Back to Other Chapters

In this chapter (which isn't included in main book) we explore what the grade of a climb means, and although the same basic approach is used by all free rock climbing grading systems, there are subtle differences that are worth understanding if you plan on visiting other countries. The chapter ends with an extended discussion of the system used in the UK, as this is probably the most difficult system to understand.

Chapter Contents

1. Introduction

There is clearly a need to be sensible about what grade you can climb however short the route. For longer routes you also need to consider how many pitches of the relevant grade you can climb quickly. If you take a rucksack it will knock several grades off your ability even if it doesn't weigh very much. On big multi-pitch routes it is well worth reading the guidebook or looking at the topo carefully. You don't want to be shut down by a type of climbing you have done little of high on the route - for example, a person-eating offwidth.

An extremely useful approach is timing yourself on a series of single and multi-pitch routes. Try and find out how long each element: leading, seconding, setting the belay, re-racking, stripping the belay etc. takes, and how this changes as the climbing gets harder or switches from bolt protected to trad. You could even leave a video camera at the base pointing at you and get the timings off this later. With this information, try and establish a reasonable idea of what you can do in an hour, and how much time you and your partner spend not climbing. Until you have tried it, it is hard to understand just how educational making such a video can be.

2. Grading Around the World

There are many grading systems in use, however the basic principle behind all modern free rock climbing grades is the same: **they provide an ordered list of all the climbs in an area grouped by the fraction of climbers who can climb them**. They do not attempt to classify climbs by the angle of the rock or the size of the holds, but purely by what fraction of the climbing population can climb them.

There are no simple set boundaries, such as if 20% of climbers can climb a route it is given one grade and if only 10% can climb it is given the next grade. The grade boundaries are simply

historic artefacts, which have never been quantified. Aid climbing grades and the International French Adjectival System used in the mountains are different, in that they contain explicit statements about the terrain or consequences that might be encountered.

In practice it is impossible to carry out mass surveys using large numbers of climbers to find out what fraction can climb which climbs, and so the grade of climbs are initially simply guessed at by the first ascensionists. Because the first ascensionists might have been having a good day, know the rock type very well, or climb much harder than the route in question, it may take many years for a climb to be given its correct grade. In the end though the climb will be compared to other routes in the neighbourhood and to certain climbs throughout the country that are considered definitive. This can cause conflicts when the type of climbing is unusual. In the UK most people rarely climb wide cracks and will be in for a shock in North America if they attempt one near their personal grade limit. The solution to this is to understand that often the system assumes that only those reasonably skilled in a particular climbing technique or rock type are part of those used to decide the grade. Hence if you have done little jamming, some granite routes can seem unreasonably difficult; or if you have done only short routes on solid rock, a multi-pitch sea traverse on shale might be somewhat traumatic.

Grades can also change with time because holds fall off, pegs rust away or climbing equipment improves. In theory they should also change as the climbing population itself evolves. There are now many more women climbing, who will typically be shorter, have less upper body strength and better footwork. There is also possibly a different attitude to risk than in previous generations. Fashions for rock types and training also tend to come and go, making grades somewhat fluid and the subject of much pub-time talk. However, the desire seems to be to keep the grade of most climbs static, and general trends in improvement caused by training etc. are by definition ignored - otherwise the top grade would never increase and we would not have an open ended system. There also seems to be a desire to try and remove some of the discrepancies in grades between areas.

It would be fair to say that the amount of equipment carried by most climbers today should have led to a mass reduction in grades. For example, many a crack climb can now be protected almost as well as a sports route, yet most such routes have not been downgraded even in countries where the grade partly reflects the inherent dangers of the route. Many multi-pitch routes were serious expeditions when they were established by climbers carrying only a few pieces of protection and a single short length of rope: many still carry the same grade 70 years later. At many venues most climbs can now be retreated from at any point by a few abseils from fixed stations. Again, most of these routes have not been downgraded and they can now feel very easy compared to their single pitch cousins. (In the UK the fashion seems to have been the opposite: lots of short routes have had their grade inflated despite never being so safe and easy to protect.)

