Chord Inversion

In one way (and maybe only one), keyboard players have it easy: there's only one of each note in each octave, and it - along with all the other notes - is there, in plain view, on the keyboard. Guitarists, on the other hand, are faced with a much more complicated fretboard "grid", and therefore often conceive of scales and chords as "fretboard patterns". While this handy way of dealing with the guitar's complexity produces good results, it can also lead to dead-ends -- that is, unless the guitarist <u>also</u> knows his or her fretboard notes, and understands how scales and chords work. To help that understanding along, here's a brief look at chord construction, and how chords can be "spaced", "doubled", and "inverted" to create far more creative solutions than the standard "chord-forms" to which many guitarists are limited. What follows is of equal use to <u>all</u> musicians, regardless of their instrument.

Triads

CHORD A "chord" is the simultaneous sounding of three or more notes.

TRIAD A "triad" is the basic, 3-note chord-form from which most chords are derived, and to which they can be reduced.

TRIAD STRUCTURE Triads have a very specific structure:

<u>Triad Structure</u>

Note that is a 5th above root ("fifth")
↑
Note that is a 3rd above root ("third")
↑
ROOT

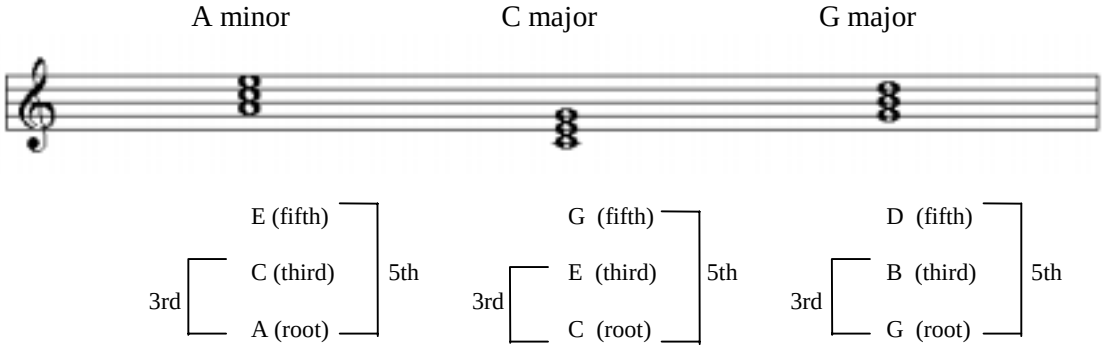
ROOT The "root" is simply the note upon which a particular triad is constructed. In its pure form, or ***root position***, the root is the lowest - or ***bass*** - note of the triad. Any note at all - including sharped or flatted notes - can be used as a root for a triad.

THIRD The middle note of a triad is a note found at an interval of a 3rd above the root. Because it's a 3rd above the root, this note is called the "third" (of the triad). The "third" of a triad is always 2 letters (in alphabetical order) *above* the root.

FIFTH The top note of a triad is a note found at an interval of a 5th above the root. It's therefore called the "fifth" (of the triad). It's always 4 letters above the root.

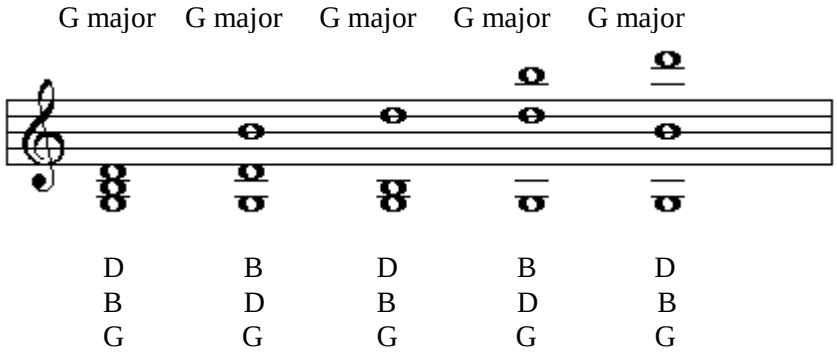
Every triad has a "root", "third" and "fifth, and is formed in this way.

