

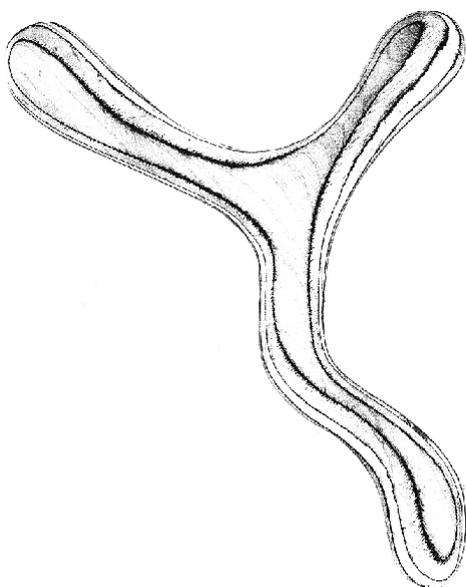
## Developing a taste for Extacy

– by Jens Krabbe, March 2004

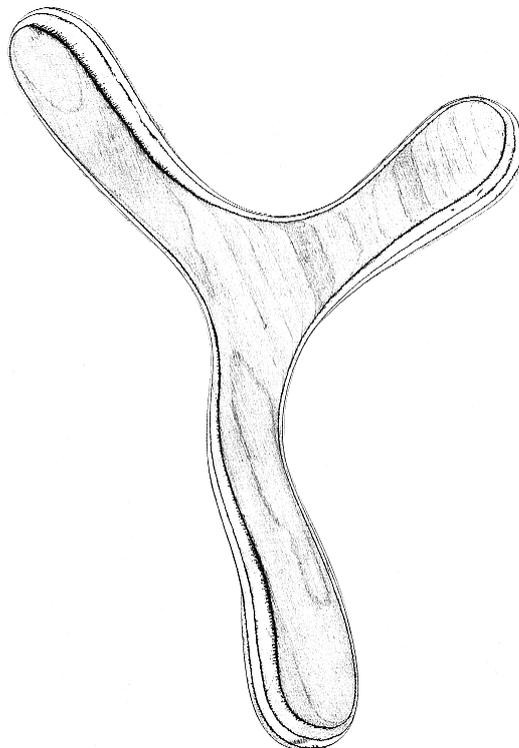
This is the story of how a boomerang design evolved from hallucinations that didn't involve neither inhalation, injection nor digestion of drugs – just sawdust.

### *Getting weaned on LSD*

At a boring meeting back in the very beginning of this century, I was doodling; drawing funny shapes. Somebody, who knew about my weakness for bent sticks, asked me if I was drawing boomerangs. I wasn't really, but one of the shapes could actually be turned into a boomerang, I believed. I showed the design to my friend Ulf who didn't express quite the same belief in my design. But as he would like to see me try he gave me 30x40cm 5mm 6ply scrap to make it of.



This was my very first boomerang design and only the second one I made, so to make the most of the scrap, I fitted a smaller version on it as well (left).



When Ulf saw the finished rangs his comment was that they looked like I had been on LSD or something.

Seems like "LSD" was a lot cooler name than "Something" so that's what I decided to call it.

It did return, but at the time I wasn't experienced enough to recognize it for what it was, a rather poor performer.

The smaller version did slightly better, but neither ever came close to the competition standard minimum 20

meter range - except when they crashed of course.

