ONE-HOUR WORKOUTS

50 SWIM, BIKE & RUN WORKOUTS FOR BUSY ATHLETES

WORKOUTS BY
SCOTT MOLINA,
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INTRODUCTION

The Common Dilemma

The idea for this book was born of real-life need. For nearly three years I had what many triathletes would think of as their dream job: I was editor of a triathlon magazine. For a year I plied this trade in the sports-mad hamlet of Boulder, Colorado, then shifted to Wellington, New Zealand, where I added to the dreaminess of my job the ability to work from home. But as many self-employed or home-office dwellers know, working in your pajamas presents its own set of difficulties. At home, I discovered, it's just as easy to get tied up in your tasks and find yourself racing, literally racing, to squeeze in your workouts before the sun goes down or the rain comes or the phone rings one more time.

When I shifted again into a "real" job that required a commute and regular hours, I found that I needed to build efficient planning back into my day. I have Wellington's Metlink train service to thank in part for this: Its timetables added an unforgiving element to my daily routine—miss the 8:03 or the 8:27 train in the morning and I'd be late to work. I needed precision.

I know I am not alone in this. Even the most devoted triathlete has to live in a world of fairly tight scripts—a swirl of family commitments, demanding workdays, time-gobbling commutes, and community activities. There will always be meetings to attend, children to pick up, and dogs to walk—"the full catastrophe," as a longtime family friend puts it. For most of us, sport is the value-added portion of our lives. And while it's a very important part of our world, the raw reality is that the time we have for training is time we carve out for ourselves from other things. That means we have to be creative with our time.

When my life changed, instead of bemoaning my new "lack" of time to train, I started to think of what I could do. I could be at the pool when it opened at 6 a.m. and,

if I didn't faff* around, an hour later I could have logged a nice, challenging workout. I had to remind myself to keep moving through the morning routine before racing out the door for my train, but it worked.

I tried the same thing with a midday run, and eventually this time-management drive became a kind of game for me. Could I get in a quality workout in precisely one hour? I thought it would be fun to throw out the challenge to some coaches whom I really respect: coaches who reject any and all ideas of faff. They responded enthusiastically.

The Answer

Meet the three coaches who will be our guides as we enter this brave new world of precision workouts—that is, precise timing (as opposed to precise heart rates).

SCOTT MOLINA

One of triathlon's famed "Big Four" and a legend in the sport, Scott Molina lives in Christchurch, New Zealand, with his wife, Erin Baker (another triathlon superstar), and their children. A lifelong athlete, he started his sporting career with swimming and basketball from age 4, adding track, cross country, and road running at age 15 before turning to triathlon in 1980. In a professional career that continued through 1995, he racked up 104 triathlon and duathlon wins, including the Hawaii Ironman®, Powerman Zofingen, and six U.S. pro titles. He now spends his days training, coaching, and racing. His coaching projects, in collaboration with Christchurch coach John Newsom, include the development of Epic Camps—camps dedicated to a week or two of epically hard training meant to lift athletes already capable of top performances into another realm of achievement. Scott says he's currently deriving huge satisfaction from helping motivated athletes in the middle of their lives—those of us with "the full catastrophe" going on—achieve their goals.

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*_Faff:_ The Urban Dictionary (www.urbandictionary.com/define.php?term=faff) defines this word, one of my favorites, thus: "1. To muck about, wasting time doing something not necessary." In my world, it's used as a verb but also as a noun and an adjective. It is our goal to make this book a faff-free zone.

Get to Know Scott Molina

I believe that the main goal of training is to improve the body's ability to perform better at the chosen task. In endurance sports most of that process involves overcoming resistance of some sort—gravity, water, air. The more resistance we attempt to overcome, the greater the training stimulus, and the greater the improvements in fitness (we hope). To go faster we need to overcome greater resistance. It pays not to stray too far from that basic idea when designing a training program.

Obviously there's a limit to the amount of training we can absorb at any given time. Unfortunately, life tends to get in the way of training! So we need to adapt things to suit our individual circumstances. Triathlon participants are mainly mature people with a full set of responsibilities, and training works around life, not vice versa, as it sometimes can for young athletes. Most of the athletes I work with are over 40 and many are over 50. I even work with some over 60 and 70. Because most training theory has been developed for young athletes at an elite level, I try to distill the tenets I can apply to mature athletes and put them all together in a sensible, manageable way.

