

# SPEED SECRETS 2



## MORE PROFESSIONAL RACE DRIVING TECHNIQUES

ROSS BENTLEY

# **SPEEDSECRETS**

**ROSS BENTLEY**

**MOTORBOOKS**  
INTERNATIONAL

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**On the front cover:** Author Ross Bentley dives through Laguna Seca's famous Corkscrew turn. *Garry Cutter*

**On the back cover:** Bentley coaches Justin Pruskowski, 2002 Star Mazda Rookie of the Year, during a test of the Quantum Autosports Fran-Am 2000 car at Buttonwillow Raceway in California.

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# ***Acknowledgments***

A great sense of relief comes over me every time I complete the illustrations and text for a book. "It's finished!" This is followed by anticipation of seeing the finished product intermixed with a sense of "I should have added this," and "I could have written that better." But, through it all, I think about the help so many people have given me during the entire process.

Much of what I present in this book I've learned from my fellow Speed Secrets coaches Danny Kok, Tony Riddle, Don Kitch, and Ronn Langford. Each has his own special strength in race-driver coaching, and I thank them for sharing their experiences and knowledge with me. What a team!

Of course, I happily continue to learn from my own driving experience. Big thanks, therefore, to the Doran-Lista and Essex Racing teams, for whom I have driven over the past few years. I have appreciated every moment I've spent behind the wheel of a race car, especially when working and learning from these two great teams, run by Kevin Doran and Michael Gue, respectively. Seeing firsthand how they operate has taught me a great deal about the business of motorsport. I wonder if they will ever know how much fun I have!

In the past few years, I have probably learned the most about racing from coaching drivers, especially when I can then go out and get behind the wheel and test it myself. While I've gained something from every driver, from the ones I've coached by telephone and e-mail to the ones I've worked with through every test session and race in a season, I do want to single out a few exceptionally talented drivers.

James Gue helped me learn what a world-class kart racer goes through in the transition from that sport to racing cars. Thanks James. Your talent behind the wheel should take you a long way.

I'm sure I have learned as much from coaching Joe and Justin Pruskowski as they have from me these past couple of years. As director of driver development for their Quantum Autosports team, I've been able to test and put in place every one of my strategies and techniques, not just in terms of driving, but within the entire team environment. These have been "dream seasons" for me from a driver-development point of view; I've been able to use my knowledge of race car engineering, team building,

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and of course driver development. Their results have been nothing short of exceptional, and they have been tremendously rewarding for me. Thank you Joe and Justin for giving me the opportunity and for your commitment to using my strategies. The time and effort you two have put into making it work is the reason for your success and the success of my coaching techniques.

I continue to learn from working with my Inner Speed Secrets co-presenter, Ronn Langford, and the participants in our seminars. My knowledge level is heightened each session, and it's both fun and fulfilling working with Ronn and each and every student. Thanks to all participants and a special thank you to Ronn.

This is my fourth book published by MBI Publishing. While each one has been satisfying and enjoyable, this one may be the best. Working with Peter Bodensteiner and everyone at MBI is a delight. Thank you.

To all of the racers and colleagues who provided feedback on the draft of this book, thank you. I always learn more when I hear how other drivers perceive what I'm presenting in my books.

And finally, thank you, once again, to my wife Robin and daughter Michelle for allowing and encouraging me to do what I love—racing—and for helping me learn so much more about life.

# *Introduction*

After I wrote *Speed Secrets*, and after Ronn Langford and I wrote *Inner Speed Secrets*, some people have actually suggested that I “figured it all out.” Lots of letters, comments and e-mails from all over the world told me, because I was able to help them so much. But guess what? The more I appear to know, the more I realize how much I have to learn. This book is more of my journey toward “figuring it all out.”

In the short time since writing those two books, a lot has happened. In racing, things do not stay stagnant for long! Both books have generated many questions, some of which I’ve even asked myself. I hope to answer them in this book.

Since writing those first two books I’ve raced a lot more and I’ve coached a ton more. I’ve talked to some very talented drivers, coaches, engineers, and other knowledgeable racing people. I’ve spent more time studying data acquisition and video of a number of drivers. Even in this very short time span, the cars and the sport in general have changed dramatically. Not a day goes by without learning something more about this sport.

