Joe's Guitar Method
Towards A Jazz Improviser's Technique

Continued .....

I. Intro

This is not really a “method” book per se.
I just happened to like the title.

What it is, is a series of exercises and tips and a particular manner of introducing conceptual material that I have been using, over many years, with my students at Mohawk College and with my private students at my home. I have found that these particular exercises and this manner of presentation work quite well. I still use many of the exercises myself when working on new material. I will be using these concepts for as long as I continue to play the guitar. Many of my students seem to have found this approach useful too. I figure that, at the very least, if I write this book out now then I can spare my students the agony of trying to decipher my illegible hand scrawled notes and that I can also spare myself the agony of having to write out the same stuff over and over again.

This book can not teach you how to improvise jazz on the guitar. Only you can do that. The book is merely aimed at helping your brain, your ears and your hands learn to hear some useful musical patterns, so that you can learn to play what you hear, in real time, on the guitar, while you’re hearing it. My intent is to help you learn to hear things that you can not hear now and to enable you to play them on the guitar when you do hear them.

Disclaimer

I am by no means an authority on the guitar, on jazz, on music education, on music theory, etc, etc. (And I’m definitely no master of English grammar!) I have no degree from any institution. I did study for three and a half years at Berklee College Of Music in the early 1970’s and I have taken some studies since then, but that is all. I am simply a pretty good player with years of experience on the bandstand, in the studio and in the classroom. Take everything I say with a grain of salt and if something I say does not jibe with something else you run across then do some research on your own to find out the truth for you.

Although I do start at square one this book really assumes that you can already play a little.

I assume that you have already developed the ability and the strength necessary in your fretting hand to play basic open position chord forms and “barre chords”.

It is beyond the scope of this book to deal with the basics of musical literacy. I will not be covering the topics of elementary music reading such as simple rhythms, pitch recognition on the staff, the conventions of musical form, etc. in any depth. Nor will I be covering things like key signatures, time signatures, etc.

There are several very good books on the market already that can do a much better job of dealing with these subjects than I can. I recommend:

Rudiments of Music, by Robert W. Ottman, Frank D. Mainous (Contributor), Published by Prentice Hall.

or

Fundamentals of Music, by Earl Henry, also Published by Prentice Hall.

I assume that you already know how to read music, at least a little bit. You don’t have to be a good sight reader yet, but you should be capable of figuring out how to play the examples that are written out on the treble clef staff without too much difficulty. You should know the names of the lines and spaces on both the treble clef and bass clef staves and how to read and execute most simple rhythms. I will not be using tablature.

If you do not yet have these skills I suggest that you spend some time with a good teacher for beginners. I learned quite a lot about the guitar from William Leavitt’s wonderful series of books called “A Modern Method For Guitar”, Volumes 1, 2, and 3 (Berklee College of Music Press) (AKA “The Berklee Books”), when I was a student at Berklee. Try to find a teacher who uses these books to get you started. They are available through Hal Leonard Publishing.

William Leavitt also wrote a couple of books designed to help with Position Style sight reading. Reading Studies For Guitar and Advanced Reading Studies For Guitar.

I also highly recommend the following two books for developing skill in reading and for learning how to

accurately execute the types of syncopated rhythms found in jazz and in the popular music work place:

Modern Reading Text In 4/4, by Louis Bellson, Published by Bellwin Mills.

and

Melodic Rhythms For Guitar also by William G. Leavitt.

Therefore, you should consider basic musical literacy (i.e. pitch recognition on the staff, being able to read simple rhythms, understanding everyday time signatures, understanding key signatures, understanding formal devices such as repeat signs, codas and the like, etc., etc.) to be a pre-requisite for using this book.

My book is not a harmony book. This subject is well beyond the scope of my book. If you have never formally studied jazz harmony or classical harmony you may get rather confused, rather quickly, with this book of mine. My book is more about applying the things you have already learned about harmony and composition to the guitar than it is about learning them in the first place.

Here are some other book suggestions on the topics of harmony, jazz improvisation and composition:

The Jazz Language by Dan Haerle, Jamey Aebersold Press.

Modern Harmonic Progression by Allen Michalek - Humber College Press (Toronto).

Al Michalek was a student and then later a teacher at Berklee. He moved to Toronto in the early 1970's to head up the new jazz department at Humber College. Al's book is the hardcopy version of Berklee's Jazz Harmony course. I learned all this stuff in lectures at Berklee. I'm glad Al wrote it all down because I lost all my notes! This book is rather hard to find though. As far as I know it is only available from the Humber College Book Store. You might also try Dave Snider Music (416) 483-5825.

The Jazz Harmony Book by Mark Levine, Hal Leonard Publishing

The Jazz Piano Book by Mark Levine, Hal Leonard Publishing

Modern Harmonic Technique by Gordon Delamont, Kendor Publishing.

A great text/workbook of romantic era harmony. Written with jazz and popular musicians in mind.

Modern Arranging Technique by Gordon Delamont, Kendor Publishing.

The Craft Of Musical Composition by Paul Hindemith. Schott Publishing.

Fundamentals Of Musical Composition by Arnold Shoenberg, Faber and Faber.

I assume that you enjoy jazz, are listening to several jazz artists and are presently attempting to imitate some of the sounds you are listening to. If you don't actually listen to any jazz then none of this will make any sense at all. We will be studying the things that jazz musicians deal with on a technical level but if you've never heard any jazz you won't have a clue as to what these techniques are really used for. The techniques used in this book can be applied to many types of music that involve improvisation including pop and rock but if you don't spend the requisite amount of time studying these ideas in a traditional jazz setting you will most likely be missing the point.

Like I said earlier, I DO start at square one but it's more in the sense of re-learning some of the basic stuff that most novice guitar players always learn with an eye towards developing an advanced improviser's technique. The book is not really intended for absolute novices. If you are an extremely tenacious, strong willed beginner (or just a glutton for punishment) you may have some luck just diving right in, but don't say I didn't warn you.

There is at least a **lifetime's** worth of work suggested within these pages. Don't be real hard on yourself if you don't "master" some of the concepts or the exercises within a week or two. This is a very gradual process and you are just starting out. Progress does take time. Once they are understood these ideas will begin to gradually work their way into your playing and they will stay with you for as long as you continue to play music

on the guitar. It is more important to understand the concept behind a particular set of exercises than it is to be able to flawlessly execute the material at the speed of light, although virtuosity is nice too!

Feel free to jump ahead to any chapter or sub chapter in this book that interests you. As a matter of fact you will HAVE TO do just that if you want to use this book successfully. I have intentionally over compartmentalized these subjects in an effort to achieve a continuity in the subject matter. In reality, music making is a "holistic" process drawing on many disparate disciplines at once.

For example, my chapter, Chords: Construction / Execution / Basic Harmony begins simply enough, with the construction of the basic triads and some movable chord forms for them on the guitar. But it might not be necessary for you, at this point in time, to get into all of the triad inversions that I present. Once you know the basic triadic chord forms it will probably be better for you to move on to the seventh chords. My intent was to explore the idea of triads in a full way. You can always come back to this topic at a later time.

So....

• As soon as you know how to play some chord forms you should try to learn the chords to some standard tunes or try to learn some open position scales in the key of that tune or some pentatonics or what have you.

• As soon as you know how to arpeggiate a triad you should try to improvise a chord tone melody over a standard tune's progression or jump ahead to seventh chord arpeggios etc.

• As soon as you know how to play a few melodies by ear you should try to learn some tunes out of a fake book also.

etc.

You will have to use the Table Of Contents as you would an index. For example, if you're working on a tune and you get an idea that pentatonic scales might be a valuable avenue of exploration then have a look in the TOC and you will probably find a subheading about pentatonics in there somewhere. Etc.

At ALL times you should be working on repertoire if your goal is to become a better jazz musician. If you don't know any tunes then you really don't know how to play anything, do you?

When you learn about chords try to learn about the chords *in a tune*. When you learn about scales try to learn about the scales involved *in a tune*. When you work on technique work on the technique needed to *play a tune*. Etc.

There are several good "fake" books on the market. You will need one of them while working through my book. A fake book is a book of "lead sheets". A lead sheet is a simple sketch of the most important aspects of a composition so that a musician or group of musicians can fake an arrangement on the spot from the information provided. The term "lead sheet" comes from the practice within jazz big bands of referring to the highest note in the trumpet, trombone or saxophone sections as the "lead". The lead part is often the melody. Everyone else in the section follows the leader for phrasing and dynamics, etc. A lead sheet consists of the melody, usually written in the treble clef at concert pitch, and a set of chord symbols which are a shorthand notation for describing a basic harmonization for the tune.

In my experience, the two fake books that are the most popular among music students everywhere (mid 1999) are:

The Real Book (an obvious play on words) - published by anonymous musicians somewhere in Boston.

and

The New Real Book - published by the Sher Music Co.

The Real Book was first put together in the mid 1970's at Berklee College of Music by some students there. It caught on everywhere because of it's a great selection of tunes. The creators of the RB do not pay any royalties to the owners of the compositions so technically it is illegal. Most of these composers seem to be happy to have their tunes immortalized by having all these music students study them so I don't think there has been any litigation yet. The RB has some problems though. There are many mistakes; wrong chords, wrong melody notes, wrong keys, etc.

The makers of the NRB have attempted to address these problems. They do pay royalties to the composers. The tunes are, for the most part, well researched and transcribed correctly. However, the selection of tunes is not as representative of the most important jazz compositions as the original Real book's. If you buy all three of the NRB's volumes you would have a nice selection of tunes though.

If you're on a tight budget my 1st choice would be the original Real Book. As a matter of fact, many of the exercises in my book refer directly to lead sheets from the Real Book. In many ways then you should consider the Real Book to be a supplementary text to my book.

What type of guitar player needs the stuff in this book?

Not every guitar player or even every jazz guitar player needs to know anything about a lot of the stuff I present in this book. There have been many many great and just plain real good guitarists who know next to nothing of a lot of this stuff. There are many great guitar players who do know a lot of this stuff too. As far as I am concerned, if you can play what you hear and you hear some interesting things then I would probably enjoy your playing. How a musician gets himself to that point is different for everyone. The exercises and the concepts presented here are intended to be more or less universal but let's face it this is my own approach. This is how I learned how to play the things that I know how to play and this is how I think about music on the guitar. You might have a totally different way of conceptualizing music in your own mind. Lots of great players do.

For example: Wes Montgomery supposedly could not read music. When I asked Ed Bickert and Lenny Breau what methods they used to harmonize melodies they both replied "I just play what I hear." It is unlikely that Jimmy Hendrix or Stevie Ray Vaughan spent a lot of time playing chord tone melodies on All The Things You Are. Pat Metheny holds his pick completely differently from the method I espouse. Howard Roberts held his pick another way. Scott Henderson is probably not too concerned with Freddie Green style comping. Etc.

But what every one of these gentlemen has had to come to grips with is:

- how to hear a melody in their head
- how to hear the chords of the tunes they perform
- how to map out several places where the notes they are hearing can be found on the guitar with several ways of executing those notes
- how to develop some way to communicate their ideas to the other musicians they have to play with

The last of these needs is met quite nicely by learning to read and write musical notation but there are other ways that musicians can communicate with each other once they have their ears together. This book attempts to address the other needs but in a very round about way. Much of the material in this book is preparatory. It is not until near the end of this book that I have a chapter called "Playing What You Hear". I suggest you have a look at this chapter first and if it presents no real challenges to you then I would say that you have no need for this book. Perhaps you should be writing your own.

Quite frankly, I don't know exactly how Wes and Lenny and Ed and Jimmy and Stevie, etc. all learned how to hear and to play the great stuff that they did. Most jazz and pop musicians spend a long time imitating their idols. It is a rare musician indeed who can extract the concepts behind the music they have stolen in order to create their own music. On a certain level this book is my own distillation of the concepts and principles that I think I have gleaned from the musicians that are my own influences.

Why do you need to know a zillion different ways to play the same chord?

You don't. You can get by quite nicely with one or two. But if you want to have some choice and you have a desire to go beyond the ordinary run of the mill stuff you hear everybody else doing you should attempt to do some exploring of your own. Exploring harmony will also enable you to hear more things faster. You are, after all, playing and listening to more than one note at a time when you play a chord.

Why do you need to know a zillion different ways to play the same scale or arpeggio?

You don't. You can get by with 3 or 4 fingerings. But if you are more adventurous than the average guitarist you will want to explore more of the possibilities. The more fingerings you investigate the more likely it is that you will be able to find a fingering, wherever your hand happens to be on the fretboard, for whatever it is that you are hearing. You might even learn to hear some new things in the process.

Why do you need to know about all of the modes of all of these scales? Why learn 7 scales when you could just learn 1?

You don't. Modal thinking is just another way of exploring things.

Etc.

You don't have to do any of the things suggested in this book to be a good guitar player but if you want to be a great player you'll find lots of things worth exploring here and I hope you'll look elsewhere too.

I hope you find the material in this book and the way it is presented of some help to you in achieving your own musical goals.

Good luck!

II. Tuning & Setup

A. The Grand Staff

I've lately felt that guitar music really should be written on a Grand Staff, like piano music. In standard tuning, our lowest open string is tuned to the E which is normally notated on the first ledger line below the Bass Clef staff. Our highest open string is tuned to the E that is normally notated on the 1st line of a Treble Clef staff. Our high E at the 12th fret is tuned to the pitch that is normally notated on the 4th space of a Treble Clef staff.

But virtually all guitar music is notated an octave higher than it actually sounds so that music that is written for the guitar will fit nicely on a single Treble Clef staff. This is fine for reading guitar music but creates some conceptual problems when *thinking* about music on the guitar.

But no-one's really going to listen to me so we might as well get used to things the way they are. Just try to be aware which note you are really playing when you are improvising or reading a guitar part and get comfortable reading non guitar music "up" an octave from where you would if it were an actual guitar part (like the music you would see in a fake book).

Figure 1: This is where the guitar's open string's pitches really SOUND.

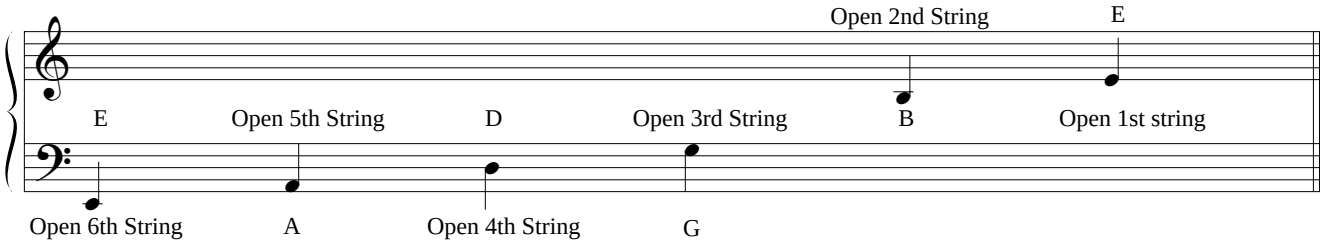
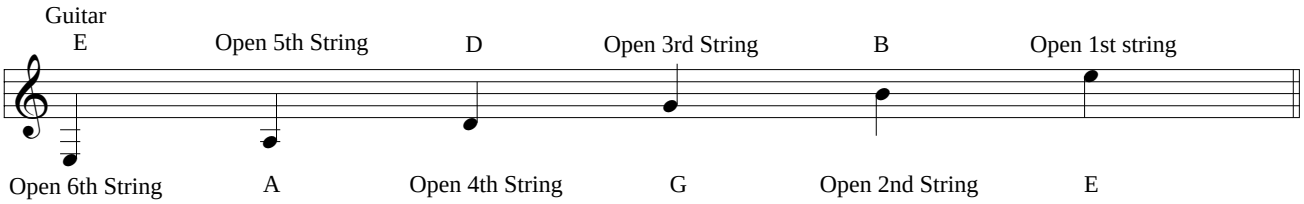


Figure 2: This is where the guitar's open strings' pitches are WRITTEN in guitar music.



B. Using A Tuner

Tuning a guitar by ear is actually quite difficult. When I was starting out there were no electronic tuners to help us. We learned a simple method of comparing fretted notes to open strings. This happens to be a very good method, once your ears have developed enough to hear when two pitches are perfectly in tune with each other, but developing those types of ears takes time.

Here's the method. It assumes that your guitar is already properly set up and intonated:

1. Use a pitch pipe, a piano, or a tuning fork tuned to A = 440 vibrations per second to tune your A string by ear. Your A string actually is tuned to A = 110 which is 2 octaves lower than A = 440 so this is tricky right from the start.

2. Fretting your A string at the 5th fret produces the note D. Play this D and tune your 4th string so that it sounds identical to the fretted note. Be extremely careful not to apply too much pressure to the fretted note or to pull on the string from side to side or you will affect it's pitch. This assumes that your guitar is set up properly and that fretting a note at the 5th fret will produce a D that is perfectly in tune. (Please see II. C. - Intonation below) Once your D string is perfectly in tune proceed to step 3.

3. Fretting your D string at the 5th fret produces the note G. Play this G and tune your 3rd string so that it

sounds identical to the fretted note.

4. Fretting your G string at the 4th fret produces the note B. Play this B and tune your 2rd string so that it sounds identical to the fretted note.

5. Fretting your 2nd string at the 5th fret produces the note E. Play this E and tune your 1st string so that it sounds identical to the fretted note.

6. Your low 6th string is also tuned to the note E but it is 2 octaves below the E on the 1st string. You could just play both open E strings and tune the low one until it sounds identical to the high one but most people find it easier to use the 6th string's "harmonic" (Please see II. F. - Other Tuning Methods below) at the 12th fret. This "harmonic" will produce a note that is 1 octave higher than the open 6th string.

Two notes of the same pitch or an octave apart that are out of tune will have an audible beating when they are sounded simultaneously. Two notes of the same pitch or an octave apart that are in tune with each other will have no beating effect. You must learn to listen very closely for this.

Not real easy for a beginner, eh?

These days a beginner can use one of the extremely accurate and inexpensive electronic tuners that are on the market. This is an important investment for a novice guitarist. If you are constantly practicing on a guitar that is not in tune or is not set up properly to play in tune, all over the neck, then your hands will try to compensate and you will be subconsciously tugging on the strings to make them sound in tune. This will pave the way for many bad habits that are quite difficult to break once they take hold.

Owning a tuner and knowing how to use it can save you a lot of money too. A typical guitar shop around here charges $35.00 for a set-up. This "set-up" is usually something extremely simple (setting the into- nation and the string height) that you could do yourself for free if you owned a decent tuner and understood some basic guitar mechanics. (See II. C. - Intonation below) Actually, the more you know about how your guitar works the better off you will be anyways. It's worth learning how to wire in your own pickups, how to change your tuning pegs, adjust your truss rod, etc. Sometimes a musical problem you are having may not have a musical origin. It might be your instrument!

There a few different tuner types on the market. I prefer the "chromatic" models because they are easier and faster to use. These tuners "know" what note you are playing and simply tell you whether it is sharp or flat. ... Simple. One thing to be careful of when you are using an electronic tuner is to make sure that only 1 string is vibrating at a time. By physically muting the other strings you will send a much clearer audio signal to the tuner.

As far as a guitar's tuning is concerned, it is either in tune or it isn't. There is no middle ground. Learn to become a fanatic about tuning now, and your musicality will develop much more quickly. I have yet to see a guitar that stays perfectly in tune for longer than 5 minutes. They are extremely sensitive to temperature, humidity and other factors. I always try to have a tuner in line when I'm playing a gig so that I can make adjustments on the fly.

In the meantime, you should probably develop a rapport with a good guitar tech but plan on learning how to do all this yourself. It's not hard. Most guitar techs are happy to show you how to do this stuff too.

C. Intonation

In order for your guitar to play in tune across the entire fretboard the lengths of the strings in relation to the string gauge, fret spacing and bridge placement sometimes needs adjusting. The 12th fret marks the halfway point along each string. The vibrational frequency of the note produced at the 12th fret should be an exact doubling of the vibrational frequency of the note produced by the open string.

Example: Your open A is tuned to A = 110 vps (Vibrations Per Second). The pitch produced at the 12th fret of your 5th string should be exactly A = 220 vps. If it is not, then something needs to be adjusted. All electric guitars have movable bridge saddles. By moving the 5th string's saddle backwards or forwards we can change the length of the string so that the open string and the fretted note at the 12th fret can be made to match. If the 12th fret pitch is sharper than the open string's pitch, then the length of string between the 12th fret and the bridge saddle needs to be increased. If the 12th fret pitch is flatter than the open string's pitch, then the length of string between the 12th fret and the bridge saddle needs to be decreased.

D. Jazz Guitar Tone

There are a range of guitar tones that are readily recognized as the “jazz guitar sound”. It is darker and fuller and less distorted than than the sounds usually associated with pop music. In my mind, the two most important features of an electric guitar to get the “jazz guitar sound” are reasonably heavy strings and a humbucking pickup in the neck position. It is rare for a jazz player to use any other pick up besides the neck pick up. Single coil pickups have a thinner sound than what is usually desirable for a jazz tone.

I use a Seymour Duncan ‘59 in the neck position of all my jazz guitars. The lightest high E string that I use for playing jazz is 0.011” gauge. I usually use a set of strings with an unwound 3rd string but most traditional sounding jazz guitar players prefer a wound 3rd and heavier strings than me. This is, of course, highly subjective advice.

A good jazz sound can be gotten from a solid body electric. Ed Bickert uses a Fender Telecaster with a humbucker in the neck position. His high E string is 0.012” gauge. He uses an unwound G string. However, most jazz players prefer the sound of a good archtop acoustic-electric, strung with heavy strings.

Most jazz guitarists reduce the high end audio output from their pick-ups by turning their tone controls down quite a bit. I believe that this is done mostly to reduce the sound the fingers make when sliding along the wound strings. It also yields a fuller warmer sound that blends better with other acoustic instruments.

Some players use flat wound strings which are also designed to reduce the sound of finger slides.

E. About Whammy Bars

A good whammy bar system, like a properly installed and properly setup Floyd Rose system, can actually allow your guitar to stay in tune even better than a fixed bridge system, believe it or not! However, it is rare to see a whammy bar system set up properly. My advice is, if you don’t know exactly what you’re doing, stay away from these things. They can make you sound lousy even if you’re playing really well. They are not ideal with heavy strings either.

F. Other Tuning Methods

There is a tuning method that many players use that is not really 100% accurate. This method involves using harmonics at 2 different “nodes” along a string’s length. A “harmonic” is the pitch that results when you lightly touch a string at spots where the string’s length is divided equally and start the string vibrating.

By lightly touching a string near the 12th fret you actually divide the string into 2 equal lengths and they both vibrate separately. The pitch that is produced is 1 octave higher than the open string. The vibrational frequency of the harmonic is exactly 2 times that of the open string.

By lightly touching a string near the 7th fret you actually divide the string into 3 equal lengths and they all vibrate separately. The pitch that is produced is an octave plus a perfect 5th (a Perfect 12th) above the open string. The vibrational frequency of this harmonic is exactly 3 times that of the open string.

The vibration frequency ratio of the open string to the 12th fret harmonic is 1:2. Perfect (see below) Octaves have a vibration frequency ratio of 1:2. Perfect Unisons are 1:1, by the way. The vibration frequency ratio of the open string to the 7th fret harmonic is 1:3. I.e. Perfect 12ths have a vibration frequency ratio of 1:3. Perfect 5ths are 2:3, by the way.

A harmonic can theoretically be created at any of the mathematical divisions of a string’s length. (1/2, 1/3, 1/4, 1/5 etc.) Each one of these mathematical divisions along the string is called a “node”. Harmonics are easier to hear on the lower strings. The higher strings produce some harmonics that are too high and/or too quiet to be perceived well by the human ear.

Examples:

The 5th string is tuned to A = 110. When you lightly touch this string near the 12th fret you cause it to be

divided into 2 equal vibrating bodies so that the pitch A = 220 is produced. When you lightly touch this string near the 7th fret you divide the string into 3 equal vibrating bodies and the pitch E = 330 is produced. When you lightly touch this string near the 5th fret you divide the string into 4 equal vibrating bodies and the pitch A = 440 is produced. Etc.

The same concept can be applied to any vibrating body and the resulting pattern of pitches produced is known as the Harmonic Overtone Series. The theory goes like this: No matter what the length of a vibrating body, it will vibrate in it's full length and also in all of it's mathematical divisions. Each one of these divisions above the "fundamental" (the starting pitch) is known as a "harmonic". The fundamental is called the 1st "partial". The 1st harmonic is called the 2nd "partial" etc.

The guitar tuning method I was referring to at the beginning of this sub chapter also involves the concept of "Perfect" intervals. Most pairs of pitches, when sounded simultaneously, will produce an audible, regularly repeating, beating sound. Not so with Perfect intervals. When two pitches are sounded that have their vibrational frequencies in the simplest ratios: 1:1 (Perfect Unison), 2:1 (Perfect Octave), 3:2 (Perfect 5th) and 4:3 (Perfect 4th) this beating effect is neutralized. The Perfect intervals are Unisons, Octaves, 5ths, 4ths and their compound intervals, double octaves, 11ths, 12ths etc.

The tuning method is this:

1. Use a pitch pipe, a piano, or a tuning fork tuned to A = 440 vibrations per second to tune your A string by ear. (I.e. no audible beating between the tuning fork and the string.)
2. Lightly touch your 5th string near the 5th fret to divide the string into 4 equal lengths to produce the harmonic which yields the pitch A (2 octaves above the open string). Lightly touch your 4th string near the 7th fret to divide the string into 3 equal lengths to produce the harmonic which also yields the pitch A (a Perfect 12th above the open string). Adjust the tension on the 4th string until it's A is in tune with the A on the 5th string.
3. Repeat as above for the 4th and 3rd strings.
4. Repeat as above for the 6th and 5th strings adjusting the tension on the 6th string to match the pitch on the already tuned 5th string.
5. Lightly touch and pluck your 6th string near the 5th fret to divide the string into 4 equal lengths to produce the harmonic which yields the pitch E. Compare this to the open 1st string and adjust it until it is in tune with the 6th string's harmonic.
6. Lightly touch and pluck your 2nd string near the 5th fret to divide the string into 4 equal lengths to produce the harmonic which yields the pitch B. Compare this B with the B that is produced by the 1st string's 7th fret harmonic. Adjust the 2nd string's tuning accordingly.

The problem with this method of tuning is that, in most Western music, for the last few hundred years, we have been using a tuning system where 5ths are not "Perfectly" in tune (see below)! So tuning the guitar with any harmonics other than those that yield an octave above the open string will actually result in detuning the guitar!

The pitches we use in contemporary Western music are actually slightly altered (aka "tempered") from the vibrational frequencies that occur naturally via the overtone series. What is known as the "12 Tone Equal Temperament" scale (12 TET) has been in use since Bach's time.

