

Contents

Dedication	3
Acknowledgments	4
Foreword	6
Preface	9
Introduction: Beginning in Track and Field Athletics	15
Chapter 1: How to Use This Book	17
Chapter 2: How to Develop as a Great Coach	21
Part 1: The Essentials of Scientific Training	33
Chapter 3: Foundations of Training	35
Chapter 4: The Science of Sport Training and Conditioning	43
Chapter 5: Designing the Training Program	63
Chapter 6: The Oregon Training Schedule Sheets	83
Part 2: The Oregon School of Running	97
Chapter 7: The Fundamentals of Distance Training	99
Chapter 8: The Distance Runner's Sprint and the Golden Mile	135
Chapter 9: The Longer Distances and Cross Country	165
Part 3: Sprints, Hurdles, and Relays	203
Chapter 10: The Short Sprints and Relays	205
Chapter 11: The Long Sprint: 400 Meters	237
Chapter 12: The High Hurdles	257
Chapter 13: The Intermediate Hurdles	279
Part 4: The Jumps	295
Chapter 14: The High Jump	297
Chapter 15: The Pole Vault	321
Chapter 16: The Long Jump	345
Chapter 17: The Triple Jump	369
Part 5: The Throws	389
Chapter 18: The Shot Put	391
Chapter 19: The Hammer Throw	413
Chapter 20: The Discus Throw	439
Chapter 21: The Javelin Throw	459
Part 6: The All-Around Athlete	487
Chapter 22: The Combined Events: Decathlon, Heptathlon, and Pentathlon	489
Part 7: Directing Track and Field Programs	523
Chapter 23: Locating and Testing Candidates in School	525
Chapter 24: Organizing and Administering the Track and Field Program	535
Chapter 25: Organizing and Administering Competitions	545
Appendix: Bill Bowerman and the Men of Oregon: The Pursuit of the Collegiate Four-Minute Mile (1954-1973)	553
Credits (Photos, Tables, Figures)	565
About the Authors	568

Foreword

In 1962, when I was an Oregon freshman and dedicating myself to distance running, I didn't have this book. I had the man who wrote it, Oregon coach William J. Bowerman. A lot of times, I'd rather have had the book.

Bill Bowerman was—and is, and ever shall be—a generous, ornery, profane, beatific, unyielding, antic, impenetrably complex Oregon original. As a freshman, I found him deeply disturbing. One of my best friends was his middle son, Jay, who became an Olympic biathlete. That didn't matter. We both found him disturbing.

The principles of high performance training set down in this book (with a clarity traceable to a collaborator named Freeman) had long been assembled and put into practice when I joined Bowerman's team, but he was—and is, and ever shall be—working on refinements. We paid our freshman dues by being guinea pigs in experiments that compared different sorts and intensities of training.

On the fundamentals, Bowerman delivered a 40-second speech. "You stress an organism, for example a freshmen," he told us, "and you let it rest. What happens? It responds by overcompensating. It becomes some increment stronger, faster, or more enduring. That's all training is. You'd think any damn fool could figure out how to do it. The only trick is finding what works best for a specific athlete."

I still share some of Bowerman's amazement that so few damn fools do learn to train to optimum effect. This general ignorance is something I've always been grateful for, given that I've had to race athletes more talented than I am. The equalizer has always been there, the fact that talent can almost be counted on to blunder in training. But if we were to gain an edge from that, Bowerman had to teach us to prepare intelligently.

Stress. Rest. Response. Individuality. They seem dry, clinical terms. But Bowerman hurled them upon us—not with the reasoned good humor of this book, but with all the force of his Old Testament personality.

Stress: The actual workouts were the least of our worries. The man was the thing, the man in all his mystifying incarnations. He spoke in parables, in Hammurabi's Code, in ringing declamations from Delphi. (I think the only one that survives in this book is the big one: "Know thyself"). He made us study. Instead of giving any of us full scholarships, he made us work weekends on the graveyard shift in Eugene's plywood mills. When we were new, he would assign an interval workout and, standing on the infield, call out our time civilly enough but completely ignore us otherwise. If you asked him a question ("Was my form correct?"), he would stonily, silently lift his gaze to the swallows in their flight above Hayward Field.

