



The Art of Planning your 'Cross Season—NOW

By Kenneth Lundgren



A Look at the Demands of Cyclocross

People used to always tell me that 'cross races are like time trials. Now, time trialing is something I'm very good at, and when I first tried 'cross, it was certainly an eye-opener! I'm a decent mountain biker, and I had good form for my first 'cross race, but it certainly was *not* like a time trial—and I fell apart badly. If I had to succinctly describe a true 'cross race, it's like riding off the front of a technical crit: much more fast-twitch-reliant than people realize.

Time trials demand a steady effort from beginning to end, with very small jumps in wattage—the lactate threshold (LT) system is the primary engine here, with most TT power output falling into the LT or “SupraThreshold” zones. The best time trialists can even produce negative splits, meaning they can put out more power in the second half of the event. But 'cross is a completely different animal, chock full of violent accelerations, max efforts out of turns and up power climbs, and attacks—the average power output may be similar to a time trial in the end, but how you *get* there is quite another story!

In TTs, the start is key—start too hard and you can risk ruining your performance. In 'cross, a hard start is imperative, and then you need to be able to stay with the leaders for the remainder of the event.

Precisely because 'cross events are shorter, in my opinion they demand as much if not even more preparation than typical road or MTB events. The anaerobic engine is hit so damned hard during these races, with max efforts constantly required, that if you don't prepare properly, you'll never be able to perform to your true potential, or you'll only last half the 'cross season, with the body just

falling apart.

Recovery Time Between Seasons

I coach four professional 'cross racers, and I make sure to deliberately give each of them perhaps more recovery time than necessary after their December racing. Many riders take too little time from season to season, and they can really pay the price in the spring when things start to heat up—these athletes aren't prepared and never really peak, or they just erode into an overtrained state and ruin their seasons. In December after your last cyclocross race, it's critically important to recharge the batteries, perhaps more so mentally than physically.

We'll use one of the athletes I coach, Laura Winberry of Elite Endurance, as our concrete example. She won the New Jersey State Cyclocross Championships in 2009, and after the race she had two weeks completely off. Nada, nunca, zilch. Then I prescribed her two weeks of light cross-training, with possible workouts including [mountain](#)



[biking](#), [hiking](#), trail running, the Stairmaster elliptical or rowing machines at the gym, [rollerblading](#), [swimming](#), [running](#), basketball, rock [climbing](#) and [yoga](#). The goal was to keep any of these workouts to an aerobic pace and finish feeling fresh.

Then Laura went through a typical five-week transition and preparation period where she started completing light gym work—which is periodized and specific for her cycling goals—and plenty of pedaling efficiency and leg speed drills, combined with light aerobic riding.

The Meat & Potatoes: Foundation Training

After this block, she's ready for Foundation work, which is the longest block at 10 to 12 weeks. In my opinion, this is the most important block in any athlete's annual training plan. Here, the gym work continues to progress, we start to introduce plenty of tempo intervals while also incorporating various forms of force work, which consists of pushing a big gear at a low cadence—like lifting weights on the bike. I also like to sprinkle in light endurance rides and group rides with specific objectives.

When Laura and I first started, I administered a fitness test to establish heart rate training zones—the test typically consists of a max 8-minute effort, full recovery, then 16 minutes at your highest aerobic level. I've found Laura's lactate threshold heart rate to be around 185 beats per minute. With this information, I can create HR zones for her: Recovery, Endurance, Tempo, UltraTempo, SubThreshold, Lactate Threshold, VO2 Max, Anaerobic Threshold, and Max.

During Foundation work, I really like to stress the two “Sweet Spots,” which for most athletes are longer 15+ minute Tempo intervals at 84-88% of LTHR, then shorter, 10-12 minute SubThreshold intervals at 93-96% LTHR. I've found that spending time in these two training zones yields the most bang for the buck.

A typical Foundation week for Laura looks like this:

Monday – 50+min (minute) Recovery Ride, rolling terrain, aerobic pace. 4 x 7min Leg Speed Drills at 105-115 rpms.

Tuesday – 75+min ride, hilly terrain. 9 Uphill Grinds, 1m efforts at sub-max effort, 50-60 rpms, 4+min recovery in between efforts.

Wednesday – 90min ride, rolling terrain. 3 x 12min SubThresholds, 172-178 HR (93-96% LTHR). These are done at her absolute highest aerobic level, not an easy effort, but not overly hard—challenging and uncomfortable, but won't blow her out.

