music theory online : guitar tablature & notation

lesson 30

Dr. Brian Blood

Many musicians are easily excited into joy, and easily depressed into gloom. This comes from their sensitive nature without which they could not be musicians.
***Percy Scholes** (1877-1958) English music critic*

Reading Chord Charts :: Writing Notes :: The Origins of Tablature Notation :: Writing Chords :: Transposing Chord Names :: Special Effects
Voicing Chords :: The Lute

Important: To see and hear our 'live' music examples you will need to install the free **Scorch** plug-in for PC and MAC systems.

Useful References :: top

Key word: *references*

1

Useful References

- History of The Lute
- Chitarrone, Theorbo and Archlute by Robert Spencer
- Some Guitar History
- The Guitar pre 1650
- Historical Figures in Jazz Guitar
- History of The Electric Guitar
- A Brief History of the Bass Guitar
- The History of the Touch Guitar
- A Short History of Hawaiian Slack Key Guitar (Ki Ho'alu)
- Some Steel Guitar History
- Guitar Chords Magic Guitar chord charts, lessons, pictures, songs, music theory and chord finder

- Online Pop-up Guitar Chord Chart from **ChordFind.com**
- Guitar Chord Finder
- Online Pop-up Ukulele Chord Finder from Sheep Entertainment
- Online Guitar Chord Dictionary
- Guitar Tuning Resource
- Alisdair MacRae Birch's Guitar Resources
- ActoGuitar - free online guitar lessons with video
- Jazz Guitar Sheet Music: sheet music for popular jazz tunes

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Reading Chord Charts :: top

Key word: *chord charts*

1

Reading Chord Charts

A guitar chord chart displays the notes in a chord by associating them with finger positions on the guitar neck. The index finger is numbered **1** through to the little finger which is numbered **4.** The thumb is denoted **T.**

Sometimes fingering, as such are not given at all. The chord chart may be no more than a series of dots on a grid showing where strings are stopped and where strings are open, i.e. unstopped. Unstopped strings may be marked with an **X** or an **O** above the chart.

We have imported links to Phillip J. Facoline's **Ultimate Guitar Chord Chart Web Page**

Click on the page number below to view the respective page of the chord chart.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14

Click here to view the chord chart in PDF format.
Click hereto download the chord chart in Postscript format.

