Chord Construction (Basics)

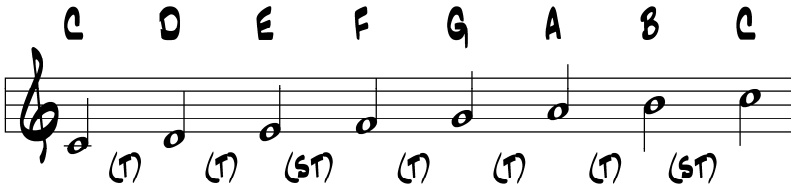
A level 2 tutorial by Lou Stonehill, designed to fully explain the harmonic structure of all the fundamental chords used in popular music.

WARNING: There isn't really a need to warn you of anything if you've totally grasped my first three tutorials. In essence, this tutorial represents nothing more than the next area of harmony with which you need to be totally conversant.

So, to re-cap, you now know about tones and semitones, the key system, and relative minors. In short, you understand the harmonic content of all 30 major and minor keys in Western music (including enharmonic equivalents), and all the whys and wherefores behind them. This, I hope you'll agree, is quite an achievement in such a short time, so well done folks!

If you don't understand however, then I urge you to re-read any of the areas already mentioned which are still causing confusion. I say this once again, because the topic of chord construction and basic harmony is, as with so many areas of music theory, completely logical once you understand it.

Before I can crack into this, I need to refer back to the good old C major scale, and then to present you with a slightly abstract concept, so here goes…



This will, no doubt, seem so familiar to you, - all notes and intervals present and correct. Now for the abstract concept I mentioned.

Everything shown above is fine, but the *letters* shown, only apply to that particular sequence of notes.

Well obviously, Lou……!

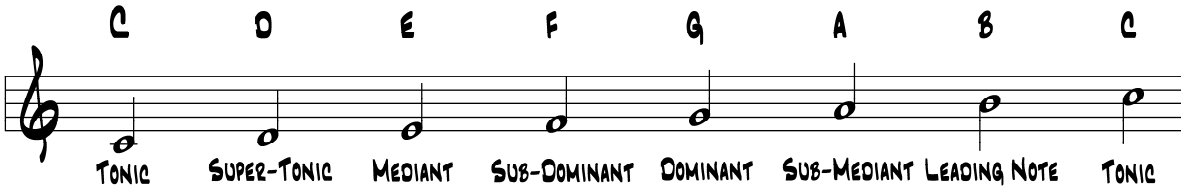
No. What I mean is, that we need to generate a labelling system for our scale which describes the actual position of the notes within the scale, rather than what pitch they are. This could then be applied to any Major scale. In other words, the note 'C' is the

first note in the key of C, of course, but if that were a G major scale written above, then the 'C' would be the fourth note along, G, A, B, C, D Etc.

See what you mean about abstract Lou……!

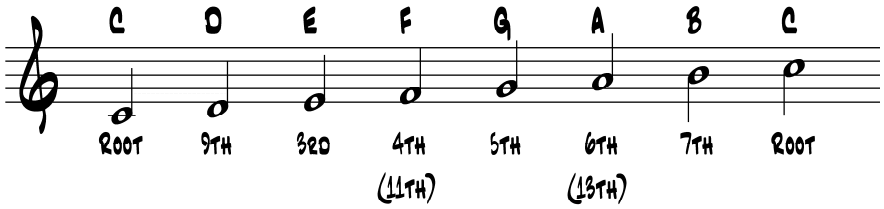
OK, sorry, but in order to understand the basics of chord construction, we need to label a scale's notes according to their location, and be able to apply that label to any major key. For (hopefully) obvious reasons, letters just won't cut it!

The following diagram shows a C major scale with the 'Classical' labelling of each note according to its position within the scale.



This clearly reveals a collection of 'big sounding' words which, although can be applied to any of our scales, can also be totally ignored, since they mean pretty much nothing in terms of practical modern harmony - with the exception, that is, of 'Tonic' and 'Dominant' as these two words crop up all the time. You'll doubtless be thankful that you can ignore the rest!

Take a look instead at the following labelling system which presents our 'scale steps' in a much more logical way, again, according to their physical placement within the scale.



Before I explain this style of labelling completely, let me draw your attention to the words 'Tonic' in our first example, and 'Root' in our second. Let me now also add to these, the word 'Keynote'. The first thing to be totally clear about is that all three of these words refer to exactly the same thing, namely the 'First' note in a scale, key, or chord. By this I mean for example that the Tonic of an F major scale is F, the Root note of the key of B minor is B, and the Keynote in an Ebm9 chord is Eb.

