APPENDIX: RATING SYSTEMS

A rating system is a tool that helps a climber choose a climb that is both challenging and within his or her ability. The development of rating systems for climbing began in the late nineteenth and early twentieth centuries in Britain and Germany. In the 1920s, Willo Welzenbach created a rating system, using roman numerals and the British adjectival system, to compare and describe routes in the Alps. This system was used as the basis of the Union Internationale des Associations d'Alpinisme (UIAA, International Climbing and Mountaineering Federation) system of rating. Rating systems have since proliferated. Ratings used internationally today include no fewer than seven systems for rock, four for alpine climbing, four for ice, and two for aid climbing.

Rating climbs is a subjective task, which makes consistency between climbing areas elusive. Climb ratings assume fair weather and availability of the best possible equipment. Variables that affect the rating include the size, strength, and flexibility of the climber, as well as the type of climb (for instance, face, crack, or friction climbing), and the types of holds or features on the climb itself.

Ideally, a route is rated by consensus in order to reduce personal bias, though climbs often are rated by the first-ascent party. A guidebook author typically does not climb every route in the guidebook and therefore has to rely on the opinions of others. In some cases, a route may have been completed only once.

Ratings described as "stiff" indicate that the climb is harder than it is rated, whereas a description of a "soft" rating indicates the climb is easier than it is rated. Of course, evaluation of a rating system is no more precise than the rating system itself. Whenever you climb in an area for the first time, it's a good idea to start out on recommended or "starred" routes at a level

lower than your usual ability until you can evaluate the local ratings and the nature of the rock.

ALPINE CLIMBING

The National Climbing Classification System (NCCS), developed in the United States, assigns grades to describe the overall difficulty of a multipitch alpine climb or long rock climb in terms of time and technical rock difficulty. It takes the following factors into account: length of climb, number of difficult pitches, difficulty of hardest pitch, average pitch difficulty, commitment, routefinding problems, and ascent time. The approach and remoteness of a climb might or might not affect the grade given, depending on the guidebook and area. It should be emphasized that with increasing grade, an increasing level of psychological preparation and commitment is necessary. This system assumes a party that is competent for the expected level of climbing.

Grade I. Normally requires several hours; can be of any technical difficulty.

Grade II. Requires half a day; any technical difficulty.

Grade III. Requires a day to do the technical portion; any technical difficulty.

Grade IV. Requires a full day for the technical portion; the hardest pitch is usually no less than 5.7 (in the Yosemite Decimal System for rating rock climbs; see below).

Grade V. Requires a day and a half; the hardest pitch is at least 5.8.

Grade VI. A multiday excursion with difficult free climbing and/or aid climbing.

Grade VII. Requires at least 10 days of suffering on a huge wall, in poor weather, in a remote area. Climbing grades are at least as difficult as those on a Grade VI climb with all other factors increasing in intensity.

Like other rating systems, the grade is subjective. For example, the Nose on El Capitan in California's Yosemite National Park is rated Grade VI. Warren Harding and companions took 45 days for the first ascent, in 1958. John Long, Billy Westbay, and Jim Bridwell made the first one-day ascent in 1975. Hans Florine and Peter Croft cut the time to under four and a half hours in 1992, and Lynn Hill (accompanied by a belayer) led the first free ascent in 1993 and the first one-day free ascent in 1994. The time needed for a climb

is as relative as the abilities and technologies of the climbers. The type of climb affects what factors of the given grade are emphasized. Proper planning, including study of a route description, are more valuable in estimating a party's climbing time than the given grade.

ROCK CLIMBING

Rating systems have been created for free climbing, aid climbing, and bouldering.

FREE CLIMBING

In 1937, a modified Welzenbach rating system was introduced in the United States as the Sierra Club System. In the 1950s, this system was modified to more accurately describe rock climbing being done at Tahquitz Rock in California by adding a decimal to the Class 5 rating. This is now known as the Yosemite Decimal System (YDS). This system categorizes terrain according to the techniques and physical difficulties encountered when rock climbing. Figure A-1 compares the YDS with other international rating systems.

