

WHAT IS A TIME TRIAL & HOW SHOULD I DO ONE?

Adapted from Bicycling Magazine's Complete Guide to Riding and Racing Techniques, by Fred Matheny.

Time Trials

If you haven't tried a time trial before, but you are thinking about it, this is the "nuts and spokes" of time trialing. Time trials are a safe way for the recreational cyclist to measure their fitness level and progress. It's also a great way for triathletes to sharpen their bike skills. If you enjoy riding and want to set your own personal record, you'll probably be tempted to give time trialing a try. The following is some information that describes tactics you'll need to make your first attempt into time trialing rewarding and fun.

Racing Against the Clock

At first glance, time trials are the simplest form of cycling competition. Cyclists start at intervals, usually 1 minute apart, and ride the course as fast as possible alone. The object is to complete the distance in the least amount of time. No drafting is allowed. It's one rider against the clock. Often called the "race of truth," the time trial is perceived as the ultimate test of a cyclist's ability. You ride as hard as you can from start to finish.

One major advantage of time trialing is safety. Because each cyclist starts alone, one minute apart from the next cyclist, you are on the course without the crowd that characterizes mass-start bicycle races. No drafting is allowed. Therefore, the emphasis is on sheer riding ability and fitness, instead of esoteric skills like following 6 inches behind a speeding wheel or cornering in a tight pack.

At speeds greater than 20 mph, almost all the cyclist's power output is used to overcome wind resistance. Obviously, the cyclist who best slices through that invisible wall of air has an advantage. As a result, time trialing has become an equipment-oriented sector of cycling. Aero-bars is a significant means for a cyclists to cheat the wind.

Time trialing is a demanding event. It involves determination, self-discipline, and persistence. Good time trialists can push themselves to the absolute limit for the duration of the course. In physiological terms, they hover on the very brink of their anaerobic threshold where the slightest increase in speed would drive them into irrevocable oxygen debt and a lost race. Psychologically, top time trialists must learn to overcome pain and blot out all other distractions in their quest for speed. But the difficulty-and ultimately the fascination-of the sport arises out of this perilous quest for human limits, both mental and physical.

The Race of Truth

If time trialing is so demanding, why do it? The answer lies in both the nature of the sport and the advantages it offers for competitors and fitness cyclists alike.

A major appeal is the event's absolute purity. The Europeans call it "the race of truth" because you cover the distance alone, with no one else to break the wind, relying on your own strength, talent, and determination to get to the finish. And although it is natural for everyone to compare times after the last cyclist streaks across the line, the real competition is always you. Time trials are an excellent opportunity to assess your fitness level on a bike.

Time trialing also happens to be a good way to sample competitive cycling, regardless of age or sex. For starters, it's convenient. And you do not have to disrupt your training schedule to race. You can train through time trials instead of tapering all week for one big effort. The race becomes one of your weekly hard workouts.

Time trialing is fun, too. Like a running race, people gather around after everyone has come in off the course to compare times and talk about the head wind or what gears they used. Time trialing also seems to encourage more camaraderie than road racing, perhaps because so many cyclists see it as a way to improve their own performance rather than as a serious competition with other cyclists.

For the beginning competitive cyclist, time trials are the best way to sample the thrill of speed and competition without major hazards found in other forms of bicycle racing.

One final word: Time trialing does not have to be expensive. If your goal is to better your own performances, the races can be ridden on the same bicycle you use for everyday training and pleasure riding (for a time trial, it is strongly recommended to use aero-bars on your bike). Of course, if you're seriously trying to better your personal record or beat someone else's, you can spend large sums on special time trial bicycles and aerodynamic wheels. But such expenditures just aren't necessary to meet most people's goals.

Equipment

If you are gauging your progress, rating yourself against yourself, you can ride the same equipment month as month and the fancy trick equipment doesn't really matter. The aero equipment matters most for those who are racing against others, not themselves. In fact, if you are primarily interested in personal improvement, changes in your times will reflect your fitness level instead of your equipment.

If you get bitten hard by the competition bug, however, it won't be long before you start wondering how you can make your bicycle just a little faster. Wheels are a good place to start.

You'll want the light weight and low rolling resistance offered by narrow tires, coupled with the low wind resistance of deep dish rims with fewer spokes.

Registration and Warm Up

On the day of the race, get to the course an hour before the start so you have plenty of time to register, put your bicycle together, and warm up. Add a few minutes for eventualities like getting lost on the drive or changing flat tires during your warm-up.

Warm up completely. Time trialing requires an intense, continuous effort from the start to the finish. So be ready to go hard from the first pedal stroke. Start the warm-up by spinning in a low gear for at least 15 minutes. Work up a sweat, and get your muscles loose until your pedal stroke feels fluid. Then do several short repeats, but don't exert too much. Go just hard enough to start stressing your body, waking it up for the impending effort.