We'll get to Dominant later!

If you now consider the numbered system above, everything seems pretty logical with the exception of '9th'. In order to clarify this point for a moment, consider that according to the overall numerical sequence presented, the two 'Roots' could conceivably be numbered 1 and 8 respectively. Well, if that were the case, then the next number in this sequence would obviously be a 9, and the corresponding letter or note name in this key at least, would of course be a 'D'. I hope that justifies why I'm calling the D in the scale or key of C major a 9th, but to be fair, I've not yet explained why I'm not calling it a 2nd. The reasons for this are twofold. Firstly, simplicity at this stage and, secondly, the only time I've ever seen the second note of a scale or key played within the context of a chord built on the Root of that key, is in a sus2 chord. We will be covering sus chords in a later issue, but for now you can rest assured that in all other chords which include the second 'scale step', the subsequent chord symbol will be written as 'blah, blah, whatever – 9th! With this in mind, it becomes just slightly easier to comprehend the fact that, sometimes the 4th is called an 11th, and similarly the 6th note when played within a chord can actually be more correctly labelled as the 13th. These last two examples depend solely on what other notes are in the chord at the time, which means that, believe it or not, an 'A' played in the context of a C chord can be a 6th, yet the exact same 'A' played within the context of a slightly different C chord, would actually be a 13th!

Let's assume for a moment that this last paragraph is complete 'Rocket Science'

Lou, Man…….you've totally lost me!

No worries, it'll make more sense shortly, but before we cover the next area of this, bear in mind that if you examine <u>all</u> the 'odd' numbers above in order, you've actually located every note of the scale in a logical sequence, and more importantly, that method of labelling can be applied to any of the keys shown in the last two tutorials.

Now for a simple rule with very bad grammar, but it does make it easier to understand. Here we go:

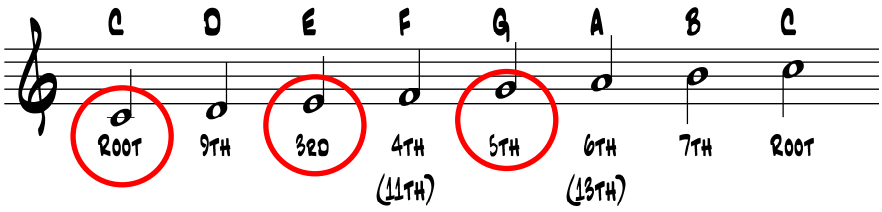
"All chords start out as piles of Odd numbers!"

By this I literally mean the following: Root, 3rd, 5th, - 7th -, (9th, 11th, 13th) Played (allowed to sound) simultaneously.

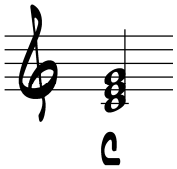
We are not going to be covering the 9th 11th and 13th in this issue, but now you've seen them presented in this context, hopefully you'll be less puzzled the next time you see these numbers appearing in chord symbols.

Before I start giving you some fundamental formulas to learn (don't panic, there's only 8!), please allow me to lay to rest a couple of popular miss-conceptions. Firstly, that you need 'loads of notes' to make chords. This is totally incorrect, since you actually only need two. (It would be wise to check out one of Mr Van Halen's influences, namely J.S. Bach and, in particular, his 'two part inventions' – Awesome!). Secondly, that a 13th chord for example, must have 7 notes in it! Think about it, chaps, we've only got six strings!

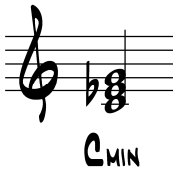
Ok, let's refer back to our odd number rule, throw some notes together, and make some changes to create some chords!



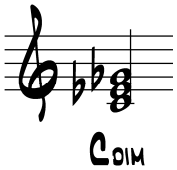
Here we've highlighted the first three notes mentioned in our rule, quite simply the Root, 3rd and 5th. If we were to play these three notes together we would get the following:



This would give us the 3 note chord (or 'Triad') of C Major, abbreviated to just C (because it's major). Let's now take the same three notes again but make a slight change:



This time, all we've done is lowered the pitch of the 3rd (flattened it), and created a Cm or 'Minor' triad, just as we did with the E and A chords in my last article. What about another change?



