HOW TO CLIMB™ SERIES

How to Rock Climb!

Fifth Edition

John Long

www.falcon.com
FALCON GUIDES

GUILFORD, CONNECTICUT
HELENA, MONTANA

AN IMPRINT OF GLOBE PEQUOT PRESS

CHAPTER ONE

The Climbing Game

Early man was a climber. He climbed to escape predators and enemies, and to forage for food. Eons later, in the mid-1700s, man began climbing again—out of desire, not necessity. Spread throughout the European Alps, villages big and small were nestled between spectacular alpine peaks, and for a host of reasons, certain men aspired to climb the grandest peaks on the continent. The summit was the ultimate goal of these first mountaineers, and glaciers and snow slopes provided the most natural passage to the top. Following the first recorded alpine ascent, that of Mount Aiguille, the rush was on, and major peaks were climbed in succession.

After the easier routes had been climbed, subsequent mountaineers found that some rock climbing skills were necessary to open up new mountains, and they discovered that the lower cliffs and crags provided a perfect training ground to this end. To provide some modicum of safety to the falling climber, ropes and rudimentary belaying techniques were introduced around the turn of the twentieth century. At the time, climbing was effectively confined to the European continent and, to a lesser degree, England. It was in Austria, around 1910, that rappelling was invented, along with heavy steel carabiners (snap links) and pitons, the latter to provide the aid and protection required on the more difficult, modern climbs. With the new equipment and techniques and the confidence they spawned, Austrian and German climbers established climbs far more difficult than previously thought possible.

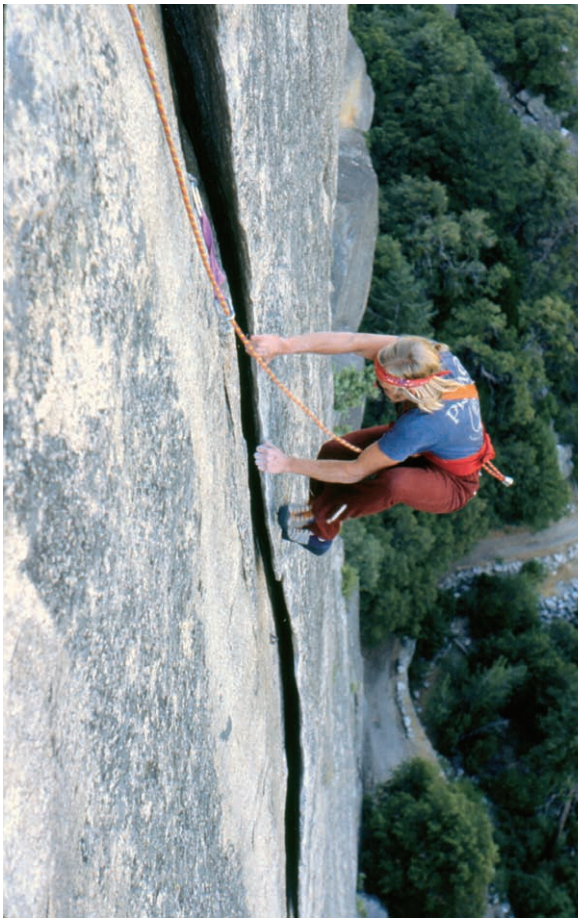
Though isolated rock summits were occasionally bagged, the endeavor was considered of lesser worth than achieving the big summits of the Alps. In retrospect, some of the training climbs on these "practice" cliffs were remarkably difficult considering the gear. The leaders had little more than hemp ropes (which routinely broke), hemp-soled shoes, and boldness to see them through. As late as the 1980s, in parts of Eastern Europe, particularly around Dresden, summitless crags were eschewed in favor of the spires that abound there; likewise, the method and style of ascent remained almost unchanged for fifty years.

Meanwhile, in pre–World War I England, rock climbing on the many backyard outcrops was being explored, albeit less aggressively than in Germany. The English discouraged the use of pitons, however, partly for ethical reasons and partly owing to the fragile nature of the "gritstone." Anyway, in the absence of big mountains, the English developed crag climbing as a sport in its own right. In the Americas, the sport's development followed the European lead, though with somewhat of a time delay—roped climbing didn't arrive until the late 1920s.