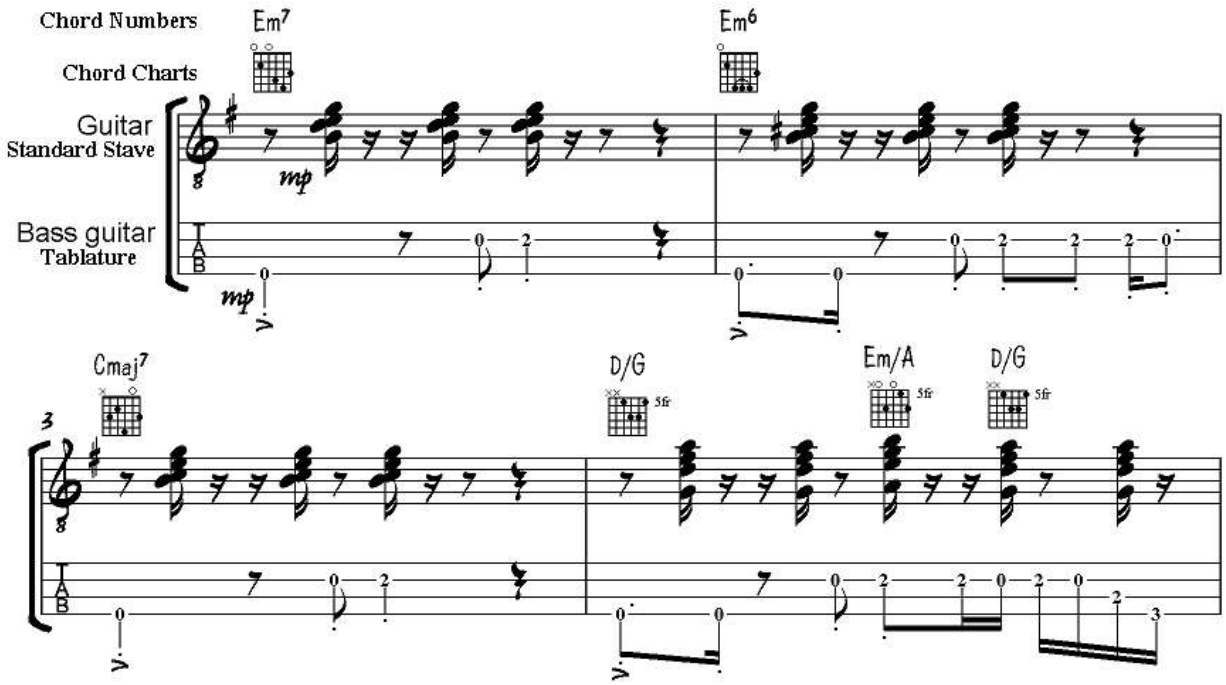
Writing Notes :: top

Key word: *writing notes*

1

Writing Notes

While most guitarists will and can read from standard musical notation, others may more commonly use tablature, a notational system that describes how the fingers are placed on the strings and frets of the instrument. The bottom line (called line 1) is usually the bottom string of the instrument. This was common notation for lute music.



On the upper 'Guitar' line you will see a combination of standard notation, chord numbers and chord charts, while the lower 'Bass Guitar' line is set out in tablature form. Here, on the lower line, the tail/flag combination tells us the note's time-value and the line and the number on it tells us on which string (line) and fret (number) the player's finger should be placed. Chords notated in tablature will be a vertical column of numbers (fret positions) one on each line (string).

The Origins of Tablature Notation :: top

Key word: *origins of tablature notation*

1

The Origins of Tablature Notation

Tablature (as it applies to lutes and viols) shows locations rather than specific pitches. It allows retuning of the instrument (scordatura), and makes reading chords much simpler. While it is possible to transcribe tablature into staff notation, the music usually makes much less sense, and may be much more difficult to read, especially when using a non-standard tuning. But there is a vast amount of music in tablature, and it is well worth the effort to learn it.

We have taken the following extract from **Reading Lute Tablature** by Conrad Leviston.

> In standard lute tablature, each stave has six lines, representing the six courses of a lute. A course is a group of adjacent strings tuned ither to the same note or to an octave. The course of highest pitch appears at the top, and that of lowest appears at the bottom, hence:
>
> G _____
> D _____
> A _____
> F _____
> C _____
> G _____
>
> On each of these lines are placed letters to represent notes. If you are required to play an open D string, for instance, a small "a" will be placed on the appropriate line. For a note with the finger on the first fret, a "b", a note on the second fret, a "c", etc. The only exception to this is that no "j" is used, as it was considered to be more or less the same as "i". So:
>
> G ___a___
> D ___a___
> A ___b___
> F ___c___
> C ___c___
> G ___a___
>
> would represent a Gm chord, and in normal guitar tuning would be an E chord.
>
> If a seventh course were used its symbol would appear below the sixth (funny that). If an eighth were used, it would appear in the same place, but with a line above it. Similarly a ninth course note would have two lines above it.
>
> The only other thing to be said about this notation is that the symbol # does not mean sharp. It does in fact represent a trill. The exact form of the trill is not known, but it did appear to have a specific meaning. Generally, one just trills from the note in the scale above the note in question.
>
> Timing is fairly straight forward. A semi-breve is represented by a stick, with a tail pointing to the left (/|), a minim by a simple stick (|), a crotchet by a stick with a tail pointing to the right (|\), a quaver by a stick with two tails pointing to the right, and so on. The duration of a note is determined by the time indicator above it. If there is no time indicator above a note, its duration is equal to that of the last note. For notes that last one and a half times as long as normal, a dot is added to the side of the time indicator, as in normal sheet music.
>
> There are two major variations of this form of tablature. Firstly, letters being replaced by numbers. This leads to the system used in modern guitar tablature, and has the elegant advantage of "0" representing an open fret.
>
> Secondly, the tablature may be written upside down. This system is more logical, in that you are essentially looking at the mirror image of your instrument. Unfortunately, for whatever reason, I do not find it as natural to play.
>
> Different areas used different notations at different times, but in general, the French and English used the above system (often refered to as French tablature), the Italians used the above system, with the second change, and the Spanish used both changes. German Tablature is completely different all together.
>
> German tablature although more difficult to read, was nonetheless popular owing to its efficient use of paper. Here are set out instructions for reading this tablature. Once you have acquired the knowledge required to interpret it, however, I suggest you use it to translate it into a more palatable form, such as French, as it is not simple to read off quickly.
>
> German tablature was designed by Conrad Paumann (1410-73) for a lute of five courses. Conrad Paumann was a German organist, blind from birth. In 1440 he became an organist in his native city, and in 1451 entered the service of the Dukes of Bavaria. As a performer on many instruments he won great renown, which became international with a visit to the Mantua court in 1470; both the Duke of Milan and the King of Aragon desired his services but he declined, fearing reprisals by competing Italian organists. His compositions include a few songs and organ pieces, and a treatise of 1452 (Fundamentum organisandi) copied into the last pages of the Locheimer Liederbuch. This elucidates the embellishment of chant in keyboard style, and contains sensitive arrangements of chants and secular melodies.
>
> When six courses became more common on the lute the tablature was adapted to make it possible to indicate notes on the extra string. This is not an ideal system, as will be seen later.
>
> The system starts by giving the values 1, 2, 3, 4 and 5 to the open strings, with lowest toned string (usually C) being 1. The strings first frets are given the values a, b, c, d and e in the same manner as before. The strings second frets are given the values f, g, h, i and k (i and j are deemed too similar in most alphabet based tablatures). Following this method (with a German alphabet), we end up with:
>
> ```
> 5  |--e--|--k--|--p--|--v--|--9--|-   G
>    |     |     |     |     |     |
> 4  |--d--|--i--|--o--|--t--|--7--|-   D
>    |     |     |     |     |     |
> 3  |--c--|--h--|--n--|--s--|--z--|-   A
>    |     |     |     |     |     |
> 2  |--b--|--g--|--m--|--r--|--y--|-   F
>    |     |     |     |     |     |
> 1  |--a--|--f--|--l--|--q--|--x--|-   C
> ```