Now, we still have our 'flattened' 3rd, but also the addition of the flattened 5th which changes things again, and we end up with a Minor chord with a flattened 5th or more correctly, a 'Diminished' triad, usually written C°

Finally, we now have what appears to be the same as the first example, but this time with the addition of a 'sharpened' 5th. This 'Triad' is the exact opposite of the 'Diminished' chord above, and is know as a C 'Augmented' triad, usually written: C+

Now we have this information, let's try to convey it in a way which is not only easier to remember but, more importantly, easier to apply to the other eleven Major keys!

Triad Formula Table

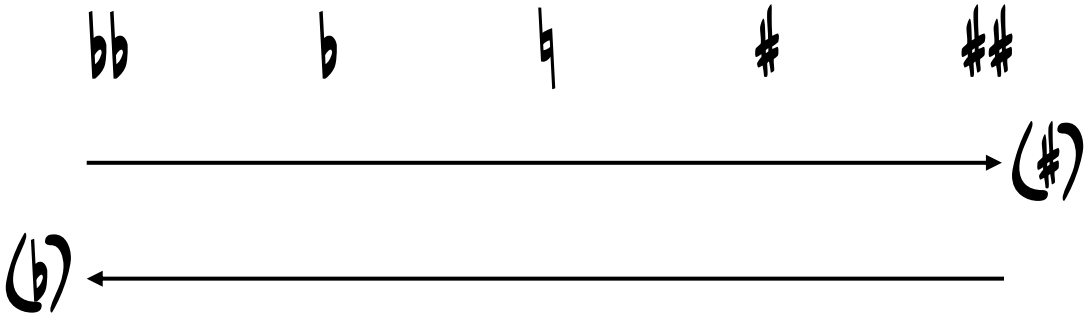
Root	3rd	5th	Major	} Of Any Major Scale
Root	b3rd	5th	Minor	
Root	b3rd	b5th	Diminished	
Root	3rd	#5th	Augmented	

The really important part of the above table is the '<u>Of Any Major Scale</u>' statement.

Basically, as long as you abide by the numbered labeling system shown above, these formulas can be applied to any of the other eleven major keys. However, you must be totally aware of the harmonic content of these keys before you start flattening or sharpening notes within them, which means, as suggested earlier, you need to <u>thoroughly</u> understand the key system. (Please see my last tutorial).

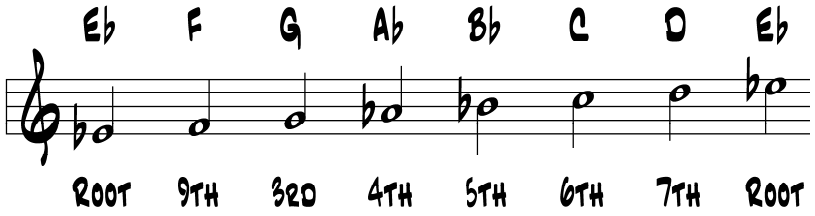
By this I mean that if for example you were trying to work out the harmonic content of a Bm triad, you'd need to be aware that the 3rd scale step in the key of B <u>Major</u> is a D# and therefore when flattened would become a D natural!

Ok, now this is where the whole topic can become really confusing since you need to be totally familiar with a couple of things I've not yet discussed. The following diagram not only illustrates the correct order of the sharpening and flattening process, but also shows the existence of a couple of accidentals you'd be forgiven for thinking couldn't exist, the 'double flat' and the 'double sharp'!

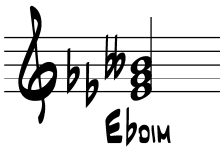


I'm sure this doesn't need an explanation, but just in case you're baffled, if you 'sharpen' a double flat, you'll get a flat. Alternatively, if you 'flatten' a sharp, you'll get a natural etc. In other words, it's all down to *'correct musical grammar'.*

Before we crack on with the next part of this, let me just illustrate my point with a more complicated example. Let's consider the scale of Eb Major.

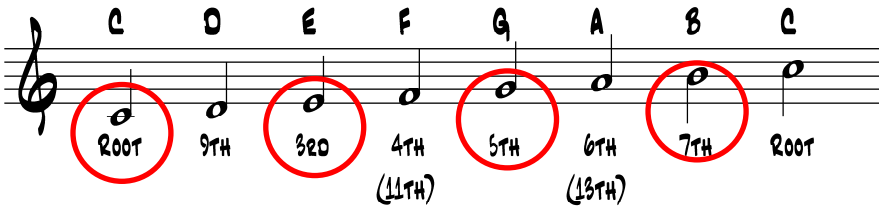


If we now use this scale and try to create an Eb° triad, we'd simply need to remember our Root, b3rd, b5th formula as mentioned earlier.

