Alternate Tuning Guide

by

Bill Sethares

New tunings inspire new musical thoughts. Alternate tunings let you play voicings and slide between chord forms that would normally be impossible. They give access to nonstandard open strings. Playing familiar fingerings on an unfamiliar fretboard is exciting - you never know exactly what to expect. And working out familiar riffs on an unfamiliar fretboard often suggests new sound patterns and variations. This book helps you explore alternative ways of making music.

Why is the standard guitar tuning standard? Where did this strange combination of a major 3rd and four perfect 4ths come from? There is a bit of history (view the guitar as a descendant of the lute), a bit of technology (strings which are too high and thin tend to break, those which are too low tend to be too soft), and a bit of chance. Nevertheless, a standard is a standard, and nearly everyone who plays knows EBGDAE. It's only a few folk musicians who use different tunings, and they probably do it because they can't play well enough, right?

Er, well, maybe Leo Kottke knows what he's doing, and maybe Wm. Ackerman and Michael Hedges are good, and maybe Adrian Belew is talented... But playing in alternate tunings is impossible on stage, retuning is a nightmare... strings break, wiggle and bend out of tune, necks warp. And the alternative - carrying around five special guitars for five special tuning tunes - is a hassle. Back to EBGDAE.

But all these "practical" reasons pale compared to psychological inertia. "I've spent years mastering one tuning, why should I try others?" *Because there are musical worlds waiting to be exploited*. Once you have retuned and explored a single alternate tuning, you'll be hooked by the unexpected fingerings, the easy drone strings, the "new" open chords. New tunings are a way to recapture the wonder you experienced when first finding your way around the fretboard - but now you can become proficient in a matter of days rather than years!

And the 'practical' reasons are becoming less convincing with the introduction of MIDI guitar controllers, which do much more than just allow guitarists to play synthesizers. With the flick of a button you can change the tuning of all six strings; no messy out of tune strings, no broken strings, no extra guitars. And the alternate tunings themselves are no longer confined

by the mechanics of string widths and neck tensions. How about a tuning with six bass strings? A tuning that spans six octaves? String configurations that were impossible to manufacture with wood and gut can now be realized with a little MIDI magic.

The Alternate Tuning Guide shows you how to slip your guitar into all the popular alternate tunings, shows you how to finger open and bar chords, how to play representative scales, and graphically displays the notes as they appear on the fretboard. Each tuning is briefly discussed and its strengths and limitations are examined, helping you to get the most from your musical explorations. The Alternate Tuning Guide is divided into four main sections, corresponding to the four main types of alternate tunings: open, instrumental, regular, and "special."

In the *open* tunings, the six strings are tuned to form a simple chord. This makes it easy to play unusual chordal combinations and interesting tonal clusters by utilizing "drone" and "sustained" strings. Bottleneck slide and harmonics are wonderful in open tunings, because you can play full six string chords. And you can play bar chords with only one finger!

The *instrumental* tunings are based on the tunings of modern and historical instruments such as the mandolin (augmented for six string play), the charango, the cittern, the oud, and numerous others. Players of these instruments may find the tuning and chord charts useful, but guitarists will find some truly wonderful "alternate" ways to tune.

In the *regular* tunings, the strings are tuned uniformly up the fretboard. This allows chord forms to be moved up and down the fretboard like a normal bar chord, and also sideways across the fretboard. Learn a handful of chord forms in a regular tuning, and you'll know hundreds of chords!

The *special* tunings are a miscellaneous collection of tunings most of which were created and/or popularized in recent years by various singers and songwriters.

Explore these alternate musical universes with the Alternate Tuning Guides friendly chord and scale charts. What are you waiting for... retune that guitar *now*.

Alternate Tunings Guide

How to Use the Alternate Tuning Guide

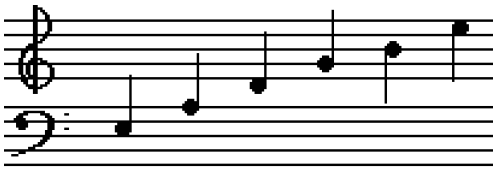
Open Tunings

Instrumental Tunings

Regular Tunings

Special Tunings

The Standard Tuning

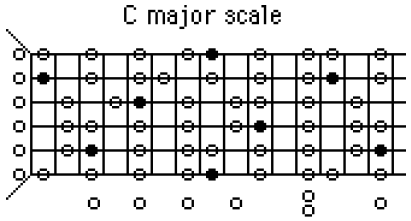


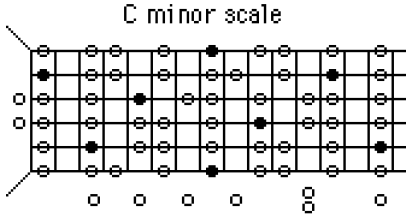
Strings:	6	5	4	3	2	1
Notes:	e	a	d	g	b	e
MIDI #:	52	57	62	67	71	76
Retune:	0	0	0	0	0	0
Fret:	5	5	5	4	5	

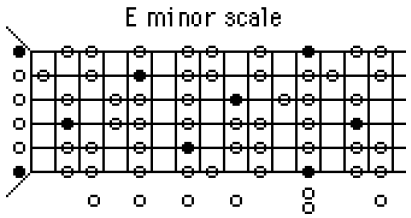
This page is intended to orient you to the presentation in the rest of the book. First, (down below) you see how the notes are laid out on the fretboard. The musical staff on the right shows how the strings are tuned. Corresponding MIDI note numbers are shown for those using a MIDI guitar controller. "Retune" shows how many half steps each step needs to be retuned from the standard tuning, and "fret" tells what fret to place your finger on in order to align the sounds - thus you place your finger on the 5th fret of the 6th string in order to make the two sound the same note. In other words, this shows how to tune the guitar.