I think it's very important that athletes try to include the type of training they enjoy most. If we can include those types of sessions, then the areas of training that are less enjoyable but necessary (such as those devoted to our weaknesses) are a little easier to tolerate because they will compose a smaller percentage of our training.

Most of the training sessions I write are for people who can only manage about an hour at a time to devote to training. This is a reality for the vast majority of us, whether we are runners, cyclists, or triathletes. Motivated people often have a hard time accepting this reality. They feel that others are training much more than they are, and consequently try to train in ways that are inappropriate for them. In my coaching work I often spend a great deal of time reassuring athletes they are training at the right effort load to meet their goals.

MARK NEWTON

Mark Newton is based in Sydney, Australia, where he runs a busy coaching company called HERT, which is short for Human Endurance Racing Team. Mark has a degree in exercise and sport science from the University of Sydney, and was part of Triathlon Australia's High Performance team from 2000 to 2003. In the past 10 years Mark has

Get to Know Mark Newton

Over the past decade I have broadened and refined my coaching philosophy by drawing on the interactions of elite and amateur athletes as they evolved from young adults into mature family role models, myself included.

I live, coach, and train by these three principles:

1. Triathlon should enrich your life and not define it! Fitness, friends, and family are essential, so ensure your triathlon pursuits include them.
2. Fun is a worthwhile pursuit! Finding the fun in endurance sport can be a challenge. Increasingly there is an overemphasis on performance, training volume, competition, and technology—at the expense of fun. Make fun the priority: "When you are having fun, you are going fast!" Fun means experiencing everything differently.
3. When it comes to training, the goal is to stimulate the body to improve, not to destroy it! The best results are achieved when the body has time to learn and adapt. Put effort into learning to improve rather than forcing improvements. I advocate that key sessions be performed three times before progressing. The initial session provides feedback, which you apply to the second, and by the third session you have had time to physically adapt.

Finally, if you can't replicate the genetics, training background, and recovery environments of elite athletes, perhaps it is a good idea not to attempt their specific routines or sessions on a regular basis.

worked with some of the world's best triathletes, including three-time world champion Peter Robertson, two-time Ironman world champion Normann Stadler, and previous Ironman champion Chris McCormack.

Mark's coaching philosophy is blessedly no-nonsense, with an emphasis on learning how you as an individual will respond to your training and on the importance of maintaining a healthy life outside of sport. Consistency and resilience are crucial concepts. Of his time working with Robertson, Mark notes that it wasn't his coaching contribution to the specific world championship races that was most satisfying. Rather, satisfaction came from knowing that the everyday work they were doing was aimed at helping Peter develop into a true professional who could handle anything.

The same can be said of your own training. Develop resilience to cope with the day-to-day challenges of life, Mark advises, and you'll be able to handle both the big roadblocks—injury, illness, travel—and the bumps in the road—late meetings, conflicting commitments, snarled traffic—that can throw a monkey wrench into even the best-laid plans. Know that nothing is ever perfect: not your training venue, your program, or your equipment. Even if you've got only 20 minutes, make the most of them. After all, you're doing something you love.

MICHAEL JACQUES

Whether competing, reporting, or supporting, Wellington, New Zealand–based coach Michael Jacques has been involved in the wider realm of endurance sports since 1974, when as an impressionable 7-year-old he was inspired by the feats of Kiwi runners John Walker and Dick Taylor in the Christchurch Commonwealth Games. While running remained his first love, after being exposed to cycling and adventure racing in his teens Michael found himself at the ground floor of the growing endurance sport movement.

At 14 he ran a marathon with a group from his high school, at 15 he cycled 3,000 km around New Zealand's South Island with a couple of mates, at 16 he competed in the second-ever Speight's Coast to Coast endurance race—a 243 km cycling, mountain running, and kayaking race across New Zealand's Southern Alps—and at 17 he raced in New Zealand's first high school triathlon. As an adult he progressed from a personal

Get to Know Michael Jacques

My coaching philosophies revolve around helping athletes of any ability achieve their potential. I spent years rubbing shoulders with top-class athletes and coaches and experimenting on myself and friends. The biggest thing I learned is that it's not so much what you do as how and when.