Note the presence of 7 and 9. These are the most common characters for these positions, but by no means universal. They are often referred to as "et" and "con". Beyond the fifth fret, the lettering sequence is repeated, however, to distinguish these letters from those before, a bar is added above, hence:

```
5   |--e--|--k--|--p--|--v--|--9--|--e--|--k--|--p--|--v--|-  G
    |     |     |     |     |     |  _  |  _  |  _  |  _  |
4   |--d--|--i--|--o--|--t--|--7--|--d--|--i--|--o--|--t--|-  D
    |     |     |     |     |     |  _  |  _  |  _  |  _  |
3   |--c--|--h--|--n--|--s--|--z--|--c--|--h--|--n--|--s--|-  A
    |     |     |     |     |     |  _  |  _  |  _  |  _  |
2   |--b--|--g--|--m--|--r--|--y--|--b--|--g--|--m--|--r--|-  F
    |     |     |     |     |     |  _  |  _  |  _  |  _  |
1   |--a--|--f--|--l--|--q--|--x--|--a--|--f--|--l--|--q--|-  C
```

In theory, a simple C chord (assuming the tuning indicated above) would be displayed thus:

```
    5     i     n     g     1
```

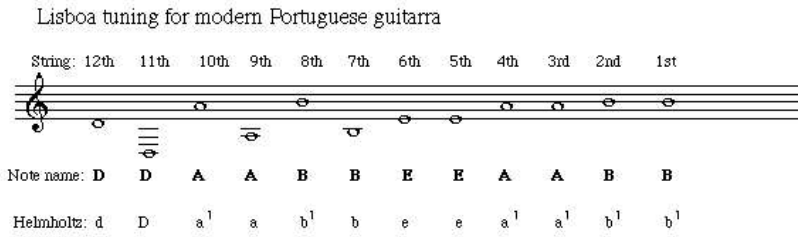
Usually, however, there are only three notes represented at a time in German tablature. This means that the score takes up much less room than would otherwise be the case. Time indicators are the same as in other tablatures.