He made our shoes. He was disdainful of the excessive weight and nonexistent cushioning of the shoes then on the market, so he improved them.

As you sat, a little weary, at your locker after a long run, a bear would suddenly loom up before you—no, a man, covered in black hoarfrost, smelling evilly of burned rubber. It was Bowerman, fresh from grinding down the rough edges of the rubber soles he'd cemented to your training shoes. He either never ground them enough (so you had to finish the job) or ground holes in the uppers. Had we known these were the beginnings of Nike's vast success, would we have been more respectful of his cobbling?

Bowerman seemed to glory in the tyranny permitted a head coach. He played with us, yanking us from races on the starting line because the dual meet score was growing lopsided, kicking people off the team because they ran unauthorized mileage behind his back.

Once he bet me a case of Nutrament® that I couldn't break 2:00 minutes for the 880 on a freezing Saturday morning. I ran with control, hitting the 440 in 60. I could feel myself accelerating in the last lap. Near the finish, I knew I'd done it. I heard him stop to watch. I slowed, and turned, gasping, to hear the time. "2:00.3," he said. "Good try." I leaped upon him, screaming, made insane by outrage. He allowed me to wrestle the watch away from him. It read: "1:56.6."

He loved to sit in the sauna until his heavy ring of brass keys had been heated to 180 degrees, and then brand us with them. And when we yelled that nowhere in Plato or Isaiah was his behavior justified, he answered us with the defining parable. All of this—all of it—was in the manner of the two-by-four.

"Farmer couldn't get his mule to work," he'd say. "Couldn't even get him to eat or drink. Mule just stood there. Finally he brought in a mule expert who took a look, went in the barn, and came out with a six-foot two-by-four. *Hit* that mule as hard as he could between the eyes.

"*'That's supposed to teach him to drink?'* said the farmer. *'That's supposed to teach him something?'*

" 'Well,' said the mule expert, 'first you have to get his attention.' "

Rest: "Are you in this to do mindless labor?" he asked when I announced my lunatic intention of running 200 miles per week over the summer after my first year. "Or do you want to improve? You can't improve if you're sick or injured."

Before June was half over, I was sick and injured. Bowerman, fed up by the spring of my sophomore year, forced me—by threat of bodily harm—to do two or even three easy days between each remotely taxing work out. My schedule seemed little more than a life of 3-A and 3-B. You can look it up. In three weeks, I improved from 9:30 to 8:48 in the two mile.

That was my personal two-by-four. It finally began to penetrate my thick skull that I had to rise above the world's fixation with work. I had to attend to my own slow-recovering physiology. I had to rest.

Response: Work for its own dumb sake is a hard habit to break, but slowly I embraced those deceptively simple basics. I accepted easy days into my life. I stopped counting miles. I grew stronger, gradually extending the one long run permitted me every 10 days from 20 to 25, to 30, even 35 miles. Over time, those runs transformed me into a marathoner capable of running 2:11:36 in 1970 and of finishing fourth in the 1972 Olympic marathon.

Coming to terms with my individual raw material also had a wider liberating effect. Eccentricity—and in Bowerman, I sure had an example of that—no longer seemed all that silly. Quitting Stanford Law School and trying to be a writer no longer seemed an imbecilic thing to do.

Now, looking around at a world largely inhabited by people who have never learned how to compete without letting it take over their life, people who've never learned how to peak when it counts, or take a joke, or stand up to a tyrant, or have faith in their thinking even if it is kind of strange, I begin to appreciate my good fortune in having been born into the Bowerman Kingdom.