There are nuances in the way different grading systems are applied. In the UK it is assumed that you have no previous knowledge of the route, except the description in the guide book. As they are red point grades, French grades on harder routes assume the opposite, i.e. you know where any hidden holds are. This form of grading system makes some rock types much easier to on-sight routes on. UK grades also cover the whole route and all aspects of it including the quality of the protection. Most other systems supposedly only measure the difficulty of single pitches and then only consider the moves - i.e. they assume the climber is on top rope. However, in some countries there seems to be an undeclared difference between the grade a pitch might get in the mountains and what it would be given on a roadside crag - but don’t count on it.

Although French rock grades, like the Australian and North American systems, seem easy to use, it is often difficult to know if you are about to climb a hard pitch, or a hard and scary pitch.

Occasionally this ensures a memorable experience.

3. Euroland

In the European Alps, where climbing has evolved over 150 years, the grading system on long routes often recognises the potential for doing a route in a variety of styles. Pegs and bolts that were originally placed for aid are now used mainly as runners. But this doesn't mean you can't pull on them if you get stuck. Hence many long routes will have a free climbing grade and an obligatory grade. The latter is the grade of the route that you need to be able to free to get up the route with a small amount of cheating, but not full-blown aid climbing. This makes a lot of sense, as a large number of long classic outings can feel unbalanced if they have one pitch of 5.11 (E4) in the middle of 15 pitches of 5.7 (HS). It also enables an unbalanced team to climb enjoyably together.

The International French Adjectival System (IFAS) alpine system works in part in a similar way to the British system and measures the overall difficulty of a route, including the length, difficulty, exposure, seriousness and difficulty of retreat. For mountain routes the different grades have been classified by the type of terrain, for example AD would be expected to include snow or ice at 45-65 degrees and significant exposure. For rock routes it does give a measure of the length of the route, the protection and quality of the rock and the ease of retreat, but it tends to get dominated by the difficulty of the climbing. The grades are: F, facile; PD, peu difficile; AD, assez difficile; D, difficile; TD, tr`es difficile; ED1/2/3/4, extremement difficile. ABO, abominablement difficile (abominable) is sometimes used to state that it is both ED and dangerous. Often a + (pronounced Sup for superieur) or a - (pronounced Inf for inferieur) is included to indicate if the climb is slightly easier or harder than typical for the grade, e.g. PD+.

In much of Europe long mountain routes are given an overall grade together with pitch-by-pitch grades. This can provide a lot of useful information, but you still need to be careful to assess the skill set needed to complete a route - including getting back down by reading the description in full. For example, the 1938 route on the North face of the Eiger has a maximum pitch difficulty of about 5.7 (UK HS), however overall it is graded ED2 which indicates it is a very difficult route for most climbers and this overall grade takes account of the terrain, the ease of escape and what might be on your feet and your back. As already mentioned, the UK also does this on much smaller routes and even single pitches.

4. YDS

The American system (or Yosemite Decimal System, YDS) was originally meant to measure just the physical difficulty of the hardest move, but now on hard pitches it is used to measure the overall physical difficulty of the pitch, like the French system. An optional Roman numeral is sometimes added to the YDS grade to indicate the scale of the route:

- **Grade I**: one to two hours of climbing.
- **Grade II**: less than half a day.
- **Grade III**: half a day climb.
- **Grade IV**: full day climb.
- **Grade V**: two day climb.
- **Grade VI**: multi-day climb.
- **Grade VII**: a climb lasting a week or longer.

An optional protection rating is often used in North America to indicate the quantity and quality of the protection. They were originally devised by Jim Erickson, and the identifiers are the ones used in the U.S. to suggest the appropriateness of movie content. PG, for example, stands for

"Parental Guidance". On most cliffs only the R and X are used:

- G: Good.
- PG: Pretty good.
- PG13: OK protection, falls may be long but will hopefully not cause serious injury.
- R: Runout, some protection placements may be very far apart (likelihood of serious injury)
- X: No protection (likelihood of death).