Thursday – Gym. Most workouts include squats, leg presses, lunges and step-ups. I'm a big fan of core, so my athletes usually do 3-4 supersets of core work at the end of each gym workout, plus some core exercises on separate days.

Friday – 45+min Recovery Ride, flat terrain. Ride at a natural cadence, HR under 127 (68% of LTHR). 8 Corner Accelerations: As you cruise out of a corner, jump from the saddle and accelerate 100% for 5 seconds. These are short, max efforts. Corner Accelerations help develop leg speed, out-of-the-saddle jumps, and leg torque.

Saturday – Group Ride. Sit in. No max efforts. Goal is to finish as fresh as possible. Enjoy the day. OK to stand while climbing. It's OK to drop to the back or off the back if the pace is too harsh. Ride time under 2hrs.

Sunday – 2.5+hrs Endurance Ride, hilly terrain. 132-154 HR (71-83% of LTHR) on the flats. 4 x 3+min PowerClimbs, 65-75 rpms, 172+ HR (93+% of LTHR). Full recovery in between climbs. Then finish with 25+m Tempo over rolling terrain, 156+ HR (84+% LTHR). 94+ rpms, pushing a challenging pace on the uphills.



For the weekend warrior with only a couple of days available for training, the Tuesday and Wednesday rides are the most important workouts in the example given, and could be shifted around to accommodate a rider's schedule. The other days could be used to add in volume whenever that saddle time can be fit in, with the gym day a good addition for those interested in full-body strength—an important attribute for a successful cyclocrosser.

During this training block, the workload is steadily increased, and the athlete is in a gray zone—never recovered, never overtired, just slowly continuing to move forward. I give Laura a ton of longer “Sweet Spot” intervals, which really strengthen her aerobic engine. In the end, the aerobic engine is the cornerstone for success in this sport, something so few riders comprehend.

Laura's Foundation block takes her into late-April but, depending on the goals, dedicated cyclocrossers could certainly begin this phase later in the spring, continue to train through summer rides and races and save their peak performances all for cyclocross season. Many riders cut short their Foundation blocks, either riding too easy or too hard, and these riders have a hard time holding back, wanting to be king of the local spring group rides and doing other things to achieve peak form sooner. But trust me: good things come to those who wait, especially if 'cross is on your menu.

Remember: early-season heroes can be summer and 'cross zeroes.

Good Things Come to Those Who Wait

Now that Laura has true foundation work in her legs, she's ready to turn it up with an eight-week Build block, which commonly finishes with a

month-long Peak and Taper block before her biggest races. Volume is not what changes so much here—it's *how* we're starting to rev her engine. In Foundation, we were doing plenty of longer aerobic intervals and plenty of steady force work. But now we turn it up, and her body will respond much better to the increased intensity.

During Build training, we will be doing plenty of *Lactate Threshold* work, intervals typically 7 to 11 minutes in duration, performed at an intensity where the rider is right at threshold, an 8 on a scale from 1 to 10. We also will complete plenty of *VO2 Max* intervals. VO2 Max is also known as known as “maximal oxygen uptake” or “maximal oxygen consumption,” and these intervals are very tough, but are also crucial for any successful 'cross racer. Here, having a power meter really helps make sure you're doing these correctly. [See Hunter Allen's “Power Training” article in *Issue 11*] *Anaerobic Threshold* intervals are shorter, typically 30 to 90 seconds in duration, and they're essentially max-effort intervals with shorter recovery, which make them even more fun!

Laura is prepared for this: she can push harder, will recover better between workouts and, most importantly, mentally she is 100 percent ready to rock and roll at a time when other athletes are perhaps starting to get drained or are starting to go backwards. Laura is truly ready to reach for her best.

Starting slower and steadier in your training is important for all endurance athletes, but it's *especially* important for cyclocross racers because they will need to be in peak form in early-winter. If the athletes don't dose their efforts properly during the year, their knife will just be too blunt for 'cross, because 'cross is a mean, mean animal, requiring sharp preparation with VO2 Max, anaerobic threshold and max power intervals. Those are very potent workouts, and if you're not prepared, you can't complete these workouts properly.

