

## Board Builders' Series: Making the "s'Rolle"

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Sunday, 10 June 2007  
Last Updated Tuesday, 12 June 2007

The second round of this year's Board Builders' Series was entitled "Top Mount Speed boards". The challenge brought a host of innovative and exciting ideas from the board builders that jumped in. One board, however, gathered top honors, the "s'Rolle" deck, produced by Germany's Matthias "Matze" Lang on the CNC Router he and his brother designed and home-built. This board has some interesting features, not the least of which are the internally illuminated graphics. Join us now for Matthias' own description of the process and creation of "s'Rolle".

Building the s'Rolle.

I was new to the Silverfish Longboarding forums and was lurking a lot. I read many things and many stories from all over the world and, after getting a lot of good information, it was about time, to start my first own thread. The thread was about the building of a classic luge with a computer-controlled router. Right after I wrote my first posts in this thread, I realized that there was a Board Building contest going on and I quickly decided to join in.

The contest was to build a top-mount speed board on the basis of some rules you have to take care about. I thought: "no problem" and begun to make the first drawings for my board on a blank piece of paper. The first version was a simple looking shape with the form of a lens, but it was too&hellip; hmmm, simple looking. In the next version, I relocated the center of the lens more to the front and I was happy with the results. Then, it was time to turn on the computer and to make the first CAD drawings.

The first, computer-generated concept drawing.

Some splines later it was on the screen and had the measurement of a huge speed board with 1004cm x 25cm. I gave the shape a 1cm camber and a 1cm concave and I was happy again, but it shouldn't keep these measurements for a long time. It was too huge. I drew it down on some glued together papers, so that I could see how it would look for real, and all I realized was that it was too big! Way too big for such a slim guy like me. The next few days I redrew it more than too often and settled upon measurements of 94cm x 21cm. It looked nice in the 3D simulation software with the Randal r2 180 trucks and the simulated Kryptonics on it.

During these days, I got the idea to add some kind of light source to the speed board. I'd heard something about light emitting foil (LEF) before and searched the web for some information. I made a find and ordered 3 sheets of it. One bigger sheet with 20cm x 10cm and two smaller ones with 10cm x 10cm. After all the drawings, it was about time to create the NC files, needed by the router. For this, I drew a piece of wood with the CAD software, where the speed board would fit into, created from 3 layers of 16mm birch plywood. I gave the speed board an offset of 13mm from the bottom, so that it is in the middle of this block of wood.

This was the first week, mostly planning and some minor things. I also bought the to-be-used sheets of wood. The middle one with the grain in longitudinal direction, the other ones with the grain in lateral direction for a better look. When I was at the do-it-yourself store, I realized that they only have 15mm birch plywood and decided to buy it. I thought: "Ha, those 3mm are not that much to hustle about". Next time I have to think twice and you know what happened then. I also ordered all the electronic parts.

In the second week, I was completely inaccessible to the world, because I was sitting in a duckling position in front of our router. It was a nerve-racking work. The first problem was that I shortened the board about 10 cm. No problems you would think, but I forgot to change the positions of the support from the middle wood from his center position. So it moved 5cm away from my router's mounting points and the rest of the routing process I had to deal with some clamps to hold the wood down, instead of some nice slim bolts.

I began with the top side of the board to route and it was very fast finished. It took me only one day, to route the top. But what was that? There was a part of the board that was not correctly routed, to say it was completely unrouted. It seems that I calculated the 3 sheets wrong. "Shit happens, it's only a few 1/10mm, I can sand it down" and moved on with the bottom. I was surprised how fast everything happened, but then again, there was an unrouted part of the board. Nervous as I was, my first thought was about the 3mm I lost with the 15mm instead of 16mm sheets. The wood is too small or something else. I removed the wood from the router to do some measurements and then I found my problem. In the CAD software a drew the board with an offset of 13mm, but in the CAM software I used an offset from only 11mm. So there was 4mm to much meet on the board, 2mm on every side. Tranquillized, that I found the problem, I decided to route the bottom again. It would took a little more time, but I had there lost steps, and this way I can solve two problems once.