Pick a gear you can start from a standing stop in your big chain ring. Finish warming-up with several short sprints in your starting gear to make sure your chain doesn't skip under load or your rear wheel pull over in dropouts. And time your warm-up so you have 5 more minutes to spin easily before you come to the line. You should be sweating, but not breathing heavily. In a time trial, each cyclist starts one minute apart. If you have a stopwatch, start it when the rider before you leaves so you'll be able to determine your elapsed time by merely subtracting a minute off your watch at the finish.

The Start

Get in the gear you can start from a standing stop in your big chain ring. At the start, some time trials will have a "holder." The holder will grab your bicycle so you can reach down and get both feet clipped in. [NOTE: In Duxbury and Halifax we do NOT use a holder] Roll the pedals over until they are horizontal, then relax and concentrate on a good start. When the timer counts down to 10 seconds, squeeze the brake levers to keep the bicycle from spurting forward, and rise out of your saddle, balanced over the pedals.

On "Go!" sprint steadily away from the line until you get the initial gear rolling, then sit down and spin it up to a cadence of about 100 rpm. Shift to a bigger gear, build up the cadence again, and then settle into the gear you know you will use for the majority of the ride. You'll know that gear from your training - the one that allows you to maintain a cadence of about 90 rpm with your heart rate hovering near your anaerobic threshold. Don't let the race's excitement and your ego tempt you into using a larger gear, or your cadence and speed will drop as your muscles fatigue. Speed is the product of a steady cadence and energy output, not pure gear size.

Once you have settled into a rhythm, focus on keeping the same aerodynamic position that you practiced in training. The most ultramodern disk wheels and skin suits won't help at all if your upper body catches the air like a sail. A good image to help you position yourself properly: a shark knifing smoothly through the water.

Hills, Wind, and Traffic

U.S. time trial courses have traditionally been flat, a tradition inherited from England where time trialing is a revered art form. European time trial courses, on the other hand, have been more like road courses - twisting and hilly - and the European model is increasingly influencing American races against the clock.

Try to stay in the aero position as much as possible. If necessary, handle short hills of less than 100 yards by standing to keep your gear rolling. Don't let your cadence drop too much - it's OK to go mildly into oxygen debt because you can recover on the downhill - but don't overdo it either. A course with short hills favors more experienced cyclists, because they know exactly how much to save on the flats so they can push hard on the ascents without blowing up. Rookies, on the other hand, tend to go so hard on the easy sections of the course that they are left with nothing when the terrain demands everything.

On longer hills, you'll have to gear down and stay seated. You are better off keeping enough in reserve so that you arrive at the top breathing instead of gasping. The key to time trialing is to portion out your energy throughout the entire race instead of blowing it all on one section.

Wind is the time trialist's nemesis. A windy day is always a slow day. And no matter how much faster you go with a tail wind, you'll lose that extra time and more when you turn around and face it. Head winds are the worst, but crosswinds can be almost as bad.

Wind, however, is a fact of life in time trials. And every cyclist is out there under the same conditions. So you need to fight the wind effectively to do well. Start with a good aerodynamic position. Always important, your position on the bicycle becomes vital in windy conditions when the effect of any body part protruding more than necessary into the slipstream is magnified. Keep low on the bicycle.

Don't overgear into a head wind. If you can handle a 53x16 on calm days, you'll probably need a 53x18 or lower when it's blowing hard. Don't let your ego interfere with your judgment, either. Use whatever gear you need to keep your cadence at optimum levels.

The best way to conquer the wind? Fight it mentally. Windy days discourage some cyclists so much they perform poorly. Often, they're the ones who stay at home on windy training days. Remember: If you train in the wind, you'll race well in it.

Nearly all time trial courses are open to traffic. Safety is the first consideration: Keep your head up and be alert for vehicles, especially at the turnaround. But traffic isn't all bad. As traffic passes, the draft increases your speed slightly for several seconds. Take advantage of this suction by raising your cadence about 5 rpm when you hear an overtaking car or truck. Then hold the higher cadence as long as possible after the vehicle has passed. This technique is legal as long as you don't linger in the draft of a slow car. Approaching traffic, of course, slows you down with a wall of wind, but since it's farther away in the other lane - the effect is less significant than a passing vehicle's. When you see an approaching car, raise your cadence and check your position to be sure it's as aerodynamic as possible. Then power through the turbulence and resume your normal cadence as soon as possible.

The Turnaround to the Finish

As you approach the turnaround, shift to the gear you will need for re-acceleration. Soft-pedal to catch your breath, but don't brake until the last second. Here's where practice can give you a real edge. Start the turn from the far right side of the road, and shave the marker cone. As soon as the bicycle straightens up, get out of the saddle, and sprint back to race speed. Resume your most efficient gearing/cadence combination as soon as possible.