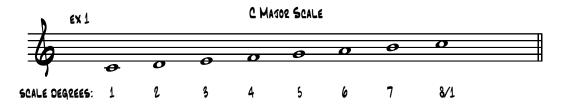
## HARMONY PRIMER

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As a prelude to my Basslines Lesson 2-adding the chords, I thought it might be a good idea to spend a little time explaining how basic Ja22 harmony is derived and how it can be applied to the guitar. The first thing to understand about learning harmony and music theory is scales of course are melodic, but scales also contain appregios (aka broken chords) and when tones of a scale are played simultaneously, we get harmony. Many of you have heard of chord/scale theory, and as we will see, the two are inseparable. Let's begin with scales. Musicians of all instruments practice scales to obtain flexibility, good intonation and touch, among other things. The Major scale in particular is very important not only for its value as a compositional generator and as a practice tool, but as a conveyor of music formulas. All melodic and harmonic musical activity can be represented in numerical code. A typical chord symbol like CMaj7 would be 1,3,5,7. These numbers represent tones relative to a major scale built on the same starting note as the root of the given chord.



NOTE: THE STARTING POINT OR NAME OF A SCALE IS CALLED ITS TONIC AND IS NUMBERED AS 1



TONES 1. 3. 5. 7 OF THE C MAJOR SCALE-SOUNDED SIMULTANEOUSLY = CMAS 7



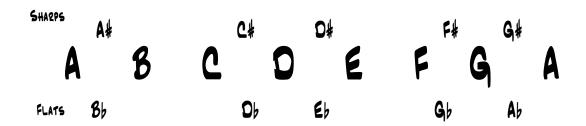
THE MAJOR SCALE MAY BE ALTERED TO PRODUCE DIFFERENT SCALES WHICH IN TURN CREATE NEW HARMONIES.
THIS SCALE IS CALLED MIXOLYDIAN AND CONTAINS THE CHORD C7 (1.3.5.)7) WHEN ORIENTED FROM NOTE 1

At this point I think it's pretty easy to see how the number system works. However, to really gain control of this stuff you need to be able to construct scales and/or chords from any pitch. To do that you must be able to construct a major scale from any given note and alter that major scale with a given numerical formula. Let's take a closer look at the construction of a major scale.

A MAJOR SCALE IS A SEVEN-TONE SCALE (AS OPPOSED TO FIVE-TONE, SIX-TONE, ETC.). THAT MOVES SEQUENTIALLY THROUGH THE MUSICAL ALPHABET LETTERS FGABCDEF, CDEFGABC, ETC. FROM ITS STARTING POINT. MOST KIDS IN MUSIC CLASS LEARN THE SOUND OF THIS SCALE THROUGH THE SOLFEGE SYLLABLES DO, RE, MI FA, SO LA, TI, DO. THE RECOGNISABLE QUALITY OF THIS SCALE COMES FROM ITS ARRANGEMENT OF HALF AND WHOLE STEPS.\* TIME FOR A LITTLE THEORY DEFINITION HERE: A STEP IS THE MEASUREMENT OF SPACE (ALSO KNOWN AS INTERVAL) FROM ONE SCALE DEGREE TO THE NEXT. THERE ARE TWO CLASSIFICATIONS; WHOLE STEP AND HALF-STEP. A WHOLE STEP ON THE QUITAR ENCOMPASSES THREE FRETS SUCH AS C-D OR F-G. NOTICE THAT THERE'S A NOTE BETWEEN ON THE RINGERBOARD (LIKE C-C\(\frac{1}{2}\) OR F-F\(\frac{1}{2}\)), WHILE THE WHOLE STEP ENCOMPASSES THREE FRETS (SUCH AS C-D OR A-8). ALL OF THE ALPHABET LETTERS ARE A WHOLE STEP APART FROM EACH OTHER EXCEPT THE "NATURAL" HALF-STEPS BETWEEN E-F AND 8-C (80TH OF THESE ARE ONE FRET TO THE NEXT).