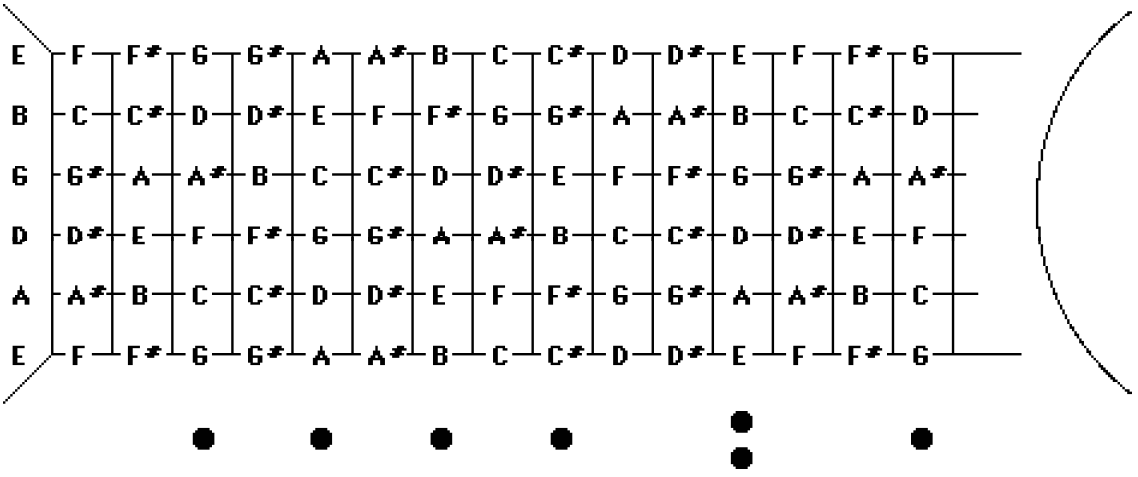
Then there are some small fretboards that show how to finger a few simple scales, and finally, a full page is devoted to cool chords that you can easily play in the tuning. Of course, you already know all this - for the standard tuning - but what about for other tunings?

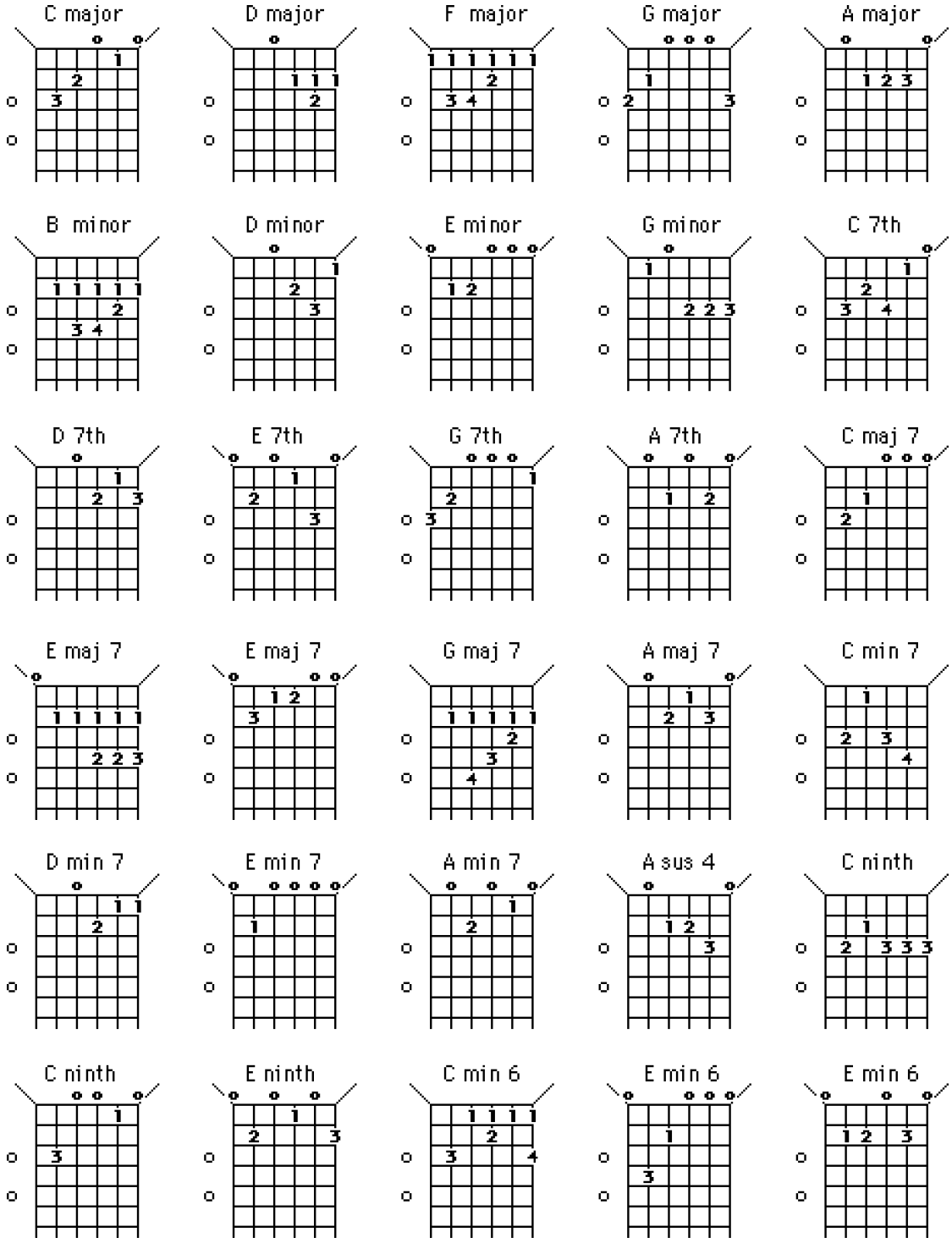
Read on...










