

## Joe Friel

Joe Friel's Blog is for the serious endurance athlete who wants to stay current on the science and art of training for sport. Here you will find Joe Friel's thoughts and ideas before they are published anywhere else. You may also visit [www.TrainingBible.com](http://www.TrainingBible.com) for more detailed and free content. Joe's training plans are available at [www.TrainingPeaks.com](http://www.TrainingPeaks.com).

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### Part 3: Training Stress Balance—So What?

The following appeared a few days ago on the TrainingPeaks.com blog. It's the last of three-part series on the Performance Management Chart on the [TrainingPeaks site](#) and on [WKO software](#). This is a powerful tool for serious athletes and coaches once they learn how to use it.



Training Stress Balance (TSB), the yellowish line on the Performance Management Chart, is merely a way of describing your race "Form." What's form? In a single phrase, it is race readiness.

So how is TSB determined? It's the result of subtracting today's Acute Training Load ("Fatigue"—the red line) from today's Chronic Training Load ("Fitness"—blue line). Both

ATL and CTL are expressed as TSS per day (TSS/d). Once the software has done the math the remainder is your TSB (by the way, the resulting TSB value is for tomorrow—not for today.) It can be either a negative or a positive number depending on which is greater—CTL or ATL. If TSB is negative you are likely to be tired and probably not race ready. If TSB is positive then you are probably rested and perhaps on form—if it doesn't get too high.

So what? What do the TSB numbers mean and how can you use them to be race ready? Let's dig a little deeper using exact TSB numbers as guidelines.

When I'm tapering and peaking athletes for A-priority races I like to have their TSB/Form at around +15 to +25 on race day. I've found that *usually* produces the best results. But not always. For some unknown reason there are athletes who perform best when their TSB/Form is just barely positive, around + 5 to +10. I don't know if this is physiological or psychological. It's just the way it is for some.

The range between -10 and +10 is generally a transitional phase. Time in this range should be rather brief. There are two common reasons to be in this range. The first is that you are moving through it toward being on form for a race (daily workout TSS is decreasing and TSB/Form is rising). The other common reason is that you are returning to focused training after a few days break and moving toward greater fatigue (daily TSS is increasing and TSB is falling).

If you spend much time in this -10 to +10 TSB range your training is stagnant. Not much is happening. Other than peaking for a race or when in a rest and recovery break lasting a handful of days, this range is best avoided. Staying there for a long time, such as two weeks or more, is seldom a good thing. Try to pass through it in only a few days.

As mentioned above, TSB/Form is closely related to your readiness to race. When it's below -10 you're probably too tired to race well. You're not "on form." That may be ok for a C-priority race. For a B race you will probably want your TSB trending positive and somewhat above -10. Perhaps even at zero to +10. And, as mentioned, an A-priority race should probably be greater than +10 for most athletes.


If you wander north of +25 your training is much too easy. You're losing a lot of fitness. This sad situation could be the result of injury, illness, lifestyle-based training interruption, or anything else that drastically reduces your training load. Your recent workout TSS is simply too low for some reason.

The other side of the coin is driving your TSB too low. For most athletes I've found keeping TSB in the -10 to -30 range when the training is hard and focused is a very productive and healthy range. This could be, for example, in the serious training weeks of the base and build periods. In this range the likelihood of a breakdown is kept in check. But going south of -30 greatly increases your risk. Managing this part of the training period is done by making sure every recovery day TSS is appropriately low and that there are adequate recovery days each week. For some athletes a recovery day may mean a zero—a day off. For others it's a session with a lower than usual TSS.

Franz Stampfl, Roger Bannister's coach back in the 1950s, said, "Training is principally an act of faith." By that he meant that you can't predict exactly what will happen in a race regardless of how you may train. The Performance Management Chart with its CTL/Fitness, ATL/Fatigue, and, especially TSB/Form, is a way of reducing the wishing and hoping that happens shortly before a race. But it by no means eliminates the individuality of training. You still must pay close attention to determine how your performance responds to varying degrees of TSB/Form.

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hey joe,

i have two races coming up in consecutive weekends. the second i woul say is my A event. however this weekend im going to Paris and ill be five days off the bike. my ctl is 90 and im planning on driving it up to 100, with -50TSB before i go away but knowing that ill be five days completely off the bike. when i come back im hoping ill be fresh and revitalised for the two hard weekends coming up. my ctl has stagnated a little recently and has been at about 80 for two months! is my reasoning ok on this?

Posted by: [Richard Egan](#) | [09/15/2015 at 10:11 AM](#)



Richard Egan--Yes, I think you're doing the right thing. I do something very similar before long trips. Good luck!

Posted by: [Joe Friel](#) | [09/15/2015 at 12:54 PM](#)

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