With the advent of the sixth course German tablature had to be modified. Rather than completely overhauling the system, the standard solution was to represent each fret on the sixth course by a capital letter. The sixth course played open was usually represented by a "1" with a cross through it (represented here by "+"). The entire six courses would therefore be:

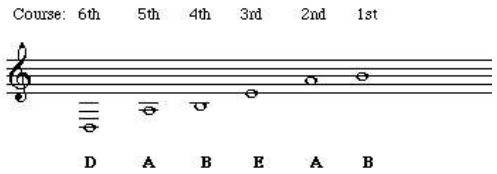
```
5  |--e--|--k--|--p--|--v--|--9--|--e--|--k--|--p--|--v--|-   G
   |     |     |     |     |     |  _  |  _  |  _  |  _  |
4  |--d--|--i--|--o--|--t--|--7--|--d--|--i--|--o--|--t--|-   D
   |     |     |     |     |     |  _  |  _  |  _  |  _  |
3  |--c--|--h--|--n--|--s--|--z--|--c--|--h--|--n--|--s--|-   A
   |     |     |     |     |     |  _  |  _  |  _  |  _  |
2  |--b--|--g--|--m--|--r--|--y--|--b--|--g--|--m--|--r--|-   F
   |     |     |     |     |     |  _  |  _  |  _  |  _  |
1  |--a--|--f--|--l--|--q--|--x--|--a--|--f--|--l--|--q--|-   C
   |     |     |     |     |     |     |     |     |     |
+  |--A--|--B--|--C--|--D--|--E--|--F--|--G--|--H--|--I--|-   G
```

To illustrate this with a practical example we have extracted the material below from an online method for the Portuguese Guitarra by Ron Fernández.

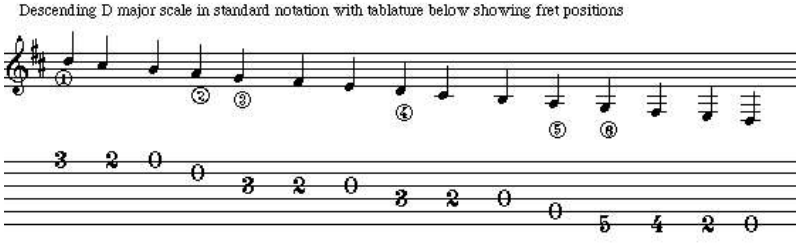
We show first the tuning of the 12 strings on a Portuguese Guitarra, a system called the Lisboa tuning.



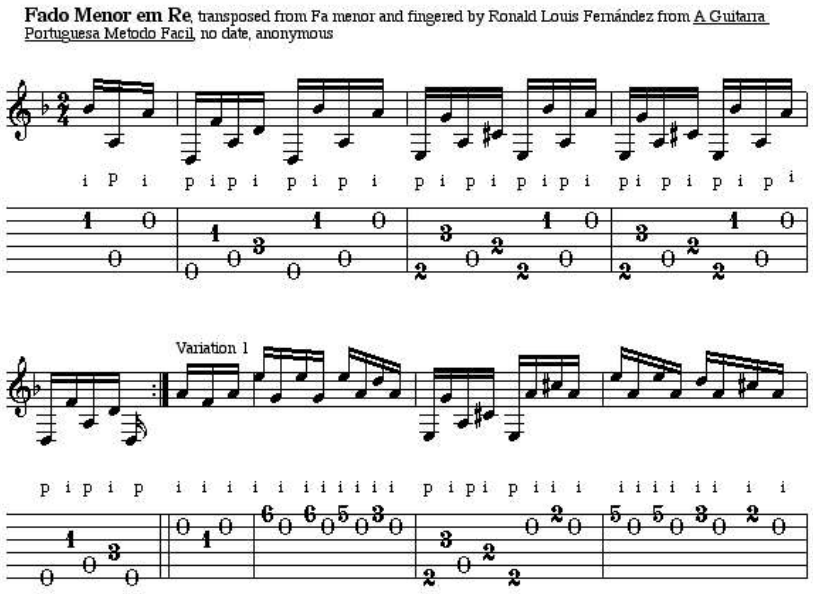
The strings are set in courses - each course being a pair of strings set to the unison or one octave apart. For this reason the player needs only consider the six courses.



