HOW TO CLIMB™ SERIES

Training for Climbing

The Definitive Guide to Improving Your Performance

Second Edition

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CHAPTER ONE

An Overview of Training for Climbing

A man's reach should exceed his grasp or what's a heaven for?

—Robert Browning

Many words can describe the wonderful activity of rock climbing—*elegant, powerful, rewarding,* and, sometimes, *frustrating.* While there may be nothing more natural and intuitive than climbing (just watch how children climb around on everything in sight!), rock climbing is indeed a complex activity with demands unique from those of living and playing in the everyday, horizontal world.

Performing in the vertical plane requires physical capabilities such as strength, power, and endurance. It also demands the development of technical skills such as balance and economic movement while gripping and stepping in an infinite variety of ways, positions, and angles. Most important, the inherent stress of climbing away from the safety of the ground requires acute control of your thoughts, focus, anxiety, and fears. In aggregate, the above factors dovetail into what may be one of the more complex sporting activities on this third rock from the sun.

The goal of this book is to explore all the topics relevant to increasing the effectiveness of your training and the quality of your climbing. As a climber of more than thirty years (who's been fortunate enough to meet and climb with many brilliant individuals), I feel the journey should begin with a primer on the history of training for rock climbing. Clearly, the advancements we make today are possible only because we are standing on the shoulders of the giants who preceded us. Next, we'll explore the interesting subject of genetics and the possible genetic limitations to climbing performance. This leads us into an overview of training for climbing and the things you should consider in your quest for the biggest gains in performance in the shortest possible time.

Sarah Marvez on* My 15 Minutes, *Hueco Tanks, Texas KEITH LADZINSKI

Training for Climbing: A Brief History

Compared with many other sports, the science of performance rock climbing is still quite young. Well over a hundred years of literature exists on technical aspects of the golf swing, and Olympic sports have been the subject of performance analysis for centuries. Far removed from the mainstream of organized sports and an almost countercultural pursuit just a generation ago, rock climbing was completely off the map in the emergence of sports sciences. What little information did exist on the technical aspects of climbing was mainly passed on by word of mouth in the form of tips on technique and equipment.

Nevertheless, some climbers used basic gymnastics, weight training, elementary bouldering, and buildering to either emulate actual climbing moves or gain the strength to perform at higher levels of the sport. Oscar Eckenstein, a Brit of Teutonic heritage and possibly the first documented boulderer, climbed ropes in the gym, did one-arm pull-ups, and pushed himself on small rocks during the 1890s; George Leigh Mallory was a high-bar enthusiast and one of the first to do giant swings; E. A. Baker in *Moors,*

John Gill's amazing one-arm front lever. Don't try this at home! JOHN GILL COLLECTION

Caves, and Crags (1903) tells of a colleague who "ascends the outside of an iron staircase on his fingers . . . and crosses in a sitting posture the tie-bars of a lofty roof"; Claude E. Benson in *British Mountaineering* (1909) talks of being "blessed with a basement staircase of stone . . . I am to be found hanging by my fingertips to the outside thereof." And a gymnastic exercise of the nineteenth century involved climbing the underside of an oblique ladder using arms only—a precursor of the Bachar Ladder.

Given the extreme and run-out technical climbs being done on the Elbe River sandstone near Dresden a century ago—the hardest of which are now recognized as being near 5.10 difficulty—it is reasonable to conclude that early German free climbers placed a high value on style and difficulty. It is hard to conceive of such sustained routes being climbed without some specific regime to build forearm and upper-body strength, although working routes on toprope may have been their primary method of training.

The strongest climbers of the early and mid-1900s included Oliver Perry-Smith, Albert Ellingwood, Joe and Paul Stettner, Fritz Wiessner, Jack Durrance, Hans Kraus, John Salathe, and Harold Goodro, as well as some of the early Yosemite masters such as Warren Harding, Dave Rearick, Bob Kamps, and Royal Robbins. All were natural athletes or competed in other athletic activity prior to becoming climbers. More important, they all possessed a great sense of adventure and daring—a hallmark trait of all great climbers of this era. Mike Sherrick, Robbins's companion on the first ascent of the Northwest Face of Half Dome, was an excellent gymnast who often backflipped to the ground after finishing a boulder problem, much to the chagrin of his tamer companions. Yet training as a rock climbing discipline built on vision, specificity, and intention was the innovation of a young man from Alabama who began climbing in the early 1950s.

