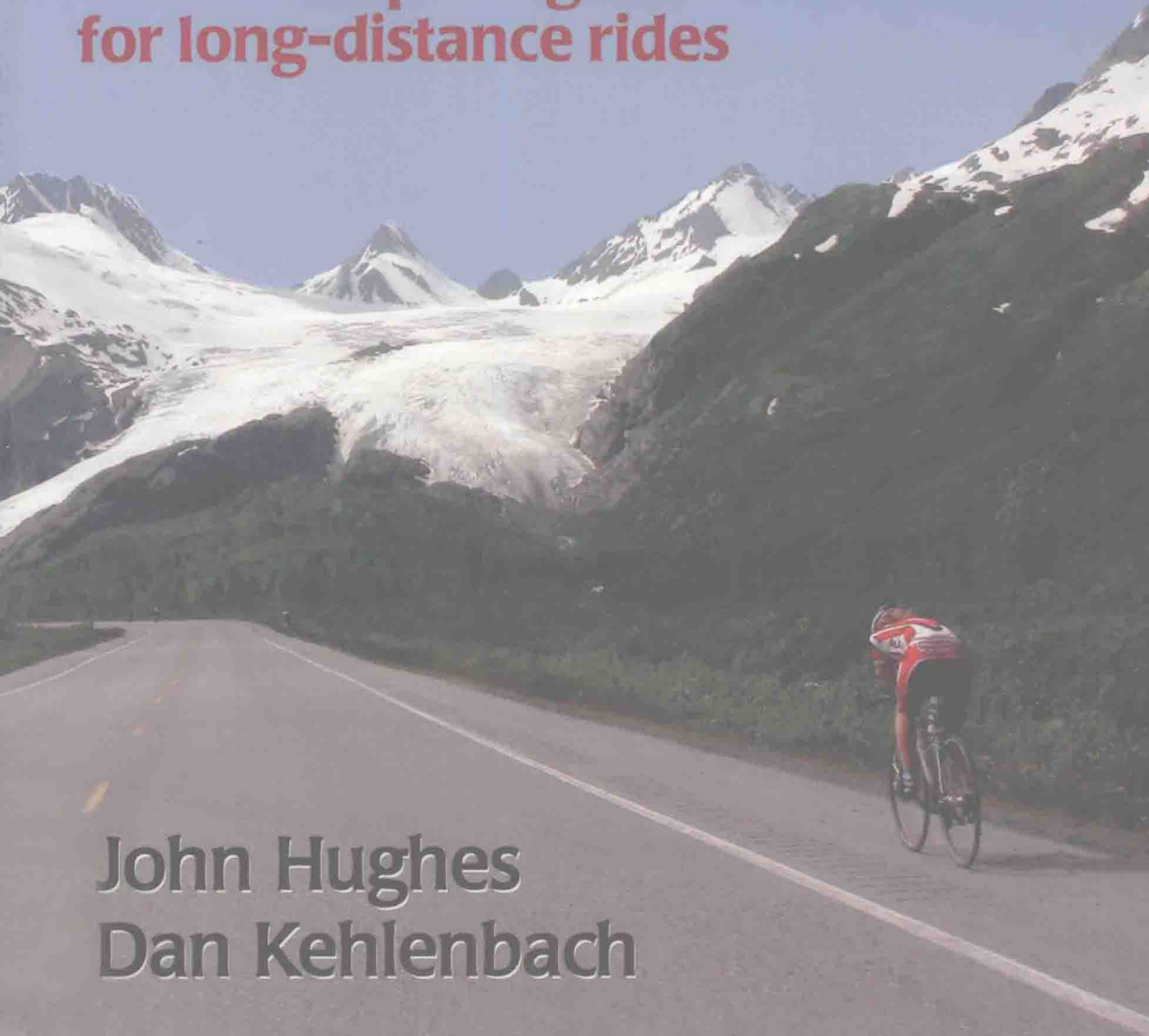


DISTANCE Cycling

**Your complete guide
for long-distance rides**

**John Hughes
Dan Kehlenbach**



DISTANCE *Cycling*

John Hughes
Dan Kehlenbach



HUMAN KINETICS

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We dedicate this book to Carol Garnand,
LuAnn Kehlenbach, and our families,
whose love, support, and encouragement
have been invaluable. We also dedicate it
to you—the endurance riders who want
to go just a little bit farther...and farther.