Also, I like to get the 'cross racer on the cyclocross bike at least once a week during the spring and summer, just to stay sharp. 'Cross is much more than just riding hard—you need to acquire the technical chops to be able to use your engine at max effort. I typically like to prescribe recovery rides where the athlete heads to a park, double track or mild wooded trails with the 'cross bike, hits “barriers” (garbage cans work great), practices run-ups, tight turns, stair climbs, off-camber descents—all at an aerobic pace, just going through the motions.

Planning Your Peaks

I recommend two to three peaks a year for the cyclocross racer, preferably two. Many riders want a May-July-autumn peak, but I actually like to talk them into a June peak, then a full build and peak for 'cross. Remember, for most athletes, the second peak is the strongest. Even for riders who don't target summer racing disciplines and only care about cyclocross competitions, it's still a good idea to "come up for air" and take a break from big blocks of training. That means they'll have great form—so it's a good time to mix it up in a summer race, kill your local training buddies or just head somewhere cool and push the pace.

Because of our thorough preparation, Laura responds very well during Build and Peak training. I've coached her for many years, she's been doing the right things at the right times, and now she's a professional athlete. It's beautiful seeing her respond so well to the training stress. With new athletes I coach, sometimes the gains don't come as quickly, or I have to progress them more slowly, and this is because of their lack of true aerobic conditioning prior to our relationship.

Case Study

Laura had a tremendous 2010, earning eight top-10s in Pro cross country MTB races. This year, MTB Nationals are in July, and after that we're shutting it down. This is a huge key for the 'cross athlete: knowing when to turn off the training, and doing it soon enough. Many riders fail to address this, not shutting it down at all, or shutting it down too late and not giving themselves enough time to prepare for a true 'cross peak, leading to mediocre performances.

In July, Laura will have two weeks off, and then I plan to run her through another nine-week Foundation cycle. She might not be flying for the early 'cross races, but in the past she still has always held her own with the solid Foundation work in her legs.

The key for the smart 'cross athlete is to be able to *progress* through the 'cross season. So many riders come out flying early on, enjoying road or MTB form only to fade away as the season is well underway. The best 'cross racers typically come into form by early-October, continuing to improve until the last races of the year, which are usually the most important.

You Can Never Plan Too Far Ahead

'Cross Nationals are on January 8th, 2012, so we designed Laura's plan to have her ready to rock at the country's biggest event. We take that race date, then work backwards from there, making sure we leave no stone unturned. Through mid-October to late-November, Laura will be progressing through true Build work, able to hit her VO2 Max and Anaerobic Threshold intervals at 100 percent, recovering well, continuing to race and get stronger. Early-December will include two Peak weeks, where she'll be pushing harder than ever, and then a solid two- to three-week taper for Nationals.

I recommend such a long prep and careful selection of peaks for 'cross because in the fall you need to be completely ready to race and train: much easier said than done. Road racing requires more lactate threshold intervals, sprint work and endurance work, whereas true 'cross prep will include much more white-hot, full-metal training, and this needs to be very carefully prepared for—too much of this arduous training, or completing it too soon, and you run the risk of overtraining, running flat or not completing the season.

The Proof is on the Podium

The training program worked very well in 2010 as Laura took podiums at the monstrously popular Oregon Cross Crusade events. She then had the best race of her life at Cyclocross Nationals, taking 34th after starting near the back. As we all know, having a good start is critical in 'cross, and had Laura *started* in 34th, I know she could've placed top-15, which would've been unbelievable. Laura reported having her best legs ever, and she was one of the few not to get lapped by Katie Compton. Laura impressively finished in front of many local pros who had beaten her all year, not far off a top-20—and this wasn't by mistake. She was at her best when it truly counted—at Nationals, she has gone from 54th in 2009 to 34th in 2010. What will 2011 bring? We plan to race all the big UCI races, something we have never done before, seeing where we can take this dream.

For all you 'cross racers out there, I highly recommend planning out your season before it starts so you can truly be at your best for your favorite racing, something so few riders can actually do. If you continue to train efficiently, not wasting any days and continuing to move forward, there is no limit to what you can accomplish.



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Ken, who is one of the area's top trialists, races for the Northeastern Hardware Cycling Team, one of New England's strongest elite squads. In the last year, he won 7 time trials. He's also won the overall in the Time Trial Cup in the last two years. Northeastern Hardware has won the Garden State Cup for six consecutive years and looks to make it seven straight next year.

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