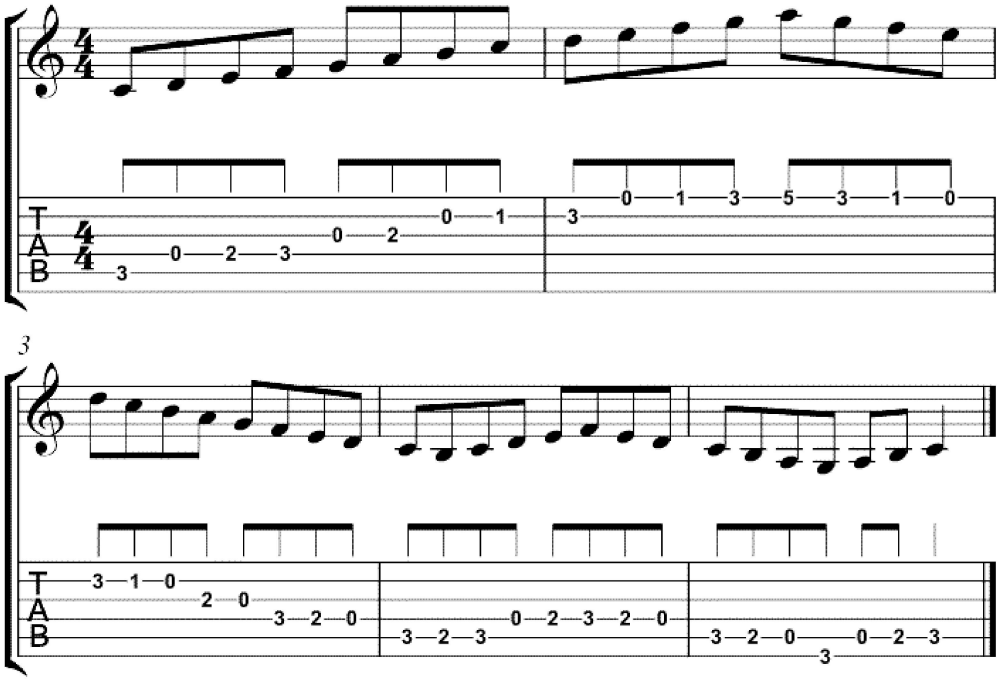
To notate a scale the tablature shows the six courses as the six horizontal lines below the normal stave. The numbers refer to the fret positions or fingerings for playing each note in turn; **0** indicates an open string.



To show how the notation works in practice we reproduce two lines from an arrangement of Fado Menor em Re.



In the example below, we have scored the same running scale passage on two lines, the upper line is standard notation, where the pitch of each note can be read from the stave, and the lower line a TAB line for standard six-string guitar, where the pitch of each note is determined by knowing the pitch of each string (represented by the six lines of the TAB staff) and the placement of the finger along the fingerboard frets (given by the numbers on each line).



Writing Chords :: top ▲

Key word: *writing chords*

1

Writing Chords

We list below all the standard chord symbols, names, component notes and chord formulae.

There is an excellent **pop-up chord chart for guitar** on the **Chordfind.com** web site.

Chords	Names	Notes (bottom up)	Formula
Triads			
C	C major	C, E, G	major 3rd, perfect fifth
Cmin	C minor	C, E flat, G	minor 3rd, perfect fifth
C+	C augmented	C, E, G sharp	major 3rd, augmented fifth
C°	C diminished	C, E flat, G flat	minor 3rd, diminished fifth
Csus2, **C5 add2**, **C5/2**	C power chord, suspended second	C, D, G	suspended 2nd, perfect fifth (no 3rd)
Csus, **Csus4**	C suspended fourth	C, F, G	suspended 4th, perfect fifth