### *Experimenting with LSD*

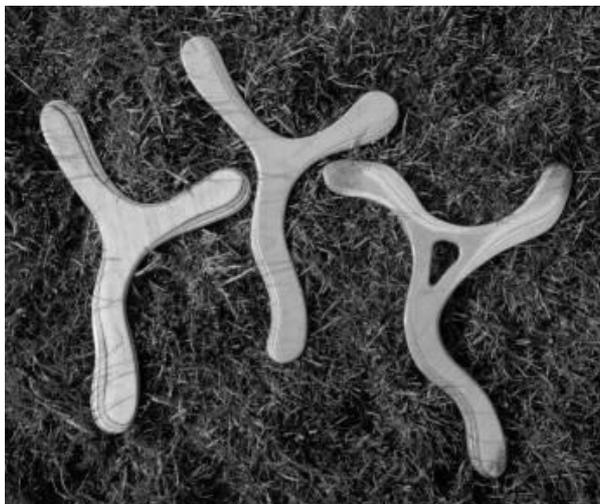
I tried to make more mini LSDs, this time from 4mm 8-ply birch plywood. I experimented with turning the boom over, but little did it improve the poor performance. It was fun though. The picture on the right shows the original mini LSD and a reversed copy in 4mm 8-ply birch plywood.

The asymmetrical shape is a great design for using that odd piece left from too many tri-bladers cut out, as it fits along the edge of a sheet.

I also copied the original LSD in better material (4mm 8-ply) and

experimented with a more elaborate design, which I called the Drop named after the hole





in the middle. Incidentally, the name was a perfect match, as that was exactly what it did – drop! No matter how I threw it, it would ground out quickly. It was clear to me that too much lift was generated in front of the centre of rotation, and therefore the boomerang would do the opposite of laying down – it would raise itself up, topple over and dive into the ground. Not a desirable behaviour for something you'd hope to catch.

I tried to adjust where the lift was generated by eliminating

the airfoils on the tips of the smaller wings. I also increased lift on the parts more in balance with the dynamics of the boomerang, but alas, not enough, so more drastic measures were employed (right) to make it return. Now I don't like the shape at all ☹ and I never throw it anymore.



### ***Consciousness expanding with Extacy***

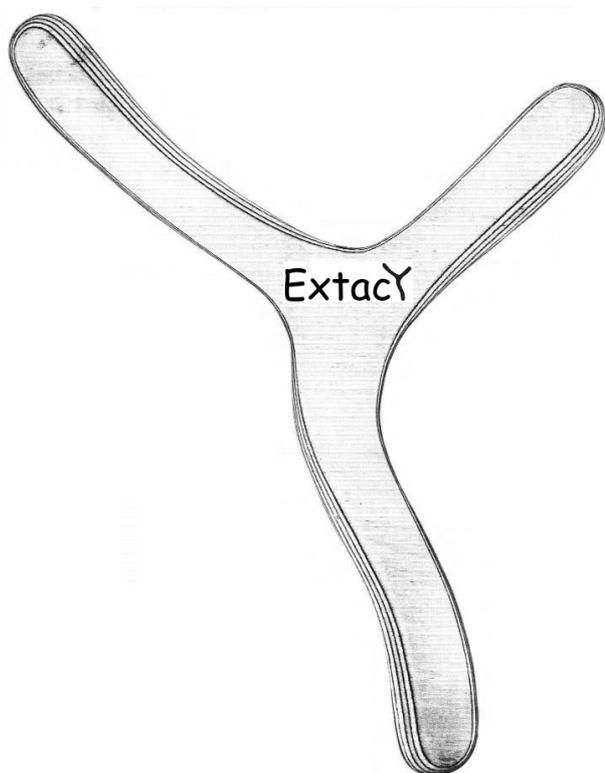
A year went by and I let the LSD collect dust while I tried my hand at other boomerangs. Picking it up again, I started to think more systematically about how to improve the performance of the shape. Holding the boomerang from the tip of each wing in turn made me see how the balance of the boomerang was distributed with regard to where the lift occurred (along the same lines as Michael Siems' construction wheel). I decided to make all three ends of the wings

point roughly towards the centre of rotation. I also took inspiration from Ulf Valentin's boomerangs and decided to slim the chords to about 3cm and made it in 4mm 8-ply.

I was careful to keep the curves and overall impression of the shape. It was also important to me to make sure that the three arms were of unequal length and orientation as this provides more ways to tune it as well as different ways to throwing it. As each arm is of different length, different spin is imparted depending on which wing it's thrown from – the closer to the centre of rotation the less spin is imparted.

I was so happy with the improved performance that I called it Extacy – never mind that I couldn't spell it.