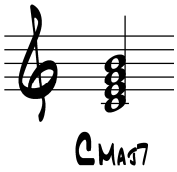


This clearly shows the 3rd scale step (G), flattened to Gb, but also the 5th scale step (Bb), flattened to B 'double flat'. If you did a similar exercise in C# Major and constructed a C#+ chord, you'd end up with the notes C#, E#, and G##!

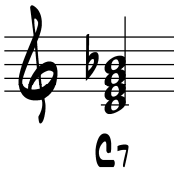
With our 'Triad' structures in place, the next logical note to add to them is of course the 7th, and this is where the whole 'bottomless harmonic pit' really opens up.



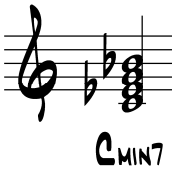
Ok, so we now have these four notes (C E G and B), but please remember I could have picked <u>any</u> major key since it's the 'numbers' that are important here, not the ***<u>letters</u>***, it just seems so much simpler to illustrate structures/formulas etc to students when there are no accidentals (sharps and flats) to begin with, so here goes…



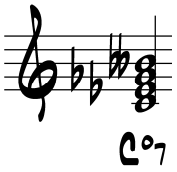
These four notes ie, Root, 3rd, 5th, 7th from a major scale produce a Major 7th chord which, bearing in mind we've started with a C Major scale, obviously means we have a - Cmaj7 chord.



If on the other hand we took the same four notes again but this time 'flattened' the 7th, we'd end up with quite probably the most 'flexible' chord type in western music – the Dominant 7th (there's that word again) This as shown, is abbreviated to - C7.



This shouldn't present a problem by virtue of the fact that, whilst we still have a b7th, we've again flattened the 3rd (as in our triads earlier), and as is always the case, the flattened 3rd means 'Minor' so we have C Minor 7th or - Cm7.



Finally, something which looks a little scary, a minor chord with a flattened 5th and a 7th that has been flattened twice. Very simply a C Diminished 7th chord or - C°7 It would be fair to say that this could be written in a slightly simpler way as follows:

The B 'double flat' has been written as an 'A' which if you think about it, is the 'enharmonic equivalent' (sounds the same as). The truth people, is that what we actually have in these four examples is nothing more complicated than the 1st, 3rd, 5th, and 7th notes of each chord's scale or 'mode'.

Huh……..?

Sorry Guys, but in all honesty Cmaj7 is 1, 3, 5, 7 of a C major scale, C7 is 1, 3, 5, 7 of a C Dominant 7th scale (mixolydian), Cm7 is 1, 3, 5, 7 of a C enharmonic minor scale (dorian) etc, etc. Let's face it you can now work out all of the above chords without needing to know (for the moment at least) the structure of the corresponding scales or 'modes'. Cool or what? (We'll get to 'modes' in a later issue).

7th Chord Formula Table

Root	3rd	5th	7th	Major	Of Any Major Scale
Root	3rd	5th	b7th	Dominant	
Root	b3rd	5th	b7th	Minor	
Root	b3rd	b5th	bb7th	Diminished	

Once again the important part of the table above is the '<u>Of Any Major Scale</u>' statement.

If you're still with me, and I sincerely hope you are, here's the good bit (bold statement coming up!), everything you'll ever hear, transcribe, or play no matter how complicated, will either be identical to, or a direct development of, one of the eight chord formulas discussed. Yup! Even poly-tonality, atonality, twelve note serialism, you name it!

What the @£%$ are you on about, Man!

Don't worry for now, just trust me (as the self-employed Musician said to the Tax Man!)

Now because you all know by now that I'm a total self confessed 'nerdy geek' you'll also know that I don't intend to leave this tutorial here. With that in mind, let me start to close this article with a subject I feel very passionate about – Tonality and Chord Function. Let's start with the easier bit – Tonality.

Tonality is a nice 'big' word which instantly makes you sound like you understand harmony. However, this word is nothing more than a sort of collective noun for all the 'big' words already mentioned, ie, Major, Minor, Augmented, Diminished and Dominant. Please don't let the 'muso snobs' tell you differently. In short, the tonality of a chord simply describes how it sounds, - happy (major), sad (minor), as if something else is about to be heard (dominant/diminished) etc etc.

The much greater and moreover, much more practical understanding of the 'big harmonic picture' relies on the complete knowledge of 'Chord Function'.