PREFACE

A few years ago my 16-year-old friend Kira told me (John) that she wanted to ride the Buff Classic, our local century in Boulder, Colorado, with me. Cool—but it was just seven weeks away!

Kira had only a mountain bike (MTB), and on the first weekend we rode 20 miles (32 km), farther than she'd ever ridden. We stopped a couple of times to admire the view (I didn't call them rest stops), and after a dozen miles (20 km) we ate snacks at a deli. Looking back at Boulder, she was pleased with how far we'd come.

The next weekend we rode 30 miles (48 km), still on our MTBs, stopping every hour to eat granola bars. Afterward she asked, "Is there any way I could get a road bike?" A woman friend in the Rocky Mountain Cycling Club loaned her a classic Bianchi seven-speed with down-tube shifters, and I put on pedals with toe clips.

At the start of our third ride, she rode around the block practicing getting in and out of the toe clips. We then headed north. After a few miles she let her front wheel kiss my rear wheel, but she didn't go down. We stopped and talked about group riding skills. On our two previous rides I'd given her tips on riding in traffic but hadn't lectured her on safety.

During week 4 we added a midweek 25-mile (40 km) ride that included some short climbs and downhill to work on climbing out of the saddle and cornering on descents. On the weekend we rode 50 miles (80 km), practicing nutrition (eating every hour) and pacing (riding at a conversational pace). So far, Kira had chosen to ride in running shorts, a T-shirt, and running shoes. After the ride she decided that the running shorts were uncomfortable, and she asked her sister whether she could borrow a pair of cycling shorts.

The Buff Classic includes a 3-mile (5 km), 6 percent climb to Carter Lake, so during the week we climbed Olde Stage, which features 2 miles (3 km) of 7 percent grade. She climbed steadily, and from the top we coasted home, where she proudly told her mom, "I climbed Olde Stage!"

On the fifth weekend, we headed for Carter Lake. Approaching the climb Kira could see the switchbacks. "This is nothing; I've done Olde Stage," she said. That became our mantra. We rode 48 miles (77 km) that day, stopping every hour to eat. I kept my food in my jersey pocket; she kept hers in her seat pack. When we got back, she asked if she could borrow one of my cycling jerseys, noting, "Those pockets are handy."

For our final training ride we first drove north about 25 miles (40 km). We then climbed to Carter Lake again and previewed the northern part of the Buff Classic route, another 50-mile (80 km) ride.

Kira was ready. She'd learned what and when to eat. She'd decided to upgrade to a road bike and to wear cycling clothes. She'd practiced climbing and descending. She knew how to ride with others and how to ride in traffic. She was mentally prepared; she'd ridden the entire course and had climbed to Carter Lake twice. She knew how to pace herself, how to listen to her body. We had a great ride, and during the last half she was chasing down riders on fancy bikes, riders who didn't understand pacing and nutrition.

Although Kira wasn't aware of it because I mixed in plenty of fun, I'd planned from the start how to teach her all the necessary skills over those seven weeks, and I'd allowed her to make her own decisions along the way.

Dan and I wrote *Distance Cycling* because we would like to share our knowledge and enjoyment of the sport with you, too, and help you reach your endurance cycling goals, whatever they may be.

ACKNOWLEDGMENTS

Writing a book is an endurance process similar to preparing for and riding a long-distance event, and we could not have reached our goal without the help of many people! First we are very grateful to our significant others for their support over the three years from conception to publication. Thank you Carol Garnand and LuAnn Kehlenbach—now we can spend more time together!

We each have significant influences in our athletic careers. John is the person he is today because of his coach, Michelle Grainger—Michelle, this book wouldn't exist without you. Lon Haldeman and Susan Notorangelo led John on his first transcontinental PAC Tour over 20 years ago—Lon and Susan, thanks for your ongoing friendship and support. Dan is particularly grateful to Richard Shumway who guided him through his studies and provided him with invaluable clinical experience.