Consider this:

The overtone series of A = 110 results in the following pitches:

1st Partial A = 110
2nd Partial A = 220
3rd Partial E = 330
4th Partial A = 440
5th Partial C♯ = 550
6th Partial E = 660

7th Partial G = 770

This G = 770 is 2 octaves plus a minor 7th above the fundamental A = 110. You would therefore expect that the G which is a major 2nd below A = 110 would have a vibrational frequency of G = 96.25 by the following calculations:

G = 770 divided by 2 equals 385 (This is the G found 1 octave below G = 770)

G = 385 divided by 2 equals 192.5 (This is the G found 1 octave below G = 385)

G = 192.5 divided by 2 equals 96.25 (This is the G found 1 octave below G = 192.5. It should be a major 2nd below A = 110)

But the overtone series of G = 96.5 results in the following pitches:

1st Partial G = 96.5
2nd Partial G = 193
3rd Partial D = 289.5
4th Partial G = 386
5th Partial B = 482.5
6th Partial D = 579
7th Partial F = 675.5
8th Partial G = 772
9th Partial A = 868.5

A = 868.5 is clearly not an exact multiple of A = 110 so something is amiss here! Equal temperament was devised so that a piece of music could effectively straddle many keys (I.e. utilizing many fundamentals) and still sound roughly "in tune". In order to accomplish this "unification" of the 12 tone system we have decided that it is OK for all intervals other than octaves to be slightly out of tune so that there is an equal distance between all 12 pitches within each octave.

As I write this, I realize that I have not explained this very well, I'm afraid. At this point it would be wise for you to seek out a good book about musical acoustics in order to fill out your understanding of this topic. The only point I need to make is this: In equal temperament 5ths are not "Perfect" (I.e. there is a slight beating sound when 12 TET 5ths are sounded together) although we still use the term "Perfect" when labeling 12 TET 5ths.

In 12 TET the pitch a "Perfect" 12th above A = 110 is not E = 330 as you would expect. It is E = 329.628.

So, any method for tuning the guitar that tunes Perfect 5ths so that they have no beats will actually put the guitar out of tune.

FYI: The formula that can be used to determine the vibrational frequency of a minor 2nd above any given pitch in the 12 Tone Equal Temperament Tuning System is this:

(x) times 1.0594361 = (y) where (x) is the original pitch and (y) is a semi-tone above.

The following table shows the exact frequencies of the pitches in 12 TET and shows one spot on the fretboard where these pitches are found on a well tuned and setup guitar:

String/Fret	**Note**	**Frequency**
Sixth Open	E	82.407
1	F	87.307
2	F♯/G♭	92.499
3	G	97.999
4	G♯/A♭	103.826

Fifth Open	A	110.000	
1	A♯/B♭	116.541	
2	B	123.471	
3	C	130.813	
4	C♯/D♭	138.591	
Fourth Open	D	146.832	
1	D♯/E♭	155.563	
2	E	164.814	
3	F	174.614	
4	F♯/G♭	184.997	
Third Open	G	195.998	
1	G♯/A♭	207.652	
2	A	220.000	
3	A♯/B♭	233.082	
Second Open	B	246.942	
1	C	261.626	(Middle C)
2	C♯/D♭	277.183	
3	D	293.665	
4	D♯/E♭	311.127	
First Open	E	329.628	
1	F	349.228	
2	F♯/G♭	369.994	
3	G	391.995	
4	G♯/A♭	415.305	
5	A	440.000	

This system is consistent, in that the vibrational frequencies of all octaves are exact multiples of each other. Example: E = 82.407 times 2 yields E = 164.814 a Perfect octave higher. Etc.

My own tuning method is as follows. It assumes that your guitar is properly intonated so that fretted notes all across the fretboard are perfectly in tune:

Tune your A string using a pitch pipe, tuning fork, piano, electronic tuner, or whatever.

Fret your 4th string at the 7th fret (A) and adjust the tuning of the 4th string until there are no beats with the open 5th string.

Fret your 3rd string at the 2nd fret (A) and adjust the tuning of the 3rd string until there are no beats with the open 5th string.

Fret your 2nd string at the 10th fret (A) and adjust the tuning of the 2nd string until there are no beats with the open 5th string.

Fret your 1st string at the 5th fret (A) and adjust the tuning of the 1st string until there are no beats with the open 5th string.

Tune your low E string to the high E string so that there are no beats.

III. Learning The Fretboard

A. Finding Pitches On The Guitar *(Learning the notes on the fretboard via the pitch distances within the C major scale.)*

The natural notes (i.e. no sharps or flats ... the white keys on a piano ... the C major scale) are:

C D E F G A B | C etc.

On the guitar, along a single string:
1 fret = a semi-tone.
2 frets = a whole tone.

The distance from:
C to D = 2 semi-tones = 1 whole tone = 2 frets
D to E = 2 semi-tones = 1 whole tone = 2 frets
E to F = 1 semi-tone = 1 fret
F to G = 2 semi-tones = 1 whole tone = 2 frets
G to A = 2 semi-tones = 1 whole tone = 2 frets
A to B = 2 semi-tones = 1 whole tone = 2 frets
B to C = 1 semi-tone = 1 fret

So, all the natural notes have 2 frets between them except for E and F as well as B and C which have only 1 fret between them.

This pattern of semi-tones (2212221) as found in the C major scale is the same for all major scales, by the way.
G major scale = G (2) A (2) B (1) C (2) D (2) E (2) F♯ (1) G
F major scale = F (2) G (2) A (1) B♭ (2) C (2) D (2) E (1) F
etc.

So, if you know that your open 1st string is tuned to E then it is a simple matter to figure out that F is found 1 semi-tone above that, at the 1st fret.
[By the way, this particular E is written using the treble clef staff on the 4th space in guitar music. However when we read this 4th space E in guitar music the E an octave below that is the one that actually sounds. This is because guitar music is transposed up an octave so it will fit nicely on a single staff. (See Chapter II: A - The Grand staff.)]

Still on the 1st string:
G is found at the 3rd fret, 2 frets above F.
A is found at the 5th fret, 2 frets above G.
B is found at the 7th fret, 2 frets above A.
C is found at the 8th fret, 1 fret above B.
D is found at the 10th fret, 2 frets above C.
E is found again at the 12th fret, 2 frets above D.
F is found again at the 13th fret, 1 fret above E.

etc., etc.

F♯ (aka as G♭) is found 1 fret above F or 1 fret below G.
G♯ (aka as A♭) is found 1 fret above G or 1 fret below A.
etc., etc.

F♭ is "enharmonically equivalent" to E.
E♯ is enharmonically equivalent to F.
C♭ is enharmonically equivalent to B.
B♯ is enharmonically equivalent to C.

With this simple bit of knowledge any note anywhere on the fretboard can be found or identified.

Try this:

Make 21 little squares of paper and on each square write one of the 21 possible pitch names (excluding double sharps and double flats of course):
A, A♯, B♭, B, C♭, B♯, C, C♯, D♭, D, D♯, E♭, E, F♭, E♯, F, F♯, G♭, G, G♯, A♭.
Put these squares in a hat and pick them one at a time. Choose a string and try to find the pitch more quickly each time.

It takes a while but with constant practice eventually this becomes second nature. I have found that this IS the best way to learn where the notes are on the fretboard.

Many novice rock guitarists get hung up on using octave transpositions of the 5th and 6th string when attempting to identify notes on the higher strings. This is a natural by product of their learning the roots of the barre chords so well. But, believe it or not, that method takes much more time, is less accurate and is actually more confusing than the method I am suggesting.

When looking for a note on any particular string just get into the habit of counting through all the notes on that string from the open string upwards. If you're looking for a note that is far removed alphabetically from the open string's pitch then learn to count backwards from the 12th fret. For example if you're trying to find A on the 2nd string then count backwards from the 12 fret (B) rather than upwards from the open string.

It is therefore extremely important that you develop the ability to think through the musical alphabet backwards:

G F E D C B A

IV. Basic Guitar Techniques

A. Overview

The techniques used to play pick-style (aka plectrum style) guitar are no where near as standardized as those used to play classical guitar. There is no RIGHT way to do do this or that although there might be a right way for YOU to do something.

Even a casual survey of just a handful of great guitar players will turn up a large number of variations in their technical approaches to the guitar. These differences in technique as well as conceptual differences are among the main forces behind what determines someone's particular style and sound (aka their "voice").

One guy's thumb (fretting hand) will always be firmly rooted at the middle of the neck, as in proper classical technique, while another guy's thumb will be hanging over the top. One guy will hold the pick with his thumb and 1st finger only while another guy uses his thumb and his 1st 2 fingers. One guy uses lots of finger stretches while another guy simply moves his hand whenever the necessity for a finger stretch presents itself. If they all sound great then who is using the RIGHT method and who is WRONG?

Having said that, I still think that there are some general principles that we can look for to decide when a particular technique is optimal or counterproductive. This general rule of thumb can be summarized as "economy of effort and motion", or using the least amount of effort and physical motion, as is possible, to accomplish a particular task. This approach also has ramifications for the health of your hands, arms and the rest of your body.

In my experience, technique is rarely improved upon until the player is at the point where a particular sound is already being envisioned in the player's mind. Technique arises simply as a means to achieve a sound that has already been conceptualized. If the player's present technique is not adequate to the task then he/she will make the necessary adjustments and develop a new technique or improve upon one already understood.

B. Holding The Pick

In general, for most people, the most practical way to hold the pick is simply between the 1st finger and the thumb. Some people are more comfortable with the flat of the pick being flush with the 1st finger's upper side. Some people are more comfortable with the flat of the pick held between the tips of the 1st finger and the thumb. Pat Metheny, always the exception to many a rule, is the guy I mentioned above who holds the pick between his thumb and his 1st 2 fingers. I can't really say that Pat's technique is wrong because he sounds so freaking good but it is wrong for me and it is wrong for most people, I suspect.

In general, the picking motion should be done with the wrist as opposed to the whole forearm or just the fingers. Once again, everyone is different on this but the majority of good players seem to be doing as I suggest.

Some people claim that for the ultimate in speed and accuracy the wrist should always be free floating with no fingers or the palm of the picking hand touching the guitar. I often practice this way but when it comes time to play I will notice my 3 free fingers often making themselves comfortable by resting on my pickguard. Again, everyone is different.

There are also reasons, as we shall see, to rest the extreme base of your thumb (palm side) lightly on the strings to dampen sympathetic vibrations and open strings.

With regards to comping (i.e. chording), certain types of passages are best executed by striking the strings with the pick only while other passages are better played by using the quasi-fingerstyle technique of pick + fingers (i.e. the 3 available fingers on the picking hand are used as well as the pick to pluck the strings). I believe that developing proficiency in both techniques is a wise course of action.

I will not be dealing with real finger style techniques or classical guitar techniques very much at all in these pages although the odd voicing here and there might require some proficiency in this area.

Please have a look at the chapter entitled Open Position for an overview of the basic picking techniques, alternate picking and economy picking.

C. Fretting Hand: Placement Of The Fingers

In order to use economize your effort the following bit of information is important. Less pressure is required to get a note to sound, without fret buzzing, if the fretting finger is placed immediately behind the fret. If you place your finger too far away from the fret you will need to apply much more pressure to the string in order to get a good sound. Always play as close to the fret as possible. Playing too far away from the fret also increases the likelihood that you may press too hard and thereby pull the string sharp as your finger tip approaches contact with the fret board.

In general, your finger's joints should always be rounded when playing single note passages. Never flatten any of your finger's joints unless you are trying to fret two strings simultaneously.

A good way to start developing finger independence and strength is to practice putting all 4 fingers on the fretboard at the same time, covering a 4 fret area.

For example:

On your 1st string put your 1st finger in the 1st fret. (This note is F natural, btw. It is written in guitar music on the 5th line of the treble clef staff although it sounds an octave lower than written.)

Leave your first finger down and put your 2nd finger in the 2nd fret. (F♯/G♭)

Leave both these fingers down and place your 3rd finger in the 3rd fret. (G)

Leave all 3 fingers down and place your 4th finger in the 4th fret. (G♯/A♭)

You should now have all 4 fingers down at once.

Each finger should be immediately behind the fret.

The joints of all your fingers should be arched.

You should be relaxed and not pressing so hard as to cause discomfort.

Now practice taking one finger at a time off the fretboard while the others remain.

Now try taking 2 fingers off the fretboard while the others remain.

Now try 3 fingers then all 4.

Repeat with the other 5 strings.

Note: This is merely an independence exercise. This is not how you play the guitar.

When you are actually playing you should try not to lift your fingers any higher off the fretboard than they really need to be for any particular task. Your fingers should always be poised above the notes that they are about to play, always thinking ahead. Again, economy of effort is the guiding principle.

D String Dampening

When sounding notes that are the same pitch as an open string (or closely related to low partial numbers of the overtone series of an open string) that open string itself will start vibrating sympathetically.

Try this:

With your amp on at a reasonable volume play the E at the 5th fret of your 2nd string. Be careful not to touch any of the other strings with either of your hands. Quickly release the finger pressure so that it no longer sounds.

You should notice that your both your open E strings as well as your open A string are ringing out. They are vibrating sympathetically to the fretted E.

The same phenomenon will happen, for sure, whenever you play any of the following notes anywhere, in

any octave, on the guitar: E, A, D, G, B.

Plus, there are other acts of nature that complicate things even more. Playing a note that is fretted one fret above or below a node and then releasing the pressure to stop it vibrating will often cause the harmonic at that node to sound.

Try this:

Play the F at the 6th string's 13th fret and immediately release the pressure. You should notice the sound of the 12th fret harmonic E still ringing out.

It is often possible to set off a sympathetic vibration from many other situations.

Clearly, some sort of method for controlling all these unintended sounds, especially on an amplified guitar, is required.

What follows is an outline of the way I dampen strings. Again, I'm sorry but, everyone is different. There is no right way to do this. Most guitar method books don't even mention this subject at all!

1. When I am fretting notes on the 6th string my fretting hand's 1st finger will lightly touch all of the other strings thus dampening them. Sometimes my 4th finger will accomplish the same task. Rarely, I will use one of my other fingers for this.
2. When fretting a note on the 5th string I will partially overshoot that string with whatever finger I am fretting with lightly touching my 6th string in order to prevent it from accidentally sounding. The other strings are dampened via the same methods as I describe when fretting notes on the 6th string.
3. When fretting a note on the 4th string I will partially overshoot that string with whatever finger I am fretting with lightly touching my 5th string in order to prevent it from accidentally sounding. The 3rd, 2nd and 1st strings are dampened via the same methods as I describe when fretting notes on the 6th string. I dampen the 6th string by lightly touching it with the extreme base of my thumb (palm side) of my picking hand.
4. When fretting a note on the 3rd string I will partially overshoot that string with whatever finger I am fretting with lightly touching my 4th string in order to prevent it from accidentally sounding. The 2nd and 1st strings are dampened via the same methods as I described when fretting notes on the 6th string. I dampen the 6th and 5th strings by lightly touching them with the extreme base of my thumb (palm side) of my picking hand.
5. When fretting a note on the 2nd string I will partially overshoot that string with whatever finger I am fretting with lightly touching my 3rd string in order to prevent it from accidentally sounding. The 1st string is dampened via the same methods as I described when fretting notes on the 6th string. I dampen the 6th, 5th and 4th strings by lightly touching them with the extreme base of my thumb (palm side) of my picking hand.
6. When fretting a note on the 1st string I will partially overshoot that string with whatever finger I am fretting with lightly touching my 2nd string in order to prevent it from accidentally sounding. I dampen the 6th, 5th, 4th and 3rd strings by lightly touching them with the extreme base of my thumb (palm side) of my picking hand.

Classical guitar technique uses the plucking hand's fingers (mostly) and palm (a little) for string dampening as well as the fretting hand's fingers. Sometimes when using pick + fingers technique it is necessary to dampen the strings with the 3 available fingers of the picking hand. Sometimes open strings must be dampened with the fretting hand's fingers. Every situation is different.

The general rule of thumb here is that you should be in control, or at least aware, of all the sounds coming off of your guitar. In order for you to be able to do this you have to listen very closely to what you are playing and be willing to not settle for inferior execution. Once you know how you want something to sound it is up to you to develop the technique to be able to make it sound that way.

I like to compare this situation to the concept, in audio, of "signal to noise ratio". The guitar, especially the electric guitar, is pretty much impossible to control completely. This is especially true when improvising on an electric guitar. There are simply too many variables. There is always some sound coming off the guitar that was not directly intended by the player. At any one time, however, this can be minimized so that a listener will only be aware of the sounds you intend them to notice.

On the other hand, part of the charm of the guitar is the way all these sympathetic vibrations sometimes drone in the background complimenting the overtones of the chords or notes being played. As with all art it is a sensitive balancing act we are involved with here.

E. Fretting Hand: The Thumb

For most people, doing the above finger independence exercise will force them to place their thumb just slightly above the centre of the back of the neck, with the thumb almost exactly behind the first finger. This is the thumb position advocated in classical guitar technique and there is rarely any real reason to have your thumb anywhere else in my opinion. In the upper positions the thumb is placed successively more and more behind the first finger (i.e. towards the nut).

But once again, a survey of just a few great guitarists will show that this is highly variable. As I remember it, I think Jim Hall and Mick Goodrick both keep their thumbs as I have described for the most part but Pat Metheny and John Scofield's thumbs are all over the place. Sometimes, occasionally moving your thumb away from the centre of the neck and hanging it over the top for a while can serve to relieve some strain if it is beginning to build up. (see below Fretting Hand: The Wrist)

There is never any real need for the fleshy part of the palm of your hand to be touching the back of the neck. All pressure to the strings should be applied via the finger tips and the tip of your thumb.

Your thumb should always be relaxed with the small joint never bent inward.

When the fingers are removed from the fretboard the thumb tip should remain lightly touching the back of the neck getting ready for the next passage.

Do not use your fretting hand to hold the guitar in place. The guitar should be held in place via the forearm of your picking hand and your thigh and supplemented by a good, well placed, secure shoulder strap. When seated, a footstool under the picking hand side foot is a good idea too. This is based loosely on classical guitar technique where the guitar is held firmly in place by the posture of the player such that the hands are free to do whatever they need to without having to secure the guitar's position.

F. Fretting Hand: Finger Stretches

A very useful feature of the hands is the ability to stretch the fingers such that 2 fingers can span more than 2 frets. This is usually done between the fingers 1 and 2 and/or fingers 3 and 4. Stretches are done sometimes between the inner 2 fingers also but for most players this is needed only on a rare occasion. In the lower positions of the fretboard these stretches are wider and more difficult to execute due to the wider spacing between the frets. Finger stretches get easier the higher up the fretboard one gets.

Try this:

1. On the 6th string put your 1st finger in the 2nd fret.
2. Now put your remaining 3 fingers in the next 3 frets respectively. All 4 fingers should be down now across frets 2, 3, 4 and 5.
3. Put your first finger in the 1st fret now while keeping the others still depressed.

This is a "1st finger stretch". Finger stretches are pretty much impossible to execute unless your thumb is in the position I have advocated earlier, especially if you are playing on one of the lower strings.

4. Put your 1st finger back in the 2nd fret now and stretch your 4th finger so that it frets the note B♭ in the 6th fret.

This is a "4th finger stretch". Ditto regarding the placement of the thumb.

5. See if you can do a 1st finger stretch and a 4th finger stretch simultaneously such that your fingers now cover a 6 fret area.

In second position (i.e. 1st finger normally plays in the 2nd fret - see below) this is “a bit of a stretch” but it CAN be done and it should be practiced.

Notice how your 2nd and 3rd fingers remain poised over their assigned frets while the 1st and 4th fingers stretch. When trying to execute a finger stretch it is wrong to move your whole hand down (or up) to the lower (or higher) fret’s area. The fingers must stretch. The hand should not move. The thumb should not move either.

G. Fretting Hand: The Wrist (About Carpal Tunnel Syndrome)

Attempting to do these wide finger stretches in 2nd position where the frets are so widely spaced has probably resulted in your wrist becoming sharply bent away from the neck. This is necessary every once in a while in the lower positions but care should be taken to minimize the wrist’s angle and the frequency of using these sharp bends or else some rather nasty RSI’s (Repetitive Strain Injuries) can result, including Carpal Tunnel Syndrome (CTS) and Tendonitis. Your wrist should never need to bend up, towards the neck, btw, although sometimes you might want to do this just to relax your hand a bit.

CTS happens when the little tunnel of cartilage that directs the nerves from your forearm through to your hand and fingers becomes compressed repetitively. This causes the conduction of the electrical impulses along the nerves to suffer. The symptoms are tingling in the fingertips (as if your hand has gone to sleep, due to lack of circulation) often accompanied by pain. The symptoms usually go away with a little rest or stretching but if it becomes chronic it can easily ruin a career. What happens is that the muscles in the base of the thumb begin to atrophy and once they are gone they don’t come back.

Be VERY careful to avoid over flexing your wrist joint too often when playing the guitar.

H. “Position Playing” On Single Strings

The finger placement exercises above have brought us to the concept of what is called “Position Playing”. Position Playing is a technique whereby you limit yourself to a 6 fret area of the fingerboard and determine fingerings for single note structures, like scales and arpeggios, based solely on your hand’s position.

The first finger independence exercise had you in what is called 1st Position (or Position I) (aka Open Position). In 1st Position any notes that you need to play in the 1st fret are played with the 1st finger. Anything in the 2nd fret is played with the 2nd finger. Anything in the 3rd fret is played by the 3rd finger. and anything in the 4th fret is played by the 4th finger.

In Open Position the open strings are also available to play the notes that are not right under our 4 fingers, if those notes are required. In the higher positions we don’t use any open strings, in this technique, generally speaking. In all other positions besides Position I we use finger stretches instead to play the notes that are not right under our 4 fingers.

The position’s number is determined by the fret that the 1st finger usually plays in. In the stretching exercise you started out with your hand in Position II. When playing the F natural in the 1st fret you were cautioned not to move your hand down to Position I but rather to stretch your 1st finger. It is a common mistake to accidentally shift position when trying to do a finger stretch. If it helps, try thinking of the position number as really being the fret number of the fret below your 2nd finger instead of the fret above your 1st finger. In Position Playing technique, you are always anchored into the position by where your 2nd and 3rd fingers have to play.

For example: When playing in Position II your 2nd finger should always be playing in the 3rd fret and your 3rd finger should always be playing in the 4th fret. As soon as your 2nd finger plays a note in the 4th fret you have shifted to Position III. Etc. Likewise, as soon as your 3rd finger has played a note in the 5th fret you have shifted to Pos. III. Etc.

Using Position Playing Technique it becomes evident that a fingering for any scale or arpeggio type is possible without needing to move the hand. Example: All 12 major scales can be played in Position 5. The fingering you come up with may not be the best fingering but it will be a do-able fingering nonetheless. Do-able after the fingers have gotten used to this idea after a few years, that is!

Position playing is a wonderful tool but many novice players get hung up on it and overdo it's usefulness in their minds. It is not the "right" way to play. It is simply "a" way to get an automatic fingering based on hand position alone. This is quite useful when sight reading because you can leave your eyes glued to the page instead of glancing at the neck all the time. However after a piece is known a little better it is rare to find that a fingering that stays in any one position for very long actually sounds any good. The musically expressive stuff requires many position shifts and slides and hammer-ons etc. and things that simply can not be played in any one position.

Practicing in position is also a great way to get your fingers to learn how to do things that they don't really want to do yet but that they ARE capable of. It is great for developing finger independence and strength.

Position playing can also be quite useful when looking for ways to join scales and arpeggios smoothly when improvising because in any one position there is usually only one place where any particular pitch can be fingered, and at most two places. It is interesting when you realize that you can solo over an entire tune all in one position. It becomes apparent how the notes of one scale join up with the notes of the next scale because they are all right in front you in the same area of the fretboard rather than all over the place. Again, this is just an exercise. A limitation exercise. This is not "the right way" to play or to improvise.

V. Single String Exercises

We will now begin exploring the guitar fretboard via some exercises that use only 1 string at a time.

Single string playing is an often overlooked subject in the guitar's educational literature. It is felt by many players though, that a proper understanding of the guitar can not be achieved without serious consideration of each string on it's own.

There are many ways to finger scales and arpeggios on 1 string. I have not explored all the possibilities here by any means. The fingerings I have selected do have some internal logic though. In general: Position shifts are best accomplished by shifting to a finger that is not currently being used to play the note just before the shift. I.e. Always try to shift to finger that is free. Sometimes however, slides with a single finger can also be the best way to execute a position shift.

The 3 fingering methods I do touch upon can be summarized as:

1. Playing as many notes in a single position as are available without using any finger stretches and then shifting to another position. This involves avoiding finger stretches totally by shifting position whenever a finger stretch would be needed.

2. Fingering 3 notes in one position and then shifting to another position. This requires using finger stretches from time to time.

3. Fingering 2 notes in one position and then shifting to another position. This requires no finger stretches but it does not prohibit them either.

I present a couple of possible fingerings in the 1st few exercises and then it's up to you.

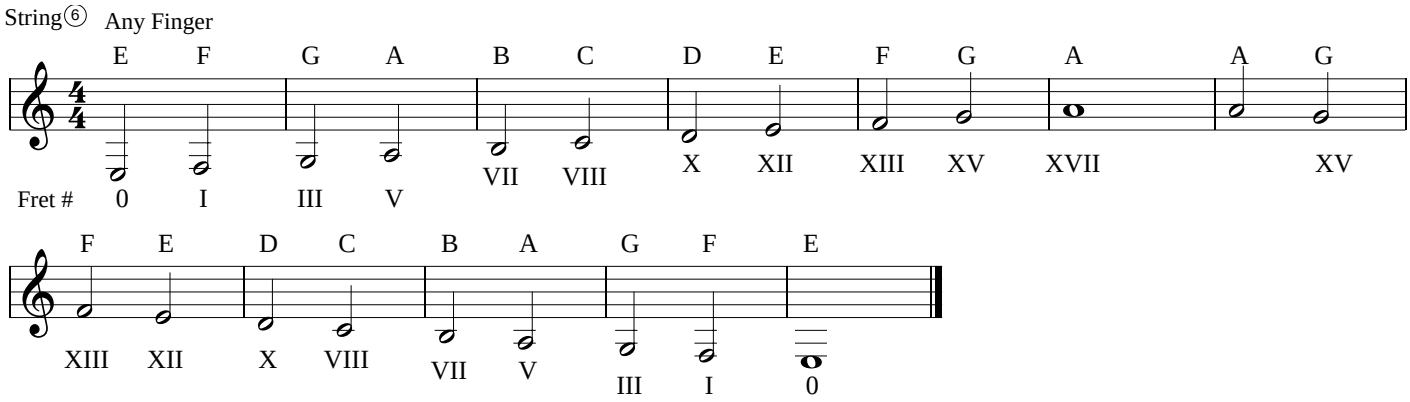
Don't get hung up on trying to play these things too fast. This is more about note recognition and learning the fretboard than it is about chops and technique. 1/4 note = 60 BPM is fine.

I have decided on the 20th fret as being the highest fret position available for these exercises. The highest note on most acoustic-electric jazz guitars is at the 20th fret but on an instrument like this it may not be practical to access these frets except on the first string. Some instruments may not even go this high but most solid body electrics go a bit higher. Feel free to adjust the following exercises to your own instrument's range by using different fingerings than the ones I am suggesting when necessary. The exercises for the lower strings go no higher than the 17th fret.