Every time I think I’ve got a bit of a handle on what race driving is really all about, I realize I don’t. As my wife said to me one day regarding parenting, “the more I learn, the less I know for sure.” I suppose that is why I love doing what I do and why it seems that despite getting older (if I could only figure out how to stop that!), I still seem to be getting better as a driver, and definitely so as a coach.

I’m sure some people are thinking, Just what the world doesn’t need, another book on how to drive a race car. After all, a book cannot drive a race car for you. But, what a book can do is help you develop some strategies that will enable you to improve your driving abilities. In fact, without strategies specific strategies it is doubtful you will improve at all. Just getting “seat time” is not an effective strategy, and yet, that is exactly what most drivers claim is between them and winning the championship.

I hear it all the time: All I need is a little more seat time, and then I’ll be really fast. I just need a bit more time to develop the feel and skills to drive consistently at the limit. Sure, there is some truth in this statement. But, to simply “sit around” (in the driver’s seat) and wait for the seat time to give

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you the feel and the skills is time wasted. Call me impatient, but I don't like to wait for things to happen. I like to make things happen, and that includes developing skills. I would rather use strategies to develop these skills in a big hurry.

My favorite quote of all time comes from Albert Einstein. He said, "A sure sign of insanity is doing the same thing over and over again and expecting something to change." How true! And yet, how many race drivers head onto a racetrack and do the same thing over and over again getting seat time, and expect something to change? They expect an improvement in lap time simply through more seat time. For most drivers, this is not enough. Without a strategy or plan to change something, nothing will change. This book's strategy is to provide you with some strategies for change and improvement.

I will use examples from real racing life as often as possible in this book. I'll pick on the styles and techniques of some of the world's great drivers (and some not so great) to demonstrate what works and what doesn't when it comes to driving race cars fast and winning races.

I should probably mention that in setting out to write this book, I did not really intend it for anyone who had never driven a race car before. That's what *Speed Secrets* was for—to teach the basics, to get started. My assumption is that you will have spent some time on a racetrack or autocross course at serious speed, that you have some knowledge of the basics, and some experience. Does this mean that you need to have years of experience before getting something out of this book? No. It may be just as useful for someone who has little to no experience and it will help build the foundation for quicker progress.

Even if you are a beginner, reading and using the information in this book may help you develop your basic skills without acquiring any bad habits. That will give you an edge on your competition whom often spends more time dealing with their bad habits than working on improving their abilities.

As an example, a funny thing has happened with a number of road racers I have coached throughout the years: they have become very, very good oval racers. Why? Without trying to sound as though I'm blowing my own horn, the reason was me. To be truthful, though, it could have been any good coach. Most drivers I coach have some experience on road courses, and little to none on ovals. So, I spend a great deal of time



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correcting bad road racing habits. The first time they ever drive an oval, I'm there to help them learn the basics, develop the right habits. They literally have no bad habits, and so they learn very quickly to be great oval racers. That's what this book may do for you: help you improve without developing bad habits along the way.

The main difference between this book and *Speed Secrets* is that my first book was mostly an instructional book; this is a coaching book. This book is meant to fine-tune what you already know, to improve your racing skills, and to help you progress. In fact, my main goal is to help you learn more in a shorter period of time. Left on your own, you will gain experience and improve your abilities. My hope is that this book will speed up that process and teach you in one season what could take you four or five on your own.

One other difference between this book and *Speed Secrets*, is that you may have to give this one a little more thought. Where *Speed Secrets* was pretty much surface-level information, this book requires digging a bit deeper. As you read through, take some time to really think about what I say. Most importantly, understand why I say it, or why you should do what I suggest.

As in my other two books, I offer *Speed Secrets*: key points, ideas, strategies and tips that will help you become a better race driver. Many of them may seem like common sense, but using them as reminders will trigger a better all-around performance. They can be thought of as quick summaries of critical concepts you need to understand and use. You will find a complete listing of these *Speed Secrets* in Appendix A.

If you have read *Speed Secrets* and *Inner Speed Secrets*, you will find some familiar passages in this book. I will repeat a few things, but for a very good reason: they are important enough to repeat. It may be that I have gained a better understanding of the topic myself, and perhaps I have come up with a better way of saying it, and an easier-to-understand explanation. Other times it is simply because I want to emphasize a critical point. So, if you think something is simply a repeat of what was covered in the other two books, think again. This may be where you need to dig deeper and develop a better understanding.

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## **How to Use This Book**

Over the last few years, I've talked with a number of drivers who claim to have read and re-read my books. I hope that's because the information presented in them is being used over and over again, and not that it took them that long to understand what I said!