Individuality: How much of what the man did to and for me can his book of training principles do for you? It's a good question. The technical instruction Freeman and Bowerman provide in these chapters is first-rate. Yet, as I found, a lot of what seems common sense is hard to apply. It goes against the damn fool compulsive achiever's grain. "Rest?" "Have fun?" "Finish your training feeling exhilarated, not exhausted?" Those are fighting words, and this book has no two-by-four.

I feel a lot more like a farmer than a man who knows mules. All I can say is, "Here is the water. Drink."

Kenny Moore
Two-time Olympic marathoner
Author, *Bill Bowerman and the Men of Oregon*

Preface

In the preface to the first edition of this book, Bill Bowerman reflected on the changes in his life and work over a 40-year period. As the surviving co-author, I look back almost 40 years to the start of the writing of that first edition. A Ph.D. student when I first met Bowerman in 1970, I look back on my life as a teacher and coach, even if not at the level of a Bill Bowerman. My dissertation was a 1972 biographical study of Bowerman,¹ and Kenny Moore has recently produced an outstanding work on Bowerman and his Men of Oregon,² following his screenplay for the movie *Without Limits*, which depicted Steve Prefontaine and Bowerman

This revision gives me an opportunity to put Bill Bowerman into the context of his time. He coached at Medford, Oregon, High School, his own alma mater, having great success as a football and track coach. In 1948, he returned to his other alma mater, the University of Oregon, where he had been quarterback of successful football teams and a convert to Bill Hayward's track team as a 440-yard runner.

His 25 years at Oregon made him a legend, or rather, his work there created his legend. Coaches from other nations sometimes discount his impact, largely due to a failure to understand his working context. They sometimes suggest that Bowerman was not a great coach because he did not produce large numbers of world and Olympic champions. My reply is simple: his job, his mission was training undergraduate university students between the ages of 18 and 22. He was not a national coach starting with the best talent in a nation and with 10 years of adulthood to develop them. He had his athletes for four years, and then they were out into the adult world for which he sought to prepare them.

Bill Bowerman throughout his career did two things few international coaches did then or do today: he personally designed and oversaw the training plan for every athlete in every track and field event, producing national- and world-class athletes in almost every event, and his Oregon days were working with men mostly from 18 to 22 years old. He rarely worked with anyone other than undergraduate university students. One example of his coaching of a post-collegiate athlete was Henry Marsh, who ran 8:09 in the steeplechase—over 20 years ago.

Compare the starting ages and talent level of his young athletes, and then look at what he produced in those brief years of their young lives. Most nations have not produced a single coach as accomplished in producing high-level success while working almost exclusively with university undergraduates—and all while coaching every event, rather than specializing in a single event as is more common in the outside world.

In a time when hardly any coach in the world had produced more than one, occasionally two, sub-4:00 milers, Bill Bowerman produced about 20, almost all of them under the age of 22. His athletes cut almost 15 seconds from the

4 x 1 mile relay world record set by the New Zealand national team that included two Olympic champions and was anchored by world-record holder Peter Snell. 16:08.9 in 1962 on cinders, with young men of 20 to 21 years of age. In the same year, his sprint relay set a world record for the 440-yard relay, running 40.0 (39.7m) on cinders with three hurdlers and a sprinter. In 1964, his javelin throwers took the first three places in the NCAA championship. He had four different NCAA one-mile champions between 1954 and 1960.

Bowerman coached world-record holders in the 60-yard (indoors), 100-yard, 100m, 400m, 440-yard relay, two-mile and three-mile (indoors), 4 x 1 mile relay, shot (indoors), and discus (his athletic conference did not compete in the hammer at that time).

He coached U.S. record holders in the 60-yard (indoors), 100-yard, 100m, 400m, 440-yard relay, high hurdles, 1,000-yard, 1,000m, 1500, 1-mile, 3 km, two-mile (indoors and outdoors) and three-mile (indoors and outdoors), 5 km, six-mile, 10 km, 4 x 1 mile relay, shot (indoors), and discus.