C major
D major
F major
G major
A major
B minor
D minor
E minor
G minor
C 7th
D 7th
E 7th
G 7th
A 7th
C maj 7
E maj 7
E maj 7
G maj 7
A maj 7
C min 7
D min 7
E min 7
A min 7
A sus 4
C ninth
C ninth
E ninth
C min 6
E min 6
E min 6

Name of Tuning

The familiar EADGBE tuning is called the Standard tuning. Some tunings are named for the chord that is sounded when the open strings are played (Open G, D Minor). Some are named from an instrument that tunes in that same way (charango, dobro, cittern). Some are named for the structural relationship among the strings (the All Fourths, Minor Sixth). Others are named after a song which uses the tuning (Admiral, Four and Twenty). Everything needs a name.

Type of Tuning

The tunings are divided into sections by the way the strings are organized:

** In the open tunings, the open strings are tuned to form a simple chord.
** In the instrumental tunings, the strings are tuned to imitate an instrument.
** In the regular tunings, the strings ascend uniformly from low to high.
** The special tunings are all those that don't fit into the above categories.

Comments

Often there are peculiarities or special features of the tuning that deserve comment. Each tuning is different, each sounds unique, and each has its own feel.

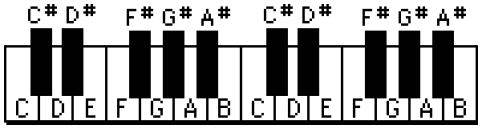
Tuning and Retuning Instructions

The major stumbling block for most guitar players (in terms of using alternate tunings) is the initial reluctance to retune the guitar. Remember how hard it was to tune to the Standard tuning when you first started playing? Well... there's good news. It's actually easier to tune to many of the alternate tunings (especially the open tunings) than to tune to the Standard.

The tuning information is all you need to retune your axe.

Those who can read music can read the notes directly from the musical staves and tune to whatever other instrument is at hand.

If a piano or other keyboard is nearby, the note names can be used to tune the strings using the following correspondance between keys of the piano and notes.



The row labelled "Retune" shows how far each string must be changed from the standard tuning. A zero means that the string is the same as in Standard. Plus numbers indicate that the string must be tuned up while negative numbers mean the string must be tuned down.

The "Fret" row tells where to fret in order to match the tone of the next string up. For example, in Standard tuning you first fix the low E. Then, placing your finger at the 5th fret of the sixth string gives the note for the open 5th string. Similarly,

** Press fret 5 of the 5th string to get the note for the 4th string.
** Press fret 5 of the 4th string to get the note for the 3rd string.
** Press fret 4 of the 3rd string to get the note for the 2nd string.
** Press fret 5 of the 2nd string to get the note for the 1st string.

And you're done.

Other tunings use different frets, but the procedure is identical. To get into the Open G tuning, for instance, note that the "Fret" row reads 5 7 5 4 3. First, fix the low string at a D. Then,

** Press fret 5 of the 6th string to get the note for the 5th string.
** Press fret 7 of the 5th string to get the note for

the 4th string.
** Press fret 5 of the 4th string to get the note for the 3rd string.
** Press fret 4 of the 3rd string to get the note for the 2nd string.
** Press fret 3 of the 2nd string to get the note for the 1st string.
Voila!

If you are using a MIDI guitar controller, then you will need to reassign the output of the controller or the input of the sound module, depending on your equipment. The MIDI note numbers are given for each string so that you can easily reprogram the controller or sound module. The details of the procedure vary depending on the manufacturer, so you will need to refer to your owners manual (shudder).

If you are using a pitch to MIDI converter, you have two options. One is to retune the strings as described above. The other option is to leave the controller in Standard tuning and to retune the sound module. The advantage of retuning the strings is that you can still mix the guitar sound with the synthesized sound. The advantage of retuning electronically is that you can switch between tunings instantly with a patch or program change command to your sound module.

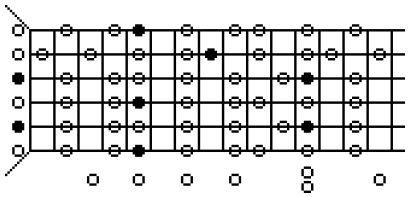
The Fretboard

The note names appear differently on the fretboard depending on how the guitar is tuned. The stylized fretboard is handy when you wish to pick out particular notes (for a melody line, perhaps) or when you wish to make up your own chords and scales.

