourite sail, mentally you switch up a gear. Because you crave its company, you use it more and make it work in a wider range of conditions. And in so doing, you develop cute technique.

On a Kerry beach last week the NW wind was blowing over Brandon mountain and gusting wildly from 18 to 30 knots. The group looked to me for sail size advice in the knowledge that whatever I said would be wrong (but they'd have someone to blame). I couldn't speculate. I had to lead from the front. I reached for the trusty 4.7 and loaded it onto the beloved 82 and tested the waters. I did about 5 reaches in and out through the waves and on each run estimate the perfect sail for that moment. The first run out was definitely 3.5 –

wild; the next one 5.2; the next one perfect 4.7. Storms over the open ocean often bring massive variances between the mean speed and the spikes. So the advice I gave was that any sail between 3.7 and 5.2 would work at different moments so choose your favourite sail, the one you instinctively reach for. Then at least you'll sail with confidence.

CHANGING THE ORDER – BOARDS FIRST?

Back to our extending the house analogy, if all your kit magically disappeared (and you got magically paid for it) how would you go about replacing it? Surely the best way is to choose the boards you most want to sail and then select the sail sizes that best suit those boards. If you're wondering what that sail is, it's usually the middle sail out of the manufacturer's recommended range.

We're back to the beginning but I stress once more that matching board and rig is more important than anything. If you do, you'll find yourself operating with an ever smaller quiver.

Next month Peter, hopefully caressed by tepid summer breezes, will be looking at SUP sailing, the techniques, the kit and everything. A very few places remain on his 2015 clinic tour, for very good reason, but check them out on www.peter-hart.com or by liking his Peter Hart Masterclass facebook page.