Writing the book was a team effort, and the result is better because of our teammates who contributed sidebars and reviewed specific sections: Ken Bonner, Paul Carpenter, John Lee Ellis, Julie Gazmararian, Michelle Grainger, Lon Haldeman, Jenny Hegmann, Dan McGehee, Pete Penseyres, Muffy Ritz, and Lulu Weschler.

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Finally, we are grateful to our coaches, Dick Hughes, who over the years has taught John how to write well, and Tom Heine and Carla Zych, our editors at Human Kinetics.

As you prepare for and ride an endurance event, we hope that you have the same support from family, mentors, friends, and volunteers and that you find our coaching is helpful.

INTRODUCTION

You may have started with a journey down the block. Then, before long, you rode around the neighborhood, and then across town. The bike was your ticket to freedom, allowing you to explore and discover new nooks and crannies of your young world. As an adult with ever-increasing responsibilities, you may use the bike for only a few hours on weekend club rides or relegate it to a dusty corner of your garage, bringing it out occasionally for a ride with friends or family on a sunny afternoon. Sound familiar?

Allow us to rekindle that sense of adventure and the pleasure of traveling great distances under your own power, enjoying the sun, the breeze, and the feeling of accomplishment. Long-distance cycling is much more than sitting on a bike and grinding away at the distance. It's about the journey, about planning new adventures. The journey is deeply personal. It can be a way to enjoy the camaraderie of fellow riders, develop new relationships, and discover greatness within yourself.

We both ride because we love riding! We aren't (primarily) racers; we just enjoy going places on our bikes. If you share our love of riding and want to become a better endurance rider, this book is for you. We are writing for

- cyclists who are preparing for a first long ride, the metric century (100 km, or 62 miles), a regular century (100 miles), or a 200-kilometer event;
- endurance riders who want to ride centuries and 200Ks more comfortably;
- athletes who are trying to improve their personal bests in the local century;
- century veterans looking to see more countryside on multiday tours; and
- experienced endurance riders who are ready for the challenge of double centuries or brevets (events with specific time limits, typically 200 to 1,200 kilometers in length and sometimes longer).

The book focuses on the century and its 200-kilometer metric equivalent because they are the basic endurance rides. For many cyclists, one of these rides is the culmination of the riding season or year. Like marathon runners, cyclists may plan the entire year with a century as the big goal. Although these events are not races, participants often try to better their previous times or finish ahead of other riders.

Sport scientists have written good books on physiology and on specialized training methods, and successful coaches and cyclists have written helpful books on how to train. Our book brings together a solid foundation in sport science and years of coaching experience in a way that is useful to readers with little or no scientific background.

We both actively coach, and we know that much more than training goes into a successful ride. In the book we cover the breadth of what you need to know to eliminate the showstoppers that could keep you from finishing your chosen event. Athletic achievement involves these six success factors:

- *Planning*—self-assessment, goal setting, and season planning
- *Training*—aerobic, strength, and flexibility workouts for baseline conditioning and specific event training
- *Mental skills*—relaxation and visualization techniques and dealing with hard times during a ride
- *Nutrition*—good nutrition year round, nourishment before an event, and fuel during the ride and for recovery
- *Equipment*—bike selection and fit, clothing, tools, other accessories, and bike maintenance before and during rides
- *Technique*—safety, cycling economy, group riding, pacing during events, and dealing with problems like flat tires

We have written this book as coaches speaking to athletes in an easy-to-understand manner. We offer the same kind of instruction that we would give to a rider in one-on-one sessions. Step by step, we guide you through the process of preparing for and completing distance cycling events.

We provide 8-week and 15-week training programs for riders preparing for a first century or 200K to show you how to apply the basic principles of training—progression, overload, specificity, variation, and individuality—to achieve your goal. We help you improve your riding technique and overcome obstacles.

After mastering the century or 200K you may be ready for a new challenge. The final chapters help you choose among various options: riding several centuries in the same year, challenging yourself with a 300K or double century, doing a weekend or weeklong tour, or completing a series of brevets. We extend your knowledge of the six success factors to help you reach your goal.