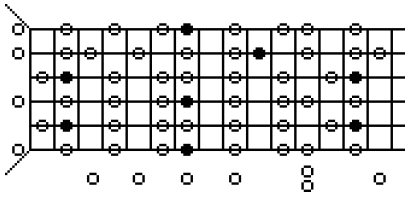
Scales

A few scales are given for each tuning. The darkened circles are the roots (starting notes) of the scale. Scales can be transposed just like chords. For instance, to play an A major scale in the Open G tuning, shift the whole pattern of the G major scale up two steps.

Thus the G major scale



becomes the A major scale

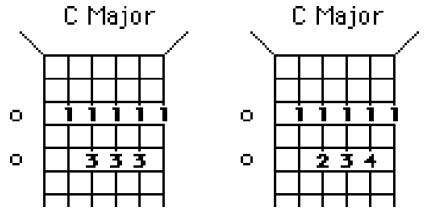


Chord Charts

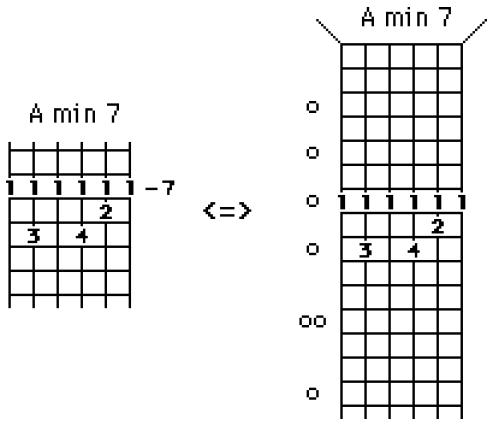
The second page of each tuning contains about 30 chords. These chords were chosen to give a balance between open position and bar chords, between major, minor, and 7th chords, and to emphasize the strengths of the tuning.

The numbers on the tiny fretboards indicate a suggested fingering for the chord where
1 - first finger
2 - second finger
3 - ring finger
4 - pinky
Small circles above the fretboard indicate that the string can be played open (unfretted).

You should always play chords in the most comfortable way. Since everyones hands are different, and everyones experience differs, feel free to either use or ignore the suggested fingerings. Even the experts can't always agree. The "A" type bar chord, for instance, is fingered in different ways in different books.



Some chords have a number to the right of the fretboard, indicating that the chord should be placed up the fretboard at this fret. Thus the A minor 7 chord from the Open G tuning chart is fingered as shown.



The next sections show how to easily transform these 30 chord forms into a nearly unlimited number of useful chords using four simple musical tricks.

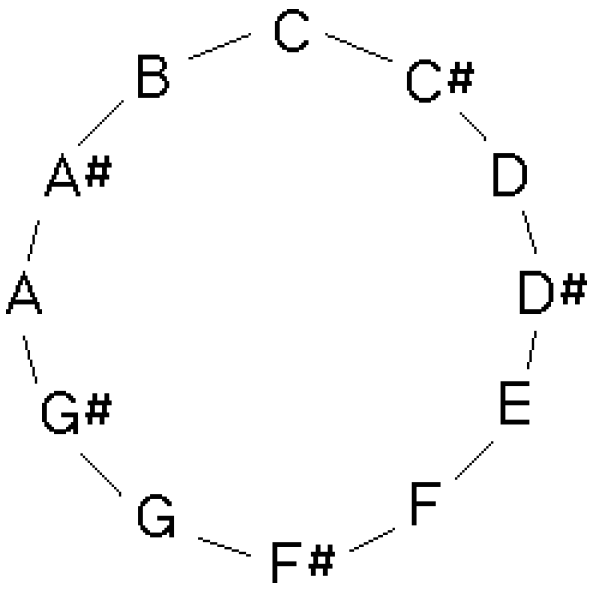
The Circle of Notes

A surprising number of useful insights about the musical universe are displayed in the circle of notes, which is like a clock face in which the hours of the day are replaced by the note names

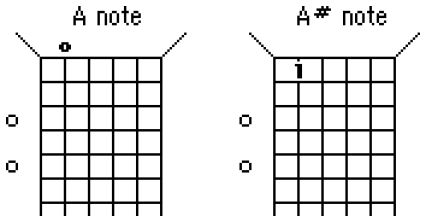
C C# D D# E F F# G G# A A# B

(pronounce C# as Sea sharp). These names are arbitrary. Any set of symbols would do - twelve numbers, twelve geometric figures, twelve months, twelve apostles, the twelve signs of the zodiac. For sanities sake, we stick with the traditional names. But beware; tradition gives some notes two names

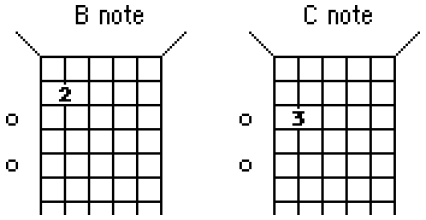
C# is also called Db
D# is also called Eb
F# is also called Gb
G# is also called Ab
A# is also called Bb



The circle of notes describes the order of notes on the fretboard of the guitar. For example, the A string (string 5) begins with an A note. Playing up one fret moves the A to an A# (move clockwise around the circle).

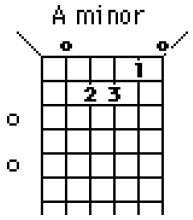


Up another fret is a B. Up one more is a C.