Now one of the undisputed legends of American

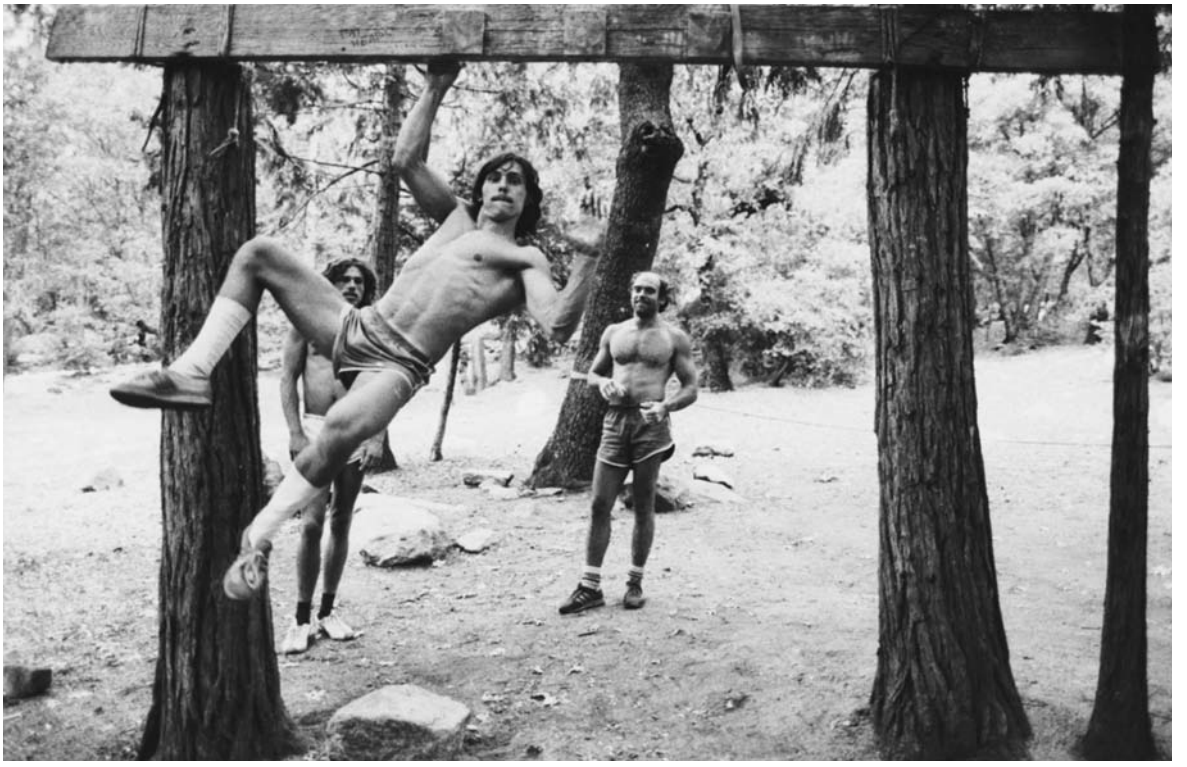
climbing, John Gill is the first person known to engage in highly regimented training for climbing. Unlike the others of his day who pushed themselves on vertical crags and long rock routes in the mountains, Gill—although an alpinist and rock climber—spent more of his time on short, overhanging faces on low boulders at the base of mountains or in river valleys. Bagging summits and climbing big walls had less aesthetic appeal for Gill; he instead sought the kinesthetics of dynamic movement up overhanging rock and adroitly built a novel training program to suit.

For more than fifteen years beginning in the mid-1950s, Gill trained on a gym rope, the still rings, and with weighted, fingertip pull-ups, one-arm and one-finger pull-ups, and one-arm front levers, in preparation for his powerful bouldering ascents throughout the Midwest, Southeast, and Rocky Mountains. In the early years Gill's gymnastic moves and the extremely muscular problems they produced—even his use of gymnasts' chalk—were viewed by most climbers with bemusement, if not bewilderment. Today his legacy as an innovator, visionary, and, in fact, the father of both modern bouldering and training for climbing is the foundation that has allowed route ratings to move into 5.13 and beyond. Gill's technical ability was years ahead of everyone else, as illustrated by his very bold 1961 free-solo first ascent of The Thimble in South Dakota's Black Hills, an overhanging 30-foot inspiration now rated V4 (5.12a), and his improbable center problem (incredibly, grade V9 by modern standards!) up the Red Cross Boulder in the Tetons two years before The Thimble. Unrecognized and underappreciated at the time, Gill in establishing these standards was an early prototype of today's top-end rock gymnasts, characterized like them by precise footwork, intense focus, and awesome power.

By the mid-1960s a number of other climbers, most with a background in gymnastics, also began training specific to climbing. Pat Ament, a young gymnast from Colorado, was an early training enthusiast and went on to become a leading climber and prolific developer of hard boulder problems. In 1967 Ament and Gill began a long friendship, and these two powerful boulderers undoubtedly inspired countless climbers throughout the Front Range and beyond.