Triads, built on different roots



SPACING

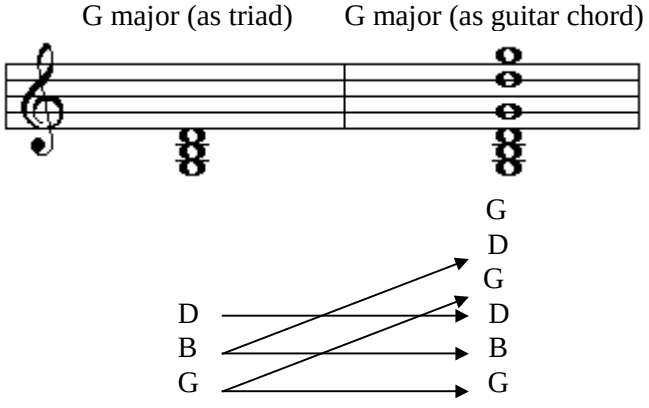
As long as the *root*, *third* and *fifth* of a triad are present, its notes can be ordered and spaced in any way, without that triad losing its identity:



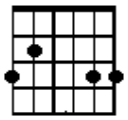
The triad's components - its *root, third* and *fifth* - never change, no matter where they're found in the re-ordered and re-spaced chord. In all the versions of the G major triad, shown above, G is always the *root,* B always the *third,* and D always the *fifth.*

DOUBLING

Guitar chords - and many keyboard chords - usually consist of more than just three notes. How do we turn a three-note triad into a four-, five- or six-note guitar chord? Very easily - just repeat one or more of its notes an octave higher or lower:



ON GUITAR
G major



G B D G D G (6-note guitar chord)

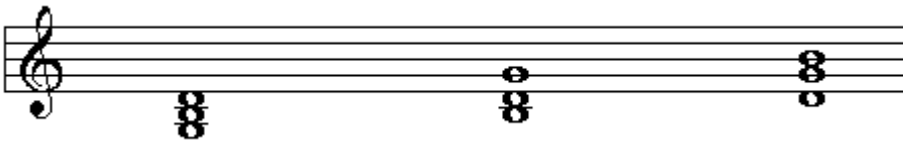
G B D (triad)

This procedure is called ***doubling***, and can be applied to any triad, in any inversion. (The term "doubling" is used regardless of whether a note is actually doubled, tripled or even quadrupled.) Any amount and kind of doubling is possible - some producing better results than others.

INVERSION

Any triad can be "flipped", or ***inverted***, so that its third or fifth - rather than its root - becomes the lowest note. It is in ***root position*** when the root is lowest note, ***1st inversion*** when the third is lowest, and ***2nd inversion*** when the fifth is lowest:

G major, **root position** G major, **1st inversion** G major, **2nd inversion**

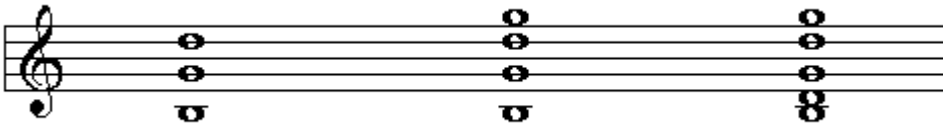


D (fifth)	G (root)	B (third)
B (third)	D (fifth)	G (root)
G (**root**)	B (**third**)	D (**fifth**)

As long as the <u>*notes*</u> of the triad are exactly maintained, the triad and its members always retain their identity; *eg.* G-B-D, B-D-G and D-G-B are simply three forms of the same "G major" triad, with G as root, B as third and D as fifth.