THE PITCES THAT ARE MOST COMMONLY USED TO CONSTRUCT THE SCALES ARE AS FOLLOWS\*:

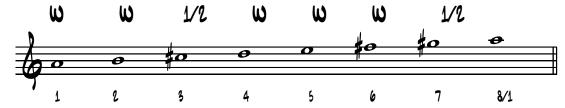
\* A#, D# AND G# ARE NOT COMMONLY USED-MORE ON THIS LATER.



THE NOTES IN BETWEEN THE ALPHABET LETTERS (KNOWN AS CHROMATICS) CAN BE SPELLED AS FLATS OR SHARPS.

A note with two names such as Gb and F $\sharp$  are known as enharmonic equivalents. In some cases the "natural" half steps are also spelled enharmonically such as: Cb = B or Fb = E.

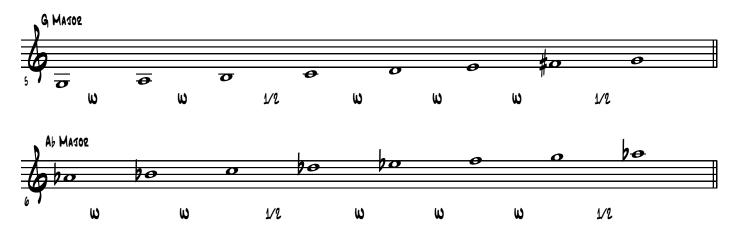
Learning the above will now allow us to build major scales on any pitch by the step process. The formula for a major scale is:



NOTICE THAT THE CONSTRUCTION FOLLOWS THE ALPHABET SEQUENCE.. YOU'RE ALWAYS MOVING UP (OR DOWN)THE ALPHABET LETTERS IN ORDER.
THERE'S NEVER A QUESTION OF THE NEXT NOTE BEING A SHARP OR FLAT SHOULD YOU NEED A CHROMATIC TO MAINTAIN THE FORMULA. YOU'LL ALSO BEGIN
TO SEE YOUR SCALES TAKE SHAPE WITH ALL SHARPS OR ALL FLATS WHEN YOU NEED CHROMATICS. YOU'VE PROBABLY HEARD THE EXPRESSION "SHARP KEYS" AND
"FLAT KEYS"-AN VERY INTERESTING ORGANIZATIONAL PHENOMENON THAT WILL PROVE EXTREMELY USEFUL TO US.

Just in case some of the above is still a little unclear (and take heart, this stuff is pretty abstract in the begining)

I've included some random major scales for you to look over. Analyze them in terms of the whole-step, half-step formula.