Pat Ament, a trained gymnast and disciple of John Gill, introduced a new level of hard bouldering—as well as chalk—to Yosemite Valley during his numerous visits in the late 1960s.
PAT AMENT COLLECTION

At about the same time, famed 'Gunks hardman Richard Goldstone met Gill during a summer trip out west and was enormously impressed with Gill's one-arm pull-ups, front levers, and stiff boulder problems. Goldstone went back to the University of Chicago with an enthusiasm for training and adapted the use of surgical tubing (long utilized by gymnasts to build enough strength to do an Iron Cross) as a training aid for portions of his workouts. A few years later Goldstone returned east and became a significant presence during the rapid expansion of difficult free climbing at the Shawangunks. Goldstone discovered that Dick Williams



German climbing icon Wolfgang Güllich demonstrating his one-arm power in Yosemite's Camp 4, circa 1980. GERD HEIDORN

(another former gymnast) was already training for climbing and incorporating dynamic movements in his campaign to free climb the many steep aid routes at the 'Gunks. Other Uberfall icons of the era such as Hans Kraus, Bonnie Prudden, Jim McCarthy, and John Stannard also had great interest and long personal histories in physical fitness. Kraus went on to form the President's Council on Physical Fitness, while Bonnie Prudden became a nationally recognized fitness expert and the first female athlete to appear on the cover of *Sports Illustrated*.

Meanwhile, out west, it seemed California climbers were more and more toying with one form or another of climbing training. Dave Rearick and Mike Sherrick were specifically oriented toward gymnastics and could do presses into handstands and other gym stunts; Layton Kor was lifting weights regularly for his many outstanding ascents around Colorado and in Yosemite. Remarkably, three of the top Yosemite free climbers of the day—Royal Robbins, Chuck Pratt, and Frank Sacherer—did very little training other than the usual regimen of pull-ups and push-ups. Jim Bridwell and Barry Bates followed in the spirit of their master-predecessors, training hard at such things as pull-ups on tree limbs in the Valley. Bates quickly developed the ability to do a one-finger pull-up with his middle finger on a sling hanging from a tree. The main thrust of their training, however, was simply to climb several days per week.

Bridwell, Bates, and others in the Camp 4 crowd were also likely influenced, directly or otherwise, by visiting climbers such as Goldstone and Ament. Rich Goldstone is believed to have installed the first pull-up bar in Camp 4 while Ament brought the toughest bouldering discipline of the time to the Valley with his first ascents of 1968. Pat Ament also brought the slack chain to Yosemite, challenging climbers to develop refined balance and focus. The revered tra-

dition of chain and rope walking in Yosemite began with the 40 feet of slack links that Ament strung between two Camp 4 trees. (Local legend has it that Chuck Pratt one day stood on the chain and juggled three wine bottles, presumably empty!) Bridwell and others went on to develop and deploy an array of training stations around Camp 4 so impressive that Warren Harding, the Yosemite Generation's sharpest wit, soon dubbed the area the "Olympic Training Village." Harding himself preferred to build stamina for his epic multiday big-wall adventures by running to the top of Half Dome and back, a 17-mile round trip with nearly 1 mile of elevation change (and also, by his own admission, by refraining from hard liquor in the weeks before an ascent). In the years that followed, Camp 4 workout rigs introduced countless climbers from around the world to the basic elements of the future science of training for climbing.

Still, sports scientists in academia and the European mountain heartland had yet to view climbing as a subject worthy of serious and sustained study. Though ascents of the world's highest mountains were long a source of national pride in Europe, there were no Olympic medals (nor commercial sponsorships) to be won around which to build a culture of sport-specific training and achievement aimed at visible rewards. Climbing remained a rarefied pursuit, and research—where it pertained to climbing at all—was narrowly focused on the effects of long exposure to low-oxygen atmosphere. Still, the steadily growing popularity of climbing throughout the 1970s eventually gave birth to the first European studies relating to the physiological stresses and injuries associated with rock climbing.

In 1977 Pat Ament's *Master of Rock* was published. This biography of John Gill, though not focused specifically on training, served to document Gill's strength-training techniques and introduce them to a wider audience; the book quickly became not just an American classic but a kind of sacred writ for a new generation of climbers interested in pushing the absolute technical limits. *Master of Rock* opened a new door of consciousness, so to speak, of what it would take to be the best—not only in terms of physical ability but in the broader context of performance, Gill being the epitome of performance excellence in virtually all his pursuits.