5. Other Systems

The UIAA grading system (which uses Roman numerals) is used for rock routes mainly in western Germany, Austria, Switzerland, Czech Republic, and Slovakia. It is also used for mountain routes in some parts of the European Alps and Asia. Eastern Germany traditionally uses the GDR or Saxon system (which is based on the same principles as the French or UIAA systems).

The Brazilian system is similar to the French or YDS. To convert from YDS to Brazilian, ignore the “5” and subtract 4. So YDS 5.9 = Brazilian 5.

The Ewbank system, used in Australia, New Zealand, and South Africa (which uses a simple 1,2,3… with no letters or +/-) was originally meant to cover issues of protection etc. in a similar way to the British system. However, this has been dropped and the grade now refers to just the difficulty.

There are a few other systems used around the world, together with separate ones for ice climbing and aid routes.

Grade comparison table. Be cautious about translating between British and other grades, as the British grade considers more than the physical difficulty of the climbing.

French Rock Grade	UIAA	North America	Australian	Very Approx. British
1	I	5.1	4	Mod
2	II	5.2	6	Diff
2+	III	5.3	7	VDiff
3	IV	5.5	10	S
3+	IV+	5.6	12	S
4	V	5.7	13	HS
4+	V+	5.8	15	VS
5	VI-	5.9	16	HVS
5+	VI	5.10a	18	HVS
6a	VI+	5.10b	19	E1
6a+	VII-	5.10c	20	E2
6b	VII	5.10d	20	E2
6b+	VII+	5.11a	21	E3

6c	VII+	5.11b	22	E3
6c+	VIII-	5.11c	22	E4
7a	VIII	5.11d	23	E5
7a+	VIII+	5.12a	24	E5
7b	IX-	5.12b	25	E6
7b+	IX-	5.12c	26	E6
7c	IX	5.12d	27	E7
7c+	IX+	5.13a	28	E7
8a	X-	5.13b	29	E8
8a+	X-	5.13c	30	E8
8b	X	5.13d	31	E9
8b+	X+	5.14a	32	E9
8c	XI-	5.14b	33	E10
8c+	XI	5.14c	34	E10

6. Aid Grades

Aid grades are a very different beast to normal rock climbing grades as they try and describe consequence more than difficulty. The prefix A implies using a hammer, mainly for placing pegs. C implies that the aid is clean, i.e. on cams, wires (stoppers) and hooks. F implies the climbing is on fixed pieces. These might be bolts, pegs, in-situ stoppers or in-situ heads. (Heads are stopper-like pieces made of soft alloy and are bashed in cracks and corners.) The prefix is followed by a number (1 to 5) and possibly a “+” to indicate it’s a little harder than the norm at that grade.

Each pitch is given a grade, and the topo might indicate the grade of various parts of the pitch.

Examples: A2, C3+, F2

- C1/A1: Easy aid where almost all the pieces are solid, easy to place and could hold a normal lead fall; if a piece were to blow, the next should hold you. Typically nuts, cams and hexes.
- C2/A2: Moderate aid. Solid gear, but possibly difficult to place. May require cam or sky hooks. Any poor pieces should be above solid placements just below you.
- C2+/A2+: Potential for fall up to 10m, but the risk of injury is small.
- C3/A3: Hard aid. Many tenuous body-weight only placements in a row. Potential falls up to 15−20m which may involve injury.
- C3+/A3+: as C3/A3, but with longer, more dangerous fall potential.
- C4/A4: Serious aid. Continuously tenuous gear placements in a row with up to 30 m ledge fall potential leading to serious injury.
- C4+/A4+: Severe aid. Longer fall potential, with high ledge fall potential. Each pitch can take many hours to lead. Thin nailing is to be expected, or may have long sections of hooking.
- C5/A5: Extreme aid. Nothing on the pitch will hold a fall and the fall will not be clean and hence may easily result in the death of the leader.