The most enlightening thing a coach ever said to me was, "A monkey can coach someone with world-class talent and they'll run well. The trick is whether the monkey can get that athlete to perform to his or her potential on the day that matters." It's true: Everyone knows roughly what they need to do, but not many people know how or when to do it.

The physiological principles are always the same. Everybody should train using the same principles as world-class athletes, but how one applies them varies from athlete to athlete.

Recovery is the most important thing. I spent quite a bit of time training with pretty classy runners hoping I would get dragged up to their level. But all I got was tired or injured. In the end I realized that the difference between world-class athletes and the rest of us is that part of their talent is recovery. They recover faster, which means they can push their body to higher levels of performance.

best of 4:12 for the mile right through to a top 10 at the Coast to Coast, an event now recognized as the world multisport championship.

Along the way he was influenced by some of New Zealand's greatest coaches, including the legendary Arthur Lydiard and John Dixon. By his late 20s he was self-coached and attracting interest from friends wanting to know how to train better. In the 15 years since, he has coached athletes with a wide range of abilities from relative rookies to national champion runners, triathletes, and duathletes to world champions in multisport, aquathon, and duathlon.

How to Use This Book

Before we get into the workouts, it's important to note what this book is and what it is not. This is not a book that will help you build a fully rounded training plan. There are lots of wonderful books out there that spell out the concepts of periodization and that can guide you through a season of triathlon—or multiple seasons—elegantly and with precision.

This is the book you stick into your sports bag and take to the office when you know you only have an hour between meetings and you want to go for a run—but rolling around the neighborhood or on the treadmill with little focus isn't going to cut it because you've got a big race in a couple of weeks and you'd like to fit in some speedwork. We can help you here. Similarly, this is the book to reach for in the early stages of your season when you're logging the time but want to add some interest to those miles.

In the interests of simplicity, we're limiting the scope of the workouts here to three broad themes—base, tempo, and speedwork. And because we believe in balance in all things, we've included some strength and crosstraining workouts as well.

Make It a Brick

"Brick" was a training term coined in the early days when triathlon was new and so were the specific demands. Your legs felt like bricks as you transitioned from the bike to the run, so specific bike/run workouts to counter that became known as bricks. Today the term is used to describe any type of transition-style workout. You'll find brick workouts at the end of the Base, Tempo, and Speed sections.

KNOWING WHAT KIND OF WORKOUT TO DO

BASE TRAINING. This is the season for building. You may have finished a significant race, or achieved a significant goal, and are returning to regular training after a well-deserved break. It may be that you're coming back from injury and building strength and endurance again. Or it may be winter transitioning into spring and you are getting ready for your competitive season. These workouts will build strength and endurance and lay the groundwork for your more focused efforts to get faster later in the year. This is where

we'll be talking about hill running; long, slow swims focused on technique; and spinning those legs on the bike.

TEMPO TRAINING. This is where things get interesting, where we start to talk a bit about going faster. Tempo work focuses the mind on sustainable speed—increasing the pace and getting comfortable with how that feels. Tempo work is the gateway to quickness, but to really develop speed, you need the third piece of this puzzle.

SPEED TRAINING. Speedwork may be the best place for a one-hour workout to shine. This is partly because these tightly focused sessions really shouldn't last a long time unless you're prepping for an Ironman or you work as a professional athlete. An hour is plenty of time for most speed sessions. These will push you out of your comfort zone and will require you to be a bit more organized about your preworkout and postworkout time. You'll need to be ready for these *and* you'll need to be strategic about recovery if you have to go back to your desk afterward.

STRENGTH TRAINING. It's important to keep up your strength training when preparing for endurance events, especially as you age. Regular strength training will make you a more resilient athlete and will enable you to cope better with everyday tasks such as lifting children, hefting the groceries, and, well, chopping wood, if that's your thing.

CROSSTRAINING. There may be times when it's just not practical for you to swim, bike, or run. Or (heaven forbid) you may be injured. To cope, we're offering some alternative workouts—including some how-tos for pool running.