In the year 2000 the bridge between Denmark and Sweden opened, and for one day people could roller-skate, walk, run, and bicycle across the bridge. I went by bicycle through the tunnel and up the bridge. On the top I stopped to enjoy the view and take some pictures – and to throw



my Extacy! The wind was strong and blowing along the bridge with people crossing in all four lanes. When there was a lull I took the chance to throw and it landed 30-40 meters

behind me – on the bridge. Next throw I put on a heavy rubber band and this time it went outside the bridge, hit one of the huge wires from the outside and landed one foot from the edge of a 60 meter drop into the sea.

### ***ExtacII***

Although the Extacy was a fine little flyer, I wanted it to go lower still, so I made a version where the shortest wing is swept forward instead of just being a stubby little straight wing. This produced the ExtacII, which turned out to be a significant improvement over the Extacy and an excellent boomerang for beginners to try their hand at. The paint scheme was made using grass for masking. Later I experimented with undercutting the trailing edge and weighting to get more distance, but without great success.



### ***Hitting 30 meters with a 5mm Slingshot***

I wanted to make a aussie round boomerang from the same concept, and had already figured out that by reversing the orientation of the long wing, I could probably make the boom lay over later, thus travelling further. In addition, I decided to make it from 5mm 10-ply inspired by the Anjelica.

I even copied the airfoil (more blunt than on the ExtacII) and tip design too. Initially, the result was not quite what I had expected as it turned too soon and went too high and generally behaved unpredictably. Taping a coin to the underside of the long arm seemed to help all those problems,

and I after a bit of practice I had myself a decent 30m aussie round boomerang! Later I embedded the coin three layers deep into the underside, keeping it flush.