Class 1. Hiking.

Class 2. Simple scrambling, with possible occasional use of the hands.

Class 3. Scrambling; hands are used for balance; a rope might be carried.

Class 4. Simple climbing, often with exposure. A rope is often used. A fall could be fatal. Typically, natural protection can be easily found.

Class 5. Where rock climbing begins in earnest. Climbing involves the use of a rope, belaying, and protection (natural or artificial) to protect the leader from a long fall.

The decimal extension of Class 5 climbing originally was meant to be a closed-end scale—that is, ranging from 5.0 to 5.9. Up until 1960 or so, a climb that was the hardest of that era would be rated 5.9. The rising standards in the 1960s, however, led to a need for an open-ended scale. Strict decimal protocol was abandoned, and 5.10 (pronounced "five-ten") was adopted as the next highest level. As the open-ended system let the decimal numbers go up to 5.11, 5.12, and ever higher, not all climbs were rerated, leaving a disparity between the "old-school ratings" and the new ratings.

The YDS numbers reached 5.15 in the first few years of the twenty-first century. The ratings from 5.10 to 5.15 are subdivided into a, b, c, and d levels to more precisely state the difficulty. The most difficult 5.12 climb, for instance, is rated 5.12d. A plus sign or a minus sign is occasionally used as a more approximate way to refine a classification. Sometimes a plus sign will be added to indicate that the pitch is sustained at its particular rating, while a minus sign might indicate that the pitch has only a single move at that level.

The extended numbers of the fifth-class rating system can't be defined precisely, but the following descriptions offer general guidelines:

5.0–5.7. Easy for experienced climbers; where most novices begin.

5.8–5.9. Where most weekend climbers become comfortable; employs the specific skills of rock climbing, such as jamming, liebacks, and mantels.

5.10–5-11. A committed recreational climber can reach this level.

5.12–5.15. The realm of true experts; demands much training and natural ability, as well as, often, repeated working of a route.

The YDS rates only the hardest move on a pitch and, for multipitch climbs, the hardest pitch on a climb. The YDS gives no indication of overall difficulty, protection, exposure, runouts, or strenuousness. Some guidebooks, however, will rate a pitch higher than the hardest move if the pitch is very sustained at a lower level. A guidebook's introduction should explain any variations on the YDS that may be used.

Because the YDS does not calculate the potential of a fall, but only the difficulty of a move or pitch, a seriousness rating has been developed. This seriousness rating (introduced by James Erickson in 1980) appears in guidebooks in a variety of forms; read the introduction to any guidebook for an explanation of its particular version.

PG-13. Protection is adequate, and if it is properly placed, a fall would not be long.

R. Protection is considered inadequate; there is potential for a long fall, and a falling leader would take a real "whipper," suffering serious injuries.

X. Inadequate or no protection; a fall would be very long with serious, perhaps fatal, consequences.

Ratings of the quality of routes are common in guidebooks. If anything, they are even more subjective than the basic climb ratings because they attempt to indicate aesthetics. The number of stars given for a route indicates the quality of the route in the eyes of the guidebook writer. A standard

number of stars for the very best climbs has not been established. A climb with no stars does not mean the climb isn't worth doing, nor does a star-spangled listing mean that everyone will like the route.