We also include safety and performance sidebars that contain practical advice from experienced endurance cyclists—century and double century riders, brevet and randon­née veterans, and Race Across America winners. These sidebars address the questions that cyclists commonly ask us: What can I learn from ultraracers about dealing with fatigue? What should I eat during a training ride or event? How do I ride safely in traffic or in the rain? How do I ride in a pack? What is the best way to descend and corner?

Think of this book as your personal cycling coach and allow it to be your constant companion on your journey to becoming a better distance cyclist. Unlike many text-books, this book features practical advice from which riders of all ability levels can learn and be inspired. Success in endurance cycling doesn't require endless training and the forfeiture of normal life. Regular riders with everyday responsibilities have completed everything from half centuries to the renowned Race Across America. This book will help you manage the delicate balance of training and daily life to ensure an enjoyable and successful ride.

Let's go for a ride—your big event is right around the corner!

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Going the Distance

The bicycle is a wonderful invention. Throughout the world, people ride bicycles for many reasons. Some use the bicycle to transport people, goods, and services. Some commute to work by bicycle, and others use it to stay healthy and fit. Cycling is also a great way to spend time with others, whether on a leisurely Saturday morning ride with friends, a family ride and picnic, or a weekend trip to a B&B with your significant other. In all its varieties, riding a bicycle is a rewarding and enjoyable activity. H.G. Wells remarked, “Every time I see an adult on a bicycle I no longer despair for the future of the human race” (Strickland, 2001, p. 18).

Bicycling is the second most popular outdoor activity in the United States according to a 2008 survey by the Outdoor Foundation. Forty-two million adults and children over the age of six went on 2.62 billion bicycle outings, averaging 62 outings per cyclist. The study investigated motivating factors behind participation in outdoor activities and concluded that the number one reason for riding is that it’s fun.

The popularity of cycling has led to the establishment of countless cycling events worldwide. Participating in these events can be your gateway to fun and adventure, allowing you to explore local roads, trails, and routes that go unnoticed in an automobile. These rides are almost guaranteed to put a smile on your face.

This chapter looks at why we ride and provides an overview of the types of cycling events throughout the world.

Fitness Benefits of Cycling

Besides offering fun, cycling is an effective form of cardiovascular exercise. A strong cardiovascular system is vital for overall health and well-being, and it contributes to an enhanced quality of life. Today, heart disease is the number one killer worldwide as well as in the United States (Mayo Clinic, Heart Disease, n.d.). Regular aerobic exercise substantially reduces the risk of cardiovascular disease and improves cardiovascular function. Table 1.1 on page 2 highlights the physical benefits of cardiovascular exercise such as cycling.

TABLE 1.1 **Physical Changes Associated With Cardiovascular Exercise**

Improves cardiovascular health
Helps maintain healthy weight
Lowers blood pressure
Increases HDL (good) cholesterol
Lowers LDL cholesterol
Promotes better sleep
Reduces possibility of diabetes, can be used to manage diabetes
Decreases risk of chronic diseases
Increases immune system function

Adapted from Wilmore and Costill 1994.

Riding a bike is easier on the joints than running and other high-impact activities. Provided the bicycle is fitted properly, the activity produces virtually no impact and little strain on the musculoskeletal system. Because of this, cycling is often the first choice in rehabilitation from injuries. People with knee, ankle, or hip problems may find that cycling is a way to continue participating in sports without aggravating previous injuries.

After a long day, you can relax by going for a bike ride. The moment that you step on the pedals, your senses awaken; as time goes by, your troubles seem to disappear. Besides providing physiological benefits, cycling improves psychological health and reduces tension. Stress is prevalent today, and riders tend to be happier and less stressed than those who do not exercise. As a result, cycling can lead to better relationships with family, friends, and coworkers. Better relationships off the bike will make a difference in your training. Those close to you will have a better understanding of your cycling goals, and you'll feel less conflict when the volume of training increases. You'll be more successful, both on and off the bike, with the support of others.

Social Aspects of Cycling

Get some friends, grab your bikes, and go for a ride or join a cycling club to enjoy the company of others. Throughout the world, thousands of cycling groups offer activities ranging from casual rides for the whole family to racing on international levels. Regardless of the kinds of riding that you do, you may find a club in your area that will increase your enjoyment of the sport.

