

(N)RDs and Sigmas at Bedtime!

Among the many goodies in the 2020 Unicorn range are some new products I should talk about. Firstly there are the Sigma HS and HS Converta darts and then there are the Volute points, designed to improve dart retention whilst minimising damage to the board.

My last “Board to Tears” blog ended on that last topic, so for this one I would normally have continued in that vein with the Volutes, leaving the Sigmas for next time. However, I’ve decided that discussing points and dart retention should wait until I understand better one aspect of my last blog’s data on NRDs, Non-Retained Darts (my term for bounceouts, although I’ve now been told Unicorn call them just RDs, Rejected Darts. Not entirely convinced, but I’ll go along with it!).



As I mentioned in that blog, the 2018/19 PDC data Chris Kempf (aka Ochepedia) gathered shows that players’ second darts are around 7 times as likely to be an RD as their first, with the third being nearly twice as likely again. Chris’s actual data is as follows:

| | 1st Dart RDs | 2nd Dart RDs | 3rd Dart RDs | Darts Thrown |
|-------|--------------|--------------|--------------|--------------|
| 2019 | 41 | 293 | 513 | 241558 |
| 2018 | 59 | 403 | 771 | 361339 |
| Total | 100 | 696 | 1284 | 602897 |

A way to make sense of this data is to make the rough assumption that as many second and third darts were thrown as firsts (although there will in fact have been slightly fewer – I’m trying to get the actual numbers) and then further assume that an RD is around 6 times more likely when hitting a previous dart than when unimpeded. Then, taking the 1st dart RD stat of 100 as being for unimpeded darts, for the 2nd it would be $100 \times (1+6) = 700$ and for the 3rd $100 \times (1+6+6) = 1300$ (as there are now, usually, twice as many darts in the board to hit). These numbers are close enough to the actual data to postulate that the chance of a dart being an RD purely due to impact with the board is indeed only 100 in a third of 602897, or approximately 1 in 2000.

Now that seems like pretty good news for board manufacturers and may take the wind out of the sails of those who blame the board for every dart on the floor. But my problem is I don’t fully understand it. I certainly believe the numbers, if anything can be relied upon in an uncertain world it’s Ochepedia’s statistics (the guy brings new meaning to the word precision!). I also have no problem with the conclusion that most RDs are due to previous darts and not direct rebounds from a wire or hard/soft spot on the board. Even so, subjectively 1 in 2000 just seems too low.

Until I sort out exactly what’s happening (maybe the actual first, second, and third dart numbers might help?), more blogs from me on RD-related topics, including the Volutes, can wait. The rest of this blog will hence be dedicated to the hopefully less contentious issue of the Sigmas. Enjoy!

So, the Sigma HS and HS Converta. HS on a prescription may mean “At Bedtime” (Hora Somni – in my youth we all spoke Latin!), but here it stands for “High Stability”, and these darts do just what it says on the box, but there are still some factors worthy of explanation, so here goes.



Before I delve into the technicalities, maybe you’ve seen the very flash promotional video for these darts, which can be found on both social media and this website? If not, it’s worth a look, because it is, well, very flash. That’s nothing to do with me, of course, I’m no marketing guru (in joke with the Big Boss - no greater insult for a scientist than to be called a marketing guru!). Also very impressive (and also nothing to do with me) is the packaging, as you can see from the inner box on the left.

Now, what about the technicalities? Well, the curved profile barrels have a low moment of inertia to aid stability and are aerodynamically matched across the weight range (21, 23, & 25gm in steel tip, 20 & 22gm in Converta). So far, so typical Sigma. However, these barrels feature the advanced machining some players (or Star Wars fans – I get the R2-D2 comments!) may want to try, although this is careful not to break a Sigma tenet by taking out too much material. To provide a little more basic in-flight stability the primary set-up utilises UltraFly Big Wing flights and not the One shape usual on stability-optimised Sigmas. Although this costs marginally in terms of, to be horribly technical, lift linearity near stall and thus consistency of yaw wavelength (see my blog Accur8), the darts should be a little more forgiving of non-standard throws or venue conditions.



Completing the primary set-up, designed to provide consistency of board impact angle, are Gripper 4 medium shafts, with both blue and “Elements” clear sets being supplied with the steel-tip version but just the latter with the Converta. The alternate set-up for both, which has lower (although still high) stability than the primary but may provide a little more accuracy for players with a smooth release, features the blue aluminium Sigma HS shaft (as on the dart at the top of this page) and UltraFly Plus flights. The HS steel tip has plain points with a blue Titanium Nitride coating for grip whilst the Converta comes with Epic acetal soft tips as well as new Sigma HS points with “finger-grip” grooves.

These HS points merit some further description as they are made from 7075 aluminium, an aerospace alloy pretty much as strong as steel at a third the weight. Although the alloy was invented in the 1930s for use in aircraft, problems with workability and weldability have rather limited its applications, but for dart points it seems perfect, especially when coated with ultra hard wearing TiN.

And that’s all for now, folks. I’m off to throw 2000 single darts to see if I get an RD!