The 1930s heralded the golden age of alpine climbing, though the emphasis was still on climbing

Mike Anderson using arm bars on the first free ascent of* Angel Hair *(5.13a), Zion National Park, Utah. KEITH LADZINSKI

Bob Gaines on the classic* Pancake Flake on The Nose *route, El Capitan, Yosemite, 1979.

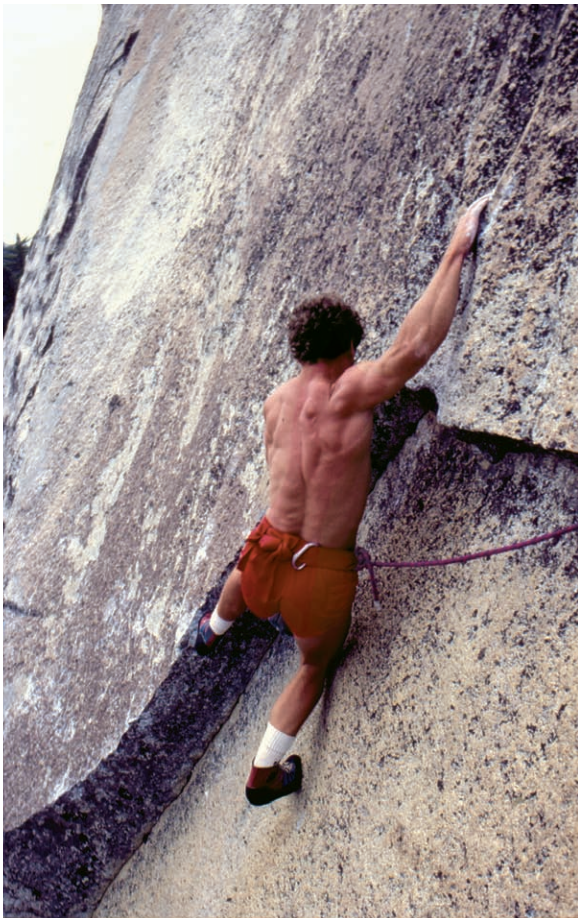


Charlie Peterson on* Wheat Thin *(5.10c), Cookie Cliff, Yosemite, 1980.

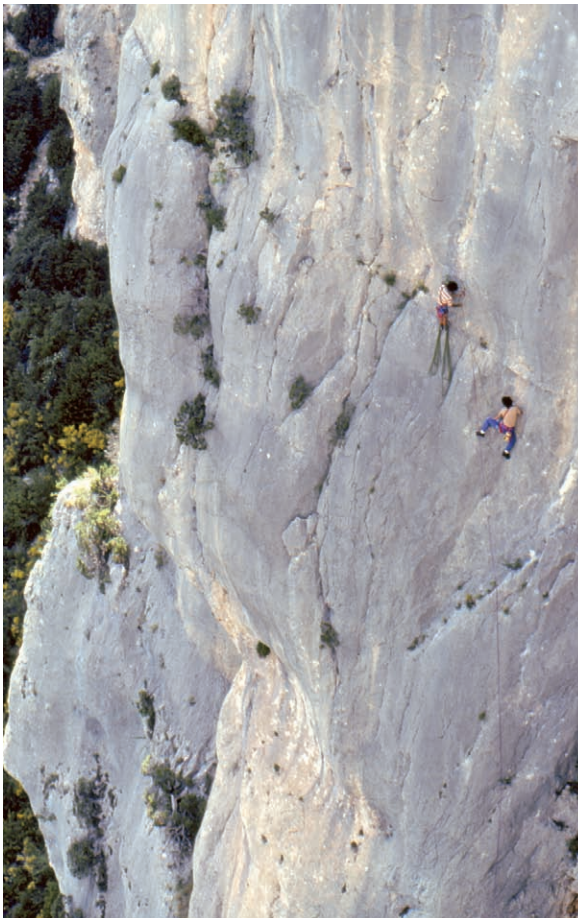
the major ridges and faces of the higher peaks. During this prewar period, rock climbing standards rose steadily throughout the world. Although most of the glory was still found in achieving mountainous summits—peaks in the Alps, North America, and Asia were conquered in succession—in many areas it was rock climbing standards that saw the most dramatic development.