## Blowing the mind with designer Extacy

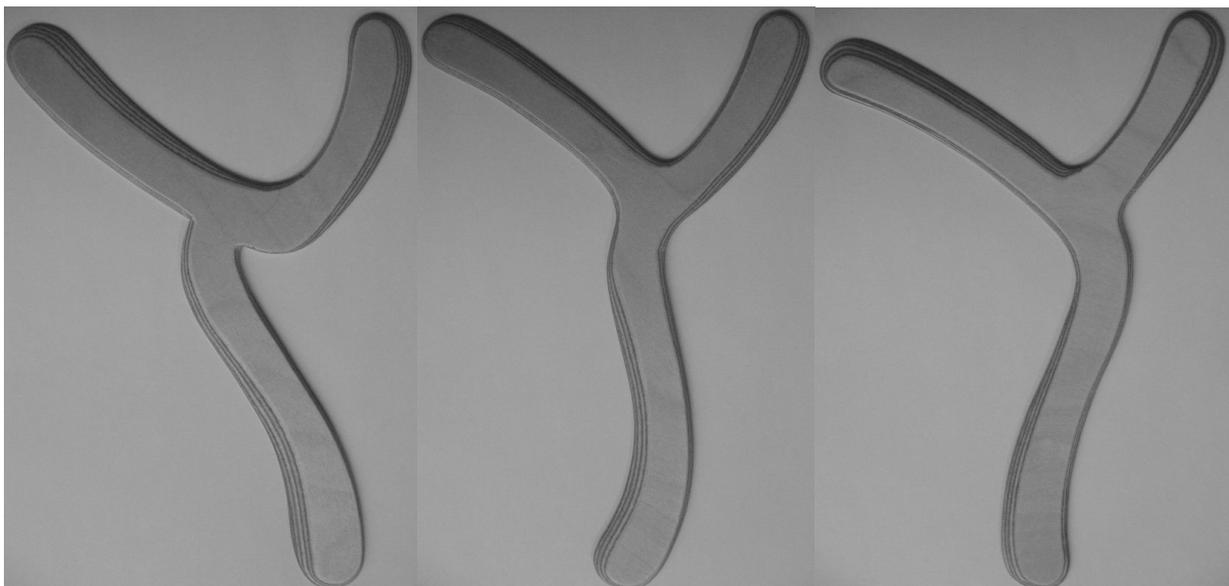
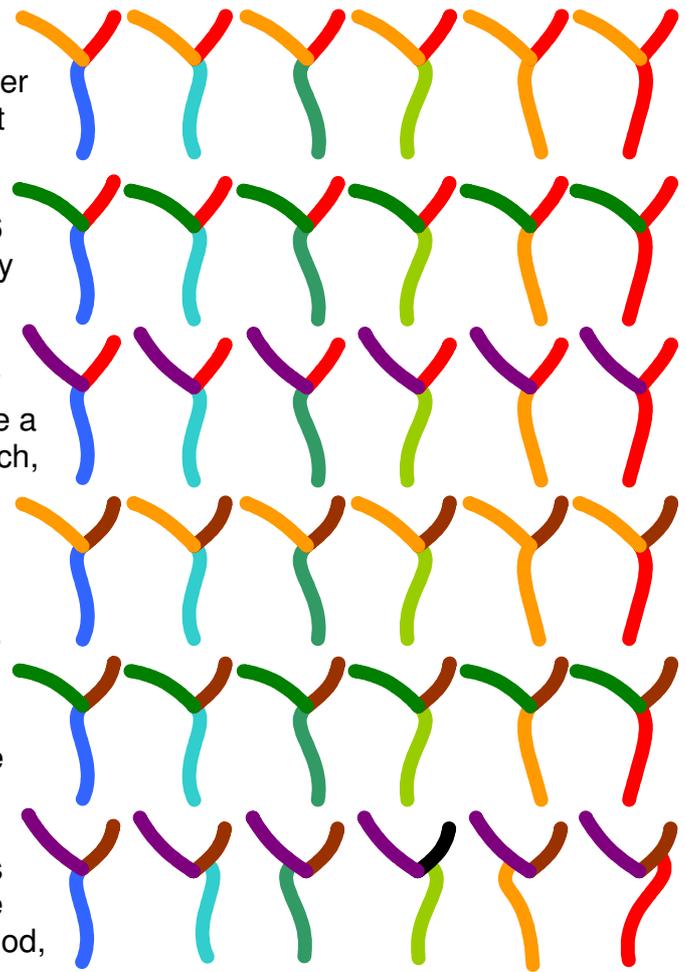
Having made experimental changes to the original design, a computer nerd like me would be badly tempted to employ a computer to help draw up all possible mutations of that shape (I used Microsoft Visio). I chose 6 different designs for the long wing (1), 3 for wing 2 and 2 for the short wing (3), giving 36 permutations on an A4. Then I added a crazy fourth variation on wing 1, making it attach way up the side of one of the other wings.

My secret desire is to develop an Extacy for every competition event and be able to make a whole set as a package: Accuracy, Fast Catch, Trick Catch and Aussie Round – maybe even MTA considering how Georgi's Triggers perform.

The ones at the bottom left and at 3,3 in the grid are the ones that most closely resemble the ExtacII.

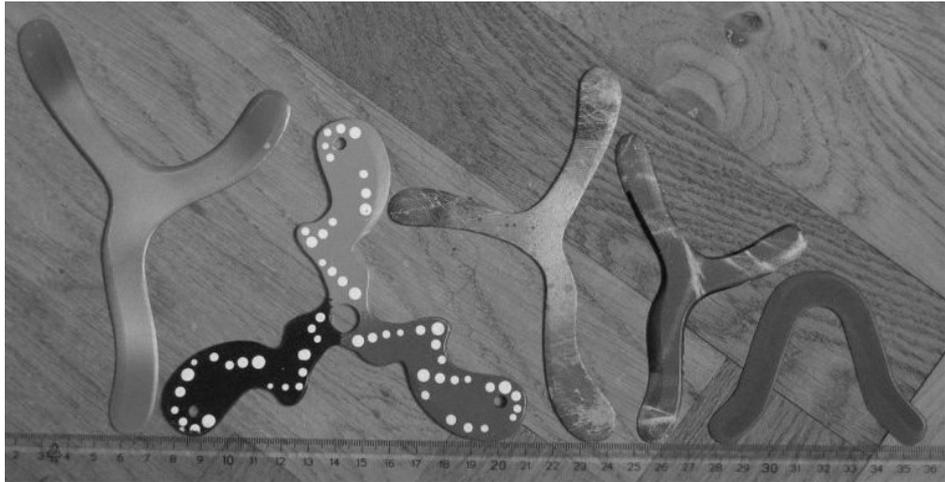
Below is some of the CAD ones in the flesh, so to speak. I haven't gotten around to make them all yet. Besides those three that I have made all seem to perform more or less the same, indicating that the balance of the lift is just that – more or less the same despite the differences in shape. Made from 4mm plywood, they all have a distance about 18m