At this point, I run the very real risk of digging myself such a huge hole.

So, where to start? Well, in my humble opinion, a chord's function directly relates to its harmonic purpose. If you like, its 'reason for being there'.

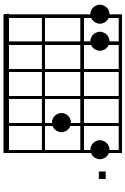
This hole's getting too big already Dude…….can't we just play G, C and D? 'worked for James Runt!

Indeed a fair point Gentlemen, (and Ladies – if any are reading). Ok, another bold statement coming up (and I've sat here for nearly half an hour now just deliberating over this next sentence). All chords fall into two basic categories – those that establish a harmonic centre, and those that sound as if they want to move on to another harmonic centre, or if you prefer, (and you may well do), static or non-static.

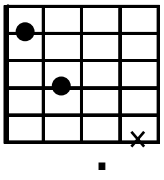
What the hell does that mean?

Columnists and Authors regularly refer to the word 'Tension' when discussing the 'Tonal' quality of a chord, riff, melodic idea, etc. This is a great word since it's usually adopted in a perfect context. Now, consider what tension is in real life – nothing more than a sense of unease about what might happen next. Music, (you'll be pleased to know), is no different. In other words, with certain chord types, you'll be quite happy to continue to listen to them without the need for a change – Static (no 'Tension'), whereas other chord types give you the very distinct feeling of movement, or that a different chord is about to be played – Non-Static ('Tension').

Allow me to try and prove these points with the following examples.

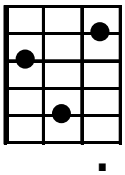


Most of you have played, or certainly could play, the good old G chord. If you now grab a guitar, try playing it in as many styles as you can – think 'Country' – 'Blues' – 'Ballad' – 'Indie' you name it. Whatever style or tempo you play this chord in, you'll be quite happy to allow your ears to keep listening. You won't sense any 'Tension' at all. Why? Because of its tonality and therefore 'Function'. A 'Major' tonality will always dictate a 'Static' function.



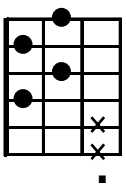
Try the exact same experiment with an Am7 chord and once again, no 'Tension' at all since a 'Minor' tonality also always produces a 'Static' function!

If you're not convinced, or are having trouble hearing what I'm referring to, try these.



E7, like all chords with a 'Dominant' tonality will have a 'Non-Static' function, which will in turn, give you the very real feeling that another chord is about to

be played, or that your ears just simply aren't comfortable listening to this type of chord for a prolonged period of time!



Finally, (and possibly the easiest to hear), there is no way that the vast majority of people would be able to stand the 'Diminished' tonality without wanting to hear the 'next' chord, so it too will always produce a 'Non-Static' function.

Whilst we're on this point, it's absolutely vital that you understand, there are no rules with this part of the subject. Any chord can preceed or follow any other. You don't need to have a non-static chord between two static ones, you could, if you wished, have a series of non-static chords and never get to a static one!

So then, here is a quick reference which covers everything mentioned in this Tutorial. I really feel it makes essential learning if you want to improve your theory knowledge and playing skills. Remember that the following table can be applied to any Major Scale.

Tonality	Formula	Symbol	Function
Major	Root 3rd 5th		Static
Minor	Root b3rd 5th	m	Static
Diminished	Root b3rd b5th	o	Non-Static
Augmented	Root 3rd #5th	+	Non-Static
Major 7th	Root 3rd 5th 7th	maj7	Static
Dominant 7th	Root 3rd 5th b7th	7	NonStatic
Minor 7th	Root b3rd 5th b7th	m7	Static
Diminished 7th	Root b3rd b5th bb7th	o7	NonStatic

Can you imagine how you're going to feel when the first time you see a chord symbol written down, it instantly triggers a stack of notes in your head? Believe me it's not only great fun, but also makes soloing so much easier since you truly understand what's happening in the music! In short, folks, you don't look at Music to appreciate it, you listen to it. Try to stop thinking of chords as the visual shapes of finger positions, and instead, start regarding them as a collection of notes with a specific purpose.

Well, that's just about it for this issue. Don't forget, as I've already said, any chord you care to mention can be interpreted as being basically one of the eight fundamental chord types above! Next time we'll be looking at Voicing, Note Priority, Inversions and Extensions! Now, come on Guys, that little lot sounds real heavy…… doesn't it?

Thanks, as always, for reading. Until next time!

Regards,

Lou.