Many clubs hold regularly scheduled rides that provide opportunities to spend time with and learn from fellow riders. We look at regular club rides later in the chapter. Many clubs also host metric centuries (100 kilometers, or 62.5 miles), centuries (100 miles, or 160 kilometers) or its international equivalent, the 200K, and other rides throughout the year. Many events have become extremely popular, drawing crowds from around the country, providing great challenges, and offering a chance to meet others who love the sport. Centuries are often the focus of a training program that starts in winter and

prepares the participant to complete a first century or improve on the previous year's time in a particular summer or fall event.

Besides riding with a club, you can socialize with cyclists off the bike. Most clubs hold regular meetings that often feature presentations on training, bike maintenance, and other topics as well as slide shows of trips. Many clubs take great pride in helping others both on and off the bike. Charity rides, potluck dinners, and other events hosted by a club are ways that cyclists can give back to the community.

The noncycling members of clubs are also important because without volunteers, many events would be impossible. Becoming involved with a cycling group offers camaraderie, companionship, and a chance to teach, learn, and be inspired by others.

Of course, you don't need to belong to a group to enjoy cycling. In many parts of the world, access to organized clubs is limited. If that is the case, get together with your cycling friends, order a pizza, and plan some rides on your own. Laying a map on the table and grabbing a highlighter to plan a ride are exciting. It wasn't much different than that for John Marino and Michael Shermer in 1982 when they planned the route for the first Great American Bike Race from the Santa Monica Pier in California to the Empire State Building in New York. (Marino had set the transcontinental cycling record of just over 12 days, and Shermer held the Seattle, Washington, to San Diego, California, record of 4 days 14 hours.) John Howard and Lon Haldeman also raced. (Howard had competed three times in the Summer Olympics and was four-time U.S. national road cycling champion. Haldeman had set the double transcontinental record of 24 days 2 hours 34 minutes, breaking Marino's one-way cross-country record in the process.) Haldeman won the race in 1982 and again in 1983; the race is now the Race Across America (RAAM), the world's most difficult ultra bike race.

Importance of Setting Goals

By Lon Haldeman

Long-distance cyclists tend to be goal oriented. For most riders involved in the sport, the process of setting and reaching goals is the sport. Many riders want to achieve new accomplishments just beyond their comfort zones. But it's important to be realistic about what you really want to achieve.

For most riders the perception of a long ride is a distance farther than what they have ridden before. When I was 10 years old, I pedaled my coaster brake bike 3 miles (5 km) toward the water tower of the next town. I thought I was a long-distance cyclist when I arrived there. When I mastered that distance, the next month I rode 6 miles (10 km) to the next town. Even at that age the process of setting goals and accomplishing them was one of the thrills and rewards of distance cycling for me.

This sport offers many goals for individuals. For some riders the personal challenge of testing themselves is the goal, such as finishing a century. For others, the goal is to set a new record and be the best. Other riders like the social aspect of long-distance riding while enjoying the scenery and seeing new places.

The benefits of goal setting in long-distance cycling include practical applications related to planning events, buying equipment, and making efficient training plans. For example, the training required for achieving a goal of riding 400 miles (640 km) in 24 hours is different from the training required for completing a century. By defining the goal, the type of training to reach that goal becomes clearer. Setting goals also makes all the decisions easier about what nutrition is needed and even what type of bicycle to ride.

Dreaming, goal setting, and planning can be among the most interesting aspects of long-distance cycling. These are the first steps toward a more rewarding and fun season.

Types of Participants

At the start of any long-distance cycling event you’re likely to see a broad spectrum of the cycling community: spandex-clad riders tuning up their racing machines, more casual cyclists on touring bicycles, kids on trailer bikes with their parents, couples on tandems, and people on recumbent bikes. The racers are mixing their sports drinks while the weekend warriors are loading up on coffee and donuts. People from all walks of life and athletic backgrounds enjoy cycling events. Organized century and 200K rides often feature shorter options (10-, 25-, 50-mile, metric century, and so on) to appeal to various riders and to offer choices for the entire family. Experienced riders may race through the century while others cycle at a leisurely pace or do a shorter ride. Then everyone enjoys the postride festivities. Riding one of the shorter options is a useful introduction to organized events and a step toward riding longer events.