unweighted. More radical measures are called for, I'm afraid, so I've ordered some 2mm, 2,3mm and 2,5mm GFK (fibre glass) from RediBoom to experiment with. The added weight and lesser thickness of the material should provide more distance.



## ***Downers in GFK***

Visiting the Black Hole of Boomerangs usually brings out new oddities. In 2002 it was DTTSA (don't Throw The Scrap Away) boomerangs. Gary was very conscious of not wasting expensive materials, so after cutting out a series of 3-bladed GFK Knuckle Booms several odd scraps were left that maybe could be made into small boomerangs.

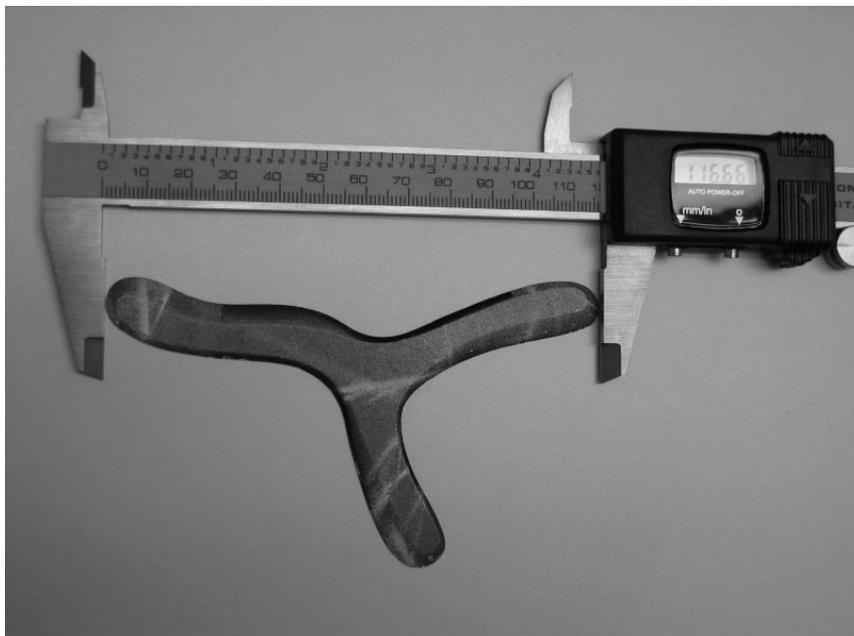


Rusty had made 1/2

size Hurricane Hooks and 1/2 size Rusty's Hook, which just fitted some of the scraps.

Other scraps were smaller still, but that didn't deter me considering the environment. The

very odd pieces where no other boomerang could fit, jus seemed to lend themselves easily to my Extacy shape and thus were the first micro Extacies born. I got a chance to try them as legal competition boomerangs when I was persuaded to organise the MEGA/mini competition for the 2003 USBA Expo in Houston, Texas. All but two of seven entries were made in GFK. The picture shows those five of which three qualified as legal



competition boomerangs – passing the 20m line and scoring accuracy points. To judge the size of the boomerangs a digital calliper was used. The micro ExtacII being measured here actually did meet the requirements and qualified, and was just 0,3mm larger than the winning entry.

## ***Kicking the habit?***

I don't think so. Not a chance. Never! I'm having way too much fun 😊