

## Crazy Horse and Challenger G12 - what you can expect and how to tune them

- a word from the Volker Behrens

First and foremost, many thanks for purchasing one of my boomerangs and for supporting my work. I feel I have to write down this note for 2 reasons: to avoid wrong expectations about the product & to help you get the most out of it.

What can you expect from a "Crazy Horse G12" and Challenger G12"? Well, you can expect a solid long distance-rang with a lot of potential for flights beyond the magic 130 - meter mark. The material is heavy and stiffer than all other epoxies i have tried, the shapes are proven performers and so are the airfoils. When the distance given in a catalogue says 150 meters, people tend to think that this kind of distance is built into the boom, which simply isn't true. The numbers given are figures obtainable under the best combination of factors:

1. Optimum tuning and weighting ( more weight = more momentum)
2. Perfect throw ( more power=more momentum, more grip=more spin=better carry on the way home)
3. Good conditions

Take one of these factors out of the list and chances are you end up with a "mere" 110 meters and possible disappointment too. It doesn't only take a very good rang to get 140 + meters, but it takes a good day and a strong arm and tight grip = good spin rate (plus the coordination to hit this really small window where everything is right ) to make it go all the way out and bring it back home too! I really don't mean to discourage anybody, but i don't want to raise false expectations. So, let's face it: 160 meters are not built into everybody. And even if they are, you have to bring them out too - when I was competing in distance and set my records, I used to practice about 10-15 hrs a week plus a bit of weight training too.

### 1 Tuning and Weighting

Here's roughly how I proceed in trying to get the most miles out of my rangs.

1. Start by making sure the rang is in neutral ( flat) tune. Pick a day with a steady light wind. Start out with no weights taped on to the rang. You want to learn the basic throw and characteristics before making any changes.
2. When you get good returns and memorize the angles and want more distance, I suggest that you first use a bit of extra weight in the tip area of the lift arm (use coins or lead pieces, which are flatter). Hold the weight on with a piece of Duct Tape. Then repeat step 1.

If all is well the rang returns fine and you still need more meters. Then we'll have to look at twisting and bending - which is the hardest but most efficient part of the procedure. Before you proceed: never alter more than one parameter at a time! Basically what you can do to increase distance is:

Bend down one or both arms or give one arm a negative (clockwise) twist. Any of these steps should be taken in the tiniest possible amount, because they both go a long way and will change the flight drastically. My suggestion is first to try and bend down the dingle arm a little bit ( provided you had enough air under your wings on the way home before - if this wasn't the case, go to next step) to flatten out the flight a bit and to delay to the lay-down. Alternatively twist the dingle arm slightly negative: this will change the flight into more of an elliptical shape and may result in a turn-over . If that's the case, reduce the twist a bit. Really, it's simple as that: play with all factors above and work yourself slowly towards the point when you get no more returns, then one step back or two, and voila, that's the potential of you and that rang- that easy and that hard too.