With the C5/A5 rating it is unclear if the belay also has to be poor, and hence whether the second might die as well. (Some texts imply that A6/C6 should be used if the belay will also fail. For the leader the distinction is irrelevant as a C5/A5 fall should kill you.) A0 is used to indicate a short section which can be pulled through without the use of specialist aid gear such as aid ladders. This is often just a couple of pegs or bolts, so might better be described as F0, but isn't.

One thing that is unclear in aid grades is how much weight to place on the two elements: consequence and likelihood. For example, if a route has a long sequence of hook moves above a ledge it seems natural given the above list to give it C3 or even C4. However, if the hooks placements are large, solid, and most importantly, obvious to the eye, this would seem unreasonable, as you would almost have to throw yourself off the route to get hurt.

Although the above system is used almost universally, a few like to use Jim Bridwell's *Casual Rating System*: NBD = No Big Deal; NTB = Not Too Bad; PDH = Pretty Darn Hard; DFU = Don't Fuck Up.

7. More on UK Grades

UK grades have been seen as an attempt to do little more than confuse the uninitiated, and even amongst the locals they inspire page upon page of discussion on bulletin boards. The following is presented to help those climbing in the country for the first time get their heads around the concept and for those British climbers that are still confused.

Within the UK, the British grading system is used for all but boulder problems and sports routes. It is an open ended scale from *Easy* to *Extremely Severe*, which currently runs as: *Easy*, *Moderate*, *Difficult*, *Very Difficult, Hard Very Difficult, Severe, Hard Severe, Very Severe, Hard Very Severe, Extremely Severe* 1 (shorted to E1), *Extremely Severe* 2 (E2), etc. up to around E11. The prefix "mild", as in Mild Very Severe, was used for a while to indicate a slightly easier route, but has largely fallen into disuse, which is a shame.

As previously said, the founding principle of climbing grades is an ordered list of how many people are able to climb the routes. The UK (or *British*) grade of a climb automatically sums up everything that goes into an ascent: the physical difficulty of the whole route, the difficulty of the hardest move, the ease of placing protection, the quality of the protection and even the consequences of failure, including how easily one can retreat. One result of this idea of capturing-all-variables-in-one-bucket is that it was felt useful to introduce another grade alongside this *adjectival* grade, that simply describes the physical difficulty of toproping the hardest move (or short sequence) on a single pitch: this is termed the *technical* grade (although it has nothing to do with how technical rather than physical a move is) and currently runs from 1 to 7 with subdivisions a, b, and c.

The adjectival and the technical grades are assembled into the complete grade of the route: examples being, HVS(5a), or E5(6b). As each pitch is given a technical grade, a three pitch climb might be described as VS(5a,4a,4c).

In the most commonly climbed grades, there are around three technical grades covering a single adjectival grade, or three adjectival grades covering a single technical grade and the difference between the two can be used to extract information on the difficulty of the hardest move, the quality of the protection, the quality of the rock and continuousness of the climbing.

Unfortunately this implies at least four variables and we only have two grade types, so it is sometimes hard to get as much information as one would want. Luckily UK guidebooks almost always include a written description of the route (possibly because the routes are relatively short) and more information can often be gleaned from this.

Some examples:

- HVS(5a) – a typical Hard Very Severe (HVS) pitch;
- HVS(4c) – either poorly protected, loose rock, or very continuous climbing; and
- HVS(5b) – one hard move either near the ground or in a very well protected position.

Or emphasising the technical grade:

- VS(4c) – a typical Very Severe (VS) pitch containing a 4c move—which is the typical grade of the hardest move on a VS;
- HS(4c) – a Hard Severe (HS) pitch with a hard (for HS), well protected, move; and
- HVS(4c) – an HVS with easier moves than is typical on an HVS, but either poor protection, loose rock, or very continuous climbing.