World War II saw little climbing activity, but the war prompted technological developments that greatly impacted postwar climbing. Before, pitons and carabiners were expensive and rare, and ropes were still fashioned from natural fibers, which were bulky and prone to snap during long falls. "The leader must not fall" was the unquestioned dictum that all climbers observed if they wanted anything but a short career. World War II changed all this with the plentiful supply of surplus army pitons, lightweight aluminum carabiners, and, most importantly, strong and light nylon ropes.

For the next twenty years, standards rose steadily in both England and the United States. English



John Long, with old-school swami belt and short-shorts, following the first pitch of* Hades *(5.12b), Suicide Rock, California, 1984.



Climbers ascending a bolted limestone sport route at the Verdon Gorge, France, 1990.

climbers maintained their anti-piton stance and developed anchoring techniques that used runners over natural rock spikes, plus the wedging of pebbles—and eventually machine nuts slung with slings—as chockstones in cracks. Not surprisingly, the English also pushed standards of boldness. They had little choice, for their protection was often dicey at best. European standards were consolidated, but actual rock climbing standards advanced little (except some exploring of large boulders at Fontainebleau, outside Paris), because of the continued emphasis on attaining alpine summits. European manufacturers did, however, develop new nylon ropes that were stronger and much easier to handle.

By the early 1960s, specialized rock climbing shoes appeared that didn't look too different from the all-around shoes available today. The varappe, essentially a high-top shoe with a smooth rubber sole, and improved piton design spurred higher standards. In the Americas and in England, rock climbing was pretty firmly established as a specialized sport, and routes that led, say, merely to a cliff

feature or to rappel points in the middle of blank cliffs were commonly done and respected. Sparingly in America, but increasingly in England, climbers formulated strong aesthetic distinctions between pulling on pitons and artificial aids in order to ascend, and using such anchors solely to protect themselves in case of a fall. This latter practice became known as free climbing. Styles and techniques remained largely provincial until the mid-1960s, however, because few climbers traveled widely to sample various climbing areas.

This changed dramatically by 1970, due in large part to the innovative development of rock climbing techniques born in California's Yosemite Valley (during the late 1950s and through the 1960s) that allowed the ascent of the spectacular cliffs there. To learn the piton aid techniques that enabled these ascents—in splendid weather to boot—climbers from around the world traveled to Yosemite. While they learned the American techniques, they also left a heritage all their own.

By the early 1970s, American and English climbers completely dominated the development of the sport, and methods and equipment for climbing rock were becoming homogenized. Americans pitched the clunkier boots they had generally favored and adopted sensitive French and English smooth-soled shoes; in addition, the destructive and strenuous American pitoning techniques used in scaling the big cliffs were found to be less effective for free climbing than the gentler English nutting techniques. Moreover, innovative Americans started redesigning and commercially producing light and effective protection devices: first, aluminum nuts, and then spring-loaded camming devices (SLCDs). Simultaneously, rope manufacturers continued fine-tuning and improving the proper balance between strength, energy-absorbing stretch, and durability, which led to a much more relaxed attitude toward falling.

By 1980, climbers were traveling the world over to explore different areas, and climbers from many countries were involved in pushing standards. While the best climbers now trained exclusively for climbing, and the techniques and equipment were common to all, a new, pure gymnastic approach was applied to the style of ascent, particularly by the French. Inspired by the technical difficulty of the free routes in Yosemite Valley, they returned to France to begin a quest for pure difficulty, linking long stretches of bouldering moves with convenient protection afforded by bolts. With easy protection they could concentrate on difficult, gymnastic movement in relative safety, and thus "sport climbing" was born.