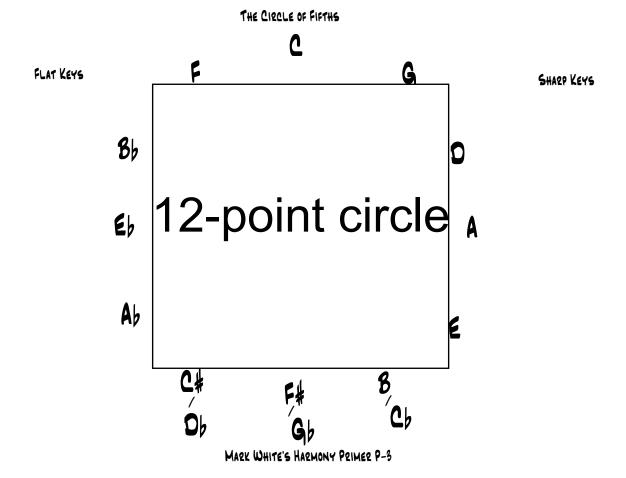


MARK WHITE'S HARMONY PRIMER P-2



AS YOU GET MORE OF THE MAJOR SCALES TOGETHER YOU'LL NOTICE THAT YOUR'RE WORKING WITH SEVEN SHARP SCALES, SEVEN FLAT SCALES ALONG WITH C MAJOR THAT HAS NO ACCIDENTALS FOR A GRAND TOTAL OF FIFTEEN SCALES. REMEMBER THAT OUR WESTERN MUSICAL SYSTEM ONLY HAS TWELVE TONES. THESE FIFTEEN SCALES REPRESENT THE TWELVE BASIC NOTES AND THREE OVER-LAPPING ENHARMONIC EQIVALENTS. THEORETICALLY AND ENHARMONICALLY YOU MAY BE CALLED ON FROM TIME TO TIME TO CONSTRUCT A MAJOR SCALE ON A PITCH SUCH AS 8\$ OR THE LIKE, BUT THE MAJORITY OF YOUR WORK WILL BE WITH THESE PRIMARY FIFTEEN SCALES. THESE KEEP THE USE OF ACCIDENTALS SIMPLE WHICH IN TURN MAKES THE READING SIMPLER, ETC. THESE FIFTEEN SCALES ARE THE NORM.

Now, we'll begin to look at another way of organizing the scales called the "Circle of fifths". But first, time for some more concept. We've been building major scales. The word major also implys tonality which is denoted as major, or minor. Without getting too long-haired a simple definition for tonality would be: melodic or harmonic activity based on scales. Generally we're working with Major or minor tonality, though one can become more specific naming the scale type such as "phrygian", implying certain musical attributes. The point is that the scales we've been writing are also tonal centers known as keys, and key is synonyhous with tonality. The "circle of fifths" is an ordering of the common written keys as well as a listing of the major scales, and therefore the major tonalities represented by these scales and keys. Holy hell! time for a beer!



You'll notice if you've written all the major scales that the "clock positions" on the circle correspond to the numer of accidentals (1,2 3, etc.). You've had to add to the major scales (to keep the formula intact) or keys.

Sharp Keys-Clockwise	Flat Keys-counterclockwise (think of 11:00 as being a reverse 1:00)
key of <b>G</b> 1 shapp at 1:00	key of F 1 flat at 11:00
key of D 2 sharps at 2:00	key of 86 2 flats at 10:00
key of A 3 shapps at 3:00	key of Eb 3 flats at 9:00
key of E 4 sharps at 4:00	key of Ab 4 flats at 8:00
key of 8 5 shapps at 5:00	key of Db 5 flats at 7:00
key of F# 6 sharps at 6:00	key of Gb 6 flats at 6:00
key of C# 7 sharps at 7:00	key of Cb 7 flats at 5:00

This brings us to the subject of key signatures, which are a short-cut method to build the scales (and therefore enableing us to know the correct notes when building chord structures or anything else that can be represented by a numerical formula). There's an order to the sharps and flats in key signatures which can be memorized via a word phrase:

## SHARP KEYS



If you want to build a major scale from one of the sharp keys: Think the name of the scale (key); then, think of the alphabet letter immediately preceeding the key (or scale) name. For instance: You're building an A major scale, think down to G, include the sharps from the beginning of the word phrase until you get to G (fine Classic Guitarists). The key of A has three sharps: F, C, and G. If you plug these three sharps into the alphabetical sequence of notes written A-A you will now have the proper arrangement of whole and half-steps



FLAT KEYS

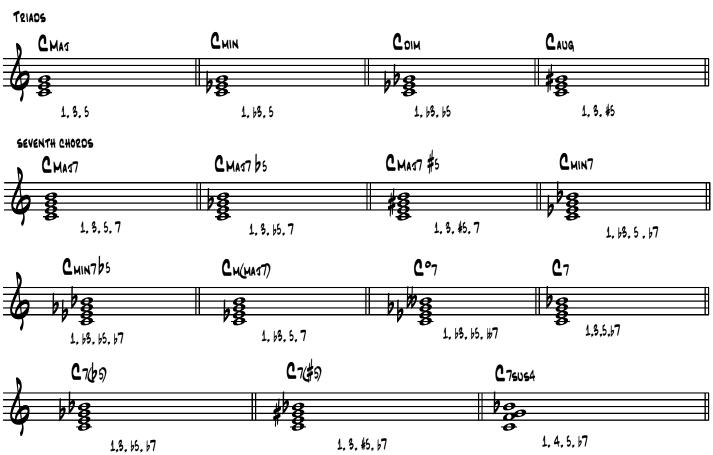


If you want to build a major scale from one of the flat keys: Think the scale (key) name, Say the flats word phrase up to that point and add 1 more flat. For instance: the key of B, would have two flats, B, and E. The only exception to this method is the key of F, it only has one flat :B.