KNOWING HOW HARD TO GO

We suggest that you try to complete these workouts in the old-school way, gauging your effort levels by using this relatively simple table, which defines rates of perceived exertion (RPE). By all means use a heart rate monitor if you like, but not all of the workouts in this book will specify heart rate zones.

So what do we mean when we talk about RPE? It's one of the most reliable ways of working out how hard you're, well, working out. And it's simple. You don't need a heart rate monitor or a power meter, although those things are wonderful training aids and may have their place in your gym bag.

The most amusing Borg Scale interpretation I've come across appears in Tim Noakes's masterful *Lore of Running*. It cites the work of an American researcher who asked athletes to classify their exertion on the 0–10 scale in response to a question from their mothers: "How was your workout, honey?" The easiest, zero, was classified as "rest," and 10 was worded as "just like my hardest race."

To simplify matters even further, you can refer to our own adaptation of RPE. We've adopted a five-point scale in the interest of getting a foolproof measure of just how hard you are working. The training response is an easy reminder of which energy system is being developed with a given workout or a specific set of intervals. Each level of exertion is described in relation to race pace for swim, bike, and run.

You'll notice that in our own RPE table and throughout the book we include exercise terminology that may or may not be consistent with the terminology you know. In fact, no matter what terms we use for standardization purposes, we will get a little flack from the "experts" for not using or discussing terms such as "functional threshold," "onset of blood lactic acid," "lactate balance point," and a host of other expressions that mean the same thing. None of these experts will be wrong, but neither are we. Our goal in writing this book was to turn theory into something that athletes of any ability can use to accommodate their passion around the realities of everyday life. Knock yourself out!

Finally, because training should be fun, we've added our own twist—a musical categorization of the RPE scale. Consider recasting it as a progression through your own musical library. In the meantime, we've infused it with some New Zealand culture.

Some Real-World Tips

ANSWER THE CALL. A few years ago I had the pleasure of interviewing Willie Stewart, a phenomenal challenged athlete and all-around top guy. We talked about how he balanced his busy work schedule with the kind of training he was doing to stay on top of both long-course triathlon and XTERRA racing—and his love of paddling. He told me that his alarm went off at 4:30 every morning. I swallowed hard. The key? "When the alarm goes off, you have to answer it." It sounds so simple but many are the mornings I remember Willie's words and force myself to answer the call. When 5

minutes of dozing can cost you the 8:03 train or 15 minutes of pool time, you get up and out. The good news? I never regret those workouts, and I suspect neither do you.

FIND THE MINUTES. Time has an elastic quality. For most of us, mornings are the most tightly scripted time of day, the time when every second seems to count. The evenings, however, often unfold with a bit more air in the schedule. There's that time after dinner but before bed when you might do the dishes, help with homework, answer some e-mails, surf the 'net, watch a little TV. This is the time to be strategic and take a

Scale	Effort	Training Response	Heart Rate (% of max)	Approximate Race Pace
RPE 1	Easy	Recovery; aerobic system	<70	Swim: slower than Ironman pace Bike: slower than normal training pace Run: slower than normal training pace
RPE 2	Moderate	Aerobic; aerobic threshold (AeT)	70–80	Swim: Ironman pace Bike: slower than Ironman pace Run: Ironman marathon pace/normal training pace
RPE 3	Moderately hard	Lactate threshold (LT)	80–85	Swim: half-Ironman to Ironman pace Bike: half-Ironman to Ironman pace Run: half-Ironman to marathon pace
RPE 4	Hard	Anaerobic threshold (AT)	85–90	Swim: 750 m to 1,500 m triathlon pace Bike: 20K to 40K triathlon pace Run: 10K race pace to 10K triathlon pace
RPE 5	Very hard	VO_2max; anaerobic system	90–95	Swim: faster than 750 m triathlon pace Bike: 20K triathlon pace and faster Run: 5K race pace and faster

few minutes to prepare for the next day. Gather up your training gear and pack your bags. Think about what you will need to eat and drink if you're working out while away from home. Make your lunch and/or your breakfast. If you're really organized, you can also take a Sunday afternoon or evening to try to prepare for the entire week. There really is no substitute for a little advance planning. The minutes you spend on it will translate into major time gains later—you won't have to think about food, clothing, or gear. Instead, you get the luxury of focusing on the job at hand for those 60 minutes you've set aside.