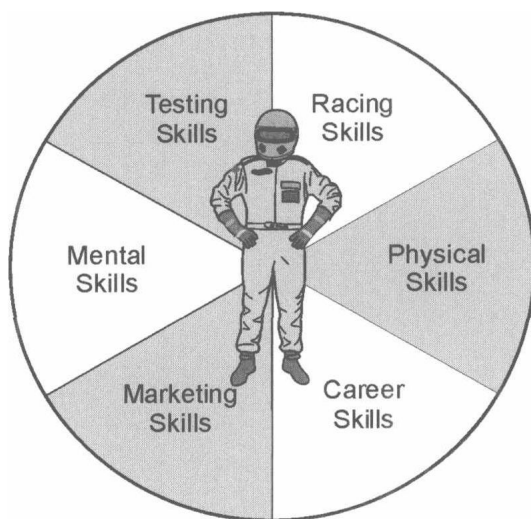
Actually, many drivers claim to carry their copies of my books in their driving-suit bags, referring to them throughout race weekends. I believe this is the best way of using this book, as well. I think it would be a good idea if you read through the entire book, and then re-read it one chapter at a time prior to each race in your season. That way you will have fresh information with which to focus your awareness, without overloading your mind.

If you decide to bring this book with you to each race weekend, I'd highly recommend reading through the two appendices before and/or after each session. The Speed Secrets and self-coaching questions in these appendices will help you become aware of areas you can improve. This alone may be enough to take you to, or secure your position at the front of the pack.

# ***The Complete Race Driver***

**I**t's long been an accepted fact in motorsport that a driver needs far more than just the ability to drive fast to make it to the top. Some say that it has always been this way to some extent, but most would agree that this is truer today than ever before. Today's complete race driver is a package made up of the ingredients shown in the illustration below.

This illustration shows a virtual job description for the complete race driver, a driver who is or will be a champion and a superstar. Some of these traits and skills are pretty self-explanatory, while others require a bit



*A champion race driver today is made of the attributes shown here. However, they will rarely, if ever, be equal parts. Some ingredients are more important than others, depending on the type and level of racing and the specific situation or team in which you are involved.*

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more of a detailed explanation and description. If I don't go into a relatively long explanation in this chapter of a trait or skill, it's because I cover it in greater detail elsewhere in this book or because it has already been discussed in my previous books.

Not all readers of this book will be interested in making a career as a race driver. Many drivers just want to have fun racing as a hobby. If this describes your approach to the sport, you may not think you can gain from some of the skills discussed in this chapter. My bet is, though, that with a better understanding of what it takes, this chapter will help you be more successful no matter what your level of racing participation.

## **Racing Skills**

**Speed:** Racing is all about speed—you need to be able to drive fast. Of course, that is a big part of what this book is all about.

**Qualifying:** Being fast and having good racecraft is not enough to make up for a poor qualifying position. You need to be able to turn in that one flying, magic, qualifying lap.

**Racecraft:** Speed and racecraft are not the same. Racecraft is all about passing, being passed, strategizing, and positioning your car to your benefit and no one else's. Some drivers are fast but don't race well—they don't have good racecraft—while others are the opposite. Obviously, becoming a real champion requires both.

**Adaptability:** If your car is not handling well during a race, you have three choices: give up, try to make the car do what it can't, or adapt your driving to best suit the way it is handling. Adapting is obviously the best choice. Having the knowledge and ability to adapt your driving to suit the car is one of the keys to becoming a real race driver. I will discuss this in detail in Chapter 11.

## **Physical Skills**

**Physical Build:** Let's face it, if you are 6 feet 6 or weigh well over 200 pounds, your options as a professional race driver are limited at best. Race car driving is not a big man's (or woman's) sport. If your DNA has led to you being on the large side, perhaps "OSB" (other sports beckon) is the best advice.

**Car Control Skills:** I have always believed that car control skills—the ability to control the car at the very limit—are more important than any

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other skill in terms of going fast. In other words, car control skills are even more important than the ability to determine the ideal line and drive on it. We'll delve into this deeply throughout the book.

**Speed Sensing:** This is the innate ability to sense the "right" speed. It is the ability to adjust and control the car on the entry to a corner, for example, to the same speed within 1 mile per hour, lap after lap. If you consider all the physical acts a race driver accomplishes, the ability to just "know" what speed to slow the car to—not 1 mile per hour too slow, or too fast—may be one of the most amazing.