The table lays out the typical combinations. Climbs below severe are not usually given a technical grade, and a few climbs with more extreme combinations of technical and adjectival grade, such as VS(5b) or VS(4a) do exist. The benchmark technical grade in each route is indicated in bold—this is the technical grade most commonly associated with each adjectival grade. One can see that between Severe and E2 there is a logical progression of one technical grade increase for each increase in adjectival grade, and that most climbs are captured by allowing three technical grades per adjectival grade. Unfortunately the simplicity of the system starts to breakdown at around E3. This failure is for three reasons:

(i) As routes get harder they often get steeper, and as the technical grade only covers a single move or short sequence, the adjectival grade needs to be increased if there is a long sequence of stamina sapping moves.
(ii) The range of physical difficulty represented by a single technical grade seems to get larger as one progresses up the grades faster than the adjectival grade (this point is one reason why UK technical grades are no longer used by boulderers—above 6a they simply don't allow one to grade problems finely enough).
(iii) More contentiously, the potential of a ground or equivalent fall is possibly taken more seriously on a harder route as it is more likely to happen.

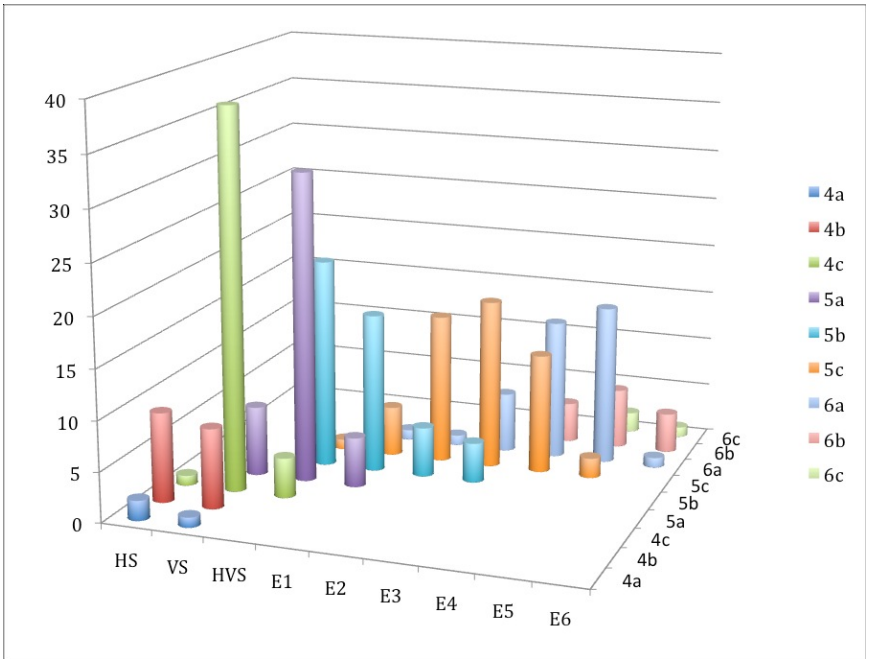
For most of the routes that most people climb the system is a lot easier to work with than it at first appears, namely: Look at the adjectival grade and ask, is the technical grade the benchmark one?

• If it is then the route is probably on reasonable rock with typical levels of protection and moves typical of the grade.
• If it is not, then if the technical grade is higher than typical the route's crux is probably hard but well protected, if it is lower then the route might be run out or have loose rock or be very sustained.

The chart adds some detail taken from my (DC) analysis of 256 routes from guide books to the Peak District (On Peak Rock) and North Devon. These are two very different areas, and the chart shows the number of routes for each technical/adjectival grade combination. From this we

can see that there is clearly a benchmark technical grade associated with each adjectival grade, and below E3 this increases by one grade for each increase in adjectival increase in grade.

A word of warning – according to this analysis, a route graded E1(6a) should be very safe. However, whilst it is true the 6a crux is likely to be, it might have in addition a lot of 5a climbing with no protection and on loose rock. Alternatively a two pitch route graded HVS(5a,4c) might appear to be a benchmark HVS with the HVS pitch being the first, however in reality it might be one pitch of VS(5a) followed by a pitch of HVS(4c) - I didn't say it was going to be simple.



Graph: The number of climbs (vertical axis) in each combination of adjectival and technical grade combination for a selection of 256 UK routes.