One of the first climbers to train with weighted pull-ups, John Bachar, could pull up with nearly 140 pounds hanging from his waist! Here he trains with a "light" fifty pounds circa 1985. PHIL BARD

From the mid-1970s through the 1980s, the worldwide growth of technical rock climbing and the first climbing competitions produced an unprecedented exchange of ideas and innovations among European, Russian and Caucasian, and American climbers. In Yosemite's Camp 4; Boulder, Colorado; and the Shawangunks of New York, small groups trained and free climbed with increasing fervor, as energetic newcomers such as John Bachar, Kevin

The author (circa 1986) on his version of the "death board," a training tool used by a handful of climbers in the pre-climbing-gym era. HÖRST COLLECTION

Bein, Jim Collins, Christian Griffith, Lynn Hill, Jim Holloway, John Long, Ron Kauk, Todd Skinner, Tobin Sorenson, Alan Watts, Tony Yaniro, and others arrived on the scene. Similarly, small groups of energetic climbers began to train in England, France, Italy, and Germany. The boulders of Fontainebleau and the ubiquitous limestone crags of the region became the proving grounds for first "sport climbers" in the early 1980s. The hard-training European climbers of the early sport-climbing era were Brits Ron Fawcett, Jerry Moffat, and Ben Moon; French icons Jibé Tribout, Antoine LeMénestral, and Patrick Edlinger; Italian's Roberto Bossi and Heinz Mariacher; and the powerful Germans Kurt Albert and Wolfgang Güllich.

In the United States no technique or aesthetic had a bigger impact on the rapid development of extreme free climbing then the import of sport-climbing tactics from Europe. Rappel-bolted routes eliminated the psychological stress and risks associated with marginal protection, and through liberal use of hangdogging, the practitioner could safely work extreme sequences and thus bring Gill-level difficulty (5.13 moves) to roped climbing. At about this time, articles on physical performance and training began to appear in American climbing magazines; academic studies, too, began to proliferate, although initially focused on the subject of injuries specific to rock climbers. Strength-training techniques remained relatively unsophisticated, although a few key innovations such as the Bachar Ladder and fingerboard jacked generic finger and pull-power training up to a higher level of intensity and specificity.

In Europe's sport-climbing culture, indoor walls had already taken hold, but it was not until 1987 that the first commercial climbing gym opened in the United States. Around the same time at the Campus Center—a weight-lifting facility at the University of Nürnberg—a strong German climber named Wolfgang Güllich developed a sport-specific form of reactive training known today simply as campus training. Between 1985 and 1991 Güllich went on to establish the world's hardest free climbs and wrote a breakthrough training book, *Sportklettern Heute* (1986), and campus training quickly became a staple of elite climbers around the world. Toward the end of the century, as at its beginning, German climbers led the way to new levels of technical difficulty and athletic achievement.

The 1990s saw climbing go mainstream with televised competitions and dozens of well-sponsored full-time climbers in training year-round. The first two books on training for climbing by American authors were published in 1993 and 1994—Dale Goddard's *Performance Rock Climbing* and *Flash Training* by this author—and articles on training became regular features of *Climbing* and *Rock and Ice* magazines. But the proliferation of indoor walls was the real wild card that allowed the average climber to practice more frequently and climb harder than ever before. All the above-mentioned factors, along with

The legendary Todd Skinner cranking hard at his beloved Hueco Tanks in 1995. ERIC J. HÖRST

improved equipment, made what was once the maximum grade, 5.10, achievable by the masses; 5.13 quickly became attainable by a handful of youngsters not even old enough to drive.

Beginning the new millennium, climbing is as popular as ever, and the limits of quantified technical difficulty have stretched to 5.15a/b and V16. The first edition of *Training for Climbing,* published in December 2002, has spread to more than fifty countries and been translated into four languages. The text introduced countless climbers to the concepts of comprehensive, climbing-specific training, and it revealed new cutting-edge strength-training strategies, such as Hypergravity Isolation Training and complex training, adapted to climbing by this author in the mid- and late 1990s. Academic researchers, alert now to the unique physiological aspects of climbing, have carried out and published the results of dozens of scientific studies in the few years since this book first appeared. The body of knowledge on the science of climbing performance has grown by leaps and bounds since the introduction of Gill's gymnasts' chalk and Ament's slack chain; much more remains to be investigated and discovered. I trust that this new and expanded edition of *Training for Climbing* will provide a solid foundation from which the next generation of climbers and sports scientists can extend their grasp.

While the climbers of my generation trained largely in accordance with myth, anecdote, and trial and error, those entering the sport today have a significant amount of quality information on the subject, if they choose to use it. As I proclaimed at the beginning of *How to Climb 5.12,* "If you are reading this book, chances are you have what it takes to climb 5.12." As I complete this book, I maintain this same sentiment—in fact, there's a good chance you have what it takes to climb 5.13! And if you're genetically blessed, maybe even 5.15 . . .

CONTENTS

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