Inverted Triads			
C/E	C major, first inversion	E, G, C	**C** with the note E (major third) in the bass
C/G	C major, second inversion	G, C, E	**C** with the note G (fifth) in the bass
Cmin/Eb	C minor, first inversion	Eb, G, C	**Cmin** with the note Eb (minor third) in the bass
Cmin/G	C minor, second inversion	G, C, Eb	**Cmin** with the note G (fifth) in the bass
Triads with Additional Notes			
C6	C major sixth	C, E, G, A	**C** plus major sixth
Cmin6	C minor sixth	C, E flat, G, A	**Cmin** plus major sixth
C6/9	C major six-nine	C, E, G, A, D	**C** plus major sixth and major ninth
Cmin6/9	C minor six-nine	C, E flat, G, A, D	**Cmin** plus major sixth and major ninth
C2	C major add two	C, D, E, G	**C** plus major second
Cmin2	C minor add two	C, D, E flat, G	**Cmin** plus major second
Seventh Chords			
Cmaj7, C$^{\Delta}$, Delta chord	C major seventh	C, E, G, B	**C** plus major seventh
Cmin7	C minor seventh	C, E flat, G, B flat	**Cmin** plus minor seventh
C7	C dominant seventh	C, E, G, B flat	**C** plus minor seventh
C7#5, C+7	C dominant seventh augmented fifth	C, E, G sharp, B flat	**C+** plus minor seventh
C^{o}	C diminish seventh	C, E flat, G flat, B double flat	**C^{o}** plus diminished seventh
C^{ø}	C minor seventh (flat five)	C, E flat, G flat, B flat	**C^{o}** plus minor seventh
C-$^{\Delta}$	C minor (major seventh)	C, E flat, G, B	**Cmin** plus major seventh
C7sus, Csus7	C seventh suspended fourth	C, F, G, B flat	**Csus** plus minor seventh
C$^{\Delta}$#4	C major seventh sharp fourth	C, E, F#, B (with unvoiced fifth) C, E, G, B, F# (in octave above seventh)	
Extended Chords - not all the lower extension notes need be voiced, although the tonic, 3rd and 7th must be present			
Cmaj9	C major ninth	C, E, G, B, D	**C$^{\Delta}$** plus major ninth
Cmin9	C minor ninth	C, E flat, G, B flat, D	**Cmin7** plus major ninth
C9	C dominant ninth	C, E, G, B flat, D	**C7** plus major ninth
C+9	C dominant ninth augmented fifth	C, E, G sharp, B flat, D	**C+7** plus major ninth
C9(flat5)	C ninth flat fifth	C, E, G flat, B flat, D	**C9** with diminished fifth
Cmin9(flat5)	C minor ninth (flat five)	C, E flat, G flat, B flat, D	**Cmin9** with diminished five
C9sus	C ninth suspended fourth	C, F, G flat, B flat, D	**C9** with suspended fourth
Cmin11	C minor eleventh	C, E flat, G, B flat, D, F	**Cmin9** plus eleventh
Cmin11(flat5)	C minor eleventh (flat five)	C, E flat, G flat, B flat, D, F	**Cmin9(flat5)** plus eleventh
Cmaj13	C major thirteenth	C, E, G, B, D, F	**Cmaj11** plus major thirteenth
C13	C dominant thirteenth	C, E, G, B flat, D, F, A	**C11** plus eleventh and major thirteenth
C13sus	C thirteenth suspended fourth	C, F, G, B flat, D, F, A	**C13** with suspended fourth
Altered Chords			
Cmaj9(flat5)	C major ninth (flat five)	C, E, G flat, B, D	**Cmaj9** with a flat fifth
Cmaj13(sharp11)	C major thirteenth (sharp eleven)	C, E, G, B, D sharp, F	**Cmaj13** with sharp eleventh
C7(flat9)	C dominant seventh (flat nine)	C, E, G, B flat, D flat	**C7** plus minor ninth
C9(flat13/sharp11)	C dominant ninth (flat thirteen/sharp eleven)	C, E, G, B flat, D, F sharp, A flat	**C9** plus sharp eleven and flat thirteenth
C13(sharp11/flat9)	C dominant thirteenth (sharp eleven/flat nine)	C, E, G, B flat, D flat, F sharp, A	**C13** with sharp eleven and flat nine
C+7(sharp9)	C augmented seventh (sharp nine)	C, E, G sharp, B flat, D sharp	**C+7** with sharp nine
Other Chords			
C5	C power chord	C G	**C** with no third
C5/2	C5 add 2	C, D, G	**C** with no third and a second
C/D	slash C over D	D, C, E, G	**C** plus D in bass
C **D**	polychord C over D	D, F sharp, A, C, E, G	**C** over **D**

Reference:

- Chris Juergensen web site has some very useful comments on chord symbols

Players will come across other names, in some case chords misnamed, or not numbered in the 'conventional' way. There are variations in the naming of alterations; for example, **m** instead of **mi** for minor, **b5** (i.e. flat 5) or **#5** (i.e. sharp 5) may be written **-5** or **+5**, respectively. The same terminology will be found for **b9** (**-9**), **b11** (**-11**), **b13** (**-13**), **#9** (**+9**), **#11** (**+11**) and **#13** (**+13**).

