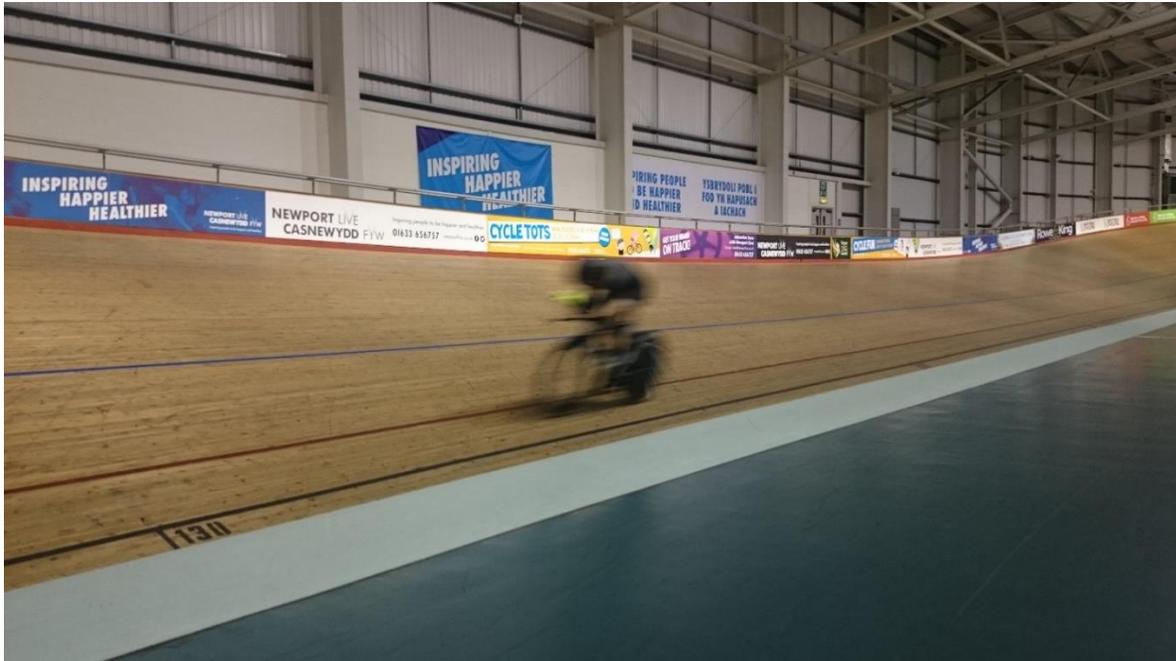


## Test session at Newport Velodrome 28<sup>th</sup> February 2018



I started looking at front-end options at the end of last season. I decided to use the off-season to experiment with front-end options, on the turbo, as an integral part of my training program.

I'd concluded that my 51 P3 was probably a bit too compact as I'd maxed-out the reach and I wanted to stretch out a bit more. I managed to pick up a 2011 54 P3 that looks pretty much identical to the 2009 51 P3. The significant difference, as I am reliably informed by customer support at Cervelo, is that the 2011 P3 has the same forks as the P4, which are renowned for being “fast”, or so people say. I also acquired a set of ENVE bars at a reasonable price, and a UCI compliant seat post, so the 54 P3 is just about UCI compliant.

My turbo “bike” is based on a 54 Pinarello Angliru. It sounds expensive but it's just an entry level aluminum frame with carbon forks. It has a low-end set of aero bars, and extensions and pads that match my race machine. I set the turbo bike position up to mirror my race position, and then experimented with extension width, extension angle and pad width.

Having collected data from upwards of 120 turbo sessions I concluded that wider spacing with angled up bars was both comfortable and efficient in terms of sustainable power delivery. Those that have seen Cycling Weekly (the comic) this week might have read Dr Hutch's comments about extension spacing and yaw. I'll come back to that in the “Front End Options” blog post.

I set up the ENVE bars on the 54 P3 accordingly and headed to Newport to test a combination of helmets and shoes, but with all tests using an identical front-end set-up. I have a lot of reference data from Newport test runs using my 51 P3 with Ventus II bars. What I wanted to find out is could the 54 P3, in its UCI (semi) compliant configuration, match the performance of the non-compliant 51 P3.