UIAA	FRENCH	YOSEMITE DECIMAL SYSTEM	AUSTRALIAN	BRAZILIAN	UNITED KINGDOM
I	1	5.2			3a
II	2	5.3	11		3b
III	3	5.4	12	II	3c
IV	4	5.5		IIsup	4a
V-	5	5.6	13	III	4b
V		5.7	14	IIIsup	
V+			15		4c
VI-		5.8	16	IV	
VI		5.9	17	IVsup	5a
VI+	6a	5.10a	18	V	
VII-	6a+	5.10b	19	Vsup	5b
VII	6b	5.10c	20	VI	
VII+	6b+	5.10d	21	VIsup	5c
VIII-	6c	5.11a	22	7a	
VIII	6c+	5.11b	23	7b	6a
VIII+	7a	5.11c	24	7c	
IX-	7a+	5.11d	25	8a	6b
IX	7b	5.12a	26	8b	
IX+	7b+	5.12b		8c	6c
X-	7c	5.12c	27	9a	
X	7c+	5.12d	28	9b	
X+	8a	5.13a	29	9c	
XI-	8a+	5.13b	30	10a	7a
XI	8b	5.13c	31	10b	
XI+	8b+	5.13d	32		
XII-	8c	5.14a	33	10c	
XII	8c+	5.14b		11a	
	9a	5.14c	34	11b	7b
	9a+	5.14d	35	11c	
	9b	5.15a	36	12a	
	9b+	5.15b	37	12b	7c
		5.15c	38	12c	

VD
HVD
MS
S
HS
VS
HVS
E1
E2
E3
E4
E5
E6
E7
E8
E9

Fig. A-1. Six of the world's seventeen climbing rating systems.

AID CLIMBING

Rating aid moves or aid climbs is different from rating free climbs in that the rating system is not open-ended like the YDS. An aid climbing rating primarily indicates the severity of a possible fall, based on the quality of protection available. To some extent, an aid rating indicates the difficulty of the climbing, but only in that there is a loose correlation between easy-to-place protection and its ability to arrest a fall. However, following a series of "easy" hook moves for a distance of 40 feet (12 meters) with no protection left to arrest a fall might garner a rating of A3, while conversely some A1 pitches might accommodate high-quality protection at regular intervals but could be extremely difficult to climb if the crack is a deep, awkward flare with protection available only at its very back.

The scale is from A0 to A5 or from C0 to C5. The "A" refers to aid climbs in general, which may utilize pitons, bolts, or chocks. The "C" refers to clean aid climbing, meaning that a hammer is not used to make placements. A rating such as C2F, with the "F" indicating "fixed," indicates that the pitch can be climbed clean only if critical gear normally placed with a hammer has been left in place by other parties. It is sometimes possible to climb a pitch clean that is rated with the A0–A5 system, and some pitches have two ratings, one A rating and one C rating, which indicates the grade with or without a hammer.

The following rating system is used worldwide except in Australia (which uses M0 to M8; the "M" stands for mechanical):

A0 or C0. No aiders are required. Fixed gear such as bolts may be in place, or the climber may be able to simply pull on a piece of gear to get through the section, a technique sometimes called "French free."

A1 or C1. Good aid placements; virtually every placement is capable of holding a fall. Aiders are generally required.

A2 or C2. Placements are fairly good but may be tricky to place. There may be a couple of bad placements between good placements.

A2+ or C2+. Same as A2, though with increased fall potential—perhaps 20 to 30 feet (6 to 10 meters).

A3 or C3. Hard aid. Several hours to lead a pitch, with the potential of 60- to 80-foot (18- to 24-meter) falls, but without danger of grounding (hitting the ground) or serious injury.

A3+ or C3+. Same as A3, but with the potential of serious injury in a fall. Tenuous placements.

A4 or C4. Serious aid. Fall potential of 80 to 100 feet (24 to 30 meters), with very bad landings. Placements hold only body weight.

A4+ or C4+. More serious than A4. More time on the route, with increased danger.

A5 or C5. Placements hold only body weight for an entire pitch, with no solid protection such as bolts. A leader fall at the top of a 150-foot (45-meter) A5 pitch means a 300-foot (90-meter) fall or a fall that would cause a serious impact on a rock feature, the latter of which may be equivalent to hitting the ground.

A5+. A theoretical grade; A5, but with bad belay anchors. A fall means falling to the ground (anchor failure).