We have collected the chords above plus many more in Chords described and transposed in **lesson 17C.**

Transposing Chord Names :: top ▲

Key word:

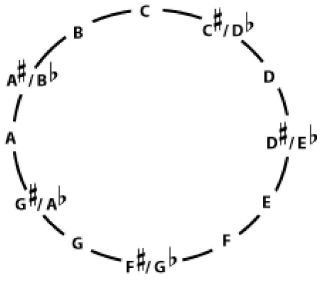
transposing chord names

1

Transposing Chord Names

The invaluable article by Catherine Schmidt-Jones, entitled Transposition: Changing Keys, discusses how one transposes chord names.

Using the chromatic circle to count keys, change the note names in all of the chords by the same amount (the same number of half steps, or places in the chromatic circle) and in the same direction. Change only the note names (things like "F" and "C sharp" and "B flat"); don't change any other information about the chord (like major, minor, dim., 7, sus4, add11, etc.). If the bass note of the chord is written out as a note name, change that, also (using the same chromatic circle).



Original Key	G	B♭	B♭6	B♭M7	E♭M7	E♭+	A7	D/A
2 keys higher	A	C	C6	C M7	F M7	F +	B7	E/B
5 keys higher	C	E	E♭6	E♭M7	A♭M7	A♭+	D7	G/D
7 keys higher (or 5 keys lower)	D	F	F 6	F M7	B♭M7	B♭+	E7	A/E

Special Effects :: top ▲

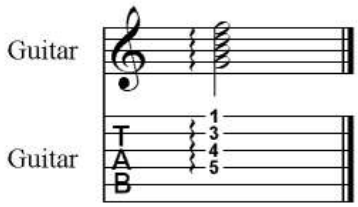
Key word: *special effects*

1

Special Effects

The guitar's large range of special effects can be notated on standard stave notation and in tablature. We give a summary of the most common, each with a short description.

Arpeggios or spread chords, are notated in the same way as on a keyboard instrument, and are played 'up' the chord from the lowest note.



Two signs, familar to string players may be found above or below a number.

⊓ down-stroke, the string is plucked with the hand moving downwards

V up-stroke, the string is plucked with the hand moving upwards

Slurs are indicated using the standard curved line, with an **H** indicating a 'hammer-on' (or ascending ligando), and a **P** indicating a 'pull-off' (or descending ligando).

The pitch of a note can be changed while it sounds by sliding the finger on the fret before or after plucking or picking it so that its pitch alters down a fret or two if bending before sounding, up a fret or two if bending after sounding, or up and then back down again if bending after sounding. The sign is a curved arrow pointing up, or the letters **BU**, for an 'up' bend (also called an ascending bend) or a curved arrow pointing down, or the letters **BD**, for a 'down' bend (also called a descending bend).

If the fret finger slides from one note up to a second note where the second note is not resounded, or the note is struck while the finger is sliding, these are called slides rather than bends. The difference is that bends occur during notes, while slides happen between notes. Slides are shown by a line lying between two notes and the letters **sl.** placed above the line.

If the fret finger touches the string lightly and the string is then plucked 'bell-like' high **natural harmonics** are produced. A similar result is produced when with a string, fretted in the normal way, is lightly touched over a fret by one of the plucking hand fingers while a second finger plucks the string. These are called **artificial harmonics**. A harmonic is shown with a **diamond notehead** and, in tablature, with both fret positions shown on the same line (corresponding to the two fingers on the same string) surrounding by a diamond shaped border.

Muted playing, where the fret hand lies on the strings and the plucking hand strikes the string is shown by using the percussion symbol, an **x** for the note head, while the palm mute effect, where the plucking hand touches the strings just ahead of the bridge to dampen the sound, is shown by writting **P.M.** over the staff or tablature line.

Three or four oblique lines written across the tail of a note is called **tremolo**. The note is played repeatedly as quickly as possible. If, instead, the fret finger is rolled back and forth rapidly the effect is called **vibrato**. It is marked with a wavy horizontal above the stave which shows

the duration of the effect.

A final detail may be the use of letters (for example, **p** for thumb, **i** for index finger, **m** for middle finger, **a** for ring-finger) indicating the fingers to be used when playing 'finger-style'.

Voicing Chords :: top

Key word: *voicing chords*

1

Voicing Chords

Alisdair MacRae Birch, a New York based guitar teacher, points out that because a guitar has only six strings and a guitarist five fingers, some chords have to be adapted, in particular by leaving out internal voicings or notes. For example, a major 9th chord might be played by using a major 7th chord with the root raised by a whole tone to produce the 9th. The root is missing from the chord, and this modification is called 'rootless voicing'.