A triad is *inverted* when its third or fifth replaces its root as lowest note, regardless of how the remaining notes are spaced, ordered or doubled above that lowest note. All of the following are considered to be *1st inversion* G major triads:

G major, 1st inversion G major, 1st inversion G major, 1st inversion



INVERSION AND CHORD SYMBOLS

In sheet music, chord inversions are indicated by a forward slash: / followed by the note-name of the lowest note in the triad or chord: *eg,* G/B

Examples:

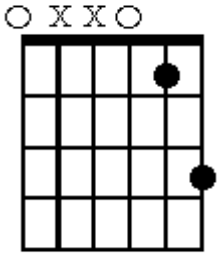
G major:
notes: G [root] - B [third] - D [fifth]
chord symbol: G

G major, 1st inversion:
notes: B [third] - D [fifth] - G [root]
chord symbol: G/B

G major, 2nd inversion:
notes: D [fifth] - G [root] - B [third]
chord symbol: G/D

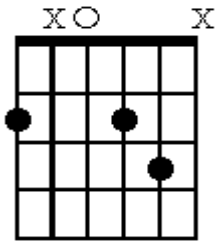
SOME COMMON CHORD INVERSIONS (GUITAR)

C/E



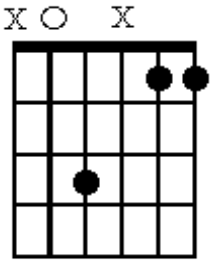
(C major, 1st inversion)

D/F#



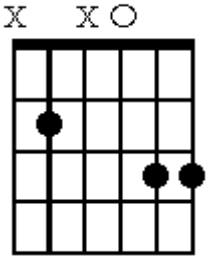
(D major, 1st inversion)

F/A



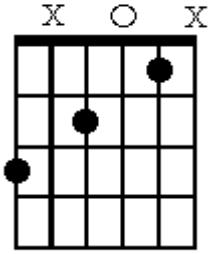
(F major, 1st inversion)

G/B



(G major, 1st inversion)

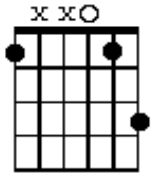
C/G



(C major, 2nd inversion)

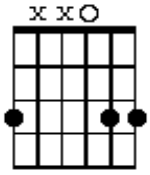
OTHER CHORDS

F2



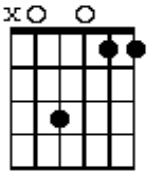
This is an F major chord, with added 9th (called "2" here), and omitted third.

G5



This is a G major chord with omitted third. The name "G5" is usually associated with "power chords", but this is a commonly used folk version.

Fadd9/A



The third chord in Cockburn's "Pacing The Cage", this is an F major chord with added 9th (compare with "F2"), in 1st inversion.

USING INVERTED CHORDS

Songwriters and composers use inverted chords to create:

More harmonic options

Compare the following:

a) All root position chords:

4/4 C | C | F | G |

b) Using C/E:

4/4 C | C/E | F | G |

Using C/E provides a fresh chord in bar 2, even though it's still a "C"

c) Using C/E along with F2 and G5:

4/4 C | C/E | F2 | G 5 |

The F2 and G5 chords turn the sound of this C/E chord into an on-going feature of the passage.

Stronger basslines

"Talking Blues" *Compare the following:*

a) All root position chords:

4/4 D | G | A | D

b) Using D/F#, G/B and A/C#:

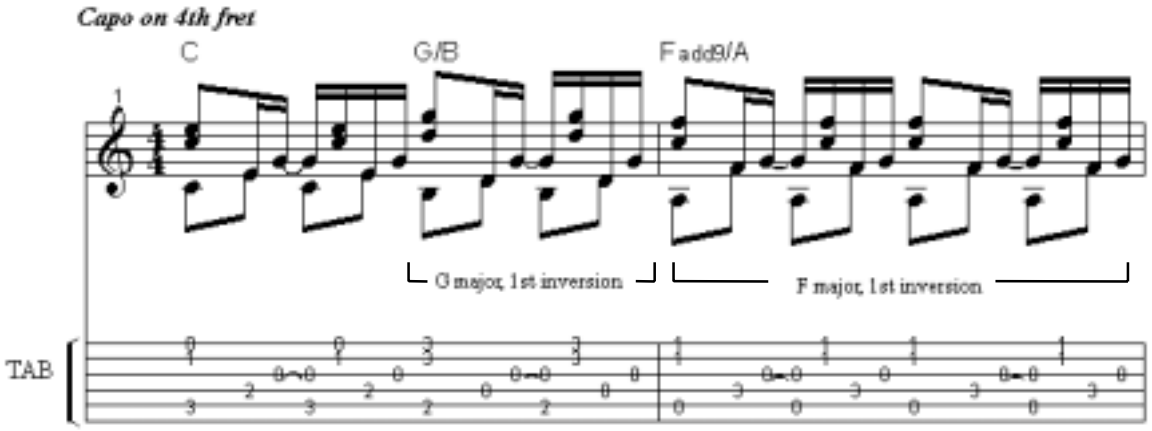
4/4 D D/F# | G G/B | A A/C# | D

c) Using D/F#, G/B, A/C# and bass "passing notes" from A to D:

4/4 D D/F# | G G/B | A B C# | D

Basslines that "harmonize" better with main melody

Pacing The Cage, Bruce Cockburn. Intro:



Compare:

a) With root position chords only *(not shown)*:

main melody notes *(not in illustration)*: E - G - C

bass notes *(bassline created by chords)*: C - G - F

b) With Cockburn's 1st inversion G/B and Fadd9/A *(as illustrated)*:

main melody notes *(not in illustration)*: E - G - C

bass notes *(bassline created by chords)*: C - B - A

The bassline created in Cockburn's version harmonizes far better with his vocal melody.

MICHAEL LEIBSON is a professional composer, teacher and music consultant whose training spans classical and non-classical musical worlds. He has done transcription work for Bruce Cockburn, Stephen Fearing, Rush, the Jeff Healy Band and many others, and is a music consultant for The Anthem Entertainment Group. He's taught harmony at Havergal College, music theory at the Toronto Waldorf School, composition at the Thornhill Chamber Music Institute, and designed and led numerous songwriters' workshops for Blue Skies In The Community, the Blue Skies Music Festival and the Ottawa Folklore Centre. He now lives near Perth, and you can reach him by phone at (613) 268 - 2720, or via email, at <leibson@superaje.com>.

For more info

Michael Leibson teaches privately in the Perth-Kingston-Ottawa area, and leads songwriters' workshops throughout the year. For more information, contact Michael at 613-268-2720 (email <leibson@superaje.com>).

Private Instruction

Songwriting & Composition
Music Theory
Guitar
Sight-singing & Ear-Training

Michael Leibson will be taking on a few new private students in the Perth - Kingston - Ottawa area this fall (Sept., 2000). Contact Michael, at 613-268-2720 (email <leibson@superaje.com>), for further information, or to simply discuss your musical goals and needs.

Blue Skies In The Community Songwriters' Workshop, level two

September 22-24, 2000, Inverary, Ontario

An intensive, weekend-long songwriters' retreat that's being held again *this* year at Al and Mary Sue Rankin's stone farmhouse near Inverary, Ontario (15 minutes north of Kingston). A "level two" workshop, this year's event is a follow-up of last year's "The Music Of Bruce Cockburn" seminar, and again features Michael Leibson as guide and mentor. As preparation for each day's songwriting sessions, participants in this year's workshop will receive intensive instruction on triads, chord progressions and cadences in major scales, and an in-depth look at how to use minor scales in various styles of music. All meals (vegetarian) and weekend-long accomodation are included in the rock-bottom fee of $80. For information, contact Michael Leibson, at 613-268-2720, email <leibson@superaje.com>.

Blue Skies In The Community
Songwriters' Workshop, level one:

The Music Of Bruce Cockburn

An entire weekend spent developing your songwriting skills under the guidance of Michael Leibson and Christine Graves. Michael uses Bruce Cockburn's songs to illustrate musical aspects of songwriting (scales, modes, and tonality in melody writing). Christine applies Natalie Goldberg's writing techniques to take lyric writing "beyond craft, to the source of creative writing".

Date: To be announced.

Contact: Michael Leibson, at 613-268-2720, email <leibson@superaje.com>.