**Traction Sensing:** This is the ability to sense whether the tires have another ounce of traction or not and then being able to keep the car at that limit all the way through each and every corner. Traction sensing is critical. It enables you to keep the tires at their optimum slip angle throughout the turns.

**Consistency:** It's one thing to drive the car at the limit through one corner, or even one lap. It's another to do it lap after lap for an entire race. Having said that, some drivers have a tough time consistently keeping the car at the limit all the way through even one corner. They drive at the limit through the entry or the exit phase, but not both. The goal, of course, is to drive the car consistently at the limit in each phase—entry, mid-corner and exit—of each and every corner for every lap.

**Strength/Endurance:** Driving a race car does require a certain amount of strength and stamina, more than some people could ever imagine. You should have the physical strength and stamina to drive a car with cornering and acceleration capabilities at least one or two levels higher than what you are driving today. You never know when the opportunity will arise to test for a ride in the "big time." Having a fitness level capable of handling a class above where you are today is also one way to guarantee you are fit enough for the level you are at now.

## Career Skills

**Business Skills:** At one time, most people felt that a driver would benefit from an engineering education because it would help him understand the nuances of tuning his car. While there is still some value in this, a business degree will take a driver a lot farther. Understanding the nuances of business is more critical to tuning one's career today.

**Team Building:** I call this the "Schumacher Factor." Is it mere coincidence that both Benetton and Ferrari became world champions during the

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time Michael Schumacher drove for them? No way. He made these teams world champions. He motivated the people around him to do whatever it took to give him the winning components. He elevated the personal performance of each and every member of these teams. The fact that many of the key personnel followed Michael from Benetton to Ferrari speaks volumes. You have to do the same for every single person around you, whether they are part of the race team, your family, sponsors, or supporters.

Whether you are a one-man team or part of a large professional race team, to be successful you must be able to get the very most out of everyone around you. And, it doesn't matter whether it's someone you have to contract with, your family, or the multitude of people on a pro team. To do that, you must understand how to motivate these people to go above and beyond what they will or can do without you.

***SPEED SECRET #1:  
No matter what level of racing you participate in,  
you are a team bullder.***

I've heard it said that the sign of a true champion or superstar in any activity is not in what he can achieve on his own; it is his ability to help everyone on his team, from the lowliest member on up, to rise up and perform beyond expectations. Some say that the Chicago Bulls won the championships they did because of Michael Jordan's abilities, and yes, his abilities were a factor. However, it was his inspiration and motivation of the rest of the team that was the real difference. He made every one of his teammates better players than they would have been without him.

That is what you need to do.

Now, I'm going to use a word to describe how you need to deal with the people around you that may sound unfair and negative, but it is not meant in that way. The word is manipulate. You must learn how to manipulate people in a positive way. The *Oxford American Dictionary* defines manipulate as "to handle, especially with skill," and that is what you need to do.

By manipulate, I mean getting people to do what you want them to do. I don't, however, mean this in a one-sided way; I don't mean for them simply to serve you and your objectives. I mean for you to get them to do what you want them to do and for them to perform at an all-new, higher level than ever before, to the extent that they are excited and happy about their performance.

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As you know, there are many ways to say the same thing. For example, if you want people to do something for you, you can tell them to do it. Or, you can ask them to do it. Or, you can phrase it in such a way that they think of it as their own idea. Each of these methods will probably result in the job getting done, but only one of them will result in the person performing the task better than ever before. And, the method that works best for one person may not be the best method for another.

The key is for you to determine what is the right approach for each and every individual. You must discover how to inspire, motivate, and manipulate each person to rise up and perform beyond expectations. To do that you must begin to understand what makes the person tick: Are they a leader or a follower? Do they communicate and learn visually, auditorily, or kinesthetically? Do they like to come up with the ideas themselves, or would they prefer to follow someone else's ideas? When interpreting instructions, do they respond best to orders or will asking a few questions guide them in the direction you want them to go? And, when performing duties, do they want you to sit back and watch, or would they prefer that you join in?

There is no doubt that Michael Schumacher is one of the most talented race drivers to have ever lived. However, one of the reasons he is so successful is because of what he does outside of the cockpit. He gets more out of the team around him than any of his competitors and as much or more than any other driver in history.