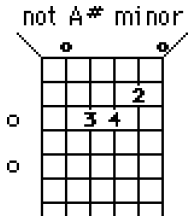


Transposing Chords

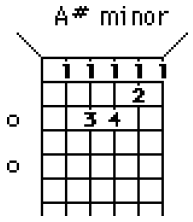
The circle of notes works for chords as well. Play an A minor chord in open position



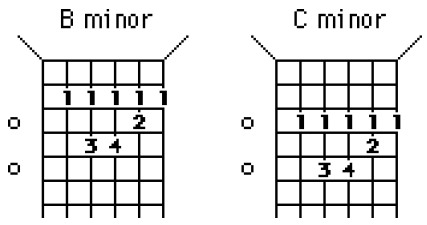
Moving all the notes up one fret should give an A# minor chord



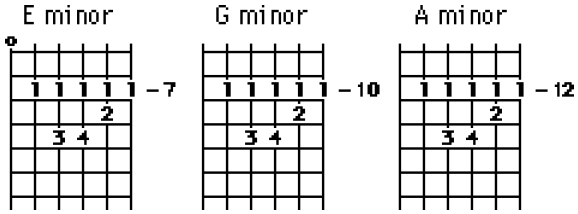
Oops... it sounds terrible. What went wrong? We forgot about the two open strings. In order to move all the strings (including the open strings) up, use the first finger like the nut (the notched bar at the end of the fretboard). Thus it's actually played as a bar chord with the first finger stretched across the fretboard.



Now it's smooth playing. Up another fret is a B minor. Up another is a C minor.



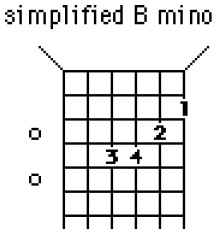
This pattern continues all the way up the fretboard, around and around the circle of notes, until you run out of frets.



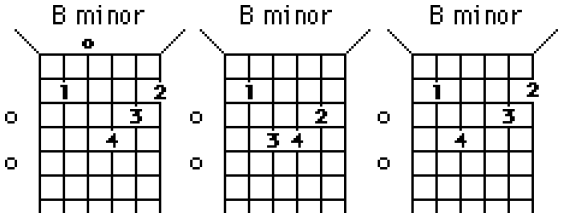
After the twelfth fret, the chords start repeating, since the circle of notes is only twelve notes long.

Subchords

Often, you can remove notes from a chord form to make it play easier, sound different, or even sound better. For example, the B minor chord above contains all the notes of the B minor chord that beginners learn



Thus the notes of the simplified B minor chord are a subset of the notes of this barred chord, and the simplified version is called a subchord. The B minor also contains other subchords that you may have noticed



In a very real way, all of these chords "come from" or "grow out of" a single chord form, the open position A minor. Similarly, other chord forms lead to whole families of playable chords

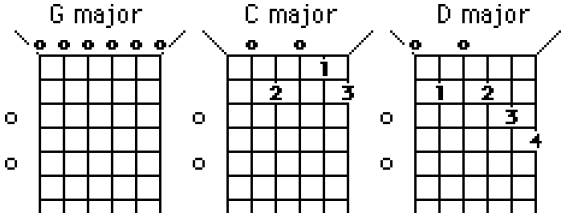
via transposition (following the circle of notes) and the process of finding subchords (withholding certain tones from a chord). The most important things to remember when using chord charts to play in alternate tunings is that each chord in the chart represents a whole family of related chords.

An Example in Open G Tuning

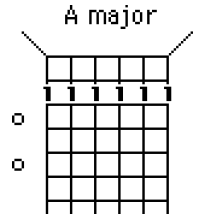
To see how these ideas work in an unfamiliar setting, and to get you started playing in alternate tunings, retune to the Open G tuning (DGDGBD) by lowering the first, fifth and sixth strings two steps apiece. Notice that strings 1 and 6 are tuned to octaves of the 4th string. Tune them down until they sound right. Similarly, string 5 needs to go down until it matches the 3rd string. It really is quite painless, and when you're done, strumming all six open strings sounds a beautiful G major chord. If you have problems retuning, check out the section on retuning again.

Ready? Suppose you want to play a song that uses the chords G, D, and A major. In the chord chart there are three different G majors (more on this later) and one D. But no A!

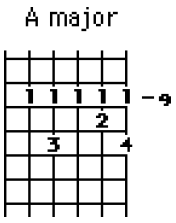
Let's find some A major chords. First, take stock of the chordal resources. There are G, C, and D major chords shown,



which suggests that we should be able to find at least three different A major chords by transposition. The circle of notes shows that A is two steps clockwise from G. Consequently, an A chord should be two frets higher than G.

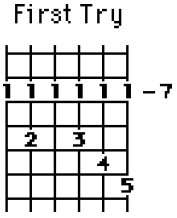


Starting at C, A is 3 steps counterclockwise and 9 steps clockwise. Thus A will be either 3 frets down from C or nine frets up from C, or both. Since it's impossible to move the chord down, move it up nine frets to the A major chord



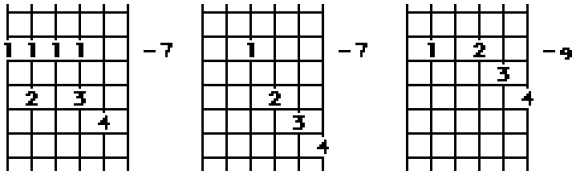
Just as in the earlier example in standard tuning which used the open position A minor chord to find B minor chords, the open strings must be moved into bar chord form and the other fingers must readjust to maintain the finger pattern.

Starting at D, A is 5 steps counterclockwise and 7 steps clockwise, indicating that the open position D chord must be moved either down 5 or up 7 frets. Since it is again impossible to move down, move up.