A. The 6th String

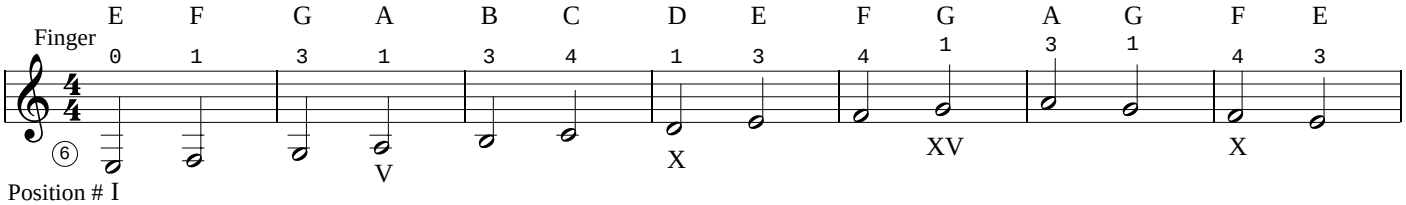
Please consult Chapter IV when doing these exercises, especially the part about string dampening. Use only down picks, for now, for these exercises. No up picks.

Ex. V.A-1

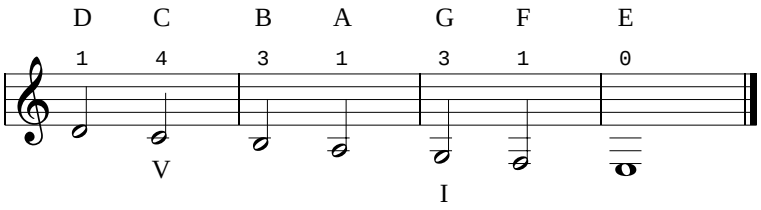


Ex. V.A-2

Avoid stretches

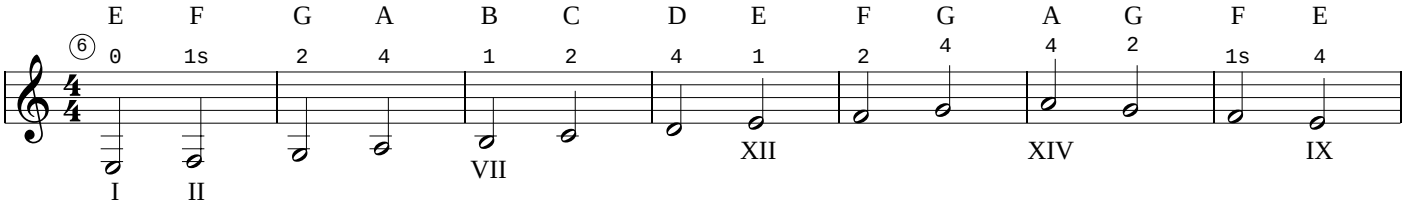


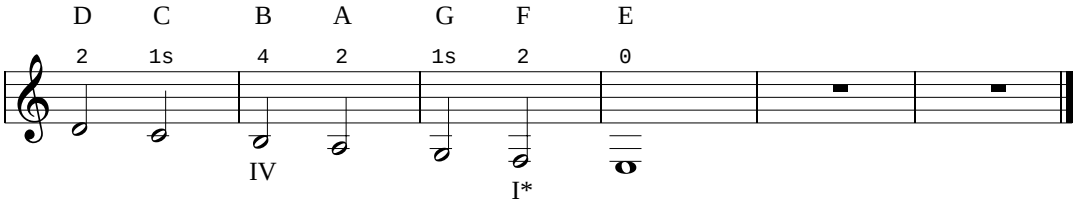
Position # I



Ex. V.A-3

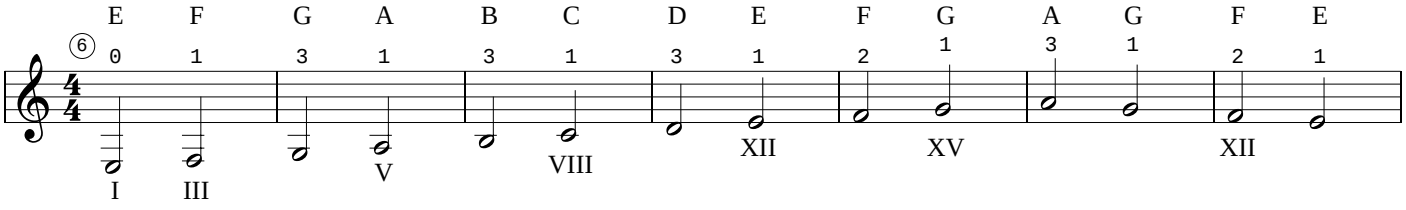
3 fingers, then shift -including stretches

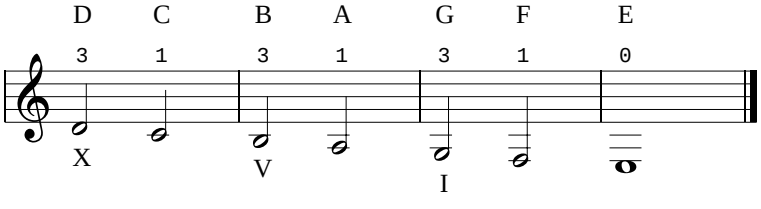




Ex. V.A-4

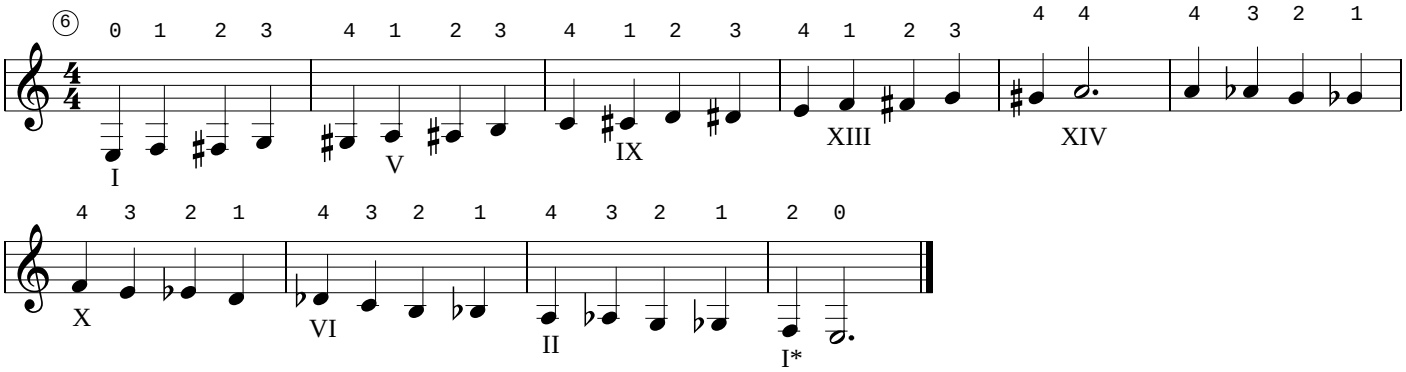
2 fingers, then shift





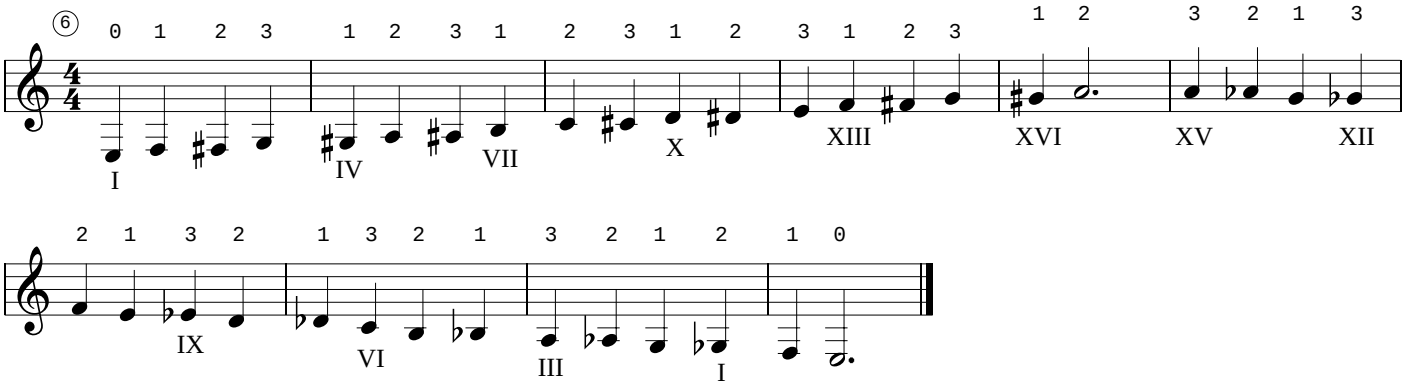
Ex. V.A-5 (Chromatic scale)

4 fingers, then shift



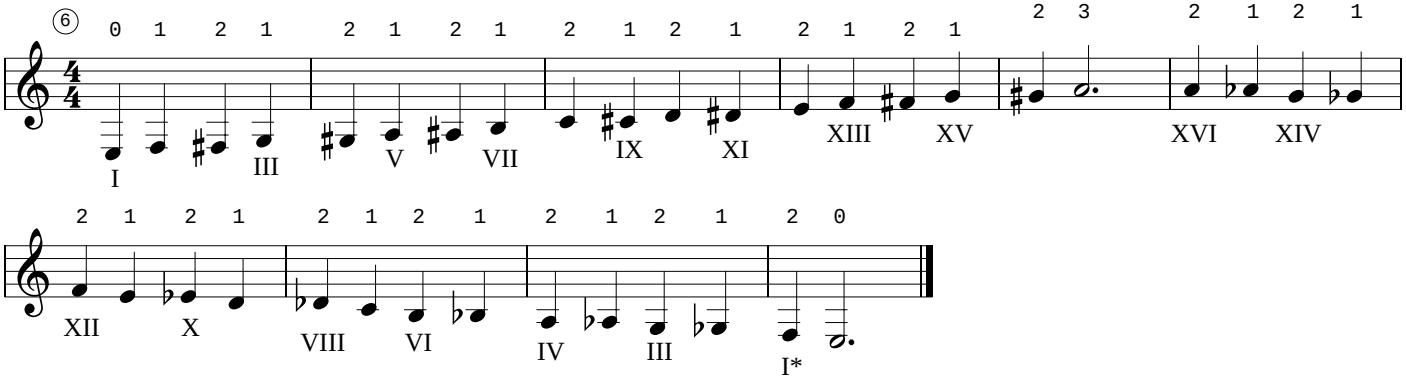
Ex. V.A-6 (Chromatic scale)

3 fingers, then shift

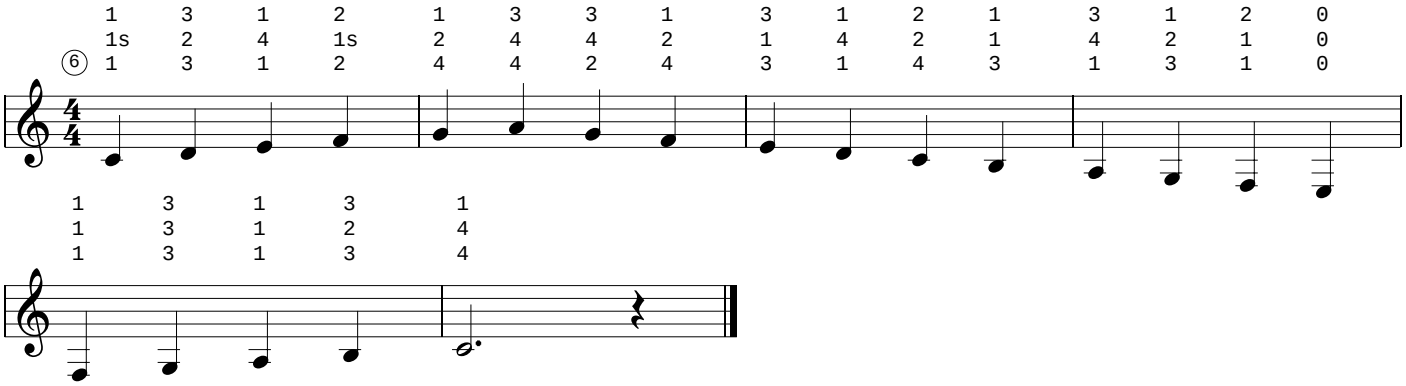


Ex. V.A-7 (Chromatic scale)

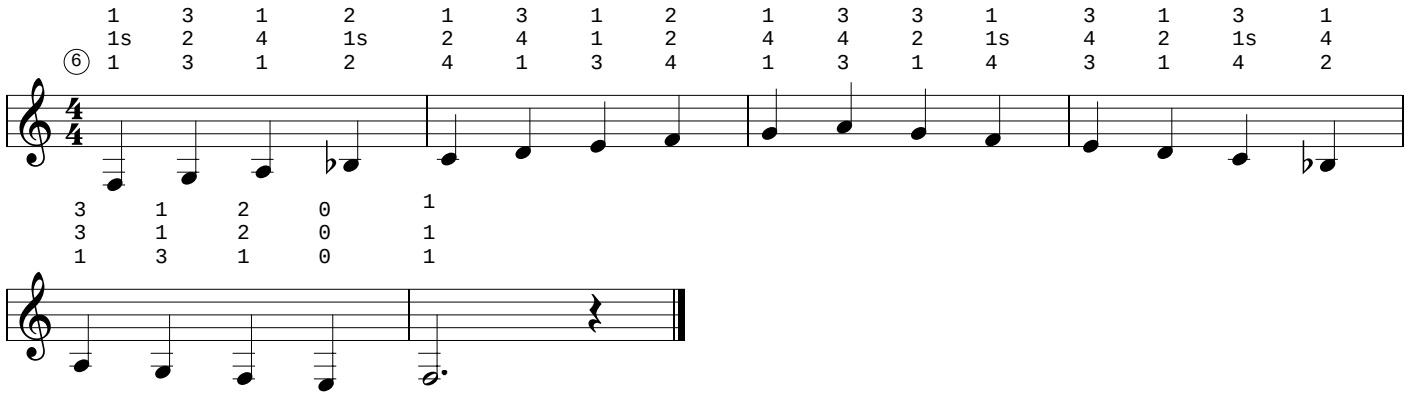
2 fingers, then shift



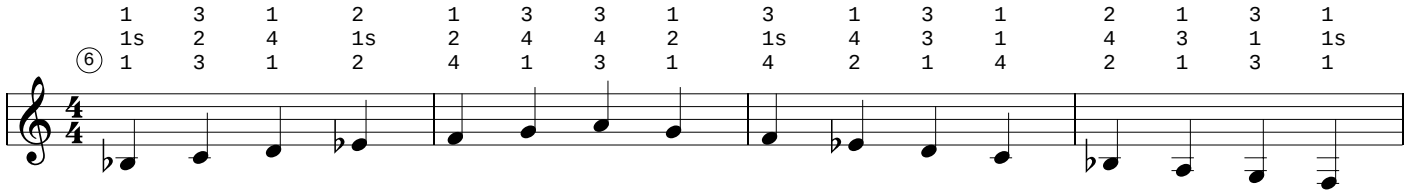
Ex. V.A-8 (C Major scale)

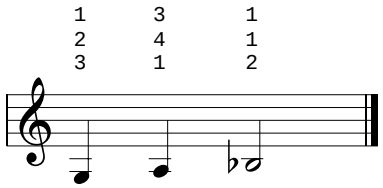


Ex. V.A-9 (F Major scale)

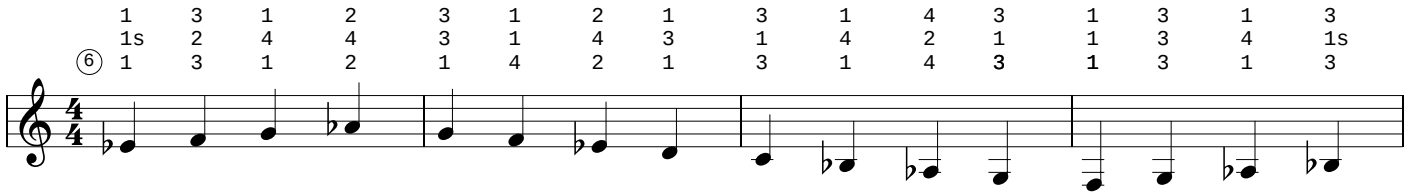


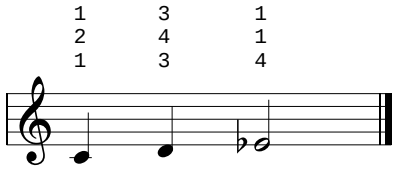
Ex. V.A-10 (B♭ Major scale)



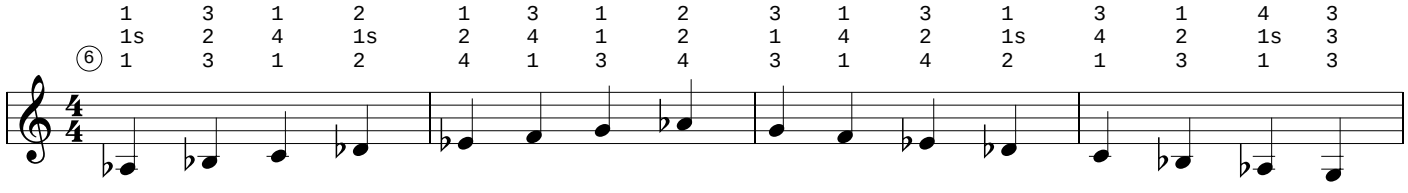


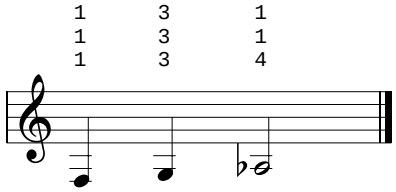
Ex. V.A-11 (E♭ Major scale)



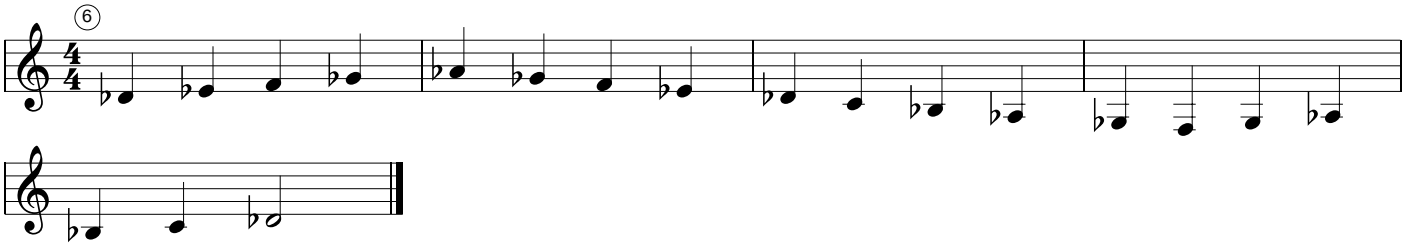


Ex. V.A-12 (A♭ Major scale)

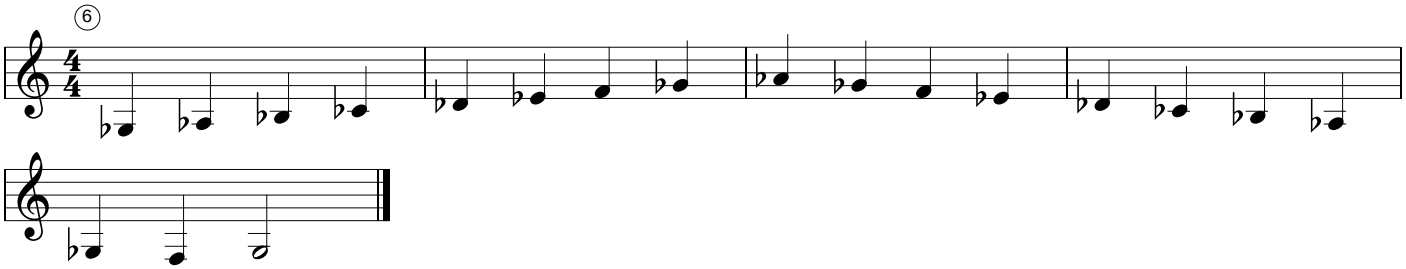




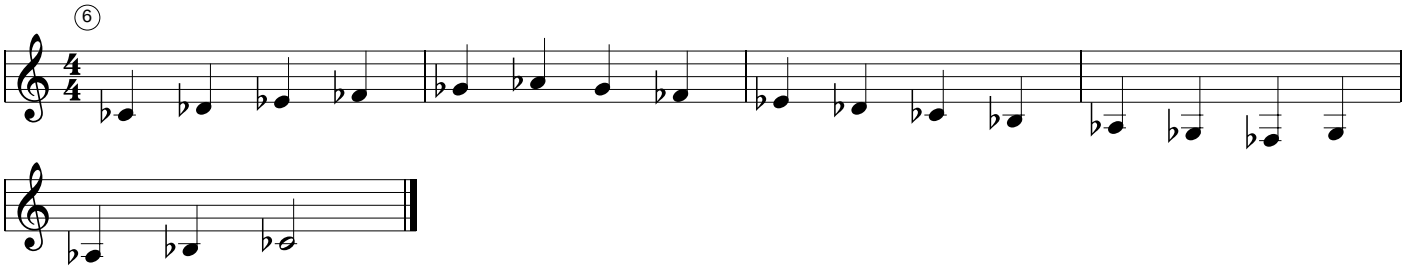
Ex. V.A-13 (D♭ Major scale)



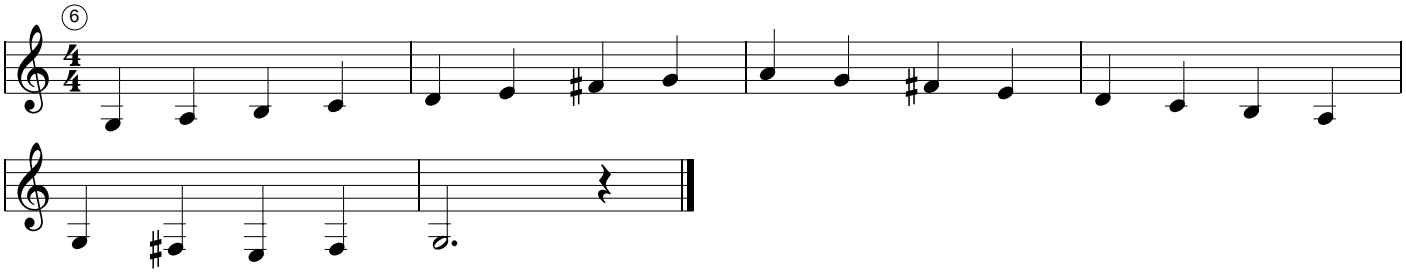
Ex. V.A-14 (G♭ Major scale)



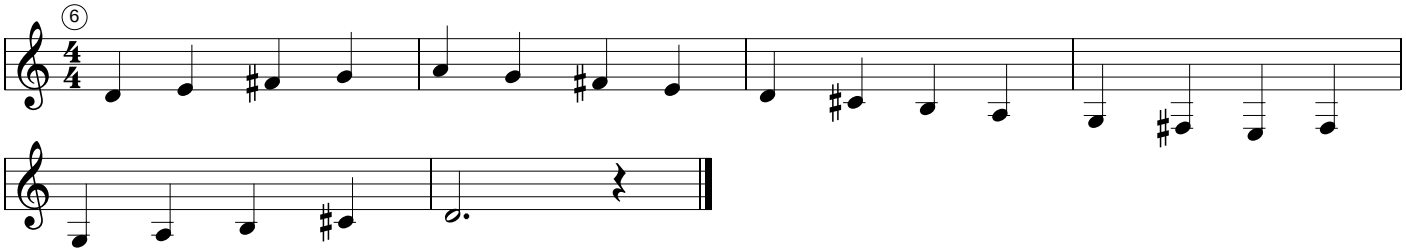
Ex. V.A-15 (C♭ Major scale)



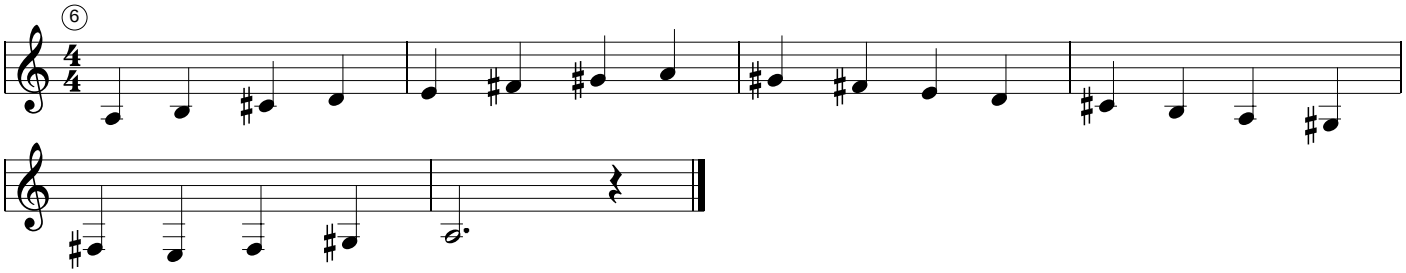
Ex. V.A-16 (G Major scale)



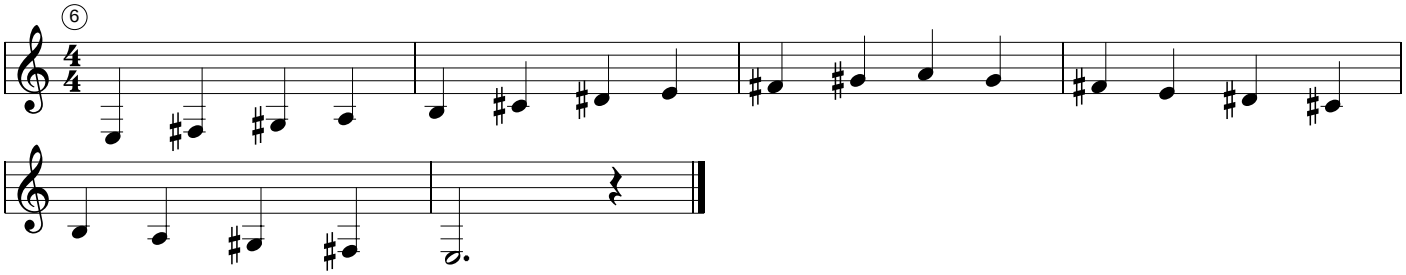
Ex. V.A-17 (D Major scale)



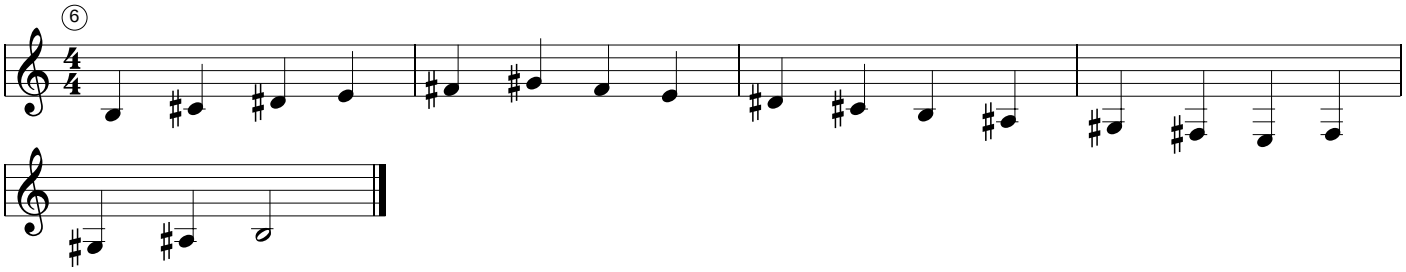
Ex. V.A-18 (A Major scale)