Aid ratings are always subject to change. What was once a difficult A4 seam may have been beaten out with pitons to the point that it will accept large chocks, rendering it C1. Camming devices and other examples of newer technology can sometimes turn difficult climbs into easy ones. Some climbs once considered A5 might now be rated A2 or A3 after repeated traffic and with the use of modern equipment.

Big wall climbs are rated like this:

The Nose, El Capitan: VI, 5.8, C2

This means that the Nose route on Yosemite's El Capitan is a Grade VI (a "multiday excursion"); the most difficult moves that you must free-climb (with no option to aid) are YDS 5.8; and the most difficult aid is C2.

BOULDERING

Bouldering—climbing on large rocks, fairly close to the ground—has gained popularity. Though once a game played by alpinists in mountain boots on days too rainy for climbing, bouldering has become an all-out pursuit of its own. John Gill created his B-scale to rate boulder problems:

B1. Requires moves at a high level of skill—moves that would be rated 5.12 or 5.13.

B2. Moves as hard as the hardest climbs being done in standard rock climbing (5.15 currently).

B3. A successful B2 climb that has yet to be repeated. Once repeated, the boulder rating automatically drops to B2.

John Sherman created the open-ended V-scale, which gives permanent ratings to boulder problems (unlike Gill's scale, with its floating ratings). As

shown in Figure A-2, Sherman's scale starts at V0- (comparable to 5.8 YDS); it moves up through V0, V0+, V1, V2, and so on, with V16 being comparable to 5.15c YDS. Neither the B- nor V-scale takes into account the consequences of a rough landing on uneven terrain.

YOSEMITE DECIMAL SYSTEM	SHERMAN V-SCALE (BOULDERING)
5.8	V0-
5.9	V0
5.10a-b	V0+
5.10c-d	V1
5.11a-b	V2
5.11c-d	V3
5.12-	V4
5.12	V5
5.12+	V6
5.13-	V7
5.13	V8
5.13+	V9
5.14a	V10
5.14b	V11

5.14c	V12
5.14d	V13
5.15a	V14
5.15b	V15
5.15c	V16

Fig. A-2. The Sherman V-scale for rating boulder problems, compared with the Yosemite Decimal System for rating rock climbs.

ICE CLIMBING

The variable conditions of snow and ice climbing make rating those climbs difficult. The only factors that usually do not vary throughout the season and from year to year are length and steepness. Snow depth, ice thickness, and temperature affect the conditions of the route; these factors plus the nature of the ice and its protection possibilities determine a route's difficulty. These rating systems apply mainly to waterfall ice and other ice formed by meltwater (rather than from consolidating snow, as on glaciers).

COMMITMENT RATING

The important factors in this ice climbing rating system are length of the approach and descent, the length of the climb itself, objective hazards, and the nature of the climbing. (The Roman numeral ratings used in this system have no correlation to the numerals used in the grading system for overall difficulty of alpine climbs; see "Alpine Climbing" earlier.)

I. A short, easy climb near the road, with no avalanche hazard and a straightforward descent.

II. A route of one or two pitches within a short distance of rescue assistance, with very little objective hazard.

III. A multipitch route at low elevation, or a one-pitch climb with an approach that takes an hour or so. The route requires from a few

hours to a long day to complete. Descent may require building rappel anchors, and the route might be prone to avalanche.

IV. A multipitch route at higher elevations; may require several hours of approach on skis or foot. Subject to objective hazards; possibly with a hazardous descent.

V. A long climb in a remote setting, requiring all day to complete the climb itself. Requires many rappels off anchors for the descent. Sustained exposure to avalanche or other objective hazard.

VI. A long ice climb in an alpine setting, with sustained technical climbing. Only elite climbers will complete it in a day. A difficult and involved approach and descent, with objective hazards ever-present, all in a remote area far from the road.

VII. Everything a grade VI has, and more of it. Possibly requires days to approach the climb, and objective hazards render survival as certain as a coin toss. Needless to say, difficult physically and mentally.