So

Major 7th Voiced : 7-3-5-1
Major 9th Voiced : 7-3-5-9

Why can the guitarist get away with missing out the root? The root of a chord can be implied by other notes, mainly the third and seventh. The notes that are used are called 'guide notes' (or 'guide tones', 'target notes', 'goal notes'). The third is important because it gives you the tonality of the chord, major or minor, while the seventh could be a major seventh or a minor seventh (as in a dominant 7th chord) and that distinction is important too. So the root is implied rather than played. Many guitar players are habit-bound playing root-position chords and think it necessary to play every note in every chord. In fact, to make the art of chord melody playing more musical, the main consideration must be the melody. If the addition of the third and seventh of the chord is sufficient and rhythmically appropriate there is no need for the root.

In the common **ii-»V-»I** progression, the seventh of each chord moves chromatically to the third of the next chord. These notes and the way they move from seventh to third make the progression clear.

The term 'rootless voicing' is also used when the root of a chord is left out in a keyboard part because it is being played on another instrument, for example a bass guitar, or on the organ pedal board. In a jazz combo the pianist never plays the root note of the chord otherwise he would be duplicating the bass players job of laying down the root harmonies. Jazz keyboard players like Bill Evans frequently use rootless voicings because by leaving out the root in the voicing, the chordal harmony is given a more ambiguous flavour opening the door to more interesting harmonic possibilities.

The fact that notes can be implied and need not be played is one of the basic features of the jazz written by Duke Ellington, one of the greatest of jazz composers. By opening up the texture and thereby increasing the harmonic ambiguity, Ellington had invented the device to open up a completely new and highly influential style of jazz music - he had found the "Divine Simplicity".

References:

- The '9 for 1' Substitution
- Rootless Voicing For Jazz
- Jazz Tools - go to: Piano Voicings
- Finding New Voicings Through Inversion
- Two For The Price Of One - which discusses rootless voicing for guitarists
- "Inside" Voicings: Life between the E's
- Pleasing the Ear
- The Bill Evans Memorial Library
- Ellington's piano: A Long Way by Riccardo Scivales - particularly section 5. *Towards the "Divine Simplicity"* (currently unavailable online)
- Master Class by Andy LaVerne studies Thelonious Monk's "Round Midnight" including some examples of rootless voicing

The Lute :: top

Key word: *lute*

1

The Lute

We have added a summary taken from Caroline Usher's guide to obtaining a lute & strings, lute societies, and publishers which provides a simple guide to the lute.

the medieval lute	up to the middle or late fifteenth century	4-5 courses, played with a plectrum
a course is a pair of strings tuned to a unison or to the fundamental and the octave, and played as a unit. Generally the top course (top 2 courses, for baroque lute) is single		
the renaissance lute	late fifteenth to early seventeenth century	6-8 or 9 courses, played with the fingers, comes in different sizes forming a consort (soprano, alto, tenor, bass; most players own a tenor lute for solo playing), tenor tuning: (D F) G c f a d' g' This is similar to modern guitar tuning, if you tune the guitar's g string down to f# and capo up three frets
the baroque lute	early seventeenth to late eighteenth century	11-13 courses, played with the fingers, tuned A d f a d' f', hence "D minor lute" (lower strings tuned to a diatonic scale)
The 10-course lute is a transitional instrument between renaissance and baroque, and much early to mid-seventeenth century music for lute is in experimental tunings		

In the late sixteenth century, the lute family put forth a marvellous offshoot in the form of instruments with neck extensions and second pegboxes, the archlute and theorbo or chitarrone (the latter two terms are interchangeable). The second neck and pegbox extend the bass range of the instrument with diapasons tuned diatonically in a scale. These instruments were initially created for accompaniment, primarily of the voice, from a figured bass part, but soon developed a solo repertoire written in tablature. In modern terminology the archlute employs renaissance tuning for its upper 6 courses, the theorbo/chitarrone employs a re-entrant tuning, like renaissance tuning except that the top 2 courses are tuned an octave down. This is because the theorbo typically is a larger instrument with a longer string length, and gut strings of such length could not be tuned to the higher pitches.

top :: next lesson

URL: http://www.dolmetsch.com/musictheory30.htm
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