This all was easily done. I routed the board, the truck mounting holes, the recess for the LEF and the script and then, next problem. My CAM-software creates the routes depending to a grid and makes all parts automatically a little bigger. I realized it after I routed the cover for the LEF. It was too long and too wide and it didn't fit into his recess. Ok, doing some measurement, rechuck, routing, rechuck, routing, and measurement. 0.1mm to big and routing again, rechuck, measurement again and strike. This part took me more than 1 day and made me very angry about my CAM-software. After that part, I clamped the board again into the router, plugged the cover into it and routed the cover down, to fit the shape of the board. There I realized that the cutter had dulled and begun to leave some burning parts on the wood behind. It was Good Friday and no shop was open, so I commanded this cutter to work until everything was done, because all was programmed for this cutter.

The next day, Easter Saturday, I went to my garage and began to rout out the contour of the board's shape. It was the last part to rout and, due to the stub cutter, not the easiest one. So, I routed 5mm deep around the shape and the wood was getting a little burned. So I changed the deepness, the cutter will remove material, to only 4mm and routed again, now 9mm deep around the shape and the wood was black and extremely burned after that. This cutter was dead. What to do? No other cutter here in this size, only larger ones. Ok, I'm of good nature and programmed this last part completely new, now for the bigger cutter. Back and forth, there and back and the deck was routed. It dropped with a dull bang down on the routers work disk.

This was the second week, mostly routing. I also ordered the grip tape, ordered the Randal R2 180 and the white Kryptonics Classic K 76mm and I reordered one LEF. The big sheet had another coloring than the small ones, so I changed it to a small one. This was possible, because the first chosen name for the board was different and larger and "s Rolle" had the correct size for 3 small foils. Now it was time for the varnish. Ha! Wait, not so much time for the varnish, because it was Easter and I want to spend those few days with the family and my girlfriend.

I also spent some hours in front of the computer, searching for a quick-drying varnish and I found it. It was called nitrocellulose lacquer, drying in only one hour. Exactly what I wanted for a quick finish. So, I went to the varnish shop on Tuesday and on the same day the board was varnished, sanded, varnished and sanded again. This nitrocellulose lacquer was the shit! For the varnish I had an old can of semi-gloss clear varnish and used it the same evening. This was a very very bad decision. This can was nearly 15 years old and the outcome surprised me first the next day. After the varnish dried over night in my car, I saw the result: many, many cracks and crannies along the surface.

It was Wednesday, only 2 days to go (I thought). So I went to the do-it-yourself store again, talked to the salesman about my nitrocellulose lacquer, he never heard about and generally about nitro lacquer, which I need for the finish, he heard about, but he never had in his shop. Here I have to say that nitro lacquer was used until the 50's to varnish cars, but was then replaced thru other lacquers because it is very hazardous to health. So, I stood there in this do-it-yourself shop with a not so helpful salesman and had to decide by myself, what to buy. I found a rack with some stuff from the same manufacturer like the nitrocellulose lacquer is from and studied every single lacquer can. And there it was: "Holz-Siegel", dry in one hour. This must be nitro lacquer, even there was not nitro standing on it. I bought a semi gloss finish can and went home. After I removed the old ugly lacquer with some sheets sand paper, I covered the board again, but this time with "Holz-Siegel". This was the shit too.

After it was dry, I immediately begun to do the electronic things. I cut down the LEF, wired them with the needed inverter and the inverter with the switch and the battery, which I wired with the loading-plugs. This was quickly done. An important part is the shrink tubes around every contact to protect you from electrical punch (spelling), because the inverter creates 100 volt, which the LEF needs to operate. It is also important, that the contacts don't rattle off. After I glued some foam on the LEF, to push it down on the inside of the recess, and some foam around the battery, I closed the board with his cover, mounted the trucks, bearings and wheels and put some clear grip tape on it and there it is: s' Rolle.

Hey, it works!

Ready to race.

It was a hard work, doing this thing within those three weeks I had time to build it. Lots of organization, hoping, that nothing went wrong and with much to less time for my family, friends and my girlfriend, who was and is very insightful with me and my hobby.

Thanks for telling us about this one, Matze! For more of Matze's photos, scroll down. To see what's cooking in the third round of the Board Builders' Series, hit the forums!