Whether riding in an organized event, on a club ride, or alone, be an ambassador for our sport. Do your best to promote the pleasure and benefits of cycling and demonstrate courtesy to others on the road.

Types of Cycling Events

If you browse websites of cycling clubs or look at cycling magazines, you’ll find information about thousands of cycling events throughout the world and rides that appeal to cyclists of all levels. From charity rides to multiday tours, there are events to please any cyclist who wants to get out and have fun on a bike. Here are some of the more common types of rides.

Club Rides

Most cycling clubs host scheduled rides throughout the season. By participating in club rides you can meet other riders, learn from them, test new gear, see different routes, and explore your local area. Rides range from casual spins with stops at coffee shops or art galleries to fast pace lines that rival team time trials. To help cyclists select rides, many clubs offer ride categories based on planned speed and may also factor in terrain (see table 1.2). As you enjoy club rides, you may also bond with others.

On club rides you can learn the dynamics and etiquette of group riding, which are important skills. On these rides you can get accustomed to drafting other riders, dealing with traffic, communicating with others, and developing other skills impossible to work on while riding alone. You will need to be comfortable riding in a group to participate

TABLE 1.2 **Example of Ride Categories**

A rides: 20 mph (32 km/h) and above
B rides: 17–20 mph (27–32 km/h)
C rides: 15–17 mph (24–27 km/h)
D rides: 13–15 mph (21–24 km/h)
E rides: below 13 mph (< 21 km/h)

in most organized events, and club rides will help you become a more efficient and safer rider.

Personal Rides

Despite the benefits of club rides, they may not be available or fit your interests or schedule. If you ride alone or with friends, you have more choices about when and where to ride. Personal rides can fit into other activities such as commuting and family outings. Many riders choose some solo rides to decompress mentally.

Even if you have access to many club rides, solo rides provide an important way to improve. Every rider has weaknesses, and riding alone is the best way to work on exactly what you need to improve. Want to improve your endurance? Ride at your optimal endurance pace rather than with faster riders. Are you weak climbing? Tackle a hilly route at your sustainable pace. Want to boost your average speed? Hammer some intervals at your optimal effort. Later in the book, we talk about specific training plans and workouts. Doing some of these training rides by yourself will make you a stronger rider both physically and mentally and will help you achieve your goals.

Centuries

Ride 100 miles (160 km) on a bike (roughly the driving distance between Manhattan and Philadelphia)? For fun? You bet! Some people dread driving a car 100 miles in a single day, yet for cyclists, the century and its international equivalent, the 200K, are among



Riders beginning a ride during Fireweed, an event including rides ranging from 50 to 400 miles (80 to 640 km) held in Alaska every summer.

Courtesy of Alaska Digital Visions.

Safety: Behave Like a Car

On my after-work ride tonight I saw a rider who was violating most of the safe cycling rules!

- ▶ He was riding without a helmet. If you fall off your bike, without any forward momentum, and hit your head, the consequences could be fatal. I always wear a helmet, even to ride around the block to test an adjustment on the bike.
- ▶ He was wearing dark clothes and was almost invisible in the late afternoon shadows. Wear a bright jersey or windbreaker.
- ▶ He was riding on the separate bike path rather than on the shoulder. A separate bike path is generally more dangerous than a bike lane on the side of a roadway or the shoulder. A bike lane is part of the roadway, essentially a wider shoulder marked for bicycles. A bike path is set back from the roadway several meters or more. A driver entering the street from a parking lot or cross street will look for traffic in the street, including the shoulder, but might not notice you in the separate bike path, especially if you are riding against traffic. Riding on the sidewalk is even more dangerous because pedestrians don't expect you and drivers aren't looking for you.
- ▶ After a few blocks he looked left and right and then zipped through a stop sign. Fortunately, there was no traffic, but illegal and discourteous behavior hurts the image of cyclists.
- ▶ The rider decided he wanted to turn left, so he signaled with his left arm (that's good!) and then cut clear across the road from the right edge to the left edge. From his brief signal, drivers, especially in oncoming traffic, would not have anticipated his action. To turn left, check both directions for traffic—and then check again, just to be safe. Signal and move to the left of your lane. Keep signaling, check again for traffic, and then turn left.
- ▶ Instead of turning left at the next intersection, he decided to continue to ride on the wrong side of the road against traffic. This practice is extremely dangerous. Drivers turning right onto the road from a street or parking lot would look left for oncoming cars but might not look right and see the rider.