TECHNICAL RATING

The technical grade rates the single most difficult pitch, taking into account the sustained nature of the climbing, ice thickness, and natural ice features such as chandeliers, mushrooms, or overhanging bulges. These ratings have been further subdivided, with a plus added to grades of 4 and above if the route is usually more difficult than its stated numerical grade.

1. A frozen lake or streambed (the equivalent of an ice rink).
2. A pitch with short sections of ice up to 80 degrees; lots of opportunity for protection and good anchors.
3. Sustained ice up to 80 degrees; the ice is usually good, with places to rest, but it requires skill at placing protection and setting anchors.
4. A sustained pitch that is vertical or slightly less than vertical; may have special features such as chandeliers and runouts between protection.
5. A long, strenuous pitch—possibly 165 feet (50 meters) of 85- to 90-degree ice with few if any rests between anchors. Or the pitch may be shorter but on featureless ice. Good skills at placing protection are required.
6. A full 165-foot pitch of dead-vertical ice, possibly of poor quality; requires efficiency of movement and ability to place protection from

awkward stances.

7. A full pitch of thin, vertical or overhanging ice of dubious adhesion. An extremely tough pitch, physically and mentally, requiring agility and creativity.
8. Thin, gymnastic, overhanging, and bold. Pure ice climbs at this level are extremely rare.

These ratings typically describe a route in its first-ascent condition. Therefore a route that was rated a 5 on its first ascent might be a 6- in a lean year for ice, but only a 4+ in a year with thick ice. The numerical ice ratings are often prefaced with WI (water ice, or frozen waterfalls), AI (alpine ice), or M (mixed rock and ice; historically, mixed climbs were described with the YDS).

NEW ENGLAND ICE RATING SYSTEM

A system developed for the water ice found in New England applies to normal winter ascent of a route in moderate weather conditions:

NEI 1. Low-angle water ice of 40 to 50 degrees, or a long, moderate snow climb requiring a basic level of technical expertise for safety.

NEI 2. Low-angle water ice with short bulges up to 60 degrees.

NEI 3. Steeper water ice of 50 to 60 degrees, with bulges of 70 to 90 degrees.

NEI 4. Short vertical columns, interspersed with rests, on 50- to 60-degree ice; fairly sustained climbing.

NEI 5. Generally multipitch ice climbing with sustained difficulties and/or strenuous vertical columns, with little rest possible.

NEI 5+. Multipitch routes with a heightened degree of seriousness, long vertical sections, and extremely sustained difficulties; the hardest ice climbing in New England to date.

MIXED CLIMBING

Jeff Lowe introduced the Modern Mixed Climbing Grade to simplify the rating of the crux on mixed ice and rock routes. It is an open-ended scale with routes rated M1 to M13. A plus sign or a minus sign is added to broaden the range and to prevent grade compression. It is the consensus of top climbers that the M ratings in Europe are inflated by one grade. See Figure A-3 for a comparison of the M grades to YDS ratings.

OTHER MAJOR RATING SYSTEMS

A variety of rating systems are used throughout the world. Figure A-1 compares the principal systems. Apart from the main rating systems described here, other rating systems are used around the world, which are unique to their own treatment of seriousness and local weather and conditional phenomena. The Alaska Grade, for example, is a grading system unique to Alaska that takes into account severe storms, cold, altitude, and cornicing; it extends from Grade 1 to 6 (instead of overall commitment ratings I to VII).

MODERN MIXED GRADE	YOSEMITE DECIMAL SYSTEM
M4	5.8
M5	5.9
M6	5.10
M7	5.11
M8	5.11+/5.12-
M9	5.12+/5.13-
M10	5.13+/5.14-
M11	5.14+/5.15-
M12	5.15
M13	5.15+

Fig. A-3. The Modern Mixed Climbing Grades for mixed rock and ice climbs, compared with the Yosemite Decimal System for rating rock climbs.