He coached athletes who went to the Olympics in the 100m, 200m, 400m, 800m, 1500m, steeplechase, 5 km, marathon, shot, discus, javelin, pole vault, and decathlon.

He coached national or collegiate national champions in the 100, 200, 800, 1500/mile, steeplechase, two-mile, three-mile/5 km, high hurdles, low hurdles, 400 hurdles, high jump, long jump, shot, discus, and javelin.

The event chapters give further information on his best athletes. This is in part, along with the athletes' photos, to honor his and their accomplishments. It also serves to drive home a critical point: those athletes used the workouts in this book. Even though these workouts are as much as 40 years old, they produced sub-4:00 miles, 10.0 100m dashes, a 44.9 400m, 1:45.0 800m, 60-foot shot-putters, and 26-foot long-jumpers.

Bill Bowerman was a master coach, in large part because he saw himself as far more than a coach, or even a teacher. His goal was to lead young, unformed boys to become men, men of accomplishment in a bigger world than the enclave of sport. He used the fire of sport to harden and then polish them, producing his "Men of Oregon."

The core elements of Bill Bowerman's coaching success were his belief in discovering what worked best for each individual, coupled with the curiosity that kept him seeking improvements in training, equipment, and facilities, in every disparate element that affected performance. Nike grew from Bowerman's quest for a lighter shoe, for the purpose of carrying less weight, for the purpose of applying more of the athlete's energy into running faster.

Working with him over the years, I came to admire his wide-ranging curiosity, his never-ceasing quest to improve, well, everything he encountered.

Where most coaches copy, Bill examined, analyzed, and dug deeper, until he could understand not simply *what* worked, but *why* it worked. Knowing *why* could lead to the discovery of a more effective process.

I also appreciated the breadth of his interest. I saw the contributions that Bill and Barbara Bowerman made to the University and State of Oregon, as well as to their home communities, and appreciated how wide was the reach of their interest and help into the realms of education and the arts.

When we were writing the first edition of this book, Bill would say, "Coaches just want to know what works. They don't care why. So let's give them the 'what' and skip the 'why.' They can get that somewhere else."

This book is Bill Bowerman's "what" book. If you want to succeed in track and field, this is what you do. The wise coaches will pick apart the nuts and bolts to see the underlying "why" (as Bill hoped they would), and then apply the training principles more effectively to the talents and needs of their own individuals. The performance marks at the start of each chapter, along with scattered photos of many athletes, are the proof that these training plans work.

Bill Bowerman was a master coach. This book is part of the great legacy that he left to the sport he loved.

As Kenny Moore wrote, "Here is the water. Drink."

Bill Freeman

Preface to the First Edition

It was almost 40 years ago that circumstances led me, a prospective medical student, into an unforeseen teaching career. Two years after the great Los Angeles Olympiad of 1932, the lean times of the Depression encouraged me to take a fling at teaching. Teachers are always needed, I reasoned, and more importantly, teaching would allow me to save tuition money and go on to medical school. But the two years I allotted to this detour were filled with so many exciting experiences that medicine was left to those dedicated to the sick, while I continued to work with the healthy. The pre-med background has nonetheless been of inestimable value to me.

Teaching was and still is fun. Like any other job, it has its tribulations and boredom, but the rewards have been generous: for one, the satisfaction of contributing to the growth of several generations of Americans.

I am proud to be a teacher and to be associated with a group of men and women who, on the whole, love youngsters and do not give a whoop if their critics, the vocal few, cause them to be underpaid, underestimated, and overworked.

I think that our schools are among the best in the world because of such teachers. Their efforts and the support of involved parents and students have made our schools the educational, cultural, and athletic centers of our communities. As both a teacher and a coach, I feel fortunate to be part of this great program.

Coaching Track and Field is an outgrowth of my years of coaching in schools. There are a number of ways to present a text on track and field, and in fact, many excellent books on the subject have been published. I have tried to read them all and continue to run into old ones, as well as those that are "hot off the press." Each has something good to offer, and many are so full of "meat" that rereading often turns up appetizing new morsels.