I also wanted to test some NorthWave shoes against my Sidi shoes, without covers, because I can no longer get my favourite Castelli shoe covers that "work", and re-test my Bambino with the parked visor against an AeroHead, in this case an "Ultimate" rather than the standard one.

My test plan was as follows:

NorthWave shoes, no shoe covers, Bambino with parked visor

NorthWave shoes, no shoe covers, AeroHead Ultimate

NorthWave shoes, no shoe covers, AeroHead Ultimate

NorthWave shoes, no shoe covers, Bambino with parked visor

Sidi shoes, no shoe covers, AeroHead Ultimate

Sidi shoes, no shoe covers, Bambino with parked visor

Sidi shoes, no shoe covers, Bambino with parked visor

Sidi shoes, no shoe covers, AeroHead Ultimate

Sidi shoes, new Castelli grey shoe covers, Bambino with parked visor

Sidi shoes, new Castelli black mesh shoe covers, Bambino with parked visor

Sidi shoes, old Castelli grey shoe covers, Bambino with parked visor

Cool down run with Sidi shoes, old Castelli grey shoe covers, AeroHead Ultimate, including riding on the tops and riding at slower speed in position.

The Kestrel weather station was set up on a tripod adjacent to the track and its data logging function used to record air density and air temperature data. The Kestrel also indicates any air movement created by the rider on the track. An IR Thermometer was used to measure track and tyre temperatures before and after every test run.



Results from the first B-A-A-B test:

0.2025	NorthWave shoes, Bambino parked visor		1.204	19.8
0.1970	NorthWave shoes, AeroHead Ultimate		1.203	20.0
0.1979	NorthWave shoes, AeroHead Ultimate		1.202	20.1
0.2027	NorthWave shoes, Bambino parked visor		1.203	20.0

The Air Density and Air Temperature data are copied from the Kestrel data log, uploaded as a .CSV file via an Android app and BlueTooth.

Results from the first A-B-B-A test:

0.2014	Sidi shoes, AeroHead Ultimate		1.203	19.8
0.2053	Sidi shoes, Bambino parked visor		1.203	19.7
0.2061	Sidi shoes, Bambino parked visor		1.204	19.5
0.2011	Sidi shoes, AeroHead Ultimate		1.204	19.6

The NorthWave shoes are about three to four Watts better than the Sidi shoes. This is pretty much what I expected given the difference in fastenings of the two shoes.

The Sidi shoes perform better with the older style Castelli shoe covers, however, I've been unable to get that type for a couple of years now. The current Castelli Aero Nano "grey" shoe covers have a more robust (black) material on the under side which probably prolongs the life of the shoe cover. The material for the upper part looks similar to the old covers but doesn't feel the same to the touch.

0.2045	Sidi shoes new grey Castelli shoe covers		1.206	19.0
0.2058	Sidi shoes new black Castelli shoe covers		1.205	19.1
0.2005	Sidi shoes old grey Castelli shoe covers		1.207	18.6

The black Castelli Aero Race shoe covers tested were the most expensive. They tested the worst of the three. They had a mesh material on the underside which started to show signs of wear (holes appearing in the mesh) just from using the covers track side. I've arrange for them to go back to Castelli with a suitable comment.

# Float Aero

..... getting aero “in a Nutshell”

Given that I can no longer obtain my favourite shoe covers (the ones that work with the Sidi shoes) I was looking for an alternative solution. The NorthWave shoes are looking promising. I’ve also sourced a pair of Solester Suplest Aero shoes to test against the NorthWave on my next Newport test session. Having to ride without shoe covers is a bit inconvenient because I’ll now have to clean my shoes whereas with shoe covers there was never any need for that (!)

Edit: Having tried the Solester Suplest shoes I found that my feet were too narrow to get a good fit at the front end. I changed the lace pattern to make the fit tighter, even then it wasn’t tight enough for my long narrow feet. The zip cover was loose and didn’t look neat with the laces tight. I guess the shoes are designed for people with more regular shaped feet.



My previous testing of the Bambino against the AeroHead was with the “ordinary” version, and it was very difficult to differentiate the results. The results with the “ultimate” version, compared to previous results with the “ordinary version, show a significant difference, greater than the two Watts that I’ve seen quoted elsewhere, nearer to four Watts. The “ordinary” one is medium and the “ultimate” one is large. That might be a factor. The Velodrome is also pretty much a zero-yaw environment. I’ll re-test when I make my next trip to Newport.

Ends