But wait... I don't have that many fingers! The open D major chord already uses all four fingers. If we try to bar with the first finger and to play the complete chord, then we run out of fingers. Thus there is no way to play a full six string A major chord at the 7th fret. But we can

look for suitable subchords. Here are a few possibilities.

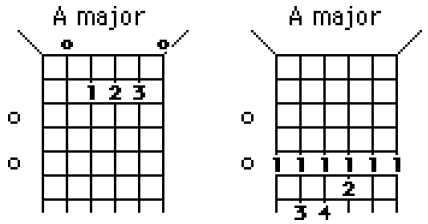


Which sounds best? It depends on the musical context. Are you finger picking or strumming? Playing electric or acoustic? Is your tone distorted or clean?

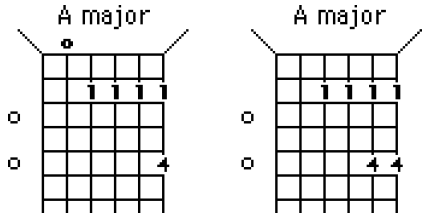
This procedure of finding desirable chords by transposing and using subchords is fundamental to making effective use of chord charts.

Combining Chords

Another trick that helps find alternate ways to finger chords is to combine two (or more) chords. For instance, an A major chord in the standard tuning can be played in either of the following ways

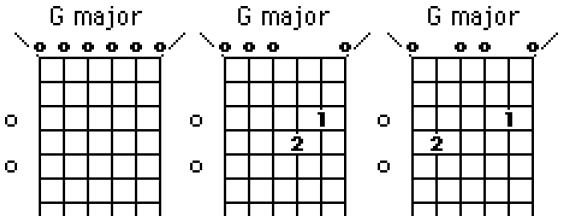


Any note in either of the chords is fair game for an A major chord. Thus two alternate A's are

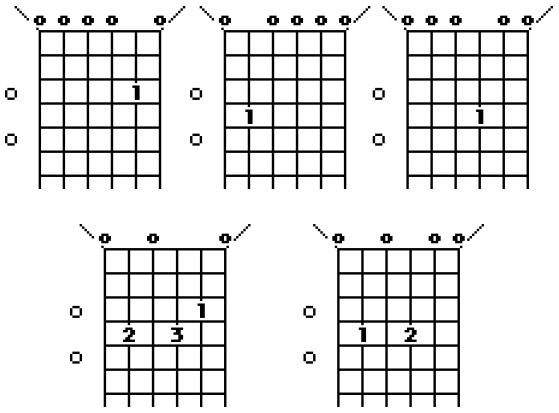


both of which combine some notes from each of the two original A's. Sometimes this kind of combination procedure works spectacularly.

Returning to the Open G tuning, note that three open position G major chords are shown



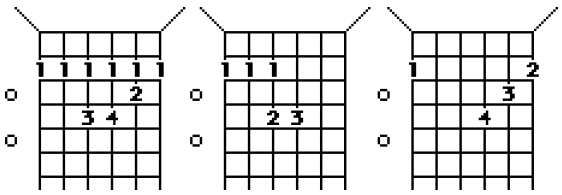
These can be combined to form several other open position G major chords



Nice, eh?

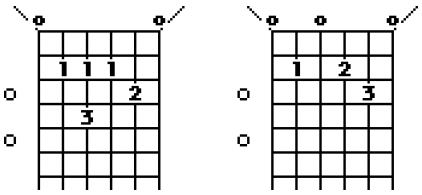
Using Octaves

Another general trick for finding chords exploits strings which are tuned alike. In the Standard tuning, there are two E strings (the highest and lowest strings). If a chord is fingered on some fret on one of these strings, then it can also be fingered on that same fret of the other string. For instance, many of the B minor chords use the second fret of the high E string. These can be optionally fingered using the low E string at the second fret. A few possibilities are...

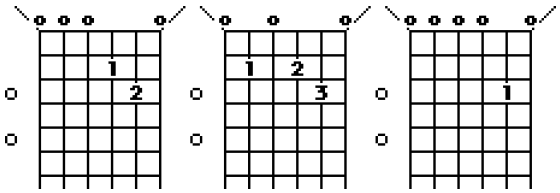


This octave trick is only marginlly useful in Standard tuning because only two strings are tuned alike. In many alternate tunings, however, more strings are tuned alike, leading to numerous useful and exciting chords.

In the Open G tuning, for instance, there are three D strings and two G strings. The open position D major chord uses the first string at the 4th fret while the fourth and sixth strings are played open. Since strings 1, 4, and 6 are all tuned to D, any of them can be fingered at the fourth fret or played open. Two possibilities are



Another example is the D7sus4 chord, whose G strings can be fingered either open or at the second fret



The Four Tricks

The four techniques to discovering large families of chord fingerings are:

** transpose chords using the circle of notes
** find and exploit subchords
** combine chords to create new chord forms
** exploit octaves and multiple strings.

These techniques, applied judiciously, allow you to play almost any chord in almost any tuning given a few seed chords to start with. The purpose of this alternate tuning guide is to provide these seeds.

The Stuff Chords Are Made Of

What is a chord?