The safest way to ride is to behave like a car. You will be more visible and more predictable to other vehicles:

- ▶ At a four-way stop with a right-turn lane, stay in the straight-ahead lane, unless you are turning right. If you move into the right-turn lane, drivers may assume that you are turning right and cut you off when you try to go straight.
- ▶ To turn left, check twice for traffic, signal, and then move to the left side of your lane. If there is a left-turn lane, move into the right side of that lane. Turn left when traffic is clear.
- ▶ When riding down a street with occasional parked cars, ride in a straight line. Don't move right into the space between parked cars and then swerve back out into the traffic lane. If you move right, a driver behind you may assume that you plan to stop rather than pull back out into the traffic flow.
- ▶ Similarly, ride in a straight line on the shoulder or bike lane. Don't swerve in and out of driveways or other spaces.
- ▶ Do not let traffic build up behind you. If several cars are waiting to pass you, stop to let them by.
- ▶ Finally, obey all traffic laws.

In sum, be visible and ride like a car. You'll be more predictable and safer, and you'll make a good impression. Drivers will have a better image of cyclists and be more courteous to all of us.

the most popular recreational cycling events. The century and 200K are to cycling what the marathon is to running, and they attract all kinds of cyclists. Participants range from first-time century riders to veterans seeking a personal best. All participate together, face the same challenges, and reap the same rewards. These rides are usually noncompetitive and may be a big cycling party. Enthusiastic volunteers run start and finish areas and rest stops, cyclists form friendly groups, and experienced riders cheer others on, all of which add to the enjoyment of the event. Many events have become incredibly popular over the years, so do your homework and plan early because some centuries fill up months in advance. For information on the most popular rides, see <http://tinyurl.com/49ha5wb>.

Many riders spend the entire season preparing for a particular century or 200K (or several). This book focuses primarily on these events. We provide information on training, nutrition, equipment, and riding events for new century and 200K riders and then more advanced information for experienced riders who want to ride faster or farther.

Multiday Tours

Multiday bicycle tours open up new experiences through cycling. Charity organizations host the most popular tours, and the funds raised make remarkable differences in the lives of others. These two or three day rides feature established routes, rest stops, prepared meals, and organized camping areas. Most even haul your gear from one overnight stop to the next. You can just ride and have fun! Spending several days with hundreds of riders sharing a goal of helping others is an enriching experience.

If you have time to plan or prefer to ride alone or with a small group, you can do a multiday tour almost anywhere. You can pack a change of clothes on your bike, take your credit card, and pedal down the road. You can buy groceries en route, eat in cafes, and stay in interesting hotels. Credit-card touring allows you to enjoy multiday outings and travel faster than riders who carry camping gear. Credit-card tours are an excellent way to prepare for 600-kilometer and longer events.

If you have a touring bike or bike trailer, you can load your camping gear, food, and accessories and head off for an adventure. Packed properly, bicycles can safely and comfortably carry you and your gear from one end of your country (or continent!) to the other. Throughout the world, thousands of campsites and public areas allow cyclists to enjoy traveling under their own power.

Longer Events

After the century bug has bitten, many riders look for new challenges. In addition to touring, double centuries, longer brevets, and 12- and 24-hour events offer additional challenges.

Double centuries (200 miles) and the metric equivalent, the 300K, can introduce you to the world of ultracycling. You can build on what you've learned about training, nutrition, and cycling techniques to extend your distance. If you have completed several centuries you can prepare to complete a double or 300K. The California Triple Crown encourages riders from across North America to participate in double centuries and offers a wealth of information at www.caltriplecrown.com.

Brevet (pronounced to rhyme with "say") rides are immensely popular in North America, Europe, Asia, and Australia. Participants ride a specified course and have control cards signed at specified checkpoints on scheduled dates. A "permanent" is like a brevet, but you can ride a set course following the same rules any day you want. Brevets are usually 200, 300, 400, and 600 kilometers (125, 186, 250, 375 miles), building up to very