Today's best sport climbers sometimes "climb" the hardest routes by first descending the cliff to prearrange their protection, inspect the route for available holds, and clean away any loose holds and offensive effluvium. The subsequent ascent may take days, weeks, or even months of repeated falls, all to the goal of climbing the route—now an extremely complicated gymnastic routine—straight through without falls. This approach has further led to the development of a formal competitive circuit, where climbers compete against each other on man-made, often indoor, artificial climbing walls. Climbing competitions peaked around 1990, but they still live on in various formats, including a limited number of national meets (see http://usaclimbing.net). Small, regional competitions continue to draw participants of all skill levels, and are typically welcomed more as fun social events than as end-all competitions.

European-style sport climbing began in the United States about thirty years ago. It was accepted grudgingly at first, but is now the preferred form of climbing for most because of its secure and convenient nature. As we continue into the new millennium, sport climbing has taken center stage with most of the climbing community, and the media as well. While sport climbing has nearly become a movement unto itself, it is in fact just one more mode of ascent derived from the original contest of trying to gain the top of alpine peaks.

About fifteen years ago, sport climbing began branching out, with a few top sport climbers applying their extreme free-climbing skills to big rock walls and high-altitude alpine climbs. Over the past few years, this trend has accelerated. As predicted by Yvon Chouinard in the 1960s, the techniques and skills developed in Yosemite found their way to the most dramatic mountain ranges in the world. Huge alpine walls in Patagonia, Alaska, the Himalayas, and other wild places were ascended using the Yosemite system, further pushing the envelope of climbing and the influence of Yosemite. To the average climber, however, climbing remains an exciting means to explore the natural world and enjoy the choreography of ascent.

Rating the Difficulty

Because the vast majority of your climbing will follow established routes already rated for difficulty and recorded in a guidebook, you will, with time, need to understand the following class system. It is your only yardstick as to how difficult a given climb is, and for this reason, it is both simple and comprehensive. The American rating system that follows is one of many in use around the world (see chart on next page).

Class

The following classes are used to describe moving across various terrain:

CLASS 1: Walking.

CLASS 2: Hiking. Mostly on established trails, or perhaps slogging along a streambed.

CLASS 3: Scrambling. Angle is steep enough where hands are used for balance. A hand line is rarely used, even for inexperienced climbers.

CLASS 4: Climbing risky enough that a fall could be fatal. Pulling with your arms required. A rope, some equipment, and protection techniques are used by most mountaineers.

CLASS 5: Technical rock climbing, commonly called "free climbing." A rope and specialized equipment and techniques are always used to protect against a fall. Fifth-class climbing is the subject of *How to Rock Climb!*

CLASS 6: Rock so sheer or holdless that ascent by using hands and feet is impossible. The equipment is used directly to aid the ascent, hence the common usage names for sixth-class climbing: artificial, direct aid, or simply, aid climbing. Recall the hoary image of the intrepid climber hammering his way up the rock, his weight suspended on a succession of creaky pins. Things have changed, but the old notion still best illustrates what aid climbing is all about.

It is commonly agreed that technical rock climbing starts at fifth class, and the bulk of this book will deal with fifth-class climbing. Fifth-class climbing varies from low-angle slabs, where only the beginner will relish a rope, to 125-degree face climbs so extreme that world-class climbers might fall fifty times before they work out the entire sequence, if indeed they ever do. In the early 1950s, fifth-class climbing was designated as "easy," "moderate," and "advanced." As climbers got better and the climbs harder, a decimal system was adopted to more accurately rate the levels of difficulty within the class. Devised in the early 1930s by the Rock Climbing Section of the Sierra Club, this system is principally used as an index of difficulty. The original scale, 5.0 through 5.9, was intended at the time of its adoption to cover the whole range of humanly possible rock climbs, anything above 5.9 being regarded as impossible. Standards are made to fall, of course, and shortly that one did.