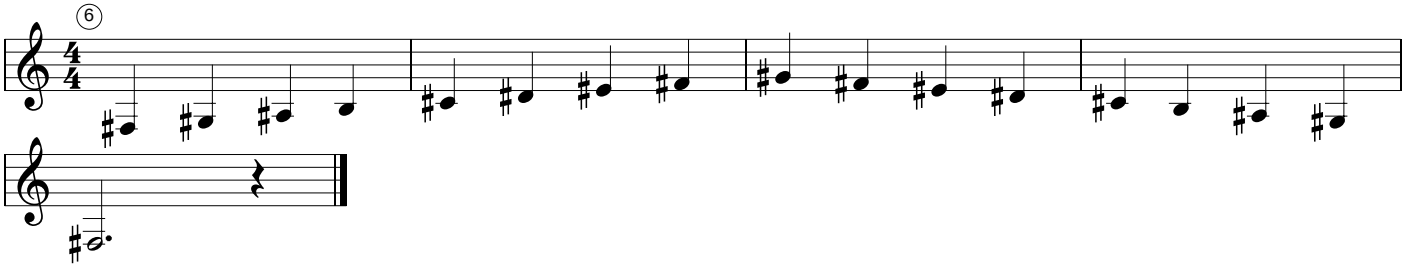
Ex. V.A-19 (E Major scale)



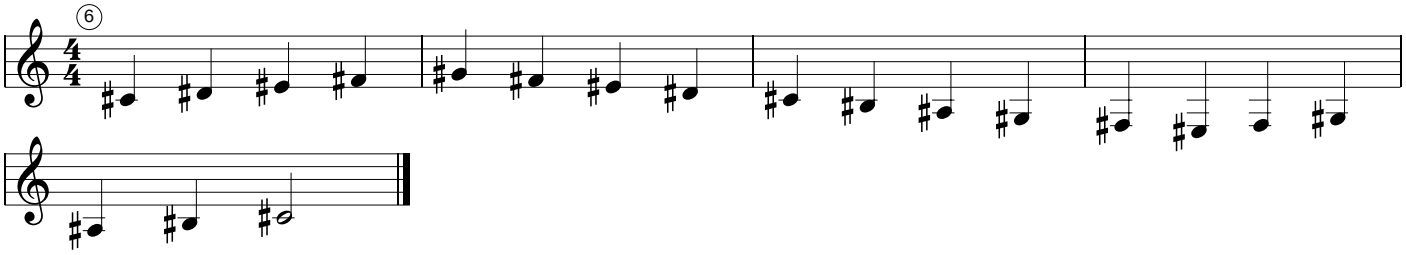
Ex. V.A-20 (B Major scale)



Ex. V.A-21 (F♯ Major scale)



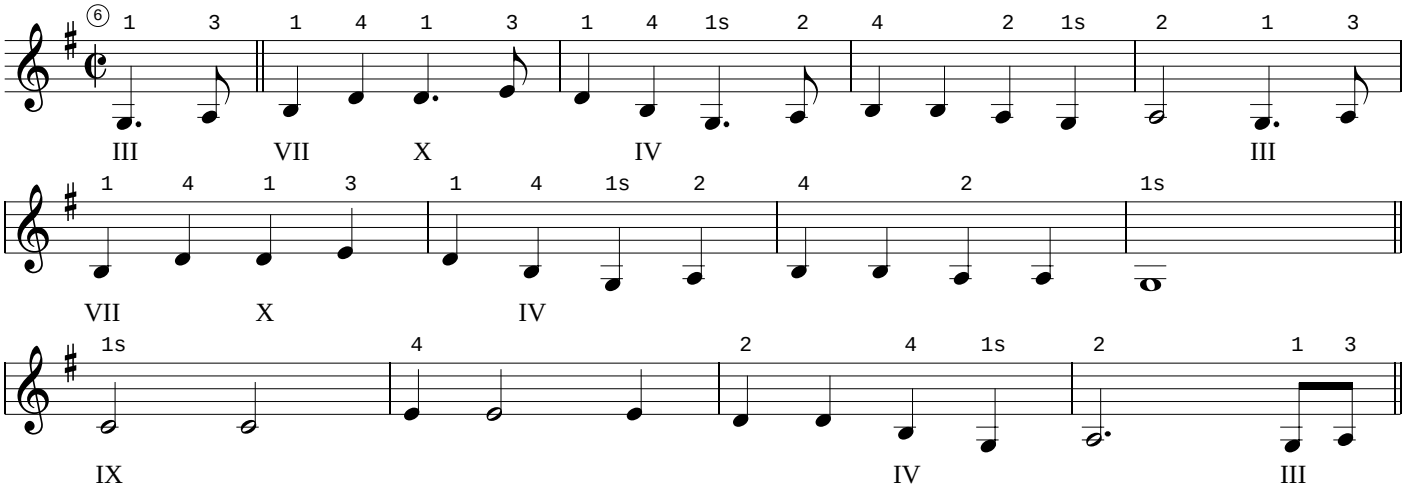
Ex. V.A-22 (C♯ Major scale)

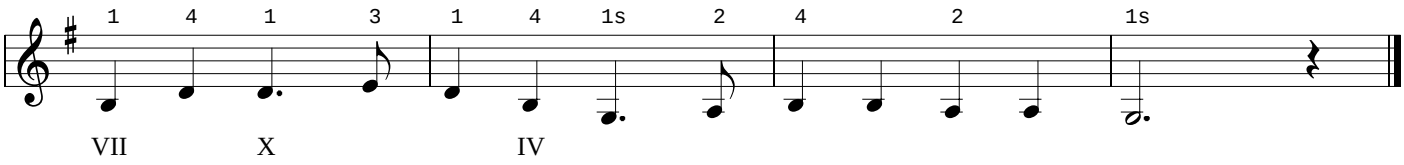


Ex. V.A-23

Oh Susannah

Stephen Foster





Ex. V.A-24 etc.

1. Play a note somewhere between the Open E and C at the 8th fret on the 6th string. Sing Happy Birthday (no I'm not kidding!) to yourself starting on that note. Play Happy Birthday by ear along the 6th string (see below) starting on that note. Repeat, starting on some of the other notes within that range.

2. Play a note somewhere between the Open E and D♯/E♭ at the 11th fret. Sing Twinkle Twinkle Little Star to yourself starting on that note. Play Twinkle Twinkle Little Star by ear along the 6th string starting on that note. Repeat, starting on the other notes within that range.

3. Play a note somewhere between the A at the 5th fret and D♯/E♭ at the 11th fret. Sing Frère Jaques to yourself starting on that note. Play Frère Jaques by ear along the 6th string starting on that note. Repeat, starting on the other notes within that range.

4. Make a list of several other simple melodies that you know well and can already sing from memory. Try playing them, by ear, along your 6th string. Start on any note at any fret. If the melody goes above A at the 17th fret or below your Open E then start on a different note so that the melody fits the range of your 6th string. Repeat starting on some other notes.

If you have a hard time finding the correct pitches on the fretboard try this:

Sing the note you are looking for and play up (or down) the string, chromatically, ONE FRET AT A TIME, until you find the same note that you are singing.

Eventually you will be able to play a melody like this using several strings but for now limit yourself to just one. The 6th string was chosen arbitrarily for this. You could just as easily pick any other string. Perhaps the fourth string is better suited to start with because it's range is not too high nor too low for the voices of most people. If the notes on the lower strings seem too low for your voice simply sing the same pitches an octave higher and visa versa for any pitches that are too high for you. If the melody spans a range that is too wide for your voice; as it approaches the point that is too high for you simply sing an octave lower and visa versa.

I'm sorry, but if you have an excruciatingly hard time doing the above melodic exercises and you never manage, as the years go by, to develop this particular musical skill there is very little chance that you will ever be able to play jazz music and you will probably not do very well at most other forms of popular music either.

Now that I've got your attention <g>.

In the final analysis, the creation of music, and especially jazz and even popular music, is an aural art. If you can not learn to "hear" a melody, retain it in your mind and execute it on your instrument you will not be able to play anything at all, very well, in a jazz or pop setting, and it is extremely unlikely that any efforts at composition will be very fruitful either. Jazz music is, after all, just a form of composition, a compositional process executed in real time. A composer is involved with writing down what he hears. A jazz musician is involved with performing what he hears in real time. Both disciplines require the artist to be able to hear the music first. Therefore ear training should always be an important part of your musical discipline whatever your skill level.

But if you are one of the unfortunate very small number of people who are, for some reason, incapable of ever developing this particular skill there is no way that you will ever be able to improvise jazz music on your instrument whether you play guitar, piano, saxophone or kazoo ... especially kazoo!. (Obviously if you're from a culture where Happy Birthday and my other choices are not such familiar melodies you should substitute some other tune that you yourself happen to know very well.)

Some people with this particular musical deficit still seem to be able to learn some of the classical repertoire or some simple pre-composed jazz and pop pieces because they can memorize the finger patterns, etc. This can definitely be a lot of fun. Your ears will develop by doing this as well. It should also be said that there are many, many people making very good livings as professional musicians, in fields other than jazz, who can not play anything at all by ear. I tend to suspect that these folks, if seemingly talented, have just not taken the time yet to figure out how to do it because in their musical field this particular skill is not required very often.

It is entirely possible that in my many years as a teacher of guitar and improvisation that I have developed a blind spot in this area and that I personally am just not very well equipped to teach students with these types of musical problems. But in my experience the "Happy Birthday by ear" exercise has been a good indicator of whether the basic pre-requisite talent for improvising and/or composing is present in a student or not. If they can not be taught somehow, by someone, to develop this talent then I know that _I_ can not teach them anything of any real value about playing jazz music.

My manner of presentation of this particular exercise is not really intended to discourage anybody from pursuing the study of jazz guitar. I am no expert in the field of talent testing let alone the field of ear training and I have no formal education even as an educator. This is all merely my opinion and perhaps it is a somewhat jaded one. Take it all with a grain of salt.

The manner with which I have presented this exercise IS designed to shock some of you into the awareness that JAZZ music, at it's very essence, is about playing BY EAR, period. This is something I think I do know at least a little bit about. If you have neither the latent ability to do this now or the patience to figure it out you will be wasting your time.

Do not be mistaken about this: We practice scales, arpeggios and the like partly to develop our physical technique but mostly to learn to "hear" new things. It's great to have chops and lots of physical technique on the guitar but it won't help you play jazz, at all, if you do not learn to play by ear FIRST. As a matter of fact, at a certain point, you have to decide to play ONLY what you hear and nothing else.

Please, if you are having an insurmountably hard time with the above exercises you should look for a teacher who specializes in ear training for beginners. And don't give up right away either. Sometimes you have to just try and figure things out from scratch. With practice you will undoubtedly find that you have much more "natural" ability in this area than you thought you did when you first tried doing this sort of thing. But if you don't constantly work at it and make developing this talent a priority I can almost guaranty you that jazz music will forever be beyond you.

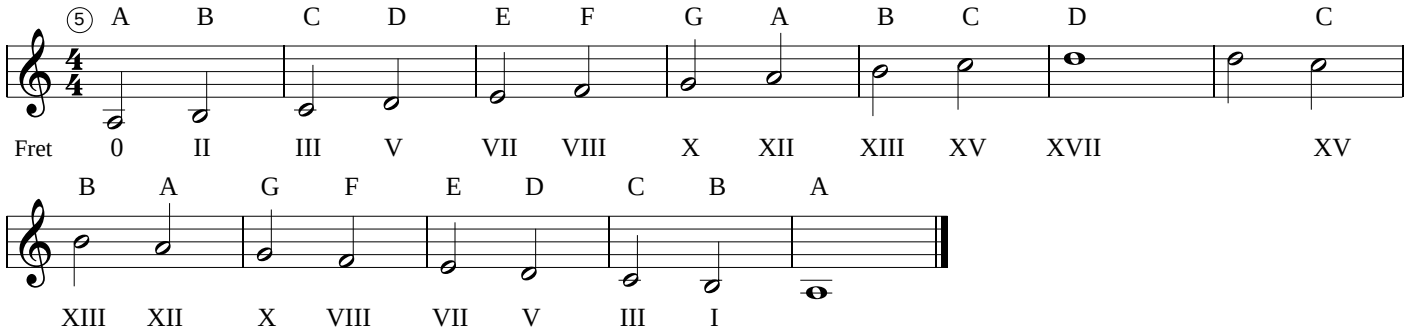
Of all the techniques discussed in this book this is by far the most important single one to achieve. Without it nothing else I present here will be of any real use to you.

Note - Credit where credit is due: I first heard about the "Happy Birthday By Ear Exercise" through one of Don Thompson's students and then later from Don (the great Canadian jazz bassist, pianist, vibist and composer) himself. However, any comments about this exercise's importance are my own.

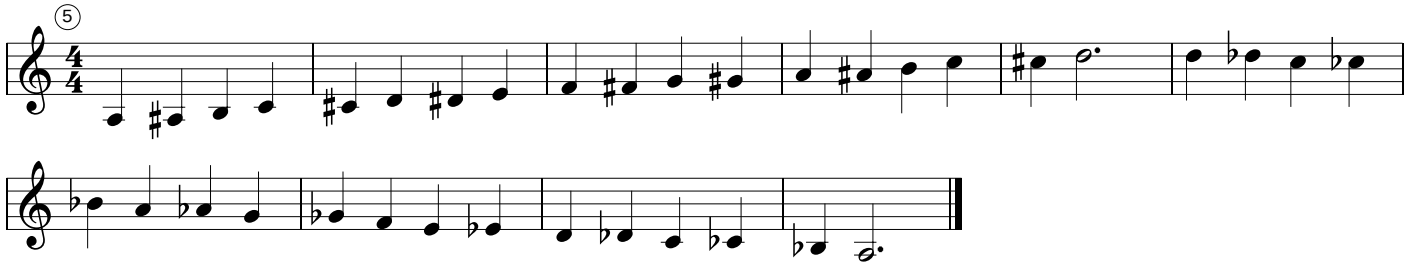
B. The 5th String

Please consult Chapter IV when doing these exercises, especially the part about string dampening.

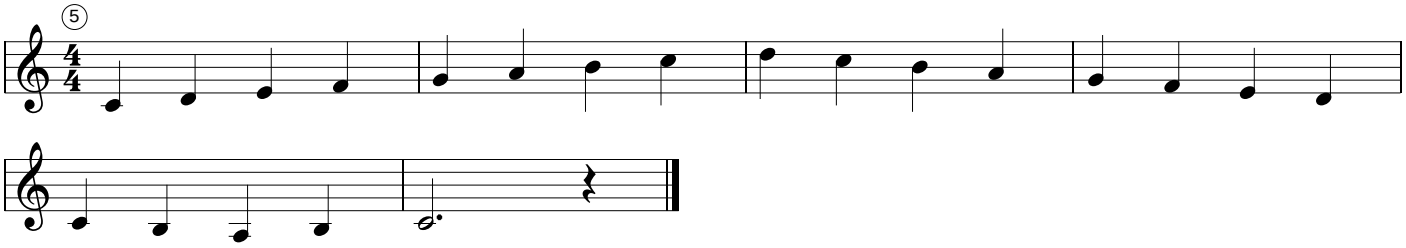
Ex. V.B-1



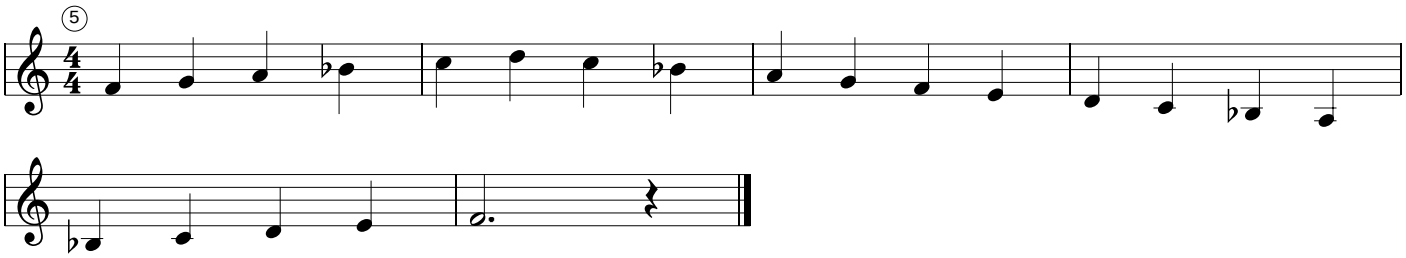
Ex. V.B-2 (Chromatic scale)



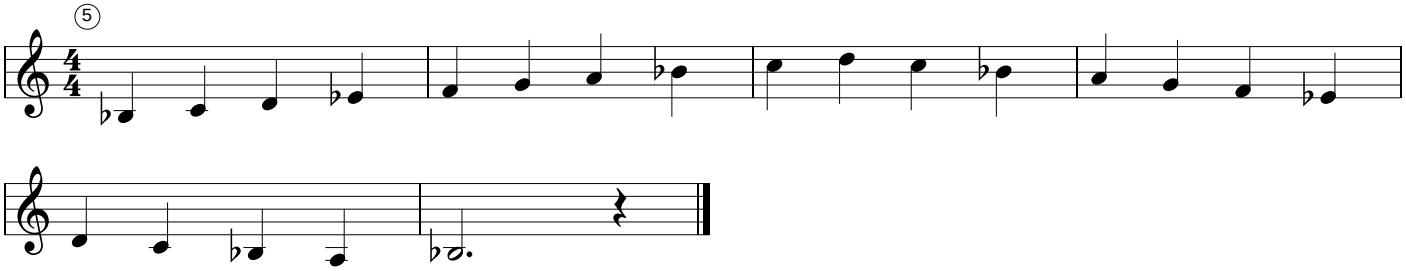
Ex. V.B-3 (C Major scale)



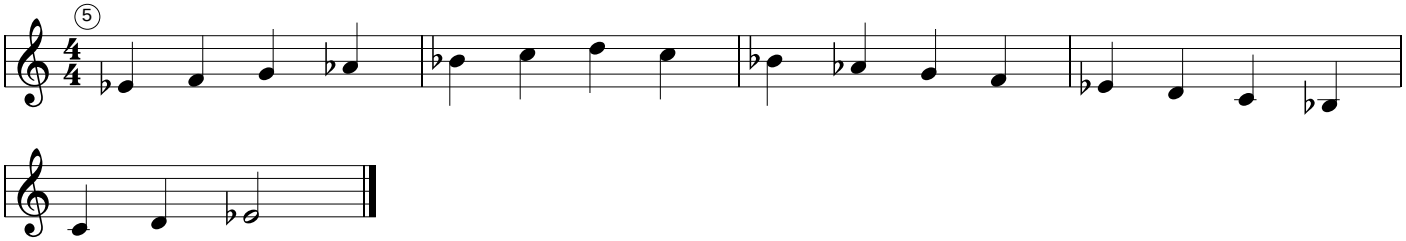
Ex. V.B-4 (F Major scale)



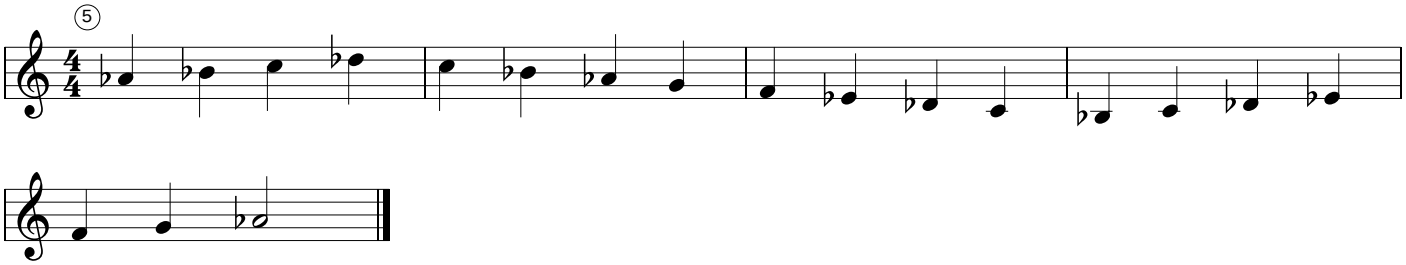
Ex. V.B-5 (B♭ Major scale)



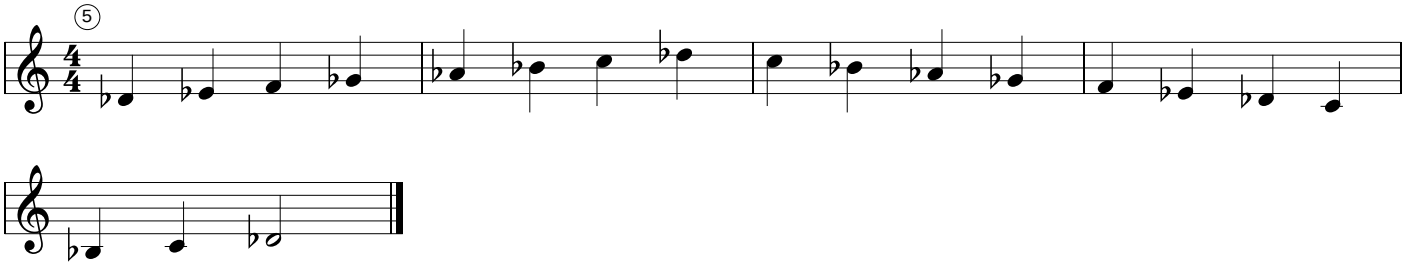
Ex. V.B-6 (E♭ Major scale)



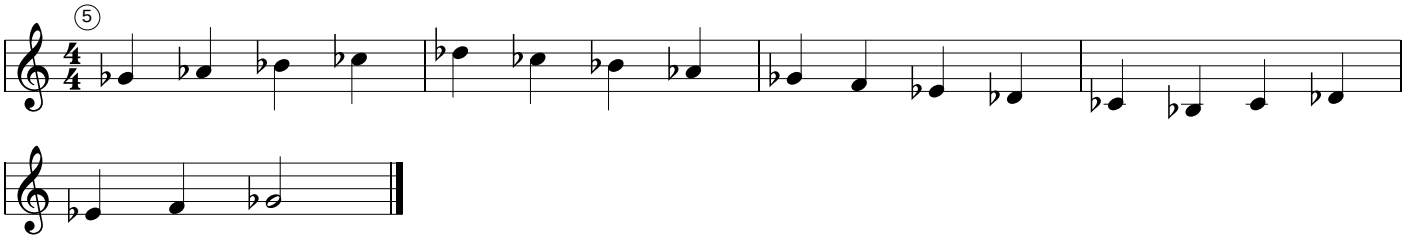
Ex. V.B-7 (A♭ Major scale)



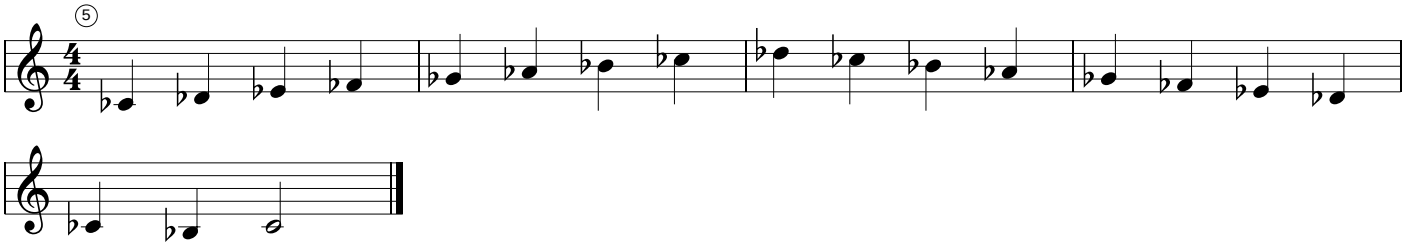
Ex. V.B-8 (D♭ Major scale)



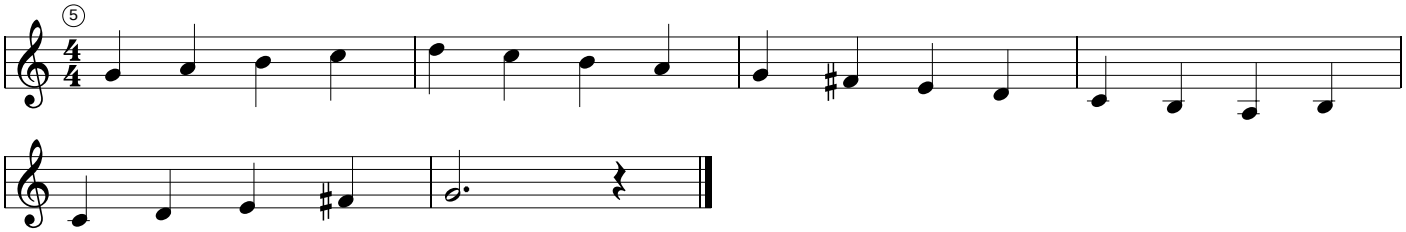
Ex. V.B-9 (G♭ Major scale)



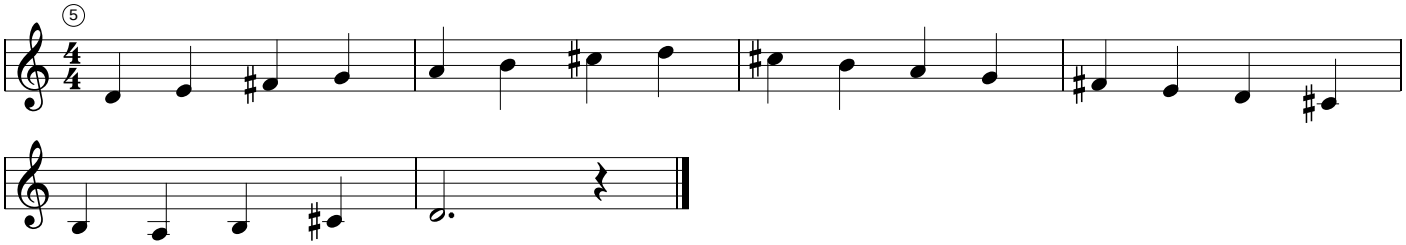
Ex. V.B-10 (C♭ Major scale)



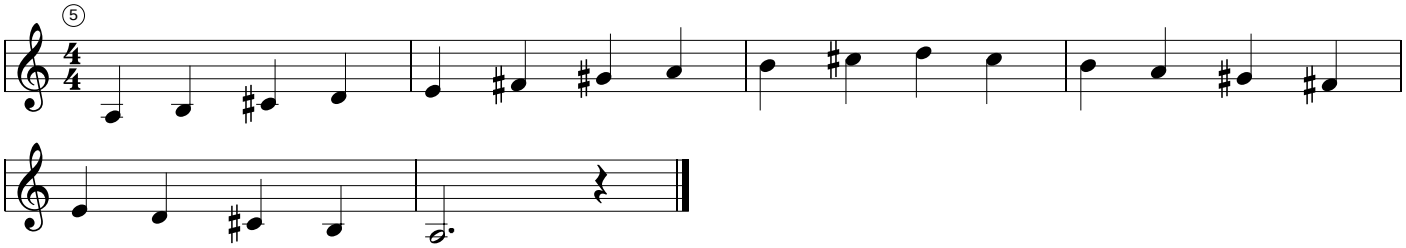
Ex. V.B-11 (G Major scale)