Despite all the music theoretic hype, there is nothing fundamental, natural, or obvious about chords. Rather, each chord type (major, minor, 7th, etc.), is *defined* to contain a certain collection of intervals. These definitions are arbitrary, but are deeply engrained by history and tradition. The accompanying Table of Chord Intervals lists most of the common chord types and the intervals that they contain. For example, the table shows that a major chord contains the intervals 0, 4, and 7. A D major chord contains the notes D (the zero), F# (which is 7 steps clockwise from D around the circle of notes), and A (which is 7 steps from D). Similarly, an F7th chord contains F, A, C, and D#.

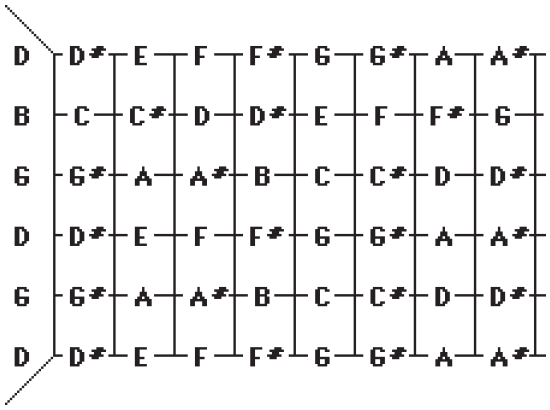
Warning: Normally these would be written F, A, C, and Eb (recall D#=Eb), but the reasons are deeply embedded in music theory, and need not concern us if all we want to do is build and use chords.

Like chords, scales are defined to be collections of intervals. The Table of Scale Intervals lists several common scales. For example, a major scale contains the intervals 0,2,4,5,7,9,and 11. An F major scale consists of the notes F, G (2 steps clockwise from F), A (4 steps), A# (5 steps), C (7 steps), D (9 steps), and E (11 steps). Consequently, with these tables and a little effort, you can build any chord or scale in any tuning.

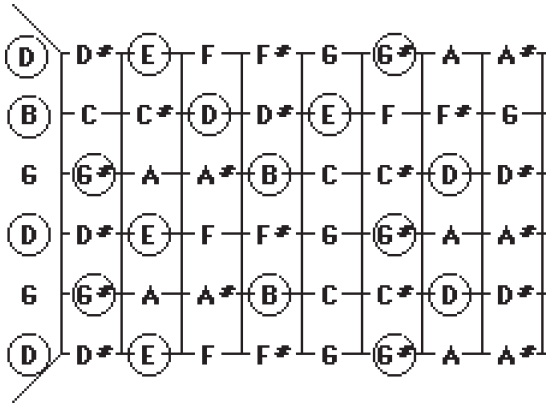
How to Build Chords and Scales

To see how this procedure works, let's build an E7 chord in open position in the Open G tuning (DGDGBD). The first step is to draw the fretboard. Each string starts with the appropriate note name (string 6 = D, string 5 = G, etc.). As the frets climb the fretboard, the note names move around the circle of notes. Thus the lower portion

of the Open G fretboard is



The second step is to identify the notes that make up the E7 chord. The table of intervals for the 7th chord reads 0, 4, 7, 10. Starting at E=0, count around the circle of notes to G#=4, B=7 and D=10. Next, highlight or circle the notes E, G#, B, D on the fretboard.



By choosing various subsets of the notes, numerous E7 chords can be found. Here are a few possibilities.

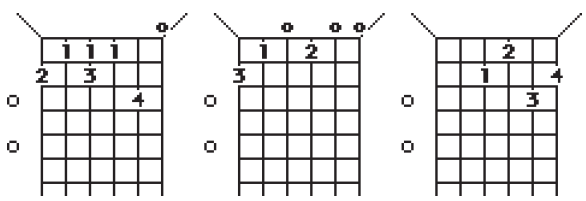
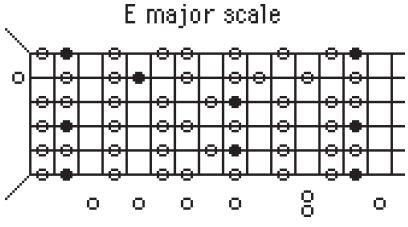


Table of Chord Intervals

Name	Abbreviation	Intervals
Major	maj	0, 4, 7
Minor	min	0, 3, 7
Major Seventh	maj7	0, 4, 7, 11
Dominant Seventh	7th	0, 4, 7, 10
Minor Seventh	min7	0, 3, 7, 10
Major Sixth	6	0, 4, 7, 9
Major Ninth	maj9	0, 4, 7, 11, 14
Dominant Ninth	9	0, 4, 7, 10, 14
Sixth add Ninth	6+9	0, 4, 7, 9, 14
Minor Sixth	min6	0, 3, 7, 9
Minor Ninth	min9	0, 3, 7, 10, 14
Minor 7 Flat Five	m7b5	0, 3, 6, 10
Seven Flat Nine	7b9	0, 4, 7, 10, 13
Seven Sharp Nine	7#9	0, 4, 7, 10, 15
Diminished	dim	0, 3, 6
Diminished Seventh	dim7	0, 3, 6, 9
Augmented	aug	0, 4, 8
Augmented Seventh	aug7	0, 4, 8, 10
Suspended Fourth	sus4	0, 5, 7
7 Suspended Fourth	7sus4	0, 5, 7, 10
Suspended Second	sus2	0, 2, 7

Scales are built exactly the same way. For example, the notes in an E major scale can be determined readily from the scale table as E=0, F#=2, G#=4, A=5, B=7, C#=9, and D#=11. Highlighting these notes on the Open G fretboard gives the E major scale



Of course, it's a lot of effort to build chord and scale charts yourself. That's why we've made this book - so that you don't need to go through this procedure for every chord and every scale in every tuning.