The decimal system ceased to be purely "decimal" when aggressive pioneers sought to rate climbs harder than established 5.9s. Like other rating systems used throughout the world, the decimal system has evolved into an open-ended system that now includes climbs from 5.0, the easiest, to 5.15,

World Rating Systems

West German (UIAA)	American (Decimal)	British		Australian	East German (GDR)	French
	5.5	4a	vs			
	5.6	4b				
5+	5.7		hvs		VIIa	5a
6-	5.8	4c		16	VIIb	5b
6	5.9	5a	E1	17		5c
6+	5.10a			18	VIIc	
7-	5.10b	5b		19	VIIIa	6a
7	5.10c		E2	20	VIIIb	
	5.10d	5c		21	VIIIc	6b
7+	5.11a		E3	22	IXa	
8-	5.11b			23	IXb	6c
	5.11c	6a	E4	24	IXc	
8	5.11d			25		7a
8+	5.12a		E5	26	Xa	
9-	5.12b	6b		27	Xb	7b
	5.12c		E6			
9	5.12d	6c		28	Xc	7c
9+	5.13a		E7	29		8a
10-	5.13b			30		
	5.13c	7a	E8			8b
10	5.13d			31		
10+	5.14a			32		8c
11-	5.14b	7b				
	5.14c		E9	33		9a
11	5.14d	7c				
	5.15					

Though ratings vary from one area to the next, the fifth-class decimal system is pretty uniform throughout the United States: A 5.8 in Yosemite would most likely be rated 5.8 at Tahquitz Rock as well. Climbers rely on the rating system being consistent, lest they are misled by guidebooks and end up on climbs either too hard or too easy for their fancy. Once a climber travels to a foreign area, however, he must become fluent in another rating system, for every country has an individual method of rating the difficulty of rock climbs. The attending chart plots comparative difficulties relative to various national rating systems. It is reasonably accurate but not unequivocal. All rating systems are open-ended, but the differences in difficulty between various number or letter ratings vary from country to country. There are other differences also: The British system factors a seriousness appraisal into the rating that precedes the standard technical rating (E5 6a). Note that the seriousness ratings overlap each other considerably in relation to the difficulty rating, as represented in the chart by the dashed lines.

the most difficult leads achieved to date. Climbs of 5.10 through 5.15 are in the realm of the advanced or expert climber; to better shade the nuances of these advanced levels, the letters a, b, c, and d were tacked onto the rating. For example, 5.12d represents the extreme end of the 5.12 standard, whereas a 5.12a or 5.12b is an "easier," low-end 5.12 (not one active climber in twenty consistently manages this grade).

Modern routes tend to be rated somewhat softer than older routes, meaning you can normally count on an old 5.10 to be more exacting than one established last week. Convenient bolt protection, the earmark of the sport climb, at once removes much of the psychological factor while reducing the physical strain of hanging by fingertips and frantically trying to hand-place gear in the rock. Because most sport climbs are first and foremost physical challenges, they likely will seem "easier" than older climbs of the same grade that feature psychological trials as well.

The standardized rating system was intended to provide uniformity; that is, a 5.7 route at El Dorado Canyon, Colorado, should correspond in difficulty to a 5.7 route at Suicide Rock, California. This is the theory, but not the reality. Ratings should be considered area-specific only. Entire areas, such the Shawangunks in upstate New York and Joshua Tree National Park, a world-renowned desert climbing area in Southern California, are widely know to have "stiff" ratings, meaning a 5.10a route at "Josh" or the "Gunks" will likely be rated 5.10b or even harder at other areas. Other popular locales are known to have "soft" ratings, such as Red Rocks outside Las Vegas, where folks flock to shore up their self-esteem as well as enjoy the divine sandstone. A few questions to locals or, better yet, a few introductory routes at any area will generally give you a feeling about an area's tendency toward soft or stiff ratings. Either way, it's good to get straight on an area's rating biases from the get-go, especially when trying to push your limits.

There are often significant (at least one full grade) differences from area to area and gym to gym, especially at the easier levels. You must also include the "sandbag" factor, the shameless practice of underestimating the actual difficulty of a given route ("sandbagging"). The desired effect is that the sandbagger looks good and us hackers feel bad about finding a route far more difficult that it's supposed objective rating. Both individuals and entire climbing communities might systematically underrate everything by an entire grade. Unfortunately, sandbagging remains an annoyance from which the climbing world has always suffered. Inasmuch as human nature is more constant than ratings, we can expect at least 10 percent of all ratings to be sandbags. An almost certain indicator of a sandbag rating is when a plus (+) is affixed to routes in the 5.7 to 5.9 range; that is, a 5.7+ route is almost always going to be a solid 5.8.