Table: Typical spread of technical grades for each adjectival grade. Benchmark grades are shown in bold.

Adjectival grade	Abbreviation	Typical Technical grade
Easy		
Moderate	M or Mod	
Difficult	D or Diff	
Very Difficult	VD or VDiff	
Severe	S	3c,**4a**,4b
Hard Severe	HS	4a,**4b**,4c
Very Severe	VS	4b,**4c**,5a
Hard Very Severe	HVS	4c,**5a**,5b
Extremely Severe	E1	5a,**5b**,5c
	E2	5b,**5c**,6a
	E3	5b,5c,6a,6b
	E4	5c,6a,6b
	E5	5c,6a,6b,6c
	E6	6a,6b,6c

One interesting characteristic of the British system is that the adjectival grade is meant to be given for an on-sight attempt, i.e. one without prior practice on a top rope or beta from another climber. If the climb involves a complex sequence of moves or hidden holds (or protection) it will

most likely feel much harder to on-sight than it would after practice. This can make it difficult for locals, who may have climbed a route many times, to accurately grade the route. Being that these locals are precisely those most likely to be involved in grading the routes within a guidebook there is plenty of potential for sandbagging visiting climbers.

Although there seems to be some debate over this, the technical grade is usually considered to be the grade of the hardest section done correctly – i.e. by the easiest sequence – and therefore not necessarily for an on-sight attempt where one is likely to climb in a more controlled manner. Another thing worth bearing in mind is that there has been much debate over whether the technical grade should only consider a single move or a longer sequence. Because it has supposedly been taken as a single move (or very short sequence), most steep crack routes should have relatively very low technical grades. Often they don't: a 6m roof crack is likely to have a harder technical grade than a 2m one.

Another issue is the reluctance to use the full potential of the system. If someone climbs a route on very loose rock or with no protection they might conclude that it felt like, for example, E2. As the route was dangerous they will select the technical grade one below the benchmark one, which in this case would be 5c, so they would select 5b and declare the route to be E2(5b). Whereas they should have selected the technical grade based on the true difficulty of the crux. This might have only been 5a. But there is great resistance to giving a route a grade such as E2(5a) as it would lie outside the norm. However there are lots of loose E2 routes which most "E2" climbers would not go near – which is a contradiction. In essence, the problem with the UK system is that it doesn't have an X and an R, but just an R. i.e. the way it is used does not distinguish between a climb with injury potential and death. The system as set up can deal with such situations, but there is a resistance to use it to do so.

The reverse approach to grading can have a similar affect. Someone might accurately grade the crux of a long unprotected route as 4c and as it is unprotected select the adjectival grade one up from the benchmark to give HVS(4c). However in reality it might well be unwise for the average HVS climber to attempt it on-sight, and if they do they are likely to have a full-on E1 experience. This suggests the grade of E1(4c) might have been more appropriate, however there will be much resistance to using such a grade combination. This is despite the fact that few HVS climbers would consider on-sight soloing a long 4c route.

Part of the problem might be one of history. It is possible that in the past climbers tended to be brave individuals, which given the amount of protection they had might have been a compulsory attribute. Now, with a skirt of cams many trad routes can be better protected than some sports climbs. This has possibly led to less brave individuals (like David) being more heavily represented in the climbing population. Given this there might be the need to expand the normal range of three technical grades to each adjectival grade to five grades.

At the top end of the grade spectrum some climbers consider the UK system to be in something of a crisis. Many of the hardest routes where put up after top rope practice and may never have had an on-sight attempt. So it is hard to know if these routes have been graded correctly. Unfortunately, few of us climb such grades so most of us don't need to worry.

This site presents the images from the ebook *High: Advanced Multipitch Climbing*, by David Coley and Andy Kirkpatrick. In order to keep the cost of the book to a minimum most of these were not included in the book. Although they work best when used in conjunction with the book, most are self-explanatory.

Please use the following links to buy the book. It costs about $9, or £6 - less than a locking carabiner

Amazon USA (kindle) / Amazon UK (kindle) / itunes / kobo

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