In fact, turn to the Open G tuning chord chart, and notice the G7th chord. Does this finger pattern look familiar? Rather than building the E7, we could have simply transposed the G7th down 3 frets (since E is 3 steps below G in the circle of notes), giving the first of the E7 possibilities. I guess this is what chord charts are for.

What About Other Tunings?

As of this edition, the Complete Guide to Alternate Tunings contains chord, scale and tuning charts for 38 alternate tunings. If you encounter a new tuning, it is not uncommon for it to be equivalent to one of the 38. For instance, suppose you wish to play in the tuning that Leo Kottke uses for his song Louise, which is B F# B E G# C#.

The first place to look is in the Cross Index of Tunings, which lists the tunings in this book. Observe that the Louise tuning is the same as the Drop D tuning transposed down 3 steps. This means that all the chords in the Drop D chart can be used in the Louise tuning, except that the names must be transposed 3 steps counterclockwise down the circle of notes. Thus the F major becomes a D major, the C minor 6 becomes an A minor 6, etc.

Cross Index of Tunings

A Tuning	E A E A C# E	Open G transposed up 2
B Tuning	B F# B D# F# B	Open D transposed down 3
Barbara's	C# G# C# G# C# E	Open C transposed up 1
Bluebird	D A D G B D	Open G with string 5 raised 2
C Tuning	C G C E G D	Open D transposed down 2
E Tuning	E B E G# B E	Open D transposed up 2
Gazos	D A D F# A C#	Open D with string 1 lowered 1
Guinevere	E A D G B D	Standard with string 1 lowered 2
Judy Blue Eyes	E B E E B E	Four and Twenty transposed up 2
It Takes	D G D G A D	Open G minor with string 2 lowered 1 or Modal D with string 5 lowered 2
Louise	B F# B E G# C#	Drop D transposed down 3
Never	C G D G B E	strings 1-4 same as Standard strings 2-5 same as Open G strings 3-6 same as Admiral
Silent Night	D A D F# B E	Drop D with string 3 lowered 1
Tortion	E A E G B E	Open D minor transposed up 2 with string 5 lowered 2
Unexpected	D A D G C E	Drop D with string 2 raised 1
Windham Mary	F G# C D# G# D#	Open A transposed down 1 with string 6 raised 2

But what if the tuning is not in the cross index, or if it is listed under a different name? Then try the Alphabetical List by Tuning, in which all the tunings are "normalized" so that the lowest string is tuned to a C note. To normalize the Louise tuning, the B must be raised one step to a C, the F# raised one step becomes a G, leading to the normalized Louise tuning CGCFAD. Looking up CGCFAD alphabetically in the list shows that this is the same as the Drop D tuning, down 2. Adding the 2 and the 1 reaffirms that Louise is the same as Drop D down 3, and the Drop D tuning chord chart can be used.

Even if you cannot find the tuning exactly, usually it will match one of the tunings with the exception of (say) a single string. Although more of a hassle, you can still use the tuning chart for this "close" tuning profitably, though all chords involving that single string will need to be modified up or down the appropriate amount. An example of this procedure is given in the introduction to the section on open tunings.

Table of Scale Intervals

Scale Name	Intervals
Major	0, 2, 4, 5, 7, 9, 11
Minor	0, 2, 3, 5, 7, 8, 10
Harmonic Minor	0, 2, 3, 5, 7, 8, 11
Pentatonic Major	0, 2, 4, 7, 9
Pentatonic Minor	0, 3, 5, 7, 10

Alphabetical List by Tuning

All tunings transposed so that string 6 is a C.
R=Regular, I=Instrumental, O=Open, S=Special

C A F# D# C A	Major Sixth	0	R
C A# C F A# F	Tarboulton	0	S
C D C E G C	Open D	0	O
C D G A C F	Hot Type	-2	S
C D# F G A# C	Pentatonic	+3	I
C D# F# A C D#	Minor Third	0	R
C E G A# C D	Overtone	0	I
C E G C E G	Dobro	+5	I
C E G# C E G#	Major Third	0	R
C F A C F C	Open A	-4	O
C F A# C C F	Balalaika	-4	I
C F A# D# G C	Standard Guitar		
C F A# D# G# C#	All Fourths	-4	R
C F C D# A# C	Slow Motion	-2	S
C F C D# G G#	Processional	-2	S
C F C E G A	Triqueen	-2	S
C F C F A C	Open G	-2	O
C F C F A# C	Modal G	-2	O
C F C F G# C	Open G Minor	-2	O
C F C G A E	Magic Farmer	0	S
C F C G A# F	Buzzard	0	S
C F C G C D	Cittern (1)	0	I
C F# C F# C F#	Aug Fourths	0	R
C G A# F A# D	Layover	-2	S
C G C C G C	Four&Twenty	-2	S
C G C D G C	Pelican	-2	S
C G C D# G C	Open D Minor	-2	O
C G C F A D	Drop D	-2	S
C G C F G C	Modal D	-2	O
C G C G C E	Open C	0	O
C G C G C G	Cittern (2)	0	I
C G D G A D	Face	0	S
C G D G B C	Admiral	0	S
C G D A E B	Mandoguitar	0	R
C G D# A# F C	Lefty	-4	I
C G# A# C# F A#	Toulouse	-4	S
C G# C G G# D#	Spirit	-1	S
C G# E C G# E	Minor Sixth	0	R