A related point worth mentioning is that in years past you would only call yourself a 5.10 leader if you could consistently lead any 5.10 route, including thin faces, roofs, finger cracks, off-widths, et al. Today, many climbers who have hangdogged up a 5.12 sport climb tend to consider themselves 5.12 climbers. But put them on a 5.9 adventure climb, where the runouts are long and the required techniques many, and they might back off at the first difficulties. The point is: Since the rating system was first devised, climbers have been preoccupied with bandying about high numbers in the most cavalier manner. Don't be swayed by such "smack," and wait until you get out on the rock to form your opinions about potential climbing partners. Some sport climbers are fairly inexperienced and can perform only under very circumscribed conditions. The danger here is that many of them don't realize this themselves, and they subsequently can make sketchy partners outside a climbing gym or practice area where every yard of every climb is chalked and bristling with bolts. The difference between a difficult toprope climb in an indoor climbing gym and a long, complex free route

in the mountains is the difference between a candle and a blowtorch. Don't get burned.

Sixth-class direct aid climbing is divided into five rating classes: A1 through A5, depending on the difficulty of placing protection anchors and their precariousness when placed. Put figuratively, this means you can hang your van from an A1 placement, but falling on a tenuous A5 thread of bashies will surely result in a harrowing 100-foot "zipper" as the bashies pull out one by one.

Grade

The decimal system tells us how difficult a climb is. The attending grade rating tells us how much time an experienced climber will take to complete a given route.

I. One to three hours
II. Three to four hours
III. Four to six hours—a strong half day
IV. Full day—emphasis on full
V. One to two days—bivouac is usually unavoidable
VI. Two or more days on the wall

The decimal rating is a relatively objective appraisal of difficulties inasmuch as it was arrived at through consensus by experienced climbers. The grade rating is posited as objective, but it uses the hypothetical "experienced" climber as the measure of how long a given route should take. Compare the grade rating with the par rating on a golf course. A par five means a pro can usually hole the ball in five shots, rarely less, but a hacker will smile at a bogey six. Likewise, a couple of good climbers can usually crank a grade V in one day, whereas the intermediate climber had best come prepared to spend the night. World-class climbers can sometimes knock off a grade VI in an inspired day, depending on the amount of difficult direct aid on the route. The more hard aid, the less likely that any team can "flash" a grade VI route in a day.

As you get more familiar with climbing, you will frequently read about "speed ascents" of big walls. Most of these occur on routes with either ample free climbing or aid that is quickly dispatched.

Free Climbing

There are two types of individuals who climb without a rope: the world-class climber whose experience is extensive and who knows her capabilities and limits perfectly, and the sorry fool who doesn't know any better and is courting disaster. More will be said on this topic in Chapter 6, "The Art of Leading," but let it be clear that, with rare exceptions, a rope and equipment are always employed in modern fifth-class climbing. Accordingly, the layman often assumes that equipment directly assists a climber's ascent. It does, in the advanced realms of aid (sixth-class) climbing, but not in the form known universally as free climbing.

Free climbing is the basis of all sport climbing and can be loosely defined as upward progress gained by a climber's own efforts—using hands and feet on available features—unaided, or "free" of the attending ropes, nuts, bolts, and pitons, which are used only as backup in case of a fall. Rock features—such as cracks, edges, arêtes, dihedrals, and flakes—provide the climber his holds and means for ascent. The variety is endless, and even uniform cracks of the same width have many subtle differences. It is this fantastic diversity that gives climbing its singular challenge, where each "route" up the rock is a mental and physical problem-solving design with a unique sequence and solution. Discovering what works, for what climb and for what person, is the process that keeps the choreography of ascent fresh and exciting. No two people climb the same route the same way.