YOU CAN NOW CONSTRUCT (WITH A LITTLE PRACTICE) MAJOR SCALES IN FIFTEEN KEYS. DON'T FORGET THAT THE KEY OF C IS NEUTRAL AND HAS NO ACCIDENTALS AT ALL. YOU CAN WRITE THEM USING THE WHOE-STEP, HALF-STEP METHOD, OR YOU CAN PLUG THE KEY SIGNATURES INTO THE BLANK SCALES TO GET THE CORRECT ACCIDENTALS. EITHER WAY, YOU'LL BEGIN TO MEMORIZE THE CONTENTS OF THE SCALES AND TO ASSOCIATE THE KEY SIGNATURES WITH PARTICULAR KEYS/SCALES. MANY TIMES ON THE GIG, WHEN MUSICIANS CALL A TUNE, THEY MIGHT ALSO GIVE YOU THE KEY BY SAYING "THREE FLATS" (KEY OF Eb) OR "ONE SHARP" (KEY OF G). ALL THIS MAJOR SCALE BUSINESS IN ALL KEYS ALLOWS US TO CONSTRUCT HARMONIES IN ANY KEY OR ON ANY ROOT BY INTERPRETING A FORMULA RELATIVE TO A MAJOR SCALE. SO WITHOUT FURTHER ADD, HERE ARE THE HARMONIC FORMULAS FOR THE FOUR TRIADIC TYPES AND THE ELEVEN PRIMARY 7TH CHORDS!

ALL EXAMPLES ARE WRITTEN ON THE PITCH C FOR CONTINUITY AND SIMPLICITY.



There are a few other common harmonic structures you might notice as missing from the above. Major 6 and Minor 6th choreds will become part of the major and minor 7th chords in terms of tensions (we'll talkabout these soon!). Another structure, sometimes labeled as Minor 7th \$5, will also be covered later.

At this point you should be able to construct all triads and 7th chords using the numeric formulas from any 200t found in the circle of fifths! The problem is: Playing these chords on the guitar from the stacked brds (particularly from the 7th chords) can be a real "mutha"! We need to make these chords "guitar Friendly". Let me introduce you to the "Drop Voicing" concept! Firstly, the number of chord tones in a chord determine how many positions a chord can be arranged in. The word position is synonymous with the term inversion. Triads having three notes have three positions: 200t position, where the 200t is the lowest note in the chord; 1st inversion where the 3rd is the lowest note; and 2nd inversion; where the 5th is the lowest note.



The word postion also conveys another descriptive term relative to the spacing of the chord tones. There are two classifications: close position (sometimes called tight) where in all inversions each note is as close as possible to the next (above or below), and open position where the chord tones are more spread out. In triadic chords, most modern gazz quitarists refer to open postion triads as spread triads.



TO OPEN (SPREAD) A CLOSE POSITION TRIAD, SIMPLY MOVE THE MIDDLE NOTE (OR VOICE) OF THE CHORD UP OR DOWN AN OCTAVE.



Notice that whether you move the middle voice up or down, you get the same three voicings. There's fust a difference in octaves. Try moving through the positions of the triads and convert to all types; minor, diminished, augmented in both close and spread formats. These voicings can be played across, up, and in combinations (diagionally) over the fingerboard.

YOU'LL NOTICE THAT I'M USING THE TERM VOICE NOW IN PLACE OF NOTE. EACH NOTE IN A CHORD IS KNOWN AS A VOICE. TERMS LIKE VOICING AND VOICE-LEADING REFER TO HOW WE CONSTRUCT AND CONNECT HARMONY.

Now that we have triads under our belt, let"s look at the seventh chords in terms of positions and voicing. A seventh chord has four tones and therefore four positions (once again regardless of octave register). We'll use C7 as an example, though this method will be the same for all types of 7th chords.



