SILVER WING
SAILING CLUB

New club PY numbers from April 2024

Sooooo, the Dinghy Show has been and gone, and as a result the RYA has published the 2024 list of boat handicaps (PYs). In past years this would have produced a huge bunfight on the Yachts and Yachting forum, with people generating conspiracy theories faster than Donald Trump after several cans of Diet Coke. Oddly, this year it has all gone a bit quiet.

For the RYA blurb on the PY system, see here:

https://www.rya.org.uk/racing/technical/handicap-systems/portsmouth-yardstick

It's not as hard as they make out, simply put:

Corrected time = (Actual Time/PY) x (Highest number of Laps Sailed/Number of laps you sailed)

Now to the dark art bit – how does the RYA arrive at the boat PYs

Every handicap race longer than about 25 minutes can be uploaded to the RYA's PY website (not the one above, but a separate database each club has a login for). From there the system works out an 'achieved PY' for each boat in each race. If you want to see how that is done – just scroll right on the results template on the club PC, you'll get to the calculation eventually.

They ask for as much stuff as they can – for example if you look at the 'class configuration list' you will see that they ask for things like Singlehanded Enterprise and Singlehanded Wayfarer to be noted, they just don't have enough data yet to publish anything for these.

The system assumes that the profile of skill levels in any race follows a 'skewed normal distribution', and kicks out the bottom 20 percentile. See later about this. This is the 'poor' statement you may see when you enter stuff on the results template.

The RYA then does a load of statistical jiggery pokey with all that data (no one knows what it is), and produces the new PY list. See 'current PY list' link on page above'.

It also publishes a list of boats that have not seen enough returns over the past few years to assess any changes. This is the 'limited data list', it does not change. It includes stuff that no one has seen since the Napoleonic Wars (Twinkle Twelve anyone?). This is where the YW Dayboat number can be found.

And then there's the Comet Versa…….

What are the caveats:

Bear in mind that 1 point change in PY is 3 seconds in an hour for the range of boats we have. These are very small changes that people get wound up about. The resolution of the system implies an accuracy that I don't think is there. They have stopped publishing the

number of data points the get back each year for each class, but some are very small. Our 2.4mR fleet for a couple of years was about 60% of the entire returns for that class, and we managed to somewhat stuff the PY of an international Paralympic class as a result….!

The big caveat is variations in skill level between different classes of boats. Assessing this is a mug's game and is probably done subjectively, if at all. No one knows. The old paper calculation back in the 1980s (a two sides of A4 table!) had a column for 'Crew Skill Factor' – this frequently resulted in the calculation going round in circles.

It also struggles to cope with boats with widely different performance characteristics. (OK, I'll stop picking on the 2.4s now!).

The RYA website system has been running from the mid 2000s. By now it should have settled down, with few if any changes. There are some surprisingly big changes this year (catching up after covid?), but I do wonder how much is noise.

What can we vary?

Well, everything as it turns out. Clubs are encouraged to alter the numbers to suit their water. The RYA PY website uses our data to recommend numbers to us, and also gives a confidence factor as to how good the data behind the numbers is.

I have a spreadsheet where I note all the 'achieved PYs' for everyone, this is used to get the Personal Handicap numbers.

I have also tracked the RYAs calculation for the boat classes for each year on the spreadsheet. All this has proved that the RYA calculation is not quite any of: mean, median, 50th percentile of a cumulative frequency curve or 50th percentile of a standard deviation curve. But they all come out fairly close. I have heard the word 'Gauss' mentioned, but last time I did any statistics was 35 years ago.

So what has changed and what have we decided?

The RYA published numbers, the recommended ones for us and my spreadsheet all seem to roughly agree, so I've stopped trying to be clever and mostly use RYA numbers. So, for 2024:

Enterprise – 7 points slower, 1126 becomes 1133. This is a bit odd.

Miracle – 6 points slower, 1194 becomes 1200.