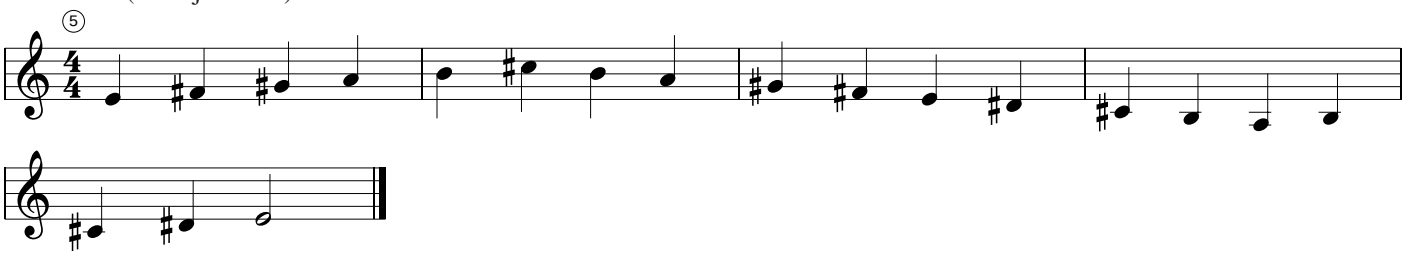
Ex. V.B-12 (D Major scale)



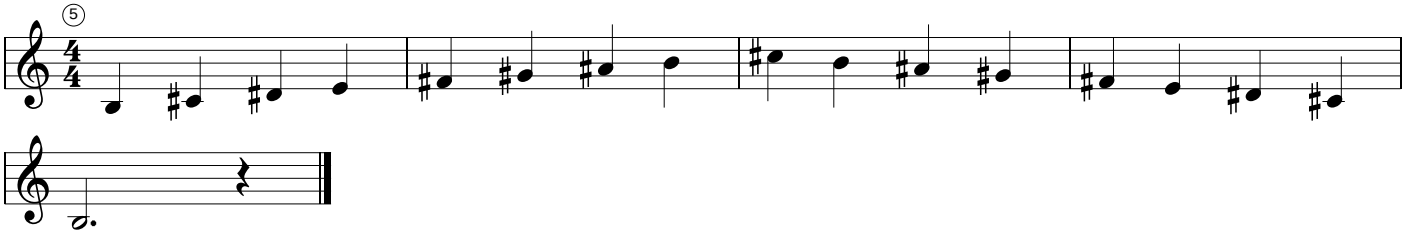
Ex. V.B-13 (A Major scale)



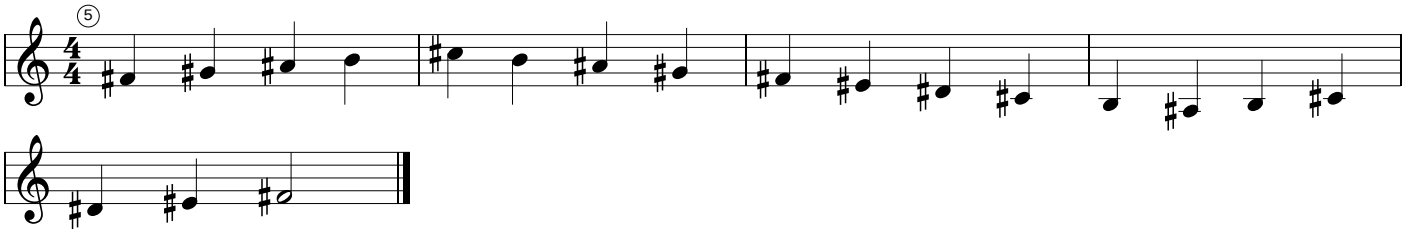
Ex. V.B-14 (E Major scale)



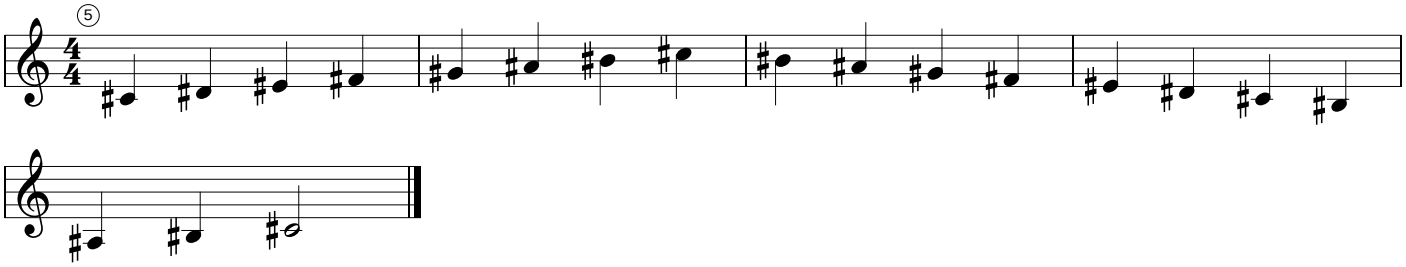
Ex. V.b-15 (B Major scale)



Ex. V.B-16 (F♯ Major scale)



Ex. V.B-17 (C♯ Major scale)



Ex. V.B-18 etc.

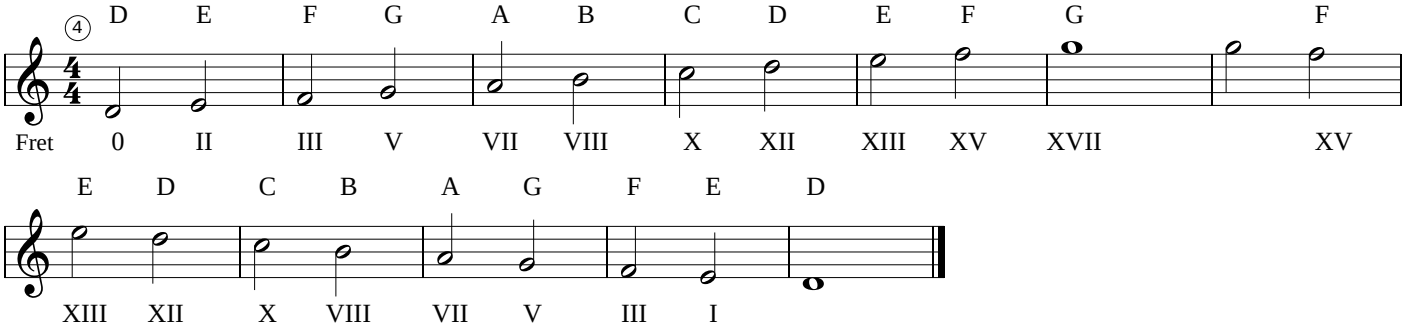
(a) Attempt to play some melodies that you know really well by ear on just the 5th string.

(b) Attempt to play some melodies that you know really well by ear using the 5th and 6th strings together. Try the same tune starting on different pitches on different strings (i.e. in several keys, in several ranges).

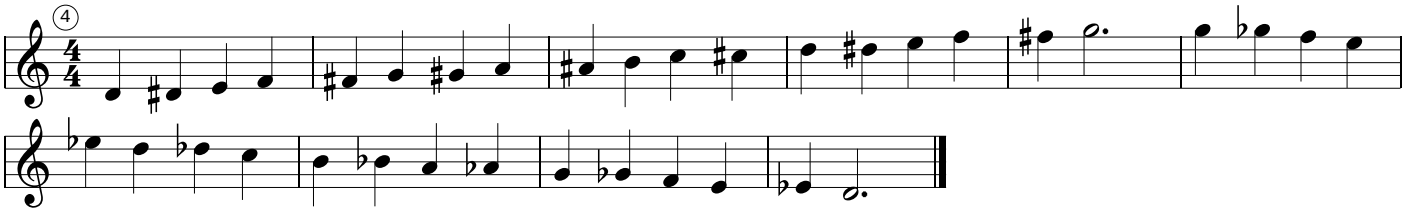
C. The 4th String

Please consult Chapter IV when doing these exercises, especially the part about string dampening.

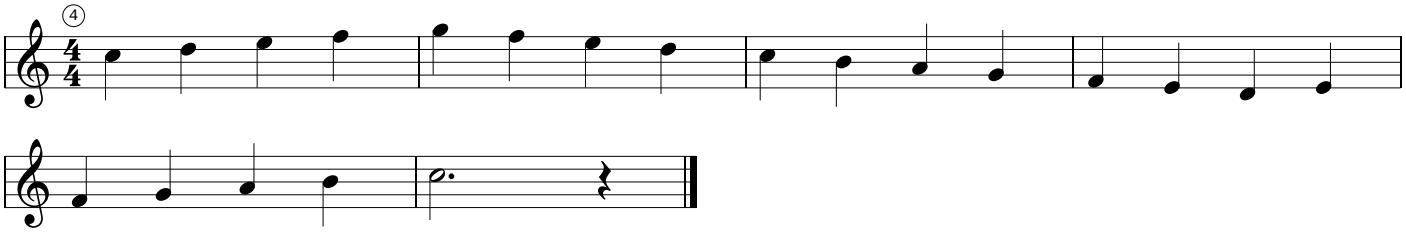
Ex. V.C-1



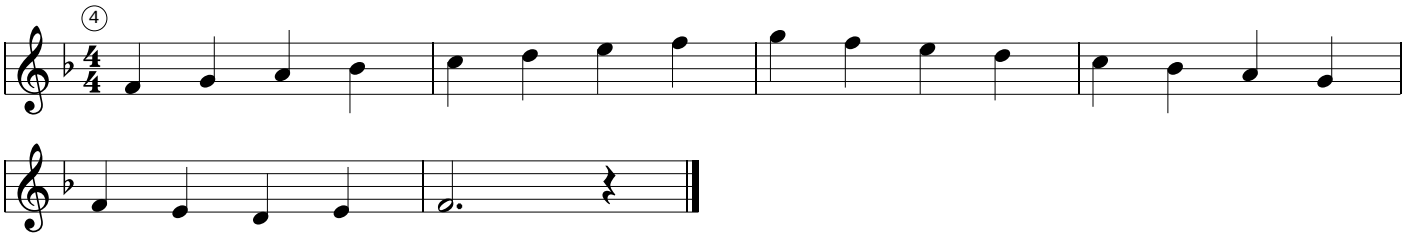
Ex. V.C-2 (Chromatic scale)



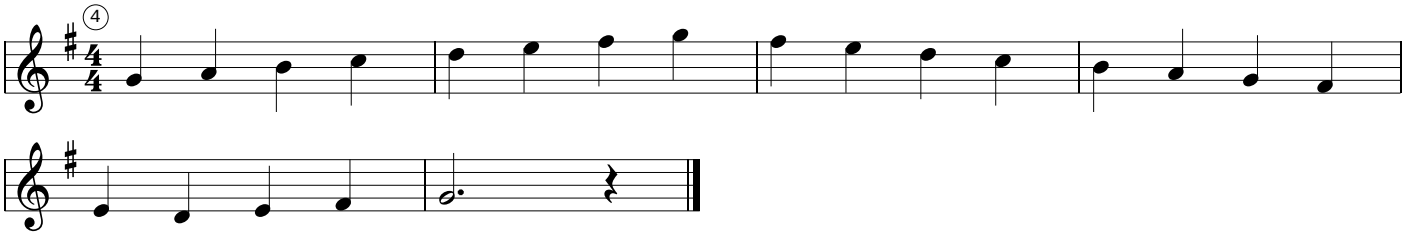
Ex. V.C-3 (C Major scale)



Ex. V.C-4 (F Major - B's are flat)



Ex. V.C-5 (G Major - F's are sharp)



Ex. V.C-6 etc.

(a) Figure out how all 12 (15 actually including enharmonic equivalents) major scales lay on the 4th string.

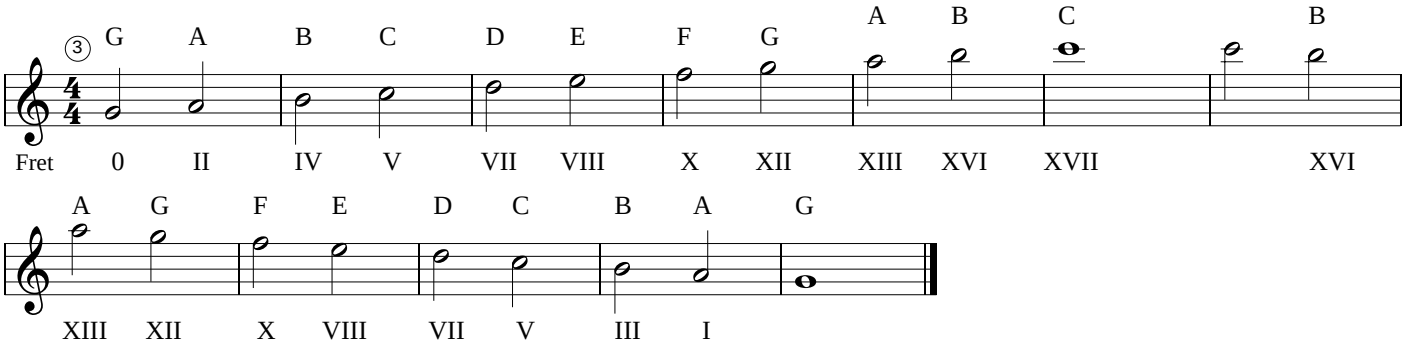
(b) Attempt to play some melodies that you know really well by ear on just the 4th string.

(c) Attempt to play some melodies that you know really well by ear using the 4th, 5th and 6th strings together. Try the same tunes starting on different pitches and on different strings (i.e. in several keys, in several ranges).

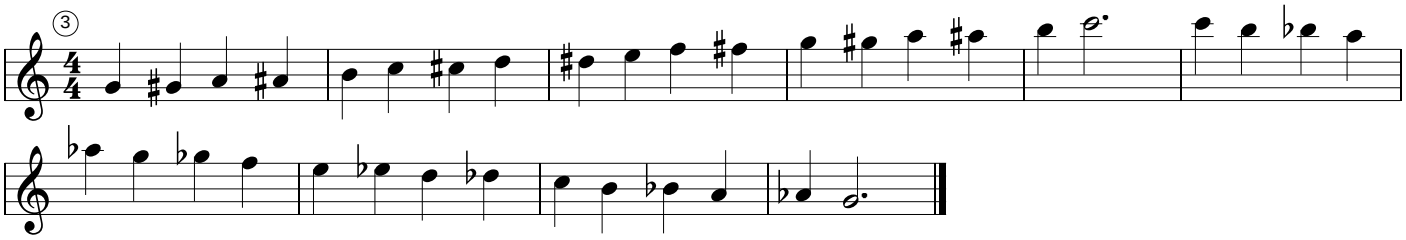
D. The 3rd String

Please consult Chapter IV when doing these exercises, especially the part about string dampening.

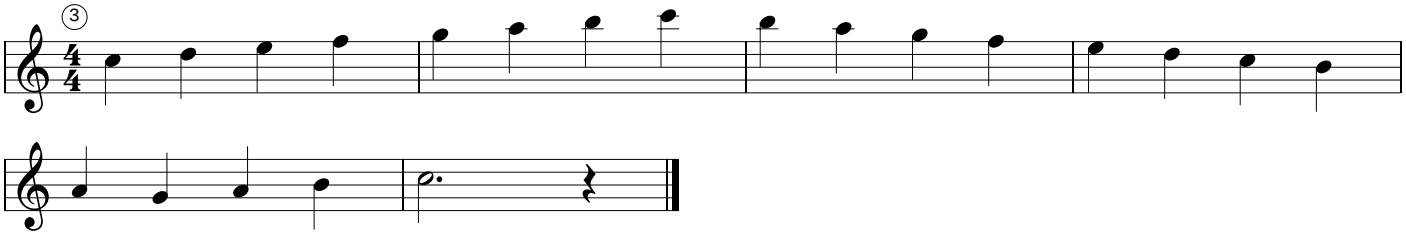
Ex. V.D-1



Ex. V.D-2 (Chromatic scale)



Ex. V.D-3 (C Major scale)



Ex. V.D-4 etc.

(a) Figure out how all the major scales lay on the 3rd string.

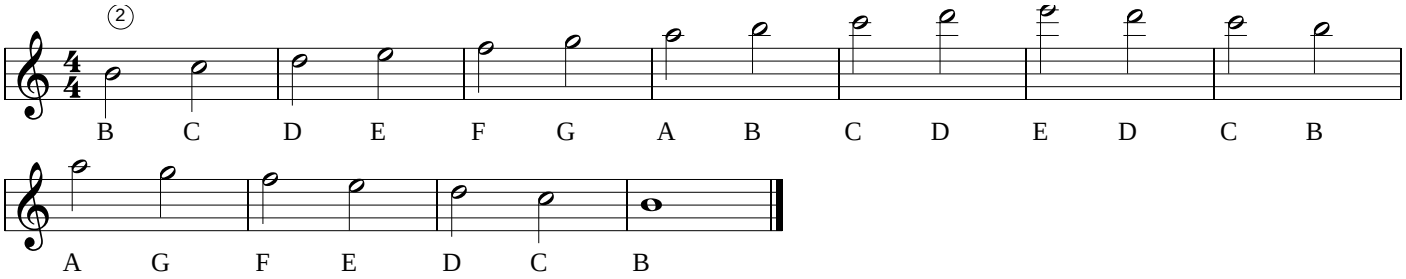
(b) Attempt to play some melodies that you know really well by ear on just the 3rd string.

(c) Attempt to play some melodies that you know really well by ear using the 3rd, 4th, 5th and 6th strings together. Try the same tunes starting on different pitches and on different strings (i.e. in several keys, in several ranges).

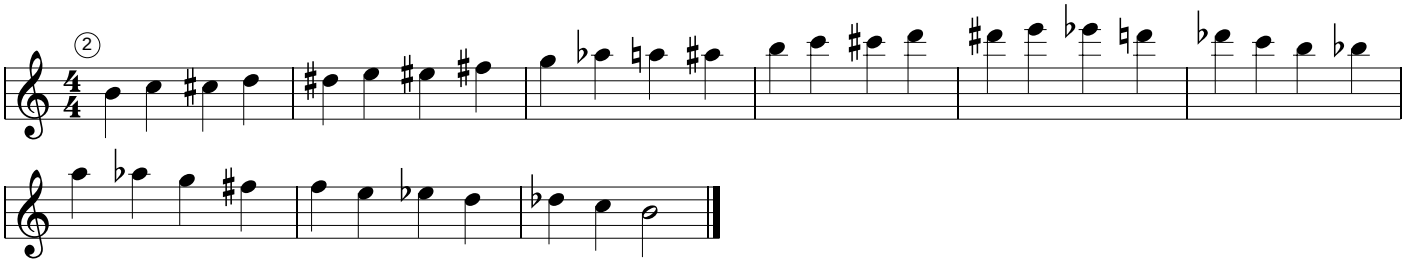
E. The 2nd String

Please consult Chapter IV when doing these exercises, especially the part about string dampening.

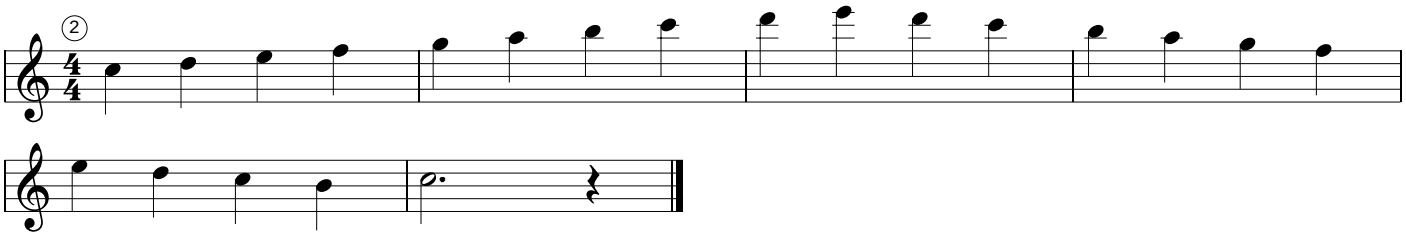
Ex. V.E-1



Ex. V.E-2



Ex. V.E-3 (C Major scale)



Ex. V.E-4 etc.

(a) Figure out how all the major scales lay on the 2rd string.

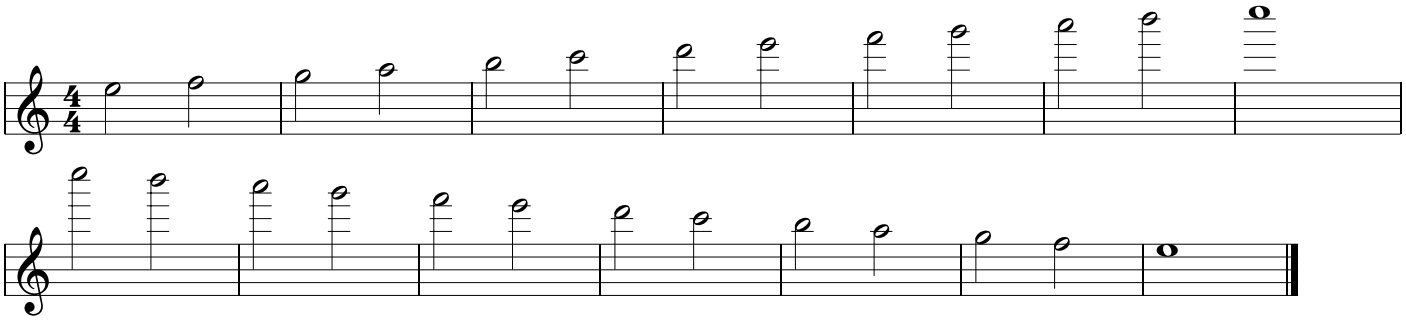
(b) Attempt to play some melodies that you know really well by ear on just the 2nd string.

(c) Attempt to play some melodies that you know really well by ear using the 2nd, 3rd, 4th, 5th and 6th strings (or some combination of them) together. Try the same tunes starting on different pitches and on different strings (i.e. in several keys, in several ranges).

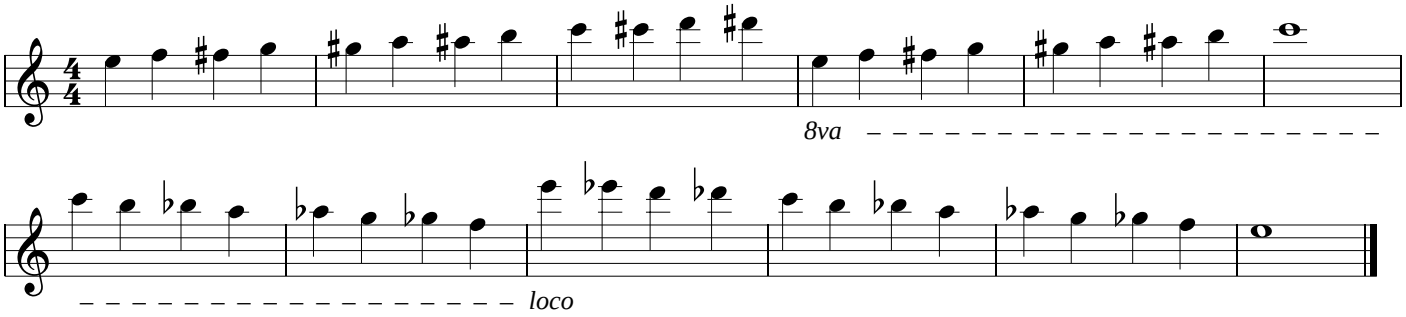
F. The 1st String

Please consult Chapter IV when doing these exercises, especially the part about string dampening.

Ex. V.F.-1



Ex. V.F-2



Ex. V.F-3 etc.

(a) Figure out where all the notes of every major scale happen to fall on the 1st string. Use the entire range, up to 24 frets or more if you've got them on your instrument.

(b) Attempt to play some melodies that you know really well by ear on just the 1st string.

(c) Attempt to play some melodies that you know really well by ear using all 6 strings (or some combination of them) together. Try the same tunes starting on different pitches and on different strings (i.e. in several keys, in several ranges).

Here's some other suggestions for tunes to try by ear:

Auld Lang Syne
Allouette
Amazing Grace
In The North Atlantic Squadron <g>
Waltzing Matilda
Billy Boy
Blow The Man Down
My Bonnie Lies Over The Ocean
I've Been Workin' On The Railroad
Clementine
Coming Around The Mountain
When Johnny Comes Marching Home
God Save The Queen
Go Down Moses
Good Old Mountain Dew
Greensleeves
Hatikvah
Mary Had A Little Lamb
Oh Canada
Old King Cole
On Top Of Old Smoky
Pop Goes The Weasel
Sinner Man
This Land Is Your Land
Three Blind Mice
Titanic (Husbands And Wives)
Turkey In The Straw
Twelve Days Of Christmas
Little Brown Jug
Yankee Doodle
Yellow Rose Of Texas
Lili Marlene
Polly Wolly Doodle
Take Me Out To The Ball Game
Battle Hymn Of The Republic

Not to mention the many TV show themes I'm sure you still remember from childhood (or the ones you're still watching now ... like the Adams Family, Gilligan's Island, The 3 Stooges, etc.).

How 'bout some jazz standards and pop tunes now?

G. Phrasing Possibilities On A Single String

"Phrasing" refers the manner by which a phrase of music is executed. In it's very basic sense it simply refers to the techniques used to attack the notes. In a broader more subtle sense it refers to every aspect of a musical phrase's performance including attack, duration, timbre, rhythmic placement, stylistic considerations, etc.