"When you talk about drivers," says Frank Williams, "it's the single-minded approach that counts, and Michael is the master of that. He is truly a master in all the paths that you need to take at the same time while tackling the difficult job to arrive at the top. By that I mean he is the best at testing, the best at racing, the best at qualifying, and the best at getting the most out of his engineers, and tire company. The list is endless. He is always there working with them, and he pushes himself all of the time. He thinks only of winning. The previous man to do that was Ayrton Senna."

Four-time World Champion Alain Prost has this to say about Schumacher. "He's a perfect driver for F1 as it is today. I am very impressed by what he has done. His ability to drive a car is probably among the top five of all time; but what has really impressed me is he has created a situation at Ferrari that is unique. He maximizes his opportunities and he's always very motivated.

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"I never managed to get a team to fashion itself around me for a long period. It is a big help to a driver, and your chances of success will be greater; but at McLaren, or Ferrari, I never had that. I look at Michael and Ferrari and I see him in a very friendly situation. He has a great relationship with the people around him, and most of them are there because of him. He understood the kind of ingredients that he needed to be successful, and it's pretty obvious that he has been helped a lot by [race director] Jean Todt and [technical director] Ross Brawn."

Notice that Prost suggests that Schumacher is probably one of the top five of all time; and yet Schumacher has won more Formula One Grand Prix races than anyone. That shows you just how important the race team really is. Schumacher himself admits this, saying, "It is impossible to be consistently successful without the right people around you. It took a while to put it together, but now I have a great team around me. The first few years were difficult, but overall, I have had a very happy time at Ferrari. The relationship I now have is very, very special; probably the best I have had in any team."

Schumacher has kept a strong core of key people around him. When he moved from the Benetton team to Ferrari, a number of key personnel moved with him. He is loyal to the people who have helped him win, and they are very loyal to him. That's very important in your efforts to build a strong team. However, you must always be on the lookout for someone better, such as a better engineer, mechanic, or crew member. That may sound disloyal and blunt, but it is a fact of life. Just as you must always strive to improve your abilities, you must always strive to improve your team with better people.

If you can't motivate your team to continue to improve their level of performance, it is less likely that you will achieve all of your racing career goals.

**Fan Appreciation:** While this trait will never make or break a driver's career, I mention it here because I do think a driver owes it to the sport to be respectful of the people who support his fun. Many drivers have become caught up in the ego-boosting glamour of being "superstars" and have forgotten who made them superstars. Other drivers never lose the appreciation for what they are doing and who played a role in making them what they are. It's not coincidence that these drivers often get the nod from smart team owners over drivers who do not have this appreciation and respect.

Speaking of appreciation, you need to have some level of appreciation for the history of the sport. While you do not need to be a motorsport



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historian, a general knowledge of who's who and who's done what can make a difference. There are people within the sport who do deserve extra respect for what they have accomplished. Be ignorant of that, and a contract may not materialize as you believe it should.

**Money:** Some may say that this is the single most important factor in today's state of motorsport. I don't necessarily agree. Yes, having the necessary financing is critical, but if you have many or all of the other factors, somehow the financing usually takes care of itself. Does that mean that you will not have to work at raising money if you have all the other factors? No. You had better be prepared to constantly work in this area, and never feel that it is "beneath you"—that with all your talent you should not have to worry about such things. If you want to make it, you have to continually keep your eye on the money.

**Networking:** Under the networking heading I include making and keeping contact with anyone and everyone who could ever possibly help your career. The drivers who are very good in this area have a way to politely stay in touch with people inside and outside the motorsport community. The term I like to use to describe this is "politely persistent." The overall objective is to have everyone think of you first whenever an opportunity arrives, and to continue to make new contacts with people who may have the ability to help you in some way, either financially, politically, or otherwise.

Many drivers believe that the only thing standing between them and the next World Championship is money. I usually disagree. The thing standing between most drivers and any championship is people. If you focus on surrounding yourself with the right people, the financial situation will look after itself. There are countless examples of how true this is. I realize now that this is what I did in my driving career, but not to the extent I needed to. Although I did spend a lot of time and energy on meeting and getting the right people to help me, I focused a bit too much on just finding the money.

### ***SPEED SECRET #2:***

***Surround yourself with the right people and your career will look after itself.***

### **Marketing Skills**

**Media Savvy:** Drivers such as Darrell Waltrip, Alex Zanardi, and Max Papis have been helped in their careers by their personalities, particularly