Topper 4.2 – 5 points slower, 1420 becomes 1425 (just as Sam grows out of it!)

Radial – 4 points slower, 1150 becomes 1154

Wayfarer – 4 points slower, 1105 becomes 1109

Laser – 1 point slower, 1101 becomes 1102 (noise?)

Comet – no change 1210

Solo – no change 1142

Lightning – no change 1160

Topper – no change 1369

YWDB – not changed in years 1200

Now, some numbers we do have to generate ourselves:

Enterprise S/H, Vision no spinnaker, Vision Singlehanded, 2000 no spinnaker. These we have generated ourselves. We change each year by the same amount as the RYA published number for full configuration boats changes.
I have a good argument as to why our Ent S/H number is correct – just not enough space to explain here.
The other three are a bit more finger in the air.

Comet Versa – and you thought the Twinkle Twelve was obscure. I dug this one out of the PY list for one of the big winter events a few years ago. It's 1270.

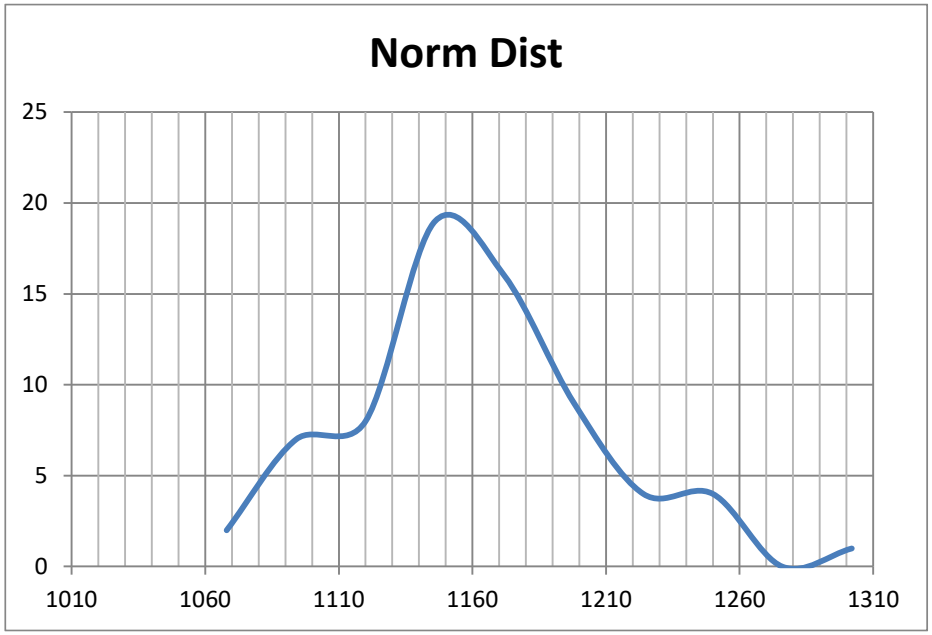
Graduate and Comet Trio Mk1. The RYA numbers have been changing (getting faster). I am not convinced this is anything more than noise and have left these as they were in about 2019.

RS400. Just when I thought I'd have a quiet life…….This has dropped to 939. Now it is not really the boat for our water, and the RYA does specify we must accommodate this, so I'm going with 950. Won't change much results wise.

And so to the skewed normal distribution -

When I was asked to produce this blurb, someone said 'you'd better put some nice graphs in as well'.