The “basic” phrasing possibilities available on the guitar (without resorting to effects processors) on a single string are these:

1. Long notes.

2. Short notes.

3. All notes attacked (i.e. struck with the pick or fingers).

4. First note attacked with one or more subsequent notes articulated via other means:

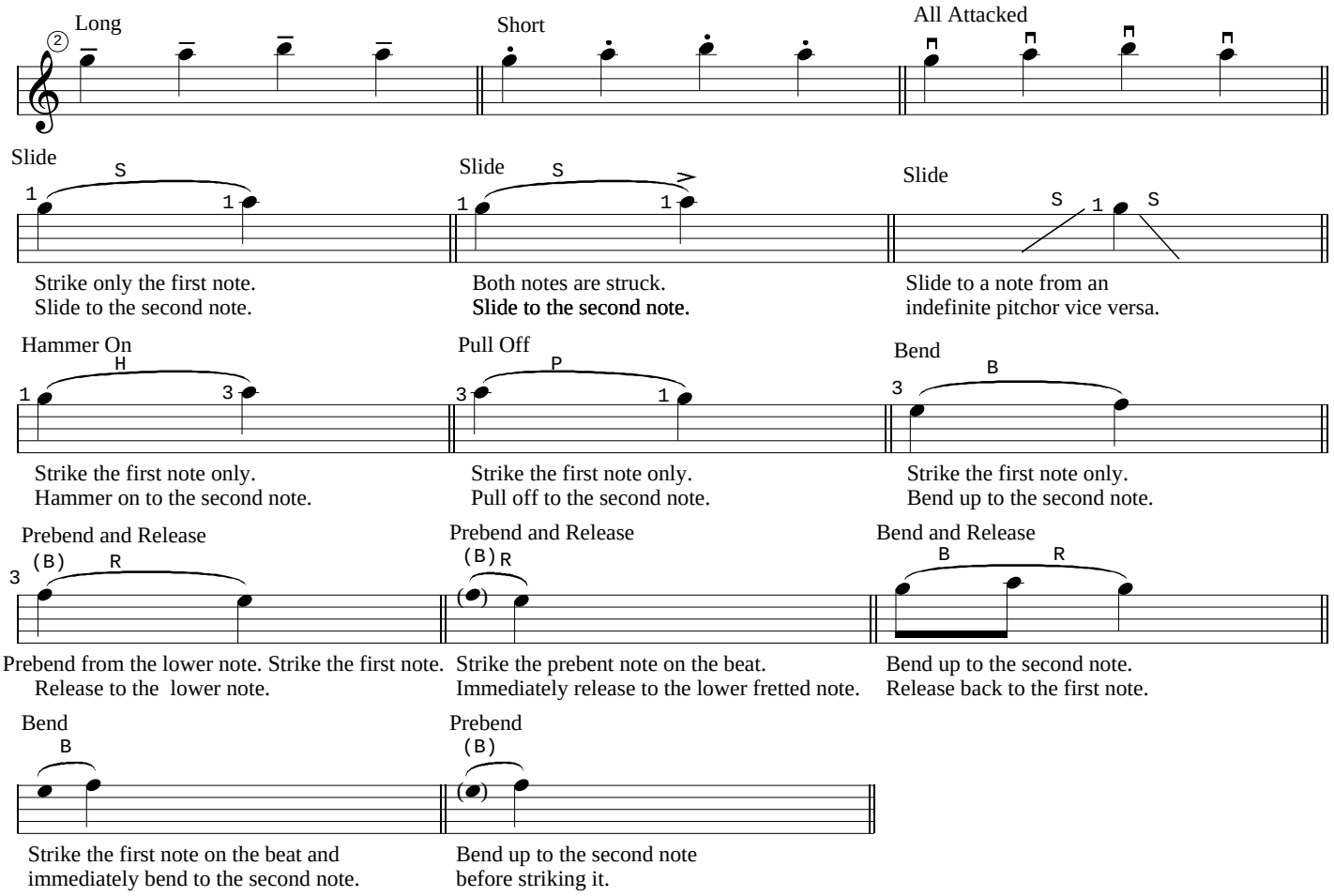
(a) Finger Slides - The first note is struck and then higher or lower notes on the same string are sounded by sliding the finger. The same finger is used for both notes.

(b) Hammer Ons - The first note (being fingered by fingers 1, 2, or 3) is struck and then higher notes on the same string are sounded by “hammering” another finger down on a higher fret. Most guitarists are capable of hammering on a note at least a Perfect 4th above any note their 1st finger is on.

(c) Pull Offs - The first note (being fingered by fingers 2, 3 or 4) is struck and then lower notes on the same string are sounded by “pulling off” to a lower fret with a lower finger. Most guitarists are capable of pulling off to a note at least a Perfect 4th below any note their 4th finger is on.

(c) Bends - The first note is struck a note above it is sounded by bending the string. Most guitarists using regular light gauge strings (0.010 to 0.046) are capable of bending at least a major third above most notes on an unwound string. Heavier strings reduce the possible bend range.

(d) Reverse Bends - The bent note is struck first and then the bend is released to the actual fretted note.



There are, to be sure, many combinations and cross pollinations of the above articulations. There are also many other possibilities that have been omitted. This is just a simple overview.

VI. Chords: Construction/Execution/Basic Harmony

Note: I definitely went a little overboard with this chapter and went into some topics with more depth than is necessary at this point in the text. If you are a novice player, one who is just now learning the grips and the intervallic formulas for the various types of chords, then I suggest that you skip the sub section dealing with inversions (VI. A. 3. - Inversions) as well as the sub sections dealing with open position major chords (VI. A. 4. - Open Position Major Chord Forms and VI. A. 5. - Open Position - Other Triadic Chord Forms) for now and concentrate on sections VI. A. 1. - 2. dealing with triad formulas and movable triad grips and then jump ahead to sections VI. B. through to the end dealing with 7th chords. Once you know the formulas for all the 7th chords you should skip ahead to the chapter about Shell Voicings. Then go back and look at the other stuff.

It is much more important for you now to be learning how to construct and to play the most common types of chords than it is to learn every inversion of every triad, etc. Learning the chords will allow you learn some real tunes and to play with people. The only way you can really learn about this music is by playing real tunes with real people.

A. Triads

1. Construction:

[Again, it is not my intention to have this book serve as a detailed primer on the subject of harmony. That is a subject best left to a dedicated text.]

Definition:

Chord: Three or more distinct pitches sounded together.

FYI: Two pitches sounded together creates what is known merely as an “interval”, a “diad” or a “double stop”.

By far, most chords used in Western tonal music are of the “tertian” variety. I.e. They are built in intervals of major and/or minor thirds. A chord consisting of 3 notes is called a triad.

There are 4 basic triad types: the Major triad, the Minor triad, the Diminished triad and the Augmented triad. As a matter of fact, depending on which music school you went to, those four chord types are the only real triads that are recognized. This is the way classical harmony is usually taught.

The Major triad consists of a Root tone plus a tone situated a Major third above the Root, which is called the “3rd”, as well as another tone situated Perfect 5th above the Root, which is called the”5th”. Note that the 5th of a major triad is situated a Min 3rd above the chord’s 3rd.

Therefore a C major triad consists of: C (Root), E (3rd) and G (5th). With D as the Root the component tones would be: D (Root), F♯ (3rd) and A (5th). Etc.

I will routinely be referring to this intervallic formula simply as 1 3 5. Written chord symbol = C or Cmaj.

A Minor triad consists of a Root tone plus a tone situated a Minor third above the Root, which is called the “flatted 3rd” or “♭3”, as well as another tone situated a Perfect 5th above the Root, which is called the “5th”. Note that the 5th of a minor triad is situated a Major 3rd above the chord’s ♭3.

Therefore a C minor triad consists of: C, E♭ (♭3rd) and G (5th). With D as the root the component tones would be: D, F (♭3rd) and A (5th). Etc.

Formula = 1 ♭3 5. Written chord symbol = Cm, Cmin or C-.

A Diminished triad consists of a Root tone plus a tone situated a Minor third above the Root (♭3), as well as a tone situated a Diminished 5th above the Root, which is called the “diminished 5th” or “♭5”. Note that the ♭5 of a diminished triad is situated a Min 3rd above the chord’s ♭3.

Therefore a C diminished triad consists of: C, E♭ (♭3rd) and G♭ (♭5th). With D as the root the results would be: D, F (♭3rd) and A♭ (5th). Etc.

Formula = 1 ♭3 ♭5. Written chord symbol = Cdim, C° ("°" can mean either a full dim7 or a diminished triad. To be 100% sure a player will play a triad the copyist should write "Cdim(triad)").

An Augmented triad consists of a Root tone plus a tone situated a Major third above the Root (the 3rd), as well as a tone situated an Augmented 5th above the Root, which is called the "augmented 5th" or "♯5". Note that the ♯5 of an augmented triad is situated a Major 3rd above the chord's 3rd.

Therefore a C augmented triad consist of: C, E (3rd) and G♯ (♯5th). With D as the root the results would be: D, F♯ (3rd) and A♯ (♯5th). Etc.

Formula = 1 3 ♯5 Written chord symbol = Caug or C+.

In jazz, however, there are a few other structures that we routinely refer to as triads: the Sus4 triad, the Sus2 triad, the Sus♭2 triad and the ♭5 triad.

Sus4	=	1 4 5 (Root + P4th + P5th)	Written: Csus4
Sus2	=	1 2 5 (Root + Maj2nd + P5th)	Written: Csus2 (Occasionally shortened to C2)
Sus♭2	=	1 ♭2 5 (Root + Min2nd + P5th)	Written: C(sus♭2) The brackets are not mandatory but they are helpful.
♭5 triad	=	1 3 ♭5 (Root + Maj3rd + Dim5th	Written: C(♭5)

The text "sus" within a chord symbol is short for the word "suspended". For our purposes this will mean: "Instead of the 3rd use 'x'."

I.e. Csus4 means: just like a C major chord but instead of using a Major 3rd use the note found a Perfect 4th above C.

For most of the upcoming exercises the P4th within a Sus4 chord voicing can be found 1 fret above the Maj3rd it is replacing. The Maj2nd in a Sus2 chord can be found 2 frets below the Maj3rd it is replacing.

So Csus4 = C F G. Csus2 = C D G. Csus♭2 = C D♭ G etc.

There are actually 13 other three note chord possibilities:

1, ♭2, ♭3. ... 1, ♭2, 3. ... 1, 2, ♭3. ... 1, 2, 3. ... 1, ♯2, ♮3. ... 1, 3, ♭5. ... 1, 3, ♭7. ... 1, 3, 7. ... 1, ♯4, 5. ... 1, 5, 6. ... 1, 5, ♭7. ... 1, 5, 7. ... 1, ♭7, ♮7.

Any other arrangement of 3 separate pitches can be demonstrated to be an inversion of either one of the 8 regular triad types or of these other more exotic 3 note chord types.

These other chords do not lend themselves to being labeled with chord symbols very well however. When they do occur within a primarily tonal piece of music they are usually thought to be part of a larger more complete tertian chord.

Eg. 1, ♭2, 3 could be seen as an incomplete voicing for a Dom7♭9 chord.

Eg. 1, 3, 7 is often used as an incomplete "shell" voicing for a Major 7th chord.

Etc.

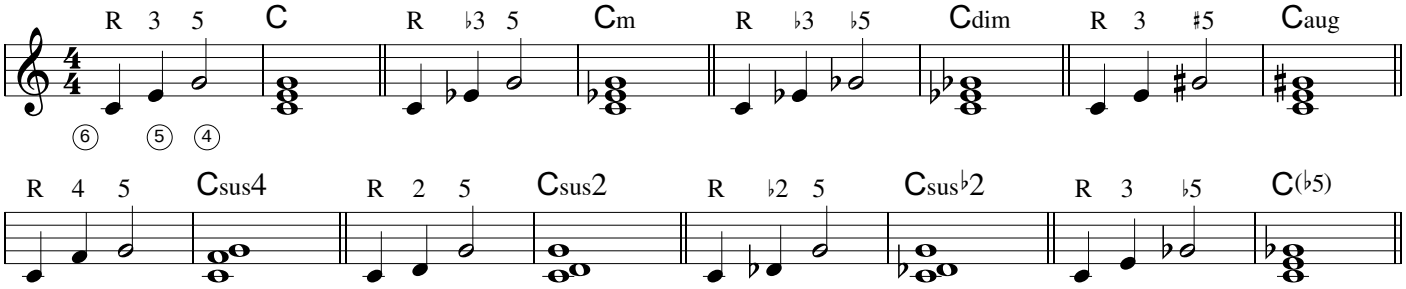
We will not be dealing with these more exotic 3 note chords very much here unless they occur in the course of discussing something else (like Shell Voicings or Voicings Derived From Chord Scales, etc.) but please feel free to experiment with them and also with their inversions, etc.

It will be seen in the following exercises that the guitar can easily be used as a sort of abacus (an ancient Chinese calculator) for figuring out intervals. Once you know the finger shape for say, a Major 3rd above C on one part of the fretboard it is very easy to figure out which note is a Major 3rd above D etc., etc., as long as you already know the names of all the notes on the fretboard. (See Chapter III.)

Some teachers would have you shy away from using the guitar fretboard for learning your intervals this way but I am not one of them. The guitar is a finger shape oriented instrument. There is no way around this fact. What is important is to understand the musical shapes and the sounds that are behind the finger shapes and to

not become fixated on using the finger shapes themselves as the raw material for your music making. It is the musical shape and the sound that really matters.

Eg. VI.A.1.-1 (Triad Construction)



2. Movable Triadic Chord Forms

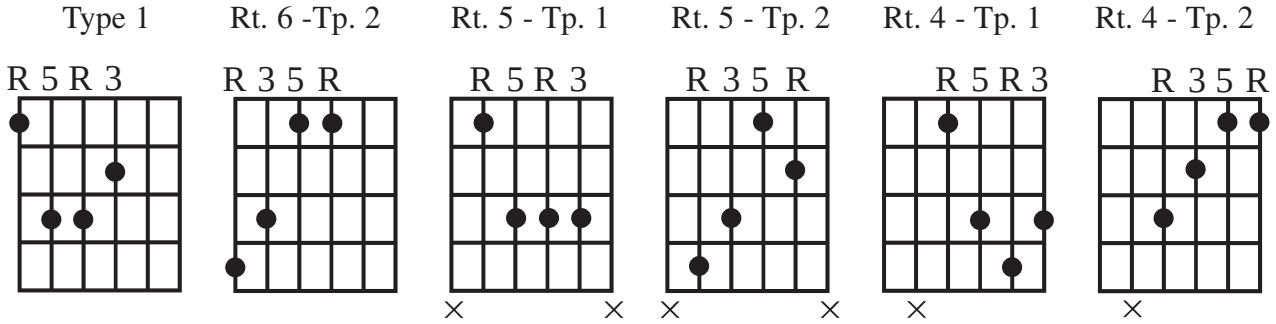
When a chord fingering shape (aka "chord form") on guitar uses only fretted notes it can easily be transposed to have a different root while retaining the same chord quality (i.e. Major, Minor etc.) simply be moving the shape up and down the fretboard.

The following chord forms are the most common movable 4 note voicings for Major chords on the guitar. They all have at least one doubled note (the root) but they are still just triadic chords because they only have 3 distinct pitches (i.e. only 3 separate letter names). None of these grips use any open strings so they can be transposed easily up and down the fretboard. They all have the chord's root as the lowest pitch.

The 3rds and 5ths of these voicings are often in a higher octave than they were when we were originally constructing the triad types. This is nothing to be alarmed about. An E situated a 10th above a C Root will still be functioning as the major 3rd of some type of a C chord. An A♯ situated an Aug12th above a D Root will still be functioning as the ♯5 of some sort of a D chord.

Note: An "X" within a chord diagram fingering means that the indicated string is muted. A blank means you should not strike that string with the pick at all. Muting is usually achieved by slightly overshooting a neighboring string with the one of the finger tips. These fingerings are designed to be played by strumming all indicated strings with the pick. Fingerstyle techniques would allow for quite different fingerings in many cases.

Root on 6th String



All of these forms use 4 notes or more but they are still triadic in nature. There are only 3 distinct letter names for the pitches within each one of these chords. Sometimes the root is doubled. Sometimes the 3rd. Sometimes the 5th. Sometimes a combination is used. There are still only three pitches involved.

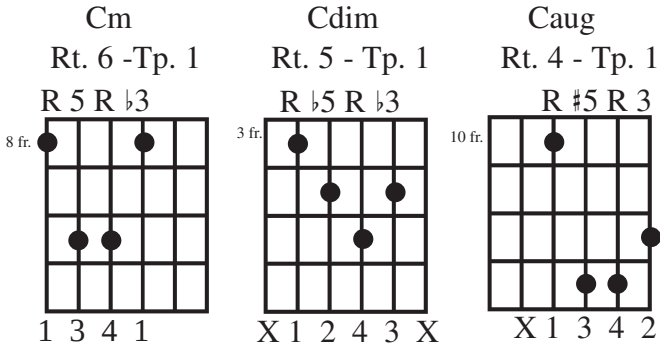
Ex. VI.A.2.- 1

Change the fingerings for these major chords into the other triad chord types by lowering or raising the appropriate chord tones according to the triad's intervallic formula.

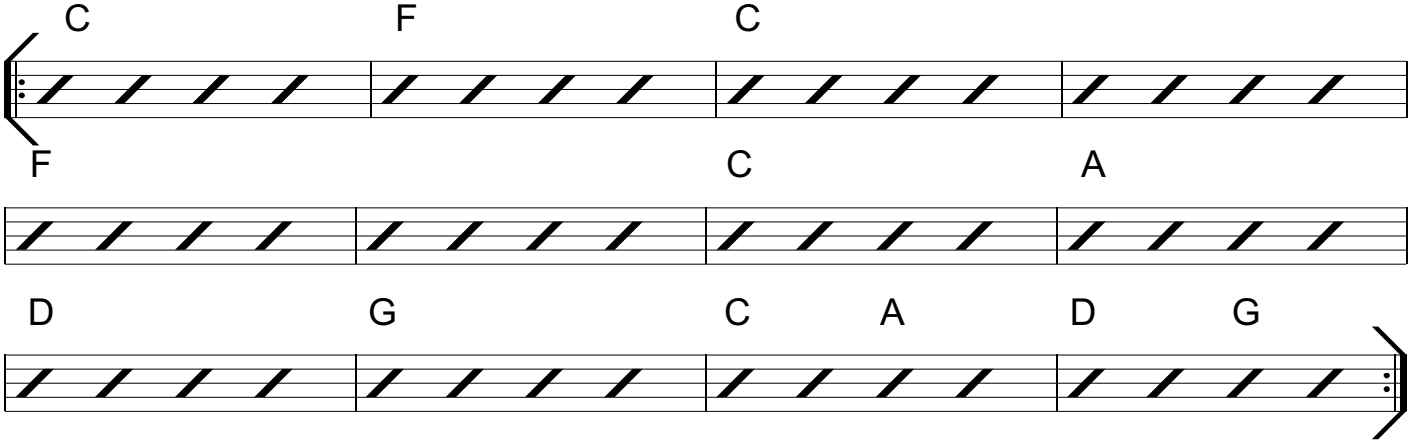
You might need to omit one of the 2 roots for some fingerings.

Examples:

Maj	= 135
Min	= 1 ♭3 5
Dim	= 1 ♭3 ♭5
Aug	= 1 3 ♯5
Sus4	= 1 4(♯3?) 5
Sus 2	= 1 2(♭3?) 5
Sus♭2	= 1 ♭2 5
Maj♭5	= 1 3 ♭5



Ex. VI.A.2. - 2



i. Play the progression using the first Maj chord type all the way through. This will result in some very big and illogical position jumps but it is a good way to learn the chord fingerings and the transpositions.

ii. Repeat with the 5 remaining chord types.

iii. Map out some more logical (i.e. with less drastic position position shifts) chord fingering choices by alternating the string on which the root is found.

Eg.

```
C Root.on 6th string > F Root.on 5th string etc.
          C Rt. 5 > F Rt. 6 etc.
          C Rt. 5 > F Rt. 4 etc.
          C Rt. 4 > F Rt. 5 etc.
```

iv. Repeat Ex i through iii using all Minor chords.

v. Repeat Ex i through iii using all Diminished chords.

vi. Repeat Ex i through iii using all Augmented chords.

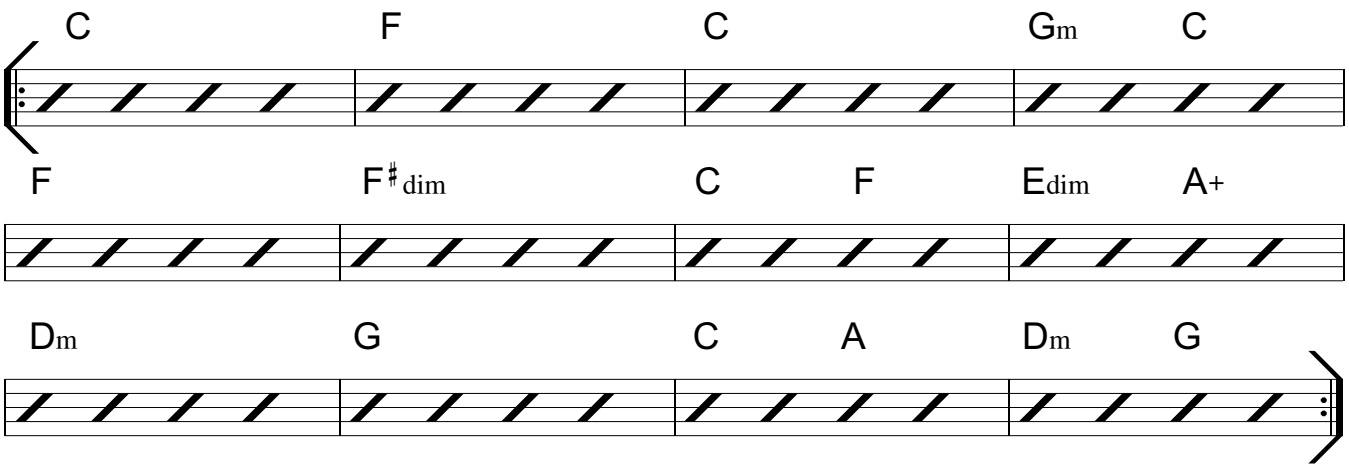
vii. Repeat Ex i through iii using all sus4 chords.

viii. Repeat Ex i through iii using all sus2 chords.

ix. Repeat Ex i through iii using all major flat five chords.

Note: Ex iv through ix will sound a little unusual. Frankly, they will not sound very musical at all but I still feel this is a good way to learn to construct and memorize the new chord forms. To be honest, they sound lousy, but try them anyway!

Ex. VI.A.2.- 3



Learn this progression in all 12 keys using as many fingerings as you can.

Note: This chord progression is a triadic version of what is often called the “jazz blues progression”. Normally these would all be seventh chords built on the same roots. It sounds a little odd with these triadic chords through-out but this root motion is classic and should be studied carefully. The full progression can be found in the upcoming sub chapter about seventh chords.

a.) Freddie Green Style - Part 1

Freddie Green was the guitarist in The Count Basie Orchestra. His name has become forever linked with a deceptively simple-seeming style of chordal accompaniment on the guitar but he was by no means the first to play this way. He was exceptionally good at it though.

The style revolves around treating the guitar essentially as a percussion instrument and using it to play time in a simple, repetitive, driving, 4 beats to the bar, strumming pattern. In this type of big band style the guitar often serves as the instrument that really keeps the time while the drums and bass are free to do fills and to set up accents with the horn sections. These 4 beats per bar must be completely accurate and metrically correct but the music also has to feel good. These were dance bands, after all.

I bring this up now not to discuss Freddie’s style in any real depth yet but to give a point of reference for the following simple pick-style strumming exercises. Most jazz guitarists are quite comfortable playing with a pick whether they are fingerstyle specialists or not. Pick style rhythm guitar is an important part of the jazz guitar tradition and should be learned well by all aspiring jazz guitarists, in my opinion.

We will now attempt to find some ways of developing control, accuracy and feel when strumming chords and when changing from one chord to the next.

(1) Strumming

In the style we are discussing the pick should travel rapidly across the strings. It should sound as if all the strings are sounding at once, not like an arpeggiated series of notes. In order to help accomplish this the pick should be slightly angled in relation to the strings so that the edge of the pick that is facing the direction of the knuckles is angled slightly downward across the strings rather than perpendicular to them.

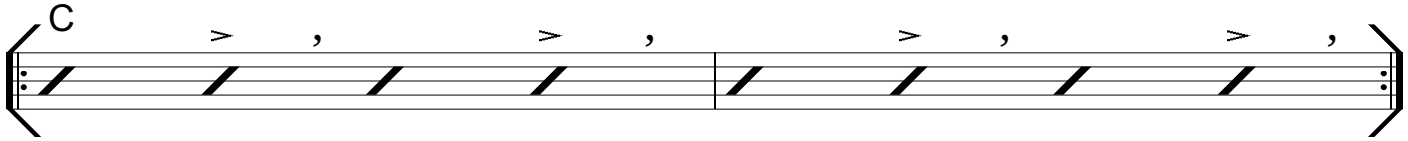
At first you will probably end up playing too loudly as you attempt to make the pick travel quickly across the strings. Remember that just because the pick is moving quickly does not mean that you have to hit the strings real hard. Use your wrist, not your forearm. One of my teachers told me to imagine that there was a small piece of something disgusting sitting on the back of my hand and that I should try to flick it off.

(2) Pressure Release Points

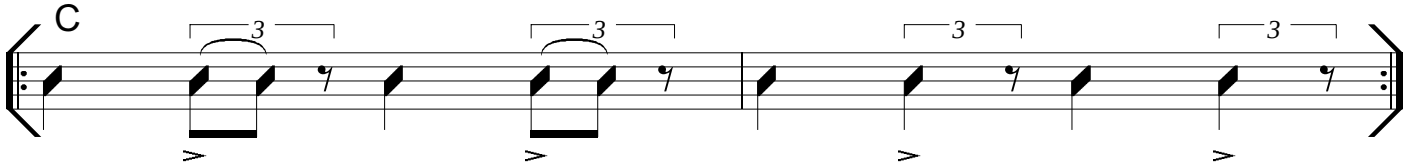
The pattern we will be working on is in 4/4 time. It will involve releasing the fretting hand pressure every two beats (or every beat) so that there will be a short string dampening effect between beats 2 and 3 and

between beats 4 and 1 of the next bar. This will be indicated in the notation with a comma above the staff. We will also be placing accents on beats 2 and 4. Play all these exercises starting at 40 beats per minute and work your way up to 120BPM.

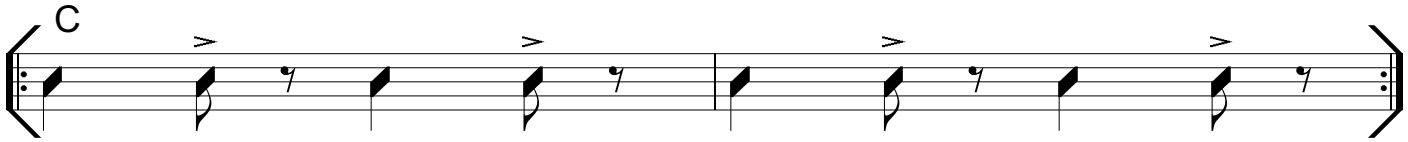
Ex. VI.A.2.a.2.-1
Pick a voicing for a C major chord that uses no open strings and that has the root located on the 6th or 5th string. Strum as indicated keeping in mind the pointers above.



Ex. VI.A.2.a.2. -2
In order to impart a swing feel try to release the pressure on the 3rd triplet of beats 2 and 4.



In order to impart a straighter feel try to release the pressure on the exact upbeat of beats 2 and 4.

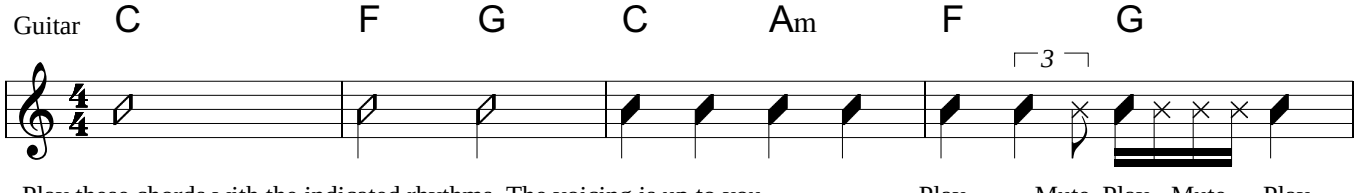


(3) Rhythm Slashes

Rhythm section parts for chording instruments like guitar, piano, vibes, accordion etc. often use a system of notation that combines chord symbols with specific rhythms. This is accomplished by using note heads that are intentionally vague or nondescript. A note head for a 1/4 note, 1/8 note, 1/16 note etc. rhythm will look like a large slash that covers at least 2 separate pitches on the staff. A note head for a whole note or a 1/2 note will look like a large offset rectangle.