When climbing in a new area, be sure to check with local authorities and/or guidebooks and become knowledgeable about any possible local grading systems and their peculiarities.

ROCK CLIMBING

Australian. The Australian system uses an open-ended number series. The Australian number 38, for example, is equivalent to 5.15c in the YDS.

Brazilian. The rating of climbs in Brazil is composed of two parts. The first part gives the general level of difficulty of the route as a whole, ranging from first to eighth grade (or degree). The second part gives the difficulty of the hardest free move (or sequence of moves without a natural rest). Figure A-1 shows only the second part of the Brazilian system, the part that is most comparable to the other systems shown. The lower range is expressed in roman numerals; the designation "sup" (for superior) is added to refine the accuracy of the rating. The upper range is expressed in Arabic numerals with letter modifiers.

British. The British system is composed of two elements: an adjectival grade and a technical grade.

The adjectival grade—such as Very Difficult (VD) or Hard Severe (HS)—describes the overall difficulty of a route, including such factors as exposure, seriousness, strenuousness, protection, and runouts. The list of adjectives to describe increasingly difficult routes became so cumbersome that the British finally ended it at Extremely Severe (ES) and now simply advance the listing with numbers: E1 for Extremely Severe 1, E2 for Extremely Severe 2, and so forth:

E. Easy.

M. Moderate.

D. Difficult.

VD. Very difficult.

HVD. Hard very difficult.

MS. Mild severe.

S. Severe.

HS. Hard severe.

VS. Very severe.

HVS. Hard very severe.

ES. Extremely severe.

E1. Extremely severe 1.

E2. Extremely severe 2.

E3. Extremely severe 3.

The technical grade is defined as the hardest move on a particular route. This numeric component of the British system is also open-ended and is subdivided into a, b, and c.

The two grades are linked to each other. For example, the standard adjectival grade for a well-protected 6a, which is not particularly sustained, is E3 (and the combined rating would be expressed as E3 6a). If the route is a bit run-out, it would be E4; if it is really run-out, it would be E5. See Figure A-1.

French. In the French open-ended system, ratings of 6 and above are subdivided into a, a+, b, b+, c, and c+. The French rating of 9b+ is comparable to 5.15c in the YDS.

UIAA. The UIAA open-ended rating system uses roman numerals. Beginning with the fifth level (V), the ratings also include pluses and minuses. The UIAA rating of XII is comparable to 5.15c in the YDS. German climbers use the UIAA system.

ALPINE CLIMBING AND ICE CLIMBING

The International French Adjectival System (IFAS) is an overall rating of alpine and ice climbs used primarily in the Alps. The system is used by several countries, including France, Britain, Germany, Italy, and Spain. It expresses the seriousness of the route, including factors such as length, objective danger, commitment, altitude, runouts, descent, and technical difficulty in terms of terrain.

The system has six categories that are symbolized by the initials of the French adjectives used. It is further refined with the use of plus or minus signs, or the terms “sup” (superior) or “inf” (inferior). The ratings end with an adjective readily understood in English:

F. *Facile* (“easy”). Steep walking routes, rock scrambling, and easy snow slopes. Crevasses possible on glaciers. Rope not always necessary.

PD. *Peu difficile* (“a little difficult”). Rock climbing with some technical difficulty, snow and ice slopes, serious glaciers, and narrow ridges.

AD. *Assez difficile* (“fairly difficult”). Fairly hard climbs, steep rock climbing, and long snow and/or ice slopes steeper than 50 degrees.

D. *Difficile* (“difficult”). Sustained hard rock and snow and/or ice climbing.

TD. *Très difficile* (“very difficult”). Serious technical climbing on all kinds of terrain.

ED. *Extrêmement difficile* (“extremely difficult”). Extremely serious climbs with long, sustained difficulties of the highest order.

ABO. *Abominable*. Translation—and difficulty—obvious.