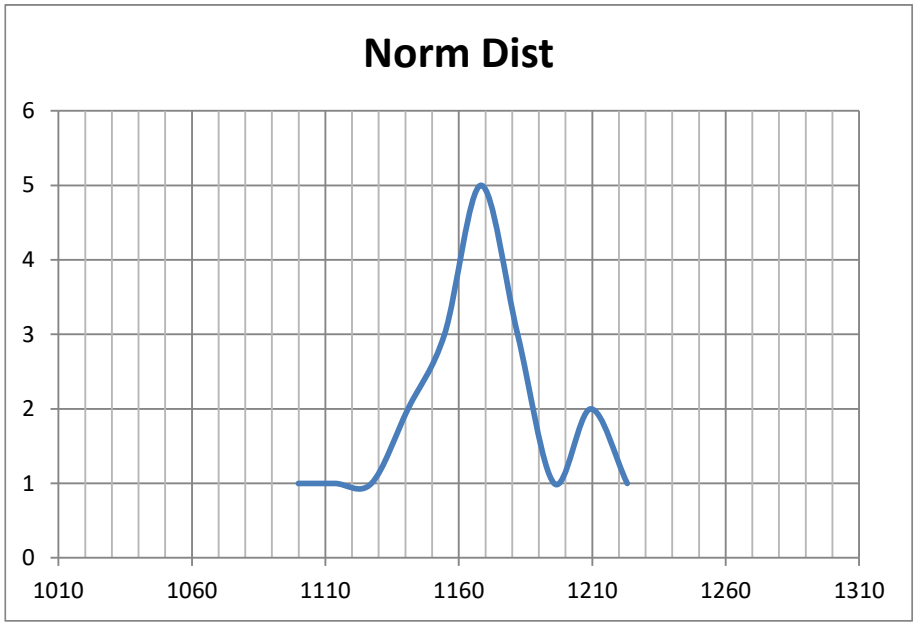
Remember I said I used everyone's 'achieved PYs' to work out their Personal Handicap numbers. Well, here's the 2023 graph for a well know Solo sailor who did 69 valid races (sprints and some other races not used as too short):



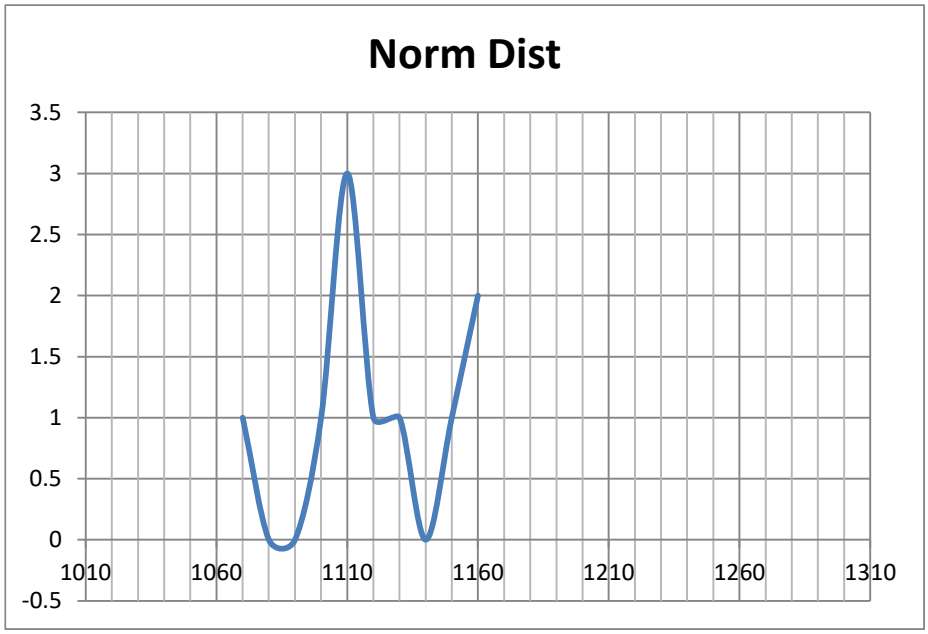
Looks sort of like a skewed normal distribution.

And now for someone who sails both Enterprise and Solo:

Solo (16 data points):



Same guy in an Enterprise (9 data points)



Well, he did ask for graphs. Remember those experiments where they fed LSD to spiders…….

Now you know the limitations of our Personal Pursuit Numbers.

In conclusion

It's not perfect, but it's as good as you will get without doing daft stuff like different PYs for different wind strengths. USA Sailing used to try that.