Perception
You're rolling down the road. Conversation flows easily, and in your head a tune by Fat Freddy's Drop* is playing, possibly a song like "The Raft." You might be sweating, but only if it's hot. You could do this all day. Everything your training partners are saying is hilarious.
You acknowledge that this is, in fact, work. You might notice your breathing. And isn't it annoying how Phil has gone up the road on his own? Fat Freddy's speeding up. You decide to chase Phil. A few minutes of concentrated effort later, you've got him. You smile and try not to look smug.
Accumulated fatigue is setting in. Your mind wanders to a recent Halloween concert where Fat Freddy's Drop performed in costume. The trombonist rocked in a black satin bustier and tights. Your remaining brain cells rub together and find this hilarious. A quicker song, perhaps "Shiverman," plays in your head, and it spurs you into speed. You focus on your form.
It's time for Shapeshifter.* You need something loud. You need to avoid thinking because if you think too much, your now-tired brain will engage your very tired body and make you go toward the edge of the track for a little lie-down and a cup of tea. Your breathing is tending to be rattly, and if you don't watch your form it could be ugly.
This feels just like your hardest race. The vision of a man playing a trombone in a black satin bustier and fishnets is no longer amusing. You see this person, instead, as a demon taunting you with his wretched instrument—and by the way, his bra strap's slipping. The trombone morphs into a pitchfork and the trombonist, Joe Lindsay, prods you, painfully, all the way to the finish. How's he able to run so fast in a bustier and heels anyway? You want to hurl. You have done it right.

**Because music is so subjective, we've based this scale on popular New Zealand bands. Fat Freddy's Drop is a Wellington band soon to be touring the United States and Europe, with music that's a terrific blend of reggae, jazz, rock, and dub beats highlighted with trombone, tuba, trumpet, and sax. Shapeshifter mixes dub and rock with electronica and has performed live with the Christchurch Symphony Orchestra. We don't do things by halves down here! If you're curious, you can find much of the music online via iTunes or at New Zealand music sites such as amplifier.co.nz.*

LEARN THE ART OF TRANSITION. I'm not talking about the kind that takes place in a special area during a triathlon. I'm talking about what the brilliant life coach Martha Beck calls "the art of the dismount"—transition between tasks. Some of us, let's face it, are just not the best at transitioning from one thing to another. If you, like me, tend to woolgather when going from one person, place, or thing to another, with a mind that meanders from "What should I make for dinner?" to "Is Peter Capaldi so brilliant in the movie *In the Loop* because obscenities are funnier in a Scottish accent?" before winding up with "Must stop at the market for bananas on the way home," then Beck's lessons are for you. They include this gem: "Plan your dismount backward." Not familiar with this technique? Here goes: If you are aiming for a 1:00 p.m. training session, work backward from that point through your entire morning. Build your schedule in reverse to hit that target, allowing all sorts of time for unforeseen complications, for things to take longer than you expect (this is almost always true and when it's not you get bonus time!), and for unavoidable delays. Write down this routine until it becomes second nature. Beck also suggests setting your watch to beep 15 minutes before you need to move on to another task. You can annoy yourself to distraction with these techniques but the point will be made.

OWN YOUR TIME-CONSUMING RITUALS. Back in my days as editor of *Australian Triathlete*, Mark Newton wrote a column that so outraged me I nearly phoned him to protest—until I realized he had a point. What shocking thing had he suggested? That we endurance athletes take a cold, hard look at our coffee ritual for the time-wasting thing that it is. I tread gingerly here because I am one of the world's great coffee lovers. But I acknowledge it now. How much time do you spend brewing and drinking the magic elixir? And how much time hanging out at the coffee shop pre- or posttraining? Is this time that could be used better? In my case, while I am in no way going to give up my morning java, I do now acknowledge that it does take time and I build that time into my morning schedule. There may be other habits you have that take similar chunks of time. Examine them—maybe you can streamline them, moderate them, or ditch them entirely.