Sometimes the top note of a voicing is indicated via smaller slashes of the same type.

An "x" usually indicates a percussive ghost strum whereby the chord is not actually allowed to ring out. The strings are merely strummed for a percussive effect.



(4) Changing Chords

In order to change smoothly, accurately and ultimately quickly from one chord into the next there are several things to pay attention to and to practice.

1. There should be no extraneous noises coming off the guitar like open stings ringing out, fingers scraping across the strings, etc. Nothing at all between chords.

2. All the notes of the first chord should stop vibrating at exactly the same time and all the notes of the next chord should seem to start exactly at the same time.

To learn to do this you must practice each step separately.

1. Strum the first chord.

2. Release the pressure.

3. Take the fingers off the fretboard silently and move your hand into position for the new chord.

4. Get the fingers into position for the new chord.

This involves analyzing exactly what each finger must do to get from one chord to the next:

What does your 1st finger have to do?

What does your 2nd finger have to do?

What does your 3rd finger have to do?

What does your 4th finger have to do?

Are there any common fingerings between the chords?

What does your thumb have to do?

5. Apply pressure to the strings.

6. Strum the new chord.

There will always be some sort of a gap between chords but we strive to minimize this as much as possible so that the chords seem to flow smoothly from one to the other in a legato fashion. The following exercise attempts to develop the awareness of exactly what is involved.

Ex. VI.A.2.a.4. -3

Pick 2 chord forms that you are having trouble smoothly switching between and practice them using the indicated intervals of silence in the following exercise. At first we will be allowing lots of time for silence between chords as we prepare our hands for the new chord. Then we will be working at shortening this gap. Pay close attention to the rests.

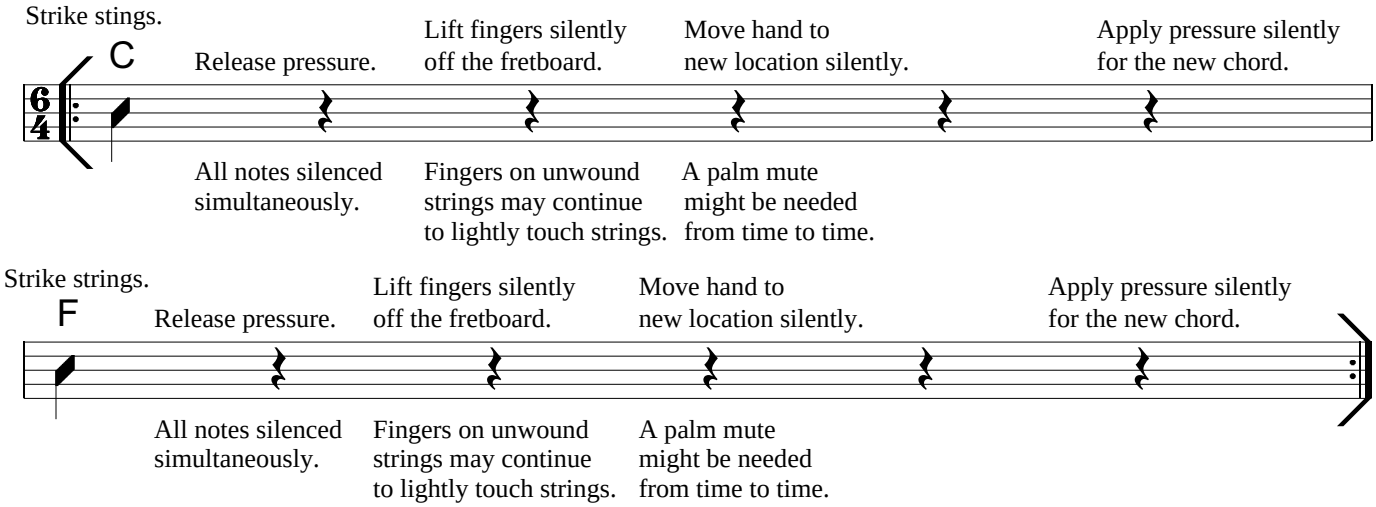
Start at 40bpm and then gradually raise the tempo to 120bpm. There should be no sound coming off of your guitar at all during the rests.

Use your amplifier so you can hear what you sound like.

Attempt to play exactly what is on the page, nothing more and nothing less.

Strive for exact metrical accuracy at all tempos especially the really slow ones. If you do not practice this at the extremely slow tempos you will be missing the point.

The C and F chord symbols are used merely for reference. Pick any two chord forms that you need work on.



When you feel ready change the time signature to 5/4 thus shortening the gap between chords. Continue practicing at very slow tempos as well as some quicker ones.

When you feel ready change the time signature to 4/4 thus shortening the gap between chords. Continue practicing at very slow tempos as well as some quicker ones.

When you feel ready change the time signature to 3/4 thus shortening the gap between chords. Continue practicing at very slow tempos as well as some quicker ones.

When you feel ready change the time signature to 2/4 thus minimizing the gap between chords. Continue practicing at very slow tempos as well as some quicker ones.

Ex. VI.A.2.a.4. -4

Practice the exercises for the Movable Triadic Forms (VI.A.2.) using the techniques we have described here.

Note: For more on this style have a look at the sub chapter Freddie Green Style - Part 2 in the chapter titled "Shell Voicings".

3. Inversions

The three notes of a triad are often placed in all sorts of arrangements. Sometimes a note or two are doubled. Sometimes they are arranged such that the notes of the chord span more than a single octave, etc. Whenever the chord is voiced such that the Root of the chord is placed as the lowest tone the chord is said to be in "Root Position". Whenever the chord is voiced such that the 3rd of the chord (or the 4th in a sus4 chord or the 2nd in a sus2 chord) is arranged as the lowest tone the chord is said to be in "1st Inversion". Whenever the 5th of the chord is arranged as the lowest tone the chord is said to be in "2nd Inversion".

In this sub chapter we will only be looking at the simplest voicings of the possible triad inversions for now. All our triads will have no doubled notes so they will all be strictly three note chords. They will span less than a full octave so they will be what are known as "Close Voiced" chords. I.e. All the notes of the chord are as closely packed together as possible as opposed to a "Spread Voiced" chord where the arrangement of the notes is more spread out.

A close voiced C Major triad in first inversion would be the notes (bottom to top): E G C.

A close voiced C Minor triad in first inversion would be the notes (bottom to top): E♭ G C.

etc.

A close voiced C Major triad in 2nd inversion would be the notes: G C E.

A close voiced C Minor triad in 2nd inversion would be the notes: G C E♭.

etc.

We will be learning to play these triad inversions as technical exercises across the fretboard, horizontally on three strings for now. Eventually you will also be playing them across the fretboard vertically using a different

group of 3 strings for each inversion.

Learning to play these triad inversions well is important for developing your abilities as an accompanist as well as your abilities as a soloist. When you are soloing over a chord progression it is very important to know where the notes of the chord you are playing on happen to fall on the fretboard. These triad inversion exercises will be the first of many many "mapping" exercises that we will be doing through-out the course of this book.

They are also great technical exercises.

Learn to play these exercises in time, with a metronome, at the suggested tempo or faster. Do not attempt to play faster than indicated until you can play extremely accurately at the suggested tempo first.

Use the pick only to attack the strings for now. (No fingerstyle.)

Try to get the pick to travel across the strings quickly enough so that the chords do not sound "strummed". It should sound as if each note is occurring simultaneously.

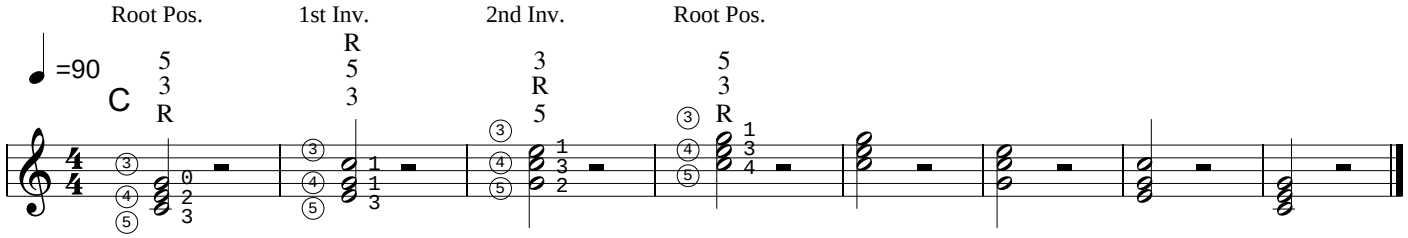
Make sure each chord starts exactly on the downbeat. Practice with a metronome.

Make sure all the notes of each chord stop vibrating at exactly the time indicated in the notation. If there is a rest on beat 3 all notes within the chord should stop vibrating exactly at the same time your metronome clicks on beat 3.

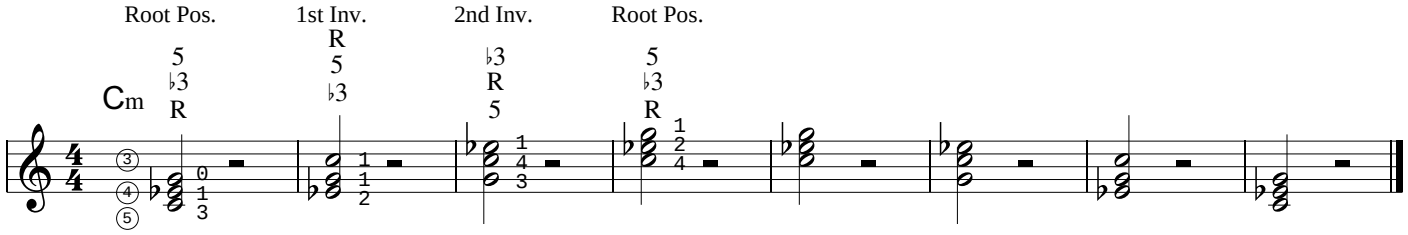
Learn to use *whatever means necessary* to avoid any extraneous noises when changing between chords. No fret buzzes. No fingers scraping across the strings. No noises as your fingers get ready to play the next chord. Some chords with open strings may require palm mutes. (I.e. The palm of the picking hand mutes the strings.) Practice with your amplifier on so you can hear clearly what sounds your guitar is making.

We will start with the inversions of a C Major chord using strings 5, 4 and 3.

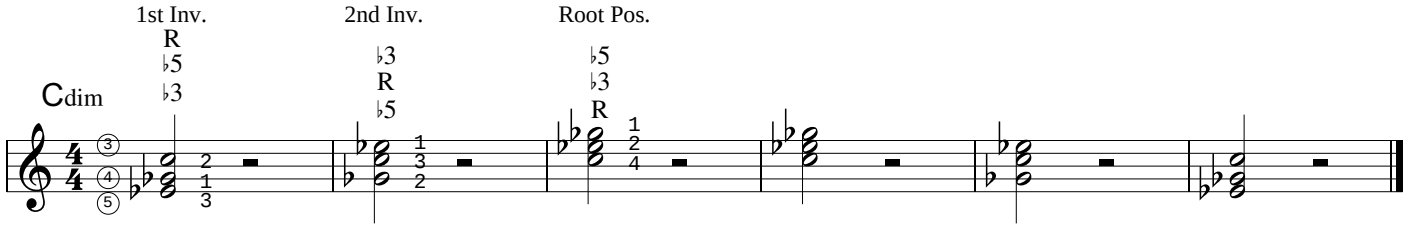
Ex. VI.A.3.-1 (C Major Triad Inversions on Strings 5, 4 and 3)



Ex. VI.A.3.-2 (C Minor Triad Inversions on Strings 5, 4 and 3)

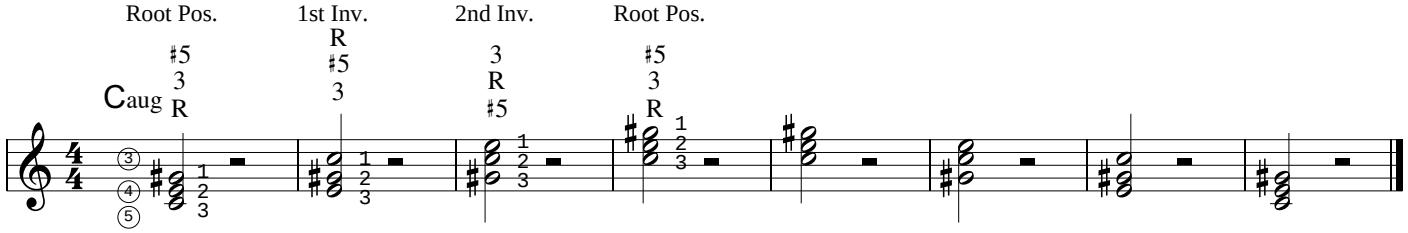


Ex. VI.A.3.-3 (C Diminished Triad Inversions on Strings 5, 4 and 3)



Note: There is no G♭ available in Pos I on the 3rd string so the low Root Position Cdim triad has been omitted.

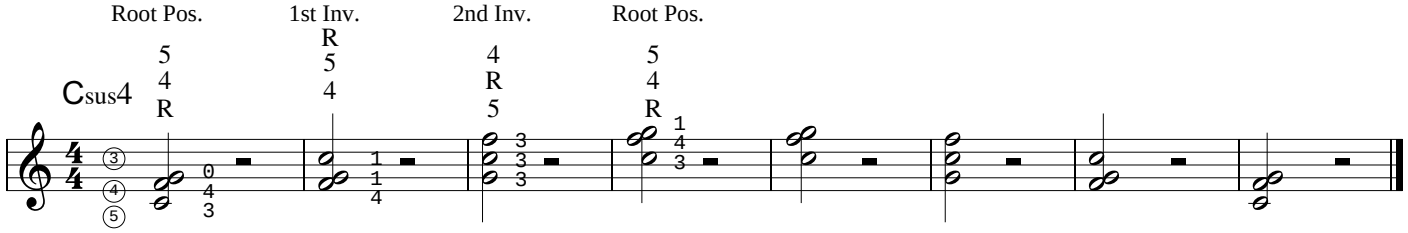
Ex. VI.A.3.-4 (C Augmented Triad Inversions on Strings 5, 4 and 3)



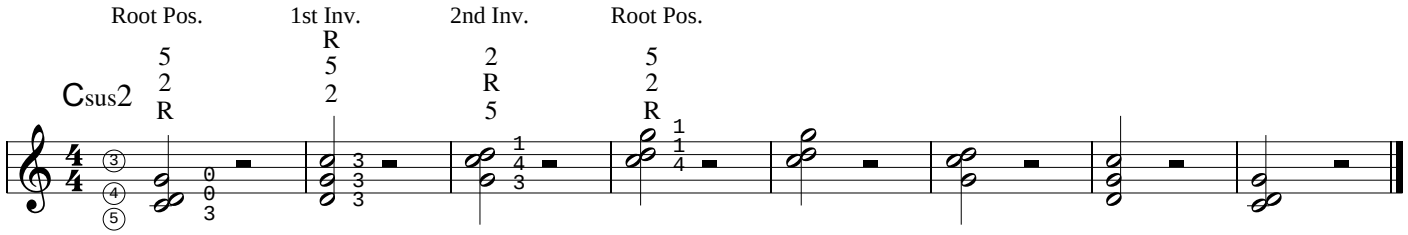
Notice how all the finger shapes for the augmented triads on these 3 strings are identical. This is because the augmented triad is a symmetrical chord, one of several that we will encounter. The notes in an augmented triad split an octave into 3 equal parts.

Example: C to E = Maj 3rd, E to G♯ = Maj 3rd, G♯/Ab to C = Maj 3rd.

Ex. VI.A.3.-5 (Csus4 Triad Inversions on Strings 5, 4 and 3)

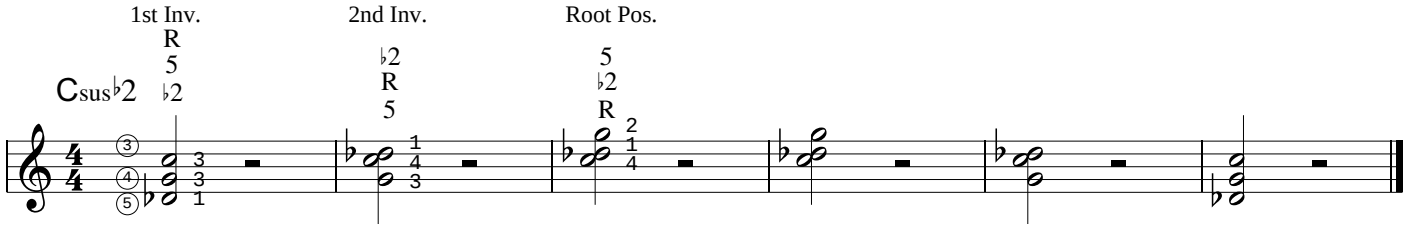


Ex. VI.A.3.-6 (Csus2 Triad Inversions on Strings 5, 4 and 3)



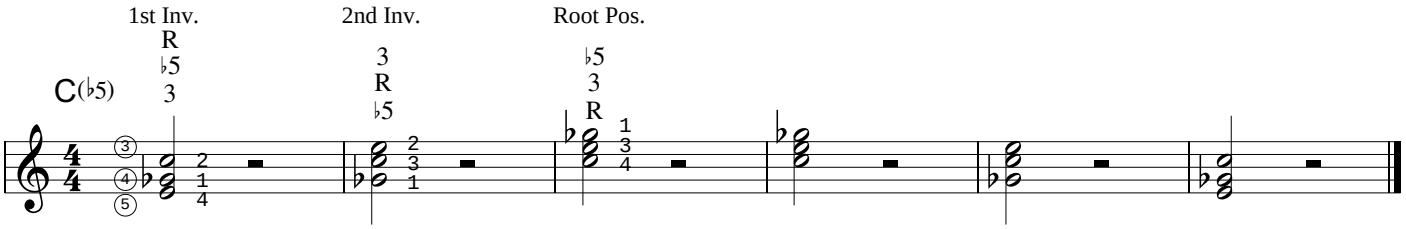
If you've been observant you should have noticed that the fingerings for the Sus4 chords and the Sus2 chords are identical but have different names in the various inversions. In classical music neither the Sus2 chord nor the Sus4 chord is considered to be a real triad. They are only used as temporary melodic decorations of a major or minor triad. In jazz and in popular music we have been using them as chords in their own right though. Ambiguous, 3rd-less chords. Neither major nor minor. It just so happens that this group of intervals can function in two different ways with two different functional roots.

Ex. VI.A.3.-7 (Csus♭2 Triad Inversions on Strings 5, 4 and 3)



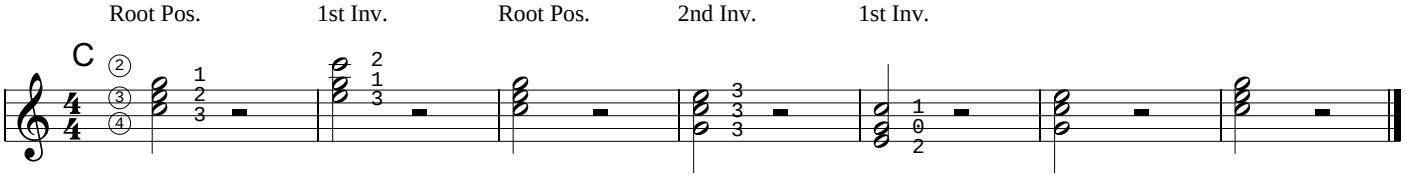
Note: There is no D♭ available in Pos I on the 4th string so the low Root Position Csus♭2 triad has been omitted.

Ex. VI.A.3.-8 (C(♭5) Triad Inversions on Strings 5, 4 and 3)

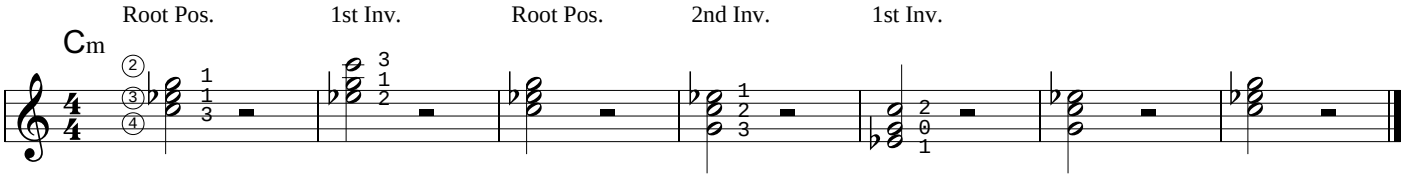


Note: There is no G♭ available in Pos I on the 3rd string so the low Root Position C(♭5) triad has been omitted.

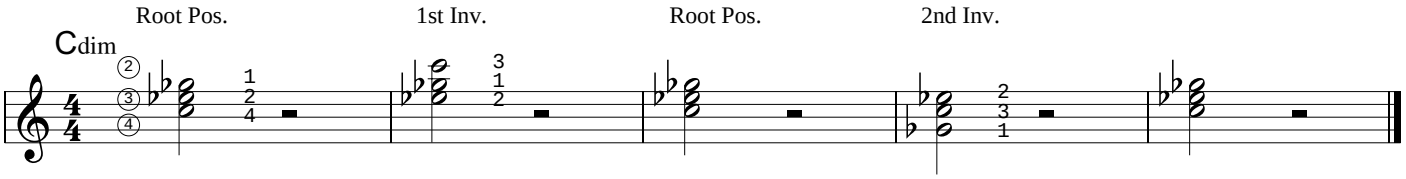
Ex. VI.A.3.-9 (C Major Triad Inversions on Strings 4, 3 and 2)



Ex. VI.A.3.-10 (C Minor Triad Inversions on Strings 4, 3 and 2)

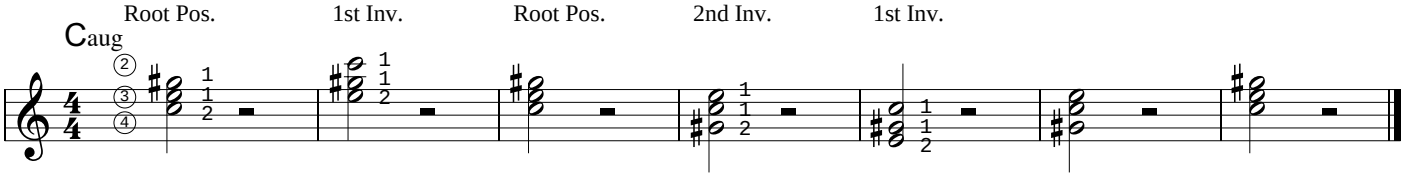


Ex. VI.A.3.-11 (C Diminished Triad Inversions on Strings 4, 3 and 2)



Note: There is no G♭ available in Pos I on the 3rd string so the low 1st Inv Cdim triad has been omitted.

Ex. VI.A.3.-12 (C Augmented Triad Inversions on Strings 4, 3 and 2)



Ex. VI.A.3.-13 (Remaining triad types with C Root and inversions on Strings 4, 3 and 2)

Figure out where the notes of the remaining triad types (Csus4, Csus2, Csus♭2 and C(♭5)) and their inversions happen to fall on these 3 strings on your own. Write them out if you have to. Better still, write them out anyways!

Ex. VI.A.3.-14 (Remaining string groups, all triad types, all inversions)

Figure out where all the inversions of all the triad types that have a C Root fall on strings 3, 2 and 1 as well as on strings 6, 5 and 4.

Ex. VI.A.3.-15 (Other Roots besides C)

Figure out, on all possible groups of 3 strings, where the notes of all the possible triad types and their inversions occur for all possible roots.

Try using the cycle of 5ths as a road map:

Major Triads with Root: C, F, B♭, E♭, A♭, D♭/C♯, G♭/F♯, C♭/B, E, A, D, G

Minor Triads with Root: C, F, B♭, E♭, A♭, D♭/C♯, G♭/F♯, C♭/B, E, A, D, G

Diminished Triads with ..... etc., etc.

Believe it or not eventually you will remember the finger shapes (aka forms) for these chords and it will be second nature for you to play them on demand. This WILL take some time (years actually) so don't be too angry at yourself for not getting this together in a week or two!

Ex. VI.A.3.-15 (Other Roots besides C)

Take the chord changes to several standard tunes and learn to comp through them using only triads. This will require you to simplify any 7th chords or more extended chords into triads.

Here are some guidelines to follow for chord simplification:

Change Maj7, Maj6 and Dom7 into Major triads.

Change Min6, Min7 and Min(maj7) chords into Minor triads.

Change Dim7 and Min7♭5 chords into Diminished triads.

Change Maj7♯5 and Dom7♯5 chords into Augmented triads.

Change Dom7sus4 into Sus4 triads.

Have a look at the formulas for the seventh chords and the chords with added tensions in the upcoming sections and when you encounter one of these try simply omitting the sevenths and tensions.

Jazz music is for the most part based on seventh chords but lots of pop, rock, R&B and even classical music is much more triadic in essence. A big eye opener for me happened when I realized that much of the way guitarists like Jimi Hendrix and Steve Cropper used chords was based on embellishing triads. Above and/or below each chord tone there is a note that can be used briefly to create some motion for fills. The idea is to make a chord that lasts for a long duration a little more interesting by creating some melodic fills.

Above the root of any triad the possible decoration notes are ♭2 or 2 unless the chord is a Sus2 triad. Chords with maj 3rds will also have a ♯2 available. Sus4 chords will also have ♭3 or 3 available as decoration notes.

Above the 3rd of any triad the possible decoration notes will be 4 or ♯4. On a Sus4 triad the only note available is ♯4 but it is not used too often. Chords with min 3rds will not usually use maj 3rds as decorative notes.

Above the P5th of any triad that contains one the possible decoration notes are ♭6 or 6 or ♭7 or 7. It is not that unusual to decorate a chord that contains a ♭5 with a P5th.

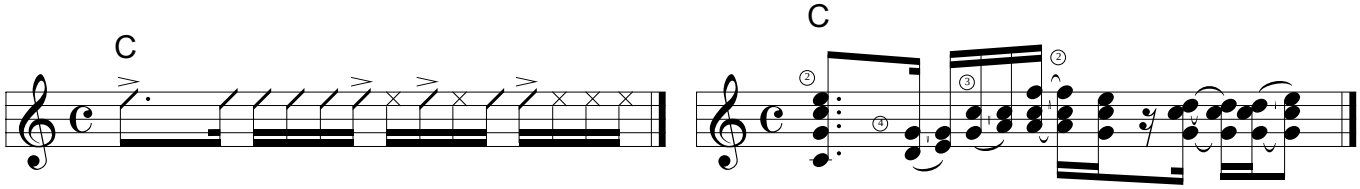
Beneath the root of any triad the possibilities are 7 or ♭7 or 6 or ♭6. The P5th might be used as well on a chord containing a ♭5.

Beneath the P5th of any chord that contains one the possibilities are ♯4 or 4. The maj 3rd is possible on chords that contain min 3rds but it is not used much. The min 3rd is possible on Sus2 chords, I suppose.

Beneath the maj 3rd of any chord that contains one the possibilities are ♯2 or 2 or ♭2. Obviously ♯2 is not available on a chord that contains a min 3rd.

