



criterium 100km – A comparison MBB bike vs Velomobile

Written by Berg – May 2014

Saturday May 17th, we made a comparative test on the course of the criterium. The pilots were myself (61 old, 82kgs) and Joël (40 years old, 70kgs), more accustomed to touring together than performing true racing.

The two bikes were a MBB-FWD Sokol (Moving-Bottom-Bracket Front-Wheel-Drive) and a Strada fiberglass velomobile. The Sokol is a full-aluminium recumbent equipped with two Duranos 28-559 and weighing about 11,5kgs all-included (pump, two tiny bags and that's all). Weighing about 34kgs, the Strada was equipped with Duranos plus 28-406 tyres on the front wheels and a Marathon Racer 40-559 on the rear wheel. The Strada is mine and the alu Sokol is Joel's. We reached the start with a van in order to avoid a preliminary exhausting climb for the Strada's cyclist. The weather was very nice, though a bit fresh, with steady wind, I would say 15km/h.



Sokol – A Moving Bottom Bracket bike

We made a warm-up lap together, stopped a few minutes to condition ourselves a bit and then, Go! The course starts smoothly winding downhill, and then becomes rather straight so that I could wipe Joel very soon off the mirrors of the Strada. Near the two thirds of the downhill section, there is a



Strada from velomobiel.nl

sequence of slow turns and an especially dangerous left hairpin. OK, no need to take any chance, safety first ! Soon after that point, a few wind gusts made the Strada trajectories a bit loose at about 60 km/h, but I am accustomed to it.

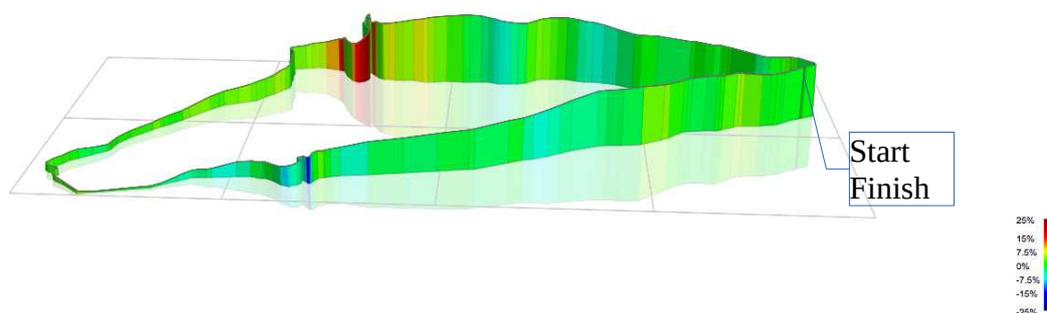
Then after a 90° right crossing (caution), I reached a tortuous section with a slight incline. I could see Joël reappear in the mirrors. After a while, a new 90° right crossing marks the beginning of the climb leading back to the start. At first, it is not that harsh of a climb. Then in a left bend with relatively large radius it starts climbing

severely : I had to put the 28 tooth front chainring upon entering the forest to pass this steep section at 10km/h, pushing hard. Fortunately it does not last too long and it is possible to put again the

middle chainring, say after 100 meters. 200m later comes an ascending right hairpin, not so difficult, and then a progressive climb still in the forest. Nevertheless, past some kind of hunter hut, the climb becomes again rather steep till one reaches the top. That's at least 200m meters on the small chainring. On the lighter Sokol, Joël could easily keep the middle chainring. Actually, he overtook me from the first steep section. When I reached the top I could ride the VM quite fast again, till the end, and the Strada happily fled on a smooth and slightly winding road with enough flats to easily reach 50km/h. Well, it was by far not sufficient for me to get at Joël. Results : Sokol with young man 22'07", Strada with more aged man 24'20".

After a few minutes break, we exchanged our bikes and made a second lap, with a running start. The start of the first lap was also a running one. I could see Joël in the Strada disappear rather soon in front of me. Nice to see a velomobile winding down at full speed. I was thinking "Well, I will catch him up later in the climb". I did, but only after the hunter's hut and he could pass me again quite soon once the climb was over. Then, Joël won again, but this time with a much smaller difference: 23'24" for him on the Strada and 23'56" for me on the pretty Sokol.

Circuito 10x10km Mondiale WHPVA Besançon



veloviewer
Grid: 1 km, Elevation x3.2

Critérium – 10km long circuit - Clockwise

On this course, a MBB-FWD recumbent is rather at ease. We believe that a lighter and more efficient velomobile could perform significantly better than the Strada. Mine bears the number 72 and creaks much under hard pedalling on the smaller front chainring. I have heard that *velomobiel.nl* improved the stiffness on newer Stradas. S72 has no laminated strengthening piece bridged across the floor right before the idler, like Quests have. When pushing on the smallest chainring, one feels some elasticity, maybe due to the lack of stiffness, maybe due to the pumping of the rear suspension, or both. Then I wonder what figures we would have obtained racing a 25kgs Milan SL or the new and even lighter Strada DF against the Sokol. But there are lighter carbon two-wheelers, too. Still, I am inclined to think that a more sporty velomobile can outperform a two-wheelers even on such a technical course, but what will be the effect of the weight penalty after ten laps ? I suppose a sleek and light cyclist will prefer his 2-wheelers on this French criterium-style course whereas a big and powerful guy can take his chance on a very light velomobile. Whatever,

we will know in August what is best ! A worth-telling detail: the climb section is well shaded. Good in summer ! Altogether, the course is representative of what encounter many century riders in most of this country, with plenty of uphill and downhill sections.