KEEP CHOCOLATE ON HAND. This is my favorite tip, but if you're a purist about your nutrition, by all means skip it. I find chocolate is my best friend, especially if it's deep and dark, for those after-work workouts. I slip myself a square or two, with a piece of fruit

maybe, to stave off any posttraining hunger pangs until my train can take me home to a proper meal. The bonus is that it's sort of calorie-dense and can go down easily if you've done a hard interval workout that has left you feeling the opposite of hungry. Do I need to tell you it's loaded with antioxidants?

GINGER IS NICE, TOO. If you're prone to doing speedwork until you literally want to throw up (which is, coincidentally, one way to know you've really reached that bleeding edge), stash some ginger candy in your bag. Or think about rehydrating with ginger ale (or ginger beer in the Southern Hemisphere). It's great for settling the stomach and will help you get some calories down when you just don't feel like eating—at all.

THE HORRIBLE TRUTH. A lighter athlete travels faster. While it's fun to buy shiny new stuff to shave weight, watching your own weight is a much harder, far less glamorous row to hoe. When you're logging lots of miles and racing through a busy schedule it's easy to rely on high-energy foods marketed as good for athletes. But a diet of high-carbohydrate, energy-dense food or protein-packed smoothies or energy bars can quickly add up to a lot of calories. The sad truth is that many of us overestimate how many calories we're burning in training and then overcompensate in an effort to replenish the perceived lack. Try this: Make sure your diet includes a variety of real foods (fruit, vegetables, meat, or fish, or other protein) and save the athletic food for competition or training simulations. And watch the rewards: Every hard race doesn't really need to be celebrated with an ice cream cone or chocolate bar, does it? This isn't an easy message to deliver but by gum it's true: Extra weight slows you down faster and more insidiously than a tire with a slow leak, and it'll make your body work much harder to hurl itself through space and time as rapidly as you'd like it to go.

Where to Now?

Ready? It's time to get started. Enjoy the journey and the time you'll spend in the company of these very smart, very practical, very entertaining coaches. Most importantly, enjoy your sport.

2 BUILDING ENDURANCE, IMPROVING TECHNIQUE

This is a session put together with the help of my good friend and protégé Gordo Byrn, who went from a guy who couldn't swim 400 m without stopping to a 50-minute Ironman swimmer in 7 years. With discipline and dedication it is very possible to improve one's swimming a great deal. Believe in the work!

TIME/DISTANCE	DESCRIPTION
10 min.	**Pyramid reps with bilateral breathing** RPE 2 *5–10-sec. rest interval*
4 × 400 m	
Odd reps	**400 m freestyle with bilateral breathing** RPE 2 *20-sec. rest interval*
Even reps	**100 m IM/300 m freestyle** RPE 3 *15-sec. rest interval*
Time remaining	**Easy kicking and drills** RPE 1

For example, 50/100/150 . . . 150/100/50, with rest between each rep.

For the 300 m, keep a steady aerobic pace. This is much slower than threshold (as determined by a 1 km time trial), on the order of 3 to 7 sec. slower per 100 m.

Remember that the goal of this session is to build endurance while improving your technique. If you feel yourself creeping to more than a steady effort, slow down. If you think that you need more rest during the main set, slow down.

When you've got more time, build the main set to 8 × 400 m.

44 FLUX SPRINTS

These flux sprint sessions offer one of the highest-intensity workouts performed on the bike and are ideal for developing power, acceleration, and speed. The level of fatigue can be very high, as the sessions will tax most of your muscle fibers.

TIME/DISTANCE	DESCRIPTION
10 min.	Easy riding RPE 1
2 × 30 sec.	Build effort RPE 2 *90-sec. recovery between reps*
4 min.	Moderate effort at 100 rpm RPE 3
2 × 10 min.	8-sec. maximum efforts RPE 5 *5-min. recovery between reps*
5–10 min.	Easy riding RPE 1

In base training, each set will be 10 min. You will do 8-sec. flux sprints every 2 min., which is 5 reps over 10 min. See Workout Guidelines for how to adapt the workout to specific training.

WORKOUT GUIDELINES

FLUX EFFORT	BASE TRAINING	SPECIFIC TRAINING
Repeat time	2 min.	1 min.
Sets	2	3
Reps	5	5
Recovery between sets	5 min.	5 min.