Nonetheless, I believe that *Coaching Track and Field* has something new and unique to offer. Through the years, it has been my pleasure to attend clinics on track, both as a listener and as an "expert" in presentations to athletes and coaches. My observation has been that most teacher-coaches and athletes would prefer to know *how* to train for, or to train a person for, an event, rather than *why* to train that way. This presentation will therefore be devoted to the "how," with training schedules that have been used by champion athletes as a special feature. Other materials related to training methods are included, plus bibliographies directing the reader to further materials in each area.

It is my hope that this book will have value in its entirety as a step-by-step guide for the teacher-coach in his first years. I would hope, too, that the experienced coach will find its systematic and complete analyses of form and training methods a useful addition to his own methods. Finally, it should be possible for the individual working alone to adapt the workout materials in single sections, such as "Distance training and racing," to a training program tailored to his own goals and informed by the experience of decades of champion athletes.

WJB

Preface to the Second Edition

This book grew from *Coaching Track and Field*, which described the Bill Bowerman's Oregon training system, the most influential in the United States today. It presents

- The theory of training
- How the theory is applied in the training program
- Extensive real-life daily training schedules for each event

Use *High-Performance Training for Track and Field* for a training year, even if you do no more than copy the workouts, and we guarantee that your athletes will perform well. Most training books cover either the "why" (the latest training theories) or the "how" (applying the theory to an actual training program). This

text gives *both*, and it blends them into the single most useful text for track and field coaches and athletes.

The earlier book included a training year of workouts for each event. All of the schedules were used by national- or world-class American athletes, some of them U.S.- and world-record holders. The result was the most comprehensive set of real-life training schedules available in any track and field book.

This book adds the theoretical bases that underlie training, summarizing what researchers know about training and competition and discussing the most advanced, scientifically monitored, foreign endurance training system in the world today. It tells, briefly and simply, what you need to know about periodization in training, overload theory, and the effects of nutrition and psychology on today's training.

Our scientific knowledge of training has expanded during the last decade, but today's knowledge has not changed the principles that underlie the Oregon System. Our training patterns reflect the very latest scientific training methods.

The heart of the Oregon system is intact, including the training schedules, with a minimum of six months of daily training sessions per event. Although the schedules have indeed been used by elite athletes, they can be used as they appear by almost any healthy athlete—male or female. As these schedules demonstrate, there is an art to coaching. The schedules were carefully crafted to develop athletes without losing them to injury or burnout.

The schedules emphasize developing the fundamental skills and necessary conditioning of the events, with performance levels scaled to individual abilities. The schedules are most appropriate for junior and young senior athletes (high school and university athletes, ages 14 to 22).

High-Performance Training for Track and Field is a step-by-step guide for teacher-coaches in their first years, who will find it to be a model for success. Experienced coaches will find its systematic analyses of training methods an invaluable addition to their own expertise.

Experienced coaches can use the schedules as an example and a starting point in developing or modifying their own training systems. Less experienced coaches can use them as models. Some coaches have simply copied and posted the schedules for their athletes to follow. Although we do not recommend that method, it will work. An individual athlete can adapt the training schedules to a training program tailored to his own goals.

No other text has ever been so usable for coaches and athletes alike. By studying and using this book properly, even the most inexperienced coach can produce well-prepared athletes.

Whether you are a coach or an athlete, a beginner or an expert, *High-Performance Training for Track and Field* will be more useful to you than any other track text in print.

Bill Bowerman
Bill Freeman

Endnotes

1. William H. Freeman. (1972). *A Biographical Study of William J. Bowerman*. Unpublished Ph.D. dissertation, University of Oregon, Eugene.
2. Kenny Moore. (2006). *Bowerman and the Men of Oregon: The Story of Oregon's Legendary Coach and Nike's Cofounder*. Rodale.