It's not all ad-lib, however. There are numerous fundamental principles that apply to all climbing: The smooth coordination of hands and feet allows fluid

Bouldering is at the heart of all free climbing. Here Lisa Rands pulls down on **Minky** ***(V8), Rocklands, South Africa.***
KEITH LADZINSKI

movement; balance, agility, and flexibility are often better weapons against gravity than brute strength; endurance is generally more important than raw power; husbanding strength is accomplished by keeping your weight over your feet, rather than hanging from your arms; and the best execution of any climb is that which requires the least effort. Finally, staying relaxed is half the battle. Much of climbing is intuitive, and the moves come naturally to the relaxed mind. Likewise, a relaxed mind allows you to find and maintain a comfortable pace, neither too fast nor too slow. A common situation is for the leader to tighten up and become rushed in response to the difficulty and the effort required. Learning to stay relaxed, especially in the midst of great physical and mental strain, is one of the boons of free climbing.

Climbing requires certain techniques that are not obvious and must be learned and practiced before you can hope to master them. It is one of the most primal activities a person can undertake, but unlike Java man, the modern climber usually wears shoes.

Basic Equipment

Rock Shoes

All climbing is done in rock shoes. Just as a ballerina does not dance in moccasins, climbers do not climb in loose shoes. And with anything that fits snugly, one wrong aspect (width, length, etc.) can result in blisters.

For your first couple of outings, rent a pair of rock shoes. Most mountain shops and guide schools, and all gyms, have rental shoes. Should you choose to pursue climbing, your first purchase should be a pair of shoes. Entry-level shoes go for about $70 to $100, while top-end shoes can run upwards of $160. Climbing shoes can be resoled (for about $40) when they wear out. Also, watch for notices posted on the bulletin boards of outdoor equipment stores. You can buy a perfectly good pair of used climbing shoes for a fraction of what they would cost new. Otherwise, consider buying a pair on sale. Even world-class climbers look for shoe deals. Particularly for beginners, who can grind the sole off a new rock shoe in a matter of days, forget about getting the most advanced model (such as reverse cambered slippers) until your footwork rounds into form, usually after a few months of active climbing.

Built on orthopedically perfect lasts, with a glove-like yet bearable fit and sticky rubber soles, modern rock shoes are a remarkable innovation. Since the first super rock shoes arrived in 1982, advances in fit, materials, and rubber have paralleled advances in technical achievement. Currently, there are about a half-dozen major brands available for both men and women. The choice for the beginner is mainly a matter of price and fit. For the expert, the choice is usually an attempt to match a specialized shoe to a particular kind of rock or a specific technique. Some shoes are stiffer, good for standing on minuscule footholds but poor for pure friction. There are shoes for cracks, for limestone "pocket" climbing, for gym and sport climbing, and so forth. An expert climber will often have a quiver of shoes for various applications, much as a champion skier will have various skis for different conditions and uses.

Each manufacturer has a generic, all-around rock climbing shoe best suited for the novice—usually a board-lasted, lace-up model that provides maximum support and can withstand multiple resolings. Velcro tighteners have done away with the laces on some models, but these are usually slippers, not full-size rock shoes, which offer better support and durability for a beginner. As previously mentioned, since a beginner's footwork is generally careless, he will trash his shoes much faster than an experienced climber, so consider this when plunking down money for your first pair. Most manufacturers are continually redesigning their shoes. If you shop around, you can often buy last year's models at considerable savings.

While a general-use shoe is the novice's most practical choice, you will eventually want footwear

Shoe selection at the Nomad Ventures climbing shop in Idyllwild, California. Note that all models are low-tops, the long-ago favored high-top being a specialty design, normally used only in wide cracks to protect the ankles.

best suited to the type of climbing you prefer. For lower-angle face climbing, a soft sole and supple, low-cut upper is best. For steep wall or pocket climbing, you'll want a tight-fitting shoe with good lateral support, a pointy toe, and a super low-cut upper for ankle flexibility.

Many advanced climbers do most of their climbing in "slippers." While most modern rock shoes are not "boots" at all but are cut at or below the ankle, slippers have also done away with the laces (though perhaps half the models feature Velcro tighteners) and offer far less support. Slippers require strong feet, but offer a sensitivity for footholds not found in regular shoes. They are excellent

for bouldering, steep sport routes, and indoor climbing. However, slippers definitely underperform on traditional routes, and can punish your feet in wide cracks—especially the reverse camber models—so many beginners stick with normal rock shoes, for that first season anyway.