Your heart rate will continuously rise after your 8-second sprint, so if you're using a heart rate monitor you'll see some interesting graphs. You may find it takes considerable time for your heart rate to drop after the entire session because of the high fatigue.

Flux Sprints

Flux efforts are high-intensity, 8-second sprint efforts followed by a recovery period. They are best performed seated on an indoor trainer, starting at 85 to 90 rpm. At the end of the 8 seconds your cadence should be between 125 and 145 rpm. If your cadence is below this, use an easier gear; if your cadence is above this, use a higher gear. The recovery period should be performed in the same gear. Toward the end of the recovery period you will need to increase your cadence to 85 to 90 rpm to get ready to start the next effort.

47 VO$_2$MAX IS MAX

Running benefits more from aerobic endurance work than any other type of training. So when it comes to speedwork, the top end of your aerobic zone (VO$_2$max) is more crucial than anaerobic work.

However, because running generates higher heart rates you can't run as much at VO$_2$max as you can bike or swim. For most people the longest they can last at VO$_2$max is 10 minutes nonstop. So it's not a good idea for your sessions to exceed 10 to 15 minutes at VO$_2$max.

RUN

TIME/DISTANCE	DESCRIPTION
10 min.	Easy running RPE 1, with a few moderate effort sprints RPE 2
5–8 × 600 m	Slightly faster than 5K pace RPE 4 *2-min. rest between reps*
10 min.	Easy running RPE 1

To make this workout a VO$_2$max time trial, run this set as 10 min. or 3K at maximum effort (RPE 4–5). See sidebar, "The 10-Minute Time Trial," for more detail.

Don't overdo this workout, because the minute you go anaerobic you are no longer developing VO$_2$max. However, because this workout is about speed, if you're in doubt then do as any reps as you can manage. Fewer reps at the right pace or effort is better than 8 reps at a slower pace or effort. But remember that the right pace or effort is only marginally faster than 5K race pace.

The 10-Minute Time Trial

Time trials aren't really in training vogue these days, but they should be. As well as fitting the VO_2max profile, a 10-minute time trial has the happy by-product of conditioning body and mind to nonstop efforts, which is something that even the best interval session in the world can't do. For the same reason, triathletes and longer-distance runners would benefit from a couple of 3K to 5K races in the final month before peaking.

You might choose to do this time trial every week or simply use it to check your progress every third or fourth week. Competitive runners or triathletes who can race 3K in close to 10:00 (equivalent is 17:15 for 5K and 35:00 for 10K) might as well do a 3K time trial. But anyone slower than 12:00 for a 3K should do 10:00 time trials because you can't hold the desired VO_2max effort for much longer.

To turn this into something more meaningful, do your time trial on the same route, and every time you do it, try to extend how far you can get in the 10:00. This is a great mental exercise for race prep because waiting for the clock is far tougher mentally than knowing where the finish line is.

LOWER-BODY STRENGTH TRAINING

5

After warming up with the abdominal superset, chin-ups, and push-ups, you can do the exercises that follow as supersets (as indicated by A and B) or as a lower-body circuit. Take no more than 30–60 seconds' rest between sets if you do the circuit.

On your first few attempts, select lighter weights or resistance. After your third or fourth time through the workout, increase the resistance to be moderately hard (RPE 3).

EXERCISE	REPS/TIME	DESCRIPTION
A 	2 × 20–30	**Swiss ball twisting crunches**
B 	2 × 15–20	**Back extensions**

Not too high. Add 2–3 sets of any other abdominal exercise you want to do. Keep varying this for each workout.

STRENGTH

EXERCISE	REPS/TIME	DESCRIPTION
	1 × 20	**Chin-ups** *No jerking at the bottom.*
	1 × 20	**Push-ups** *Sternum should touch floor on each rep.*
	2 × 15	**Lunges (without weight)** *Don't move your feet when doing lunges the Terminator way! Take a big step of 4–5 feet and then it's more of an up/down movement than forward/backward movement. Remember to go easy, low, and slow.*
	2–4 × 15–20	**Squats** *Accelerate on the way up, moderately fast. Focus on driving through the heels using your glutes.*

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