

Robert Chambers  
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Bill Wiseman  
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Dear Bill,

When I put in that bid for the A2 Wind Tunnel time, I never expected to win. I was a bit chagrined when I won, because I had messed with my position constantly last year and never settled into anything. Then this year I felt I had things dialed in and was determined not to mess with it any further. Now I was going to learn how to ride with the bike set-up I had. Then I go and win two hours of testing at the A2 Wind Tunnel. Hmmmm. Add to the above that, I'm aiming for the USA Cycling Masters National Championship Time Trial at the end of June. So, I thought, do I really want to mess with things now?

I decided to call Mike Giraud at A2 Wind Tunnel to talk things over. Mike convinced me to make the trip and if we spotted some things to change, I could do it now or do it later. Fair enough.

When I arrived at A2 Wind Tunnel I found the place was well organized and state-of-the-art. Mike Giraud is a former cycle racer and knows his stuff, including those pesky UCI and USAT rules and details. He'd clearly paid attention when we spoke over the phone and he had a plan in mind before I arrived, that was based on my desire not to do anything too crazy before TT Nationals. I was impressed how sensitive Mike was to my needs. He had a plan that made perfect sense to me, so we got to work to see what could be accomplished.

To start there was a series of "baseline runs" that included me on my bike just the way I've been riding it for the past number of months. One test was at 0 degrees yaw, then at 10 degrees and then a test at 20 degrees yaw. This series of tests formed the basis for all comparisons. The objective is to achieve the lowest possible coefficient of drag and I was very pleased to hear that my baseline was already very good.

My front end setup uses the Easton Attack TT bars that allow very limited changes. With such good numbers to start, Mike elected to not change anything on the bike and to focus on a smaller difference in my body position and my helmet, to see what improvements could be accomplished.

During the position test session, Mike taught me the correct way to shrug my head. He also helped me pinpoint the right helmet. The funny thing was that I recently purchased a new helmet thinking it was more aero; but Mike showed for me this was not the case. So I'm back to my old TT helmet. Mike then moved my elbows in, trying a longer stem to "open me up" a little more so I could breathe better. What's really nice is that when the changes are made you're connected to a CompuTrainer power measuring system. This allows you to review the wind drag data. You also see your power output. Mike explained that there's no sense changing to a new position if it compromises your ability to produce power so much that it offsets the aerodynamic benefits. I was able to see for myself that I was dropping meaningful drag without any drop in watts. That's ideal.

I think Mike might have felt I was shortchanged since we didn't find any major changes to make to my bike. To the contrary ... I was very happy to see that the many many hours of my fussing and experimenting with my time trial position was in the correct direction and any additional changes would not yield much improvement. The head shrug Mike taught me did show a large benefit. I know I may not be able to hold that position for too long, but it'll will definitely be something I can use when

I'm bearing down on the backstretch or have a flat stretch of clear road ahead at Nationals ... when those times come when I really want to open the throttle. Per the data generated in the wind tunnel, I'll be able to open the throttle to 30 mph using 24 fewer watts than it took me before ... or I can hold the previous watts and just go faster! The testing proved this.

Since I won the wind tunnel testing at the silent auction, I got a real deal. But even if I'd paid the nearly full \$800.00 price, the A2 Wind Tunnel testing is a great deal. On my way home, I was thinking about how much time, money and effort I've put in just trying to find my correct time trial position. In hindsight, I know it would have been much easier if I had the A2 Wind Tunnel testing done a year or two ago. I was also thinking if another rider that has not worked as much on their TT position as I have, they would see an even more significant gain with the changes to their bike and position. Bill, consider this, how much would a serious cyclist pay for a piece of equipment that could save you 24 watts? I see it as speed without the guess work of new components. With the A2 Wind Tunnel testing, I now know my bike, helmet, wheels and position are optimal. Now to gain real time over the 25 watts we found, I'll need to continue to work on my engine which will be more painful than any type of wind tunnel testing.

*I would like to offer a few recommendations for any other TT participants considering using the A2 Wind Tunnel:*

Get organized and try to have some idea what you want to accomplish. But also go with the flow and let Mike guide you. Mike knows his stuff and a great deal on how to get you your aero advantage.

Take all of your race gear. If you have other bars and stems and wheels, take them, too. A second TT helmet? Take it. You may not use them, but you'll never know where the gains will come if you don't test.

I would like to thank the CCTTA for providing me this excellent testing opportunity. I would also like to thank the A2 Wind Tunnel staff for all of their help and guidance. This was a really informative, cool experience; one I recommend to anyone that is serious about going fast and maximizing their aerodynamics. Believe me, it worth every penny you pay. One other item that I didn't know, as part of your testing package at A2 Wind Tunnel, you are given a CD with all of your test data. They also mail you a DVD with video and still photos. The A2 Wind Tunnel testing for cyclists is first class.

Below I have included a couple of photos that depict before and after the changes made at the A2 Wind Tunnel.

Thank you. I'm looking forward to the rest of the Lowe's Motor Speedway Time Trials Series. One more thing, I love that the CCTTA has included the 40K TT.

Best regards,

*Bob Chambers*

Bob Chambers

"Cycling is 90% mental. The other half is physical."  
If Yogi Berra was a cycling coach

**A2 Wind Tunnel Testing**  
Mooresville, NC  
**Bob Chambers**  
May 12, 2008

Here's the baseline, before any adjustment from the wind tunnel testing:



and here's the end result: Note my flatter back, slightly more forward position. The shoulder shrug and that I'm back to my old helmet. Saving 25 watts doesn't sound like a lot, but when you think about it as a percentage gain, this equals approximately a 5% increase. That's got to pay off with faster speed and low finish time.