Optimum performance in a slipper requires a painfully tight fit. This often results in a pronounced callus, or "corn," on top of the big toe. The only compensation here is that slippers are easy to remove, so most climbers take them off between each route. Also, to keep them light, some slippers are straight leather with no liner. Normally worn without socks (common with regular rock shoes as well), slippers—and in fact almost all rock shoes—usually take on a fierce bouquet. Air them out, clip them (dangling) onto the outside of your pack when you're out and about, and store them in a cool, dry place.

Climbers have traditionally worn shoes painfully tight to avoid foot rotation inside the shoe when standing on small holds. Climbing shoes with leather uppers will stretch with time, though many models have stitched/glued-in liners meant to remedy this. A well-fitting shoe should be snug out of the box, but never torturous. Modern climbing shoes are constructed on anatomically correct lasts and are contoured to fit the foot, but you must try them on and climb in them to know if they fit your foot.

Some brands may favor a wider or narrower last, so try on an assortment of different shoes until you find the perfect fit. As a novice it is probably more important to your climbing to have a good-fitting shoe than one that is specifically designed for the type of climbing you intend to do.

The foot should not rotate in the shoe; neither should the toes be dreadfully curled in the toe box—unless you're climbing at a very high standard. Climbers normally wear their shoes without socks for a better fit and increased sensitivity. A floppy pair of shoes are frustrating to climb in, and you don't want to spend serious money and waste all that technology on a sloppy fit. Shoe manufacturers often run demos in climbing gyms and at bouldering competitions so you can test drive their various models. Do so and learn what you do and do not like.

Climbing magazines regularly have equipment reviews that rate shoes based on many criteria. These are usually reasonable guides in a sweeping kind of way. Just remember that despite significant advances in both rubber and shoe construction, there's no magic in shoes unless you know how to use them.

Dirt, grime, oil, tree sap, and such can affect a sole's performance, so always keep your shoes clean. Limit walking around in them to a minimum. Most climbing soles are not rubber at all but TDR—Thermo Dynamic Rubber—a petroleum-based synthetic. Regardless, the TDR oxidizes and hardens just like rubber, and though this is only a surface condition, it can affect performance. An occasional wire brushing is the solution for both grime and hardening. Hot car trunks loosen the glue bonds of the rands and soles. Superglue can fix this, but it's better to avoid excessive heat. Foot powder helps avoid stitch rot from sweaty feet.

Chalk

The use of gymnastic chalk to soak up finger and hand sweat and to increase grip, has been standard practice for over thirty years. On coarse sandstone, in 40-degree shade, the advantages are noticeable but not great. But stick a climber on a greasy, glacier-polished Yosemite crack in midsummer swelter, and his hands will sweat like he's going to the electric chair—here chalk can make a huge difference.

Though not permanent, excessive chalk buildup is not only an eyesore, but also telegraphs the sequence of holds to subsequent teams, diminishing the factor of discovery so vital to the climber's experience. Also, too much chalk on the holds can make the grip worse than no chalk at all, a common condition that has caused many climbers to carry a toothbrush to uncake chalky holds.

Contents

FALCONGUIDES®

FalconGuides is an imprint of Globe Pequot Press.
Falcon, FalconGuides, and Outfit Your Mind are registered trademarks of Morris Book Publishing, LLC.
How to Climb is a trademark of Morris Book Publishing, LLC.

Text designer: Casey Shain
Project editor: John Burbidge
Illustrations by Mike Clelland
All interior photos by Bob Gaines unless noted otherwise.

The Library of Congress has cataloged the earlier edition as follows:
Long, John, 1953-
How to rock climb! / John Long.—4th ed.
p. cm. – (How to climb series)
Includes index.
ISBN 0-7627-2471-4
1. Rock climbing. I. Title. II. Series.
GV200.2 .L66 2002
796.52'23—dc21 2002029907

ISBN 978-0-7627-5534-9
Printed in China
10 9 8 7 6 5 4 3 2 1