If you try to play these voicings on guitar, you'll find them difficult or impossible to play without changing octaves. Even then, they sound pretty "thin" as well as being really difficult to "grab" quickly. Orop voicings to the rescue!

Deop voicings are easy to make and are very standard chord forms for the guitar. They sound richer than their close position cousins. They're much easier to play physically and "Lie" better on the guitar fingerboard. They are widely used by all chord intrumentalists and arrangers.

## TO CONSTRUCT DROP VOICINGS:

- 1. EACH TONE IN THE FOUR-PART CHORD IS CALLED A VOICE.
- 2. The voices are numbered 1-4, the highest note designated as "1".
- 3. Drop a designated voice (such as 2 or 3) an octave, while leaving the other voices where they were.

The most commonly used drop voicings formulas are: Drop 2, Drop 3, and Drop 244.

Let's start with the drop 2 voicings. A really large chunk of Ta22 harmony vocabulary comes from these little rascals. On the guitar, they can be nicely organized via string groups-I'll show you how in a minute. First, let's see what some typical structures look like.



YOU CAN CHANGE THE OCTAVE AND THE CHOOD SPELLING REMAINS THE SAME



A drop & voicing always encompasses 4 adjacent strings. We could play the lower version of the chords with the bottom notes up the 6th string and then transfer to the bottom note on the 5th string, and finally the bottom note on the fourth string as the chords get higher.



YOU COULD PLAY ALL FOUR POSITIONS OF THE C7 ON A SINGLE STRING GROUP (6,5,4,3 5,4,3,2 4,3,2,1)

Drop 3 voicings encompass 5 strings and can also be organized by string groups (6×5432 and 5×4321). There's always a muted string in drop 3 voicings, the "x" in the string group indicates a muted string.



Doop 2\$45 can be done with the same method, though they're not as widely used as the doop 25 and doop 35. Check them out too! One thing I'll warn you about these chords: some chord types are possible to play pretty easily, and others are difficult or nearly impossible to play physically. Go through the possibilities in all keys with all eleven chord types (a big 108!). Make a note of the chord voicings you like somically and for ease of fingering and start using them in tunes. This is crucial for developing your harmonic vocabulary.

And now, a mini preview about adding chords to bass lines. These drop 2 and drop 3 voicings are a good place to start, though you can simplify the structures by using only the guide tones (chord tones  $3 \marking$ ) along with the bass note for creating a three note structure. This kind of voicing goes back to "rhythm" style playing and I would suggest you check out some Freddie Green with Count Basie, Jim Hall, and John Pizzarelli as outstanding practicioners of this style.



THE MAIN FOCUS IS THE BASS LINE. ADDING THE CHORDS ADDS HARMONIC DEFINITION. ALSO IF YOU CHECK OUT THE LAST PAGE OF MY BASS LINE LESSON YOU'LL GET MORE IDEAS ABOUT MUTING CHORDS AND RHYTHMIC DEVICES. BUT THIS HARMONY PRIMER IS REALLY ABOUT GETTING OUR CHORDS TOGETHER. I HOPE THIS INFORMATION GETS YOU THINKING AND DOING ON THE QUITAR. THE HARMONY CONTINUES NEXT LESSON WITH ADDING TENSIONS TO THE BASIC SEVENTH CHORDS, THEN QUARTEL HARMONY, VOICE LEADING, HARMONIC PLUMBING (MY SUBSTITUTION AND LINKAGE METHODS FOR HARMONY), COMPING, AND RHYTHM STYLES WHICH WILL LEAD US BACK TO THE BASS LINES AND IMPROVISATION! REMEMBER TO MAKE THIS THEORY INTO MUSIC! YOU MUST PUT INTO PRACTICE WHAT YOU LEARN! HAVE FUN, AND HAVE PATIENCE! HERE'S A LITTLE BASS LINE WITH CHORDS TO KEEP YOU GOIN' UNTIL NEXT TIME. TRY IMPROVISING CHORDS WHERE THERE IS JUST THE BASS LINE. MIX IT UP!







Try adding the chords randomly and play some of the chords muted for more rhythmic punch.