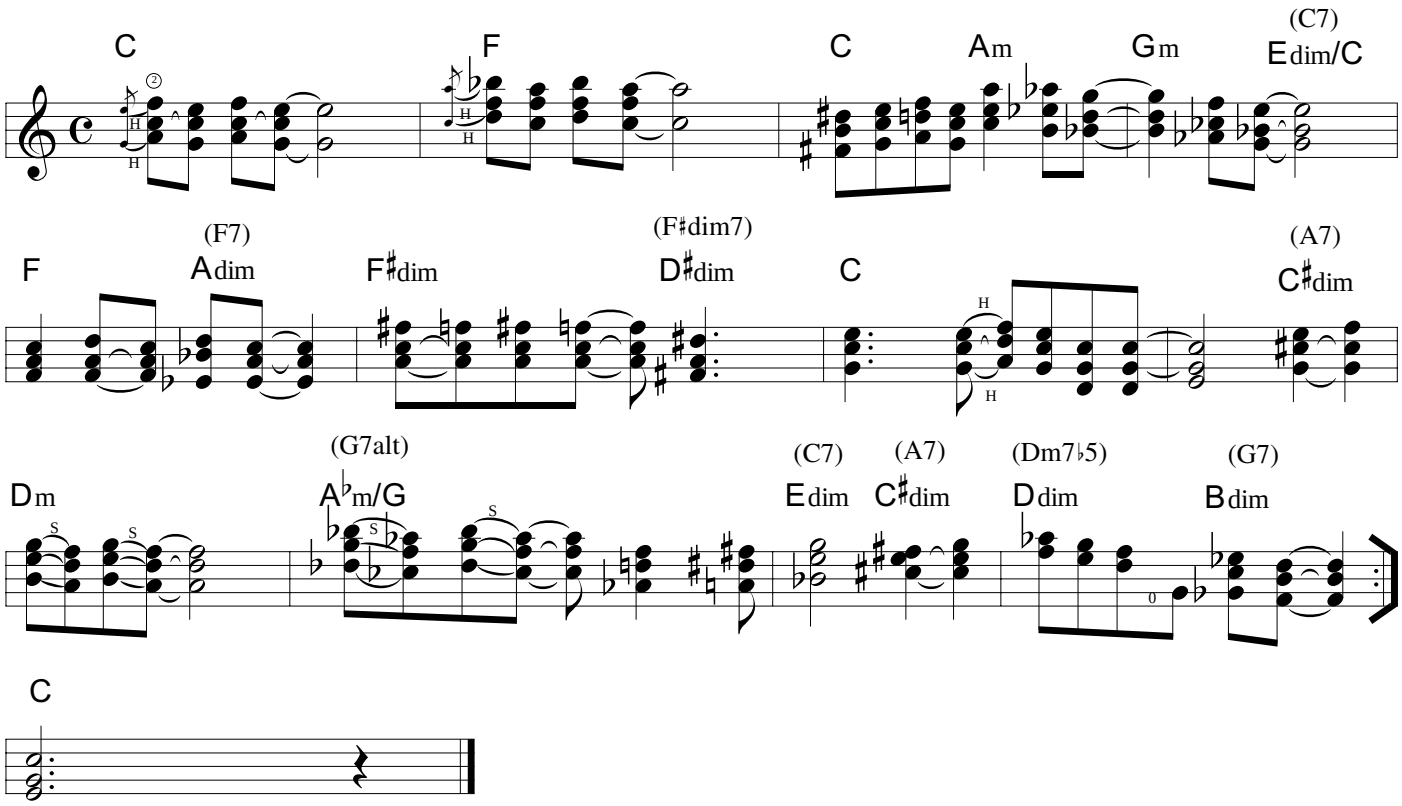
Determining which one of these upper or lower neighbor notes is more appropriate than the others at any given time is another matter that I won't be dealing with till some later chapters but for now try to use your ears.

This type of thing: ..... can become... this ...by using some of the C major triad's neighbor tones.



Here's a little etude that uses some of these ideas. It is played entirely on strings 4, 3 and 2. It is a blues in the key of C major:

Triad Embellishment Etude Blues



Note: Inversion is a universal technique in the sense that any group of pitches, if inverted, will yield several other arrangements of those pitches. Most of these arrangements will be satisfyingly complimentary to the original structure and in many ways may be interchangeable with the original. Some will not. It is worthwhile to experiment with inverting any chord voicing you have learned of which you are fond. The results are often unplayable, at least on the guitar that is, and/or rather harsh sounding but every once in a while a real gem appears.

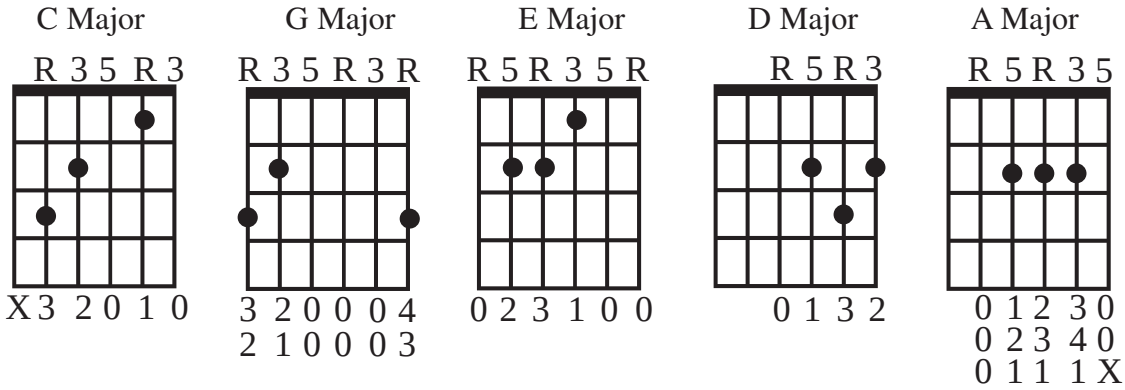
Also, when practicing arpeggiating chords within a jazz solo it is quite useful to learn to arpeggiate the inversions of the chord as well as the root position.

4. Open Position Major Chord Forms

The following chord diagrams are all for major chord voicings in Open Position (I.e. mostly Pos I with use of open strings allowed). Because they use open strings they are not transposable, by simply changing their position on the fretboard, like a movable chord form that uses no open strings is.

Ex. VI.A.4 - 1

Learn the to play the basic major chords forms as written and then attempt to alter their fingerings such that the other triad types are produced where possible.



Note: Using the methods suggested above you will find it impossible to achieve a voicing for the following chords: Cdim, C(♭5), Gdim and G(♭5). All the others should work out OK but the resulting voicings may not be extremely musical sounding, although usually they will be fine. The important thing is that you learn to think on the guitar in this manner. At all times you need to know how the fretted notes in the chords you are playing function within that chord.

5. Open Position - Other Triadic Chord Forms

The following triads all have at least one note that is available as an open string. See what kinds of voicings you can come up with for these chord types in and around Open Position. If you're feeling real adventurous try exploring other areas of the fretboard plus these open strings as well.

Cmaj, D♯/E♭maj, Emaj, Gmaj, Amaj, A♯/B♭maj, Bmaj.

Cm, C♯/D♭m, Dm, Em, F♯m, Gm, G♯/A♭m, Am, Bm.

C♯/D♭dim, Ddim, D♯/E♭dim, Edim, Fdim, F♯/G♭dim, Gdim, G♯/A♭dim, Adim, A♯/B♭dim, Bdim.

Caug, C♯/D♭aug, Daug, D♯/E♭aug, Eaug, Faug, F♯/G♭aug, Gaug, G♯/A♭aug, Aug, A♯/B♭aug, Baug.

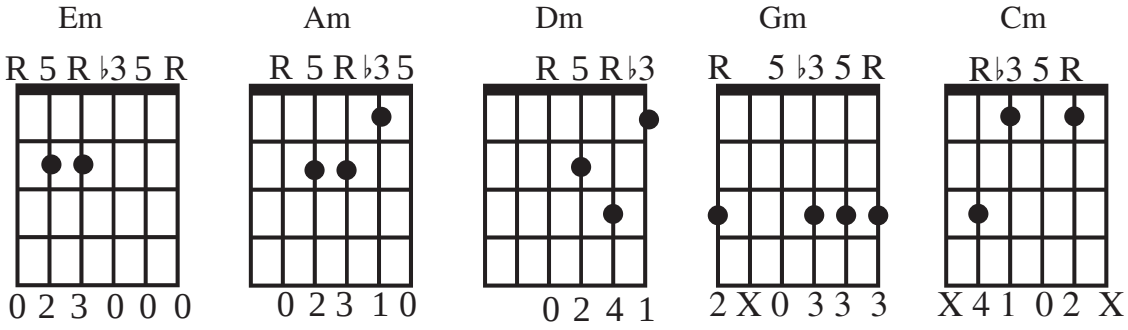
Csus4, Dsus4, Esus4, F♯sus4, Gsus4, Asus4, Bsus4.

Csus2, Dsus2, Esus2, Fsus2, Gsus2, Asus2, Bsus2.

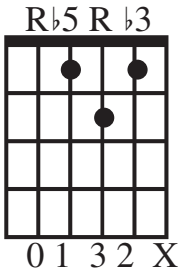
C(sus♭2), C♯/D♭(sus♭2), D(sus♭2), D♯/E♭(sus♭2), Esus♭2), F♯/G♭(sus♭2), G(sus♭2), G♯/A♭(sus♭2), A(sus♭2), A♯/B♭(sus♭2), B(sus♭2).

C(♭5), C♯/D♭(♭5), D(♭5), D♯/E♭(♭5), F(♭5), G(♭5), G♯/A♭(♭5), A(♭5), A♯/B♭(♭5), B(♭5).

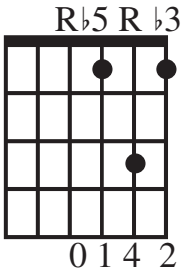
Here are a small number of the possible triad voicings with at least one open string, in and around, Open Position:



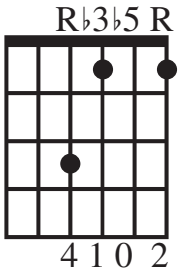
Adim



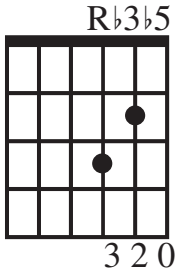
Ddim



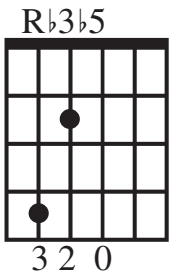
Fdim



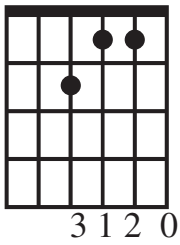
B♭dim



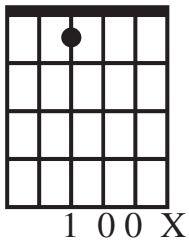
C♯dim



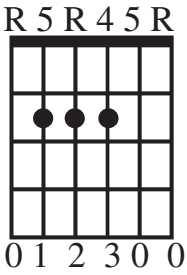
E/G♯/A♭/C aug



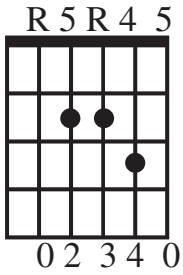
D♯/E♭/G/Baug



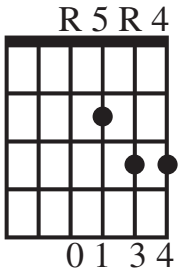
Esus4



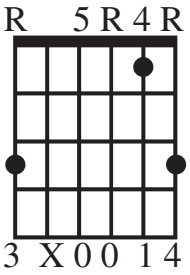
Asus4



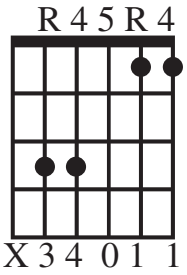
Dsus4



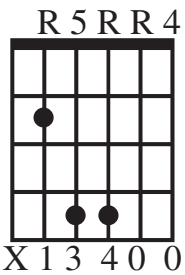
Gsus4



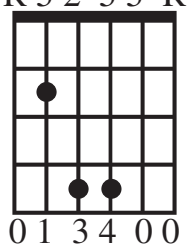
Csus4



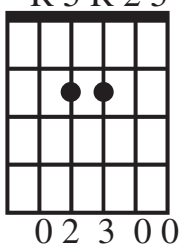
Bsus4



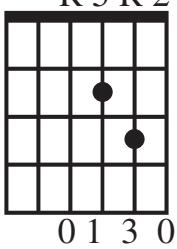
Esus2



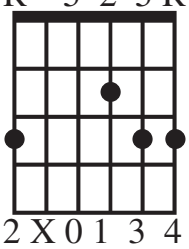
Asus2



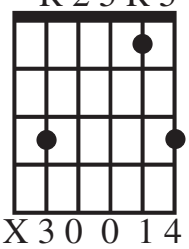
Dsus2



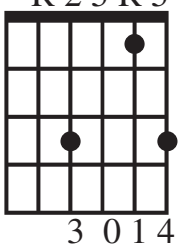
Gsus2



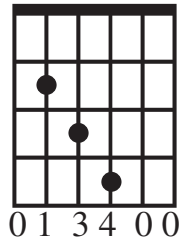
Csus2



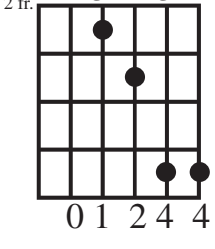
Fsus2



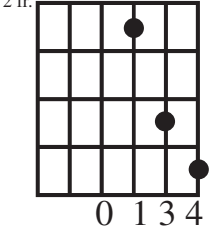
E(sus♭2)



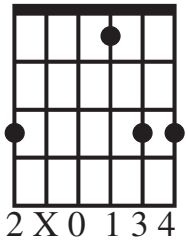
A(sus♭2)



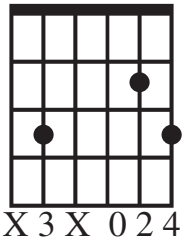
D(sus♭2)



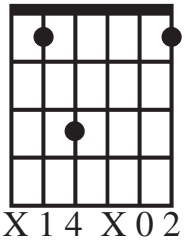
G(sus♭2)

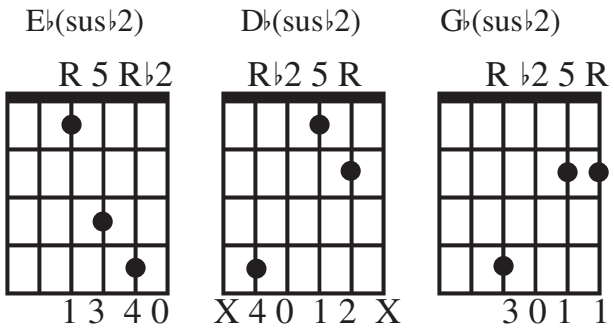


C(sus♭2)



B♭(sus♭2)





The Major triad with a flatted 5th is not used that often so I am omitting it in an effort to save space. There are many other larger chords that do contain a Maj3rd and a ♭5 so I encourage you to experiment with this structure on your own.

a) Palm Muting

When switching between chords with open strings it is often desirable to mute the open strings with the fleshy part of the palm on your picking hand. The intent is to make it sound as if all the strings, whether fretted or not, have stopped vibrating at exactly the same time. This same type of palm mute can be used at strategic times to give the strumming a little bit of a lift, like between beats 2 and 3 or beats 4 and 1 in a Freddie Green style accompaniment.

To be sure, there are many ways to mute open strings when chording. Sometimes it is done with a free finger on the fretting hand. Fingerstyle players have the luxury of using their plucking hand's fingers and thumb as well. The pick + fingers technique employed by many jazz players allows for the 3 free fingers on the picking hand to also be used for muting. Everybody is different. Various musical passages require different approaches. There is no "right" way to do this.

It should also be said that part of the charm of the guitar's sound has to do with open strings sometimes droning away in the background. If you totally eliminate this effect your sound may seem rather dry to some people.

Also, it should be said that it is often impossible to eliminate completely all of these extraneous noises from a performance on the guitar. Guitar is in many ways not as exacting an instrument as many others like the piano. I like to compare this situation to the way audio people talk about "signal to noise ratio". At all times, any given piece of audio gear will suffer from some amount of noise and/or distortion. The equipment designer's job is to make it so that this noise is below the audible threshold. When you play the guitar you have to consciously be aware of every sound coming off of your instrument and to try to make it so that the things you intend your audience to hear are indeed heard clearly and that the things that you don't want them to hear are below the audible range or are masked in some way.

Open string muting will again be touched upon at various other spots in this book.

B. Seventh Chords

1. Construction

A "Seventh" chord is also a tertian structure. We simply add another note to one of the triad types. This fourth note will be a major, minor or augmented 3rd above the triad's 5th (or ♭5 or ♯5). This new note will be seven letter names, and therefore some sort of a seventh interval, above the chord's root, hence the term "Seventh" chord.

C Major 7th = C (Root) E (3rd) G (5th) B (7th)

Some times an inversion of a 7th chord will be named as if the lowest chord tone is actually the root. Here's an example:

A Minor Seventh (Am7) consists of the tones A, C, E, G. It's first inversion is: C, E, G, A.

This chord is usually named C Major 6th (C6) when C is in the bass. The formula for a Major 6th chord should be thought of as: 1 3 5 6. It is still tertian in nature.

See below for some other chords that contain chord degree Maj6.

Here are the formulas for most types of 7th chord (i.e. 4 note tertian structures):

Note: Sometimes a seven with a strike through it (7̶), aka a European seven, is used to indicate a Major 7th interval within a chord symbol. This particular practice should be avoided in my opinion because it leads to confusion when trying to distinguish it from a regular "7" which indicates a ♭7 interval within a chord symbol.

Major 7th	=	1 3 5 7	Written: Cmaj7, C△7, C7̶
Dominant 7th	=	1 3 5 ♭7	Written: C7
Minor 7th	=	1 ♭3 5 ♭7	Written: Cmin7, Cm7, C-7
Minor 7(♭5)	=	1 ♭3 ♭5 ♭7	Written: Cmin7♭5, Cm7♭5, C-7♭5, Cø7 (Half Diminished Seventh)
Diminished 7th	=	1 ♭3 ♭5 𝄫7(6)	Written: Cdim7, C°7, C°
Major 6th	=	1 3 5 6	Written: C6
Minor 6th	=	1 ♭3 5 6	Written: Cmin6, Cm6, C-6
Dom7(sus4)	=	1 4(♯3?) 5 ♭7	Written: C7sus4
Dom7♯5	=	1 3 ♯5 ♭7	Written: C7♯5, Caug7, C+7
Dom7♭5	=	1 3 ♭5 ♭7	Written: C7♭5
Maj7sus4	=	1 4 5 7	Written: Cmaj7sus4, C△7sus4, C7̶sus4 (This chord is rather rare.)
Maj7♯5	=	1 3 ♯5 7	Written: Cmaj7♯5, Caug(maj7), C+(maj7), E/C (Emaj triad with C bass.)
Maj7♭5	=	1 3 ♭5 7	Written: Cmaj7♭5, C△7♭5, C7̶♭5
Dim(maj7)	=	1 ♭3 ♭5 7	Written: Cdim(maj7), B/C (Bmaj triad with C bass)

These are the most common seventh chords used in jazz and pop music. They are all completely tertian in construction except for the two Sus4 chords. To be sure, there are many, many other possible 4 note structures, too many to list here, but most of them are rarely used as chords in their own right within a tonal composition. Quite often though, a group of 4 notes that can not itself be classified as a seventh chord can be seen to be a decoration of one or more of the regular seventh chord types. We shall also see that it is possible to add one or more tensions to triads, a process that will obviously result in a chord with at least 4 notes that is not a seventh chord.

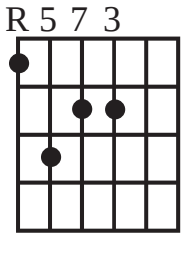
Example: C, E♭, G♯, B (1 ♭3 ♯5 7) can not be classified as a regular 7th chord on it's own but it can be superimposed over a D7 chord to create D7(♭9,♯11,13). This could be thought of as a tertian usage of a non tertian chord. Note: I refer to this chord later as Cm(maj7)♯5 but this is quite an unusual usage.

Example: C D E G can not be classified as a regular 7th chord (because there is no 7th) but it can be seen as functioning as a C(add9) chord. This could be thought of as a tertian usage of a non tertian chord.

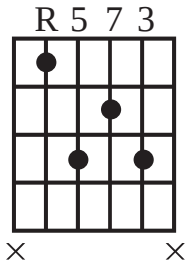
2. Movable 7th Chord Forms

The following Maj7 chord forms use no open strings and therefore can be transposed by simply changing their position on the fretboard.

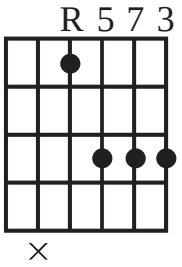
Rt. 6 - Maj7 - Tp. 1



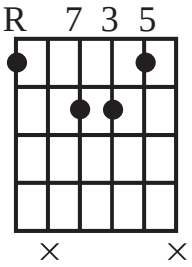
Rt. 5 - Maj7 - Tp. 1



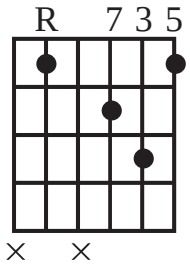
Rt. 4 - Maj7 - Tp. 1



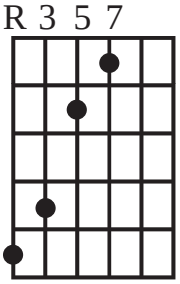
Rt. 6 - Maj7 - Tp. 2



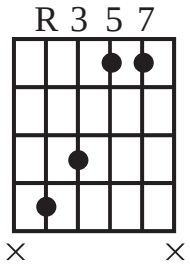
Rt. 5 - Maj7 - Tp. 2



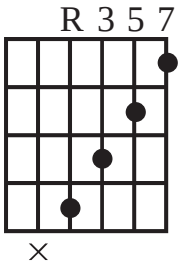
Rt. 6 - Maj7 - Tp. 3



Rt. 5 - Maj7 - Tp. 3



Rt. 4 - Maj7 - Tp. 3



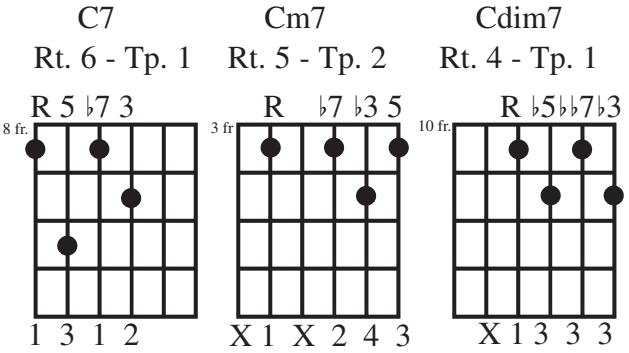
Ex. VI.B.2.-1

Change the fingerings of these Maj7th chord voicings into all the other 7th chord types by raising or lowering the relevant chord tone(s) according to the 7th chord formulas presented at the beginning of this sub-chapter. Some of the forms will be impossible to play but most will be fine. Some of the ones that seem too difficult at first will get easier with practice. Some voicings built off of the 6th string may sound muddy when played in the lower ranges. These will sound better if played higher up the fretboard.

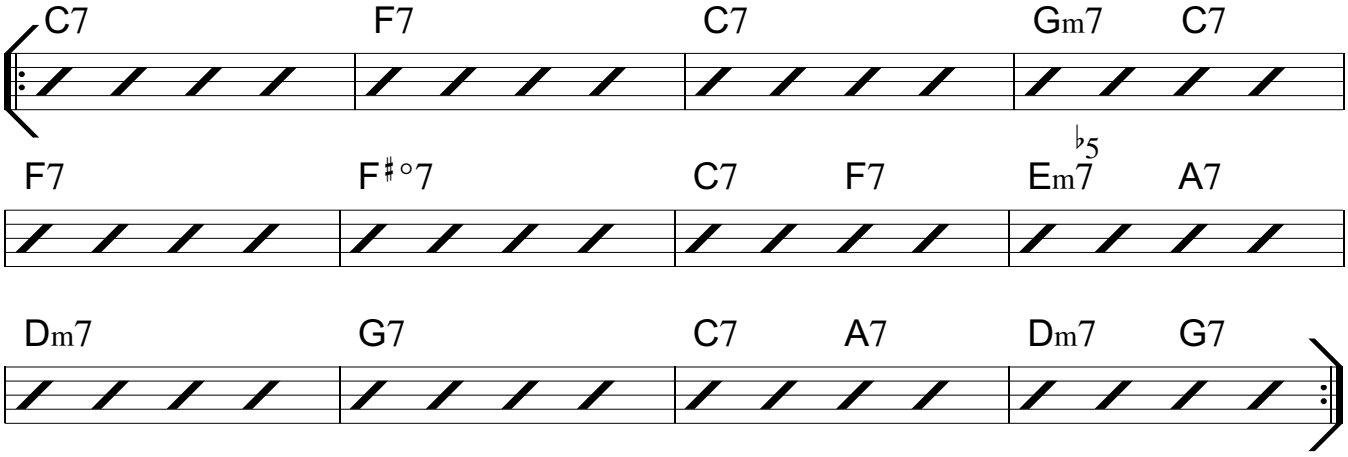
Try to get fingerings that allow you to strum the chord, i.e. any unused strings are either muted or simply not struck with the pick. Try also to look for fingerings that can only be played finger-style or pick + fingers.

Feel free to write out your own chord diagrams for these new chord forms if it helps you to remember them. It would be a shame if every time you wanted to play Cdim7 you need to play Cmaj7 first! Anything you can do that will help you memorize, execute and understand a great variety of chord voicings is a good thing.

Examples:



Ex. VI.B.2.-2



This is the 12 bar jazz blues progression I mentioned earlier. It is probably the single most important chord progression in the jazz repertoire. Learn it well.

1. Figure out as many ways as you can to play each of these chords then look for logical ways to join them together just like we did earlier with the movable triadic chord forms.
2. Go through the entire progression using one of the chord types with the root on the 6th string.
3. Go through the entire progression using one of the chord types with the root on the 5th string.

Etc., Etc.

4. Start on the 6th string for the 1st chord and then go to the 5th string for the next chord etc., etc.

Note: When switching between the Rt. 6 - Tp. 2 forms and the Rt. 5 Tp. 1 forms, the 3rd, 5th and 7th of each chord will be found on the same group of three strings while the roots alternate from string to string. This often results fairly good voice leading without much conscious effort.

The same effect occurs when alternating the Rt. 5 - Tp. 2 forms with the Rt. 4 - Tp. 3 forms.

5. Then transpose the chord progression into all 12 possible keys.

6. Learn to play this chord progression using only triads according to the chord simplification suggestions I presented earlier. (Ex. VI.A.3.-15) (i.e. Use this chord progression to review everything we've talked about regarding chords up to this point.)

When playing with a bass player it is often not necessary for the guitar player to play the roots. Try leaving the roots out of these chords.

Notice anything familiar?

A Dominant 7th chord is really just a Dim triad with a bass note added to it, a Maj3rd below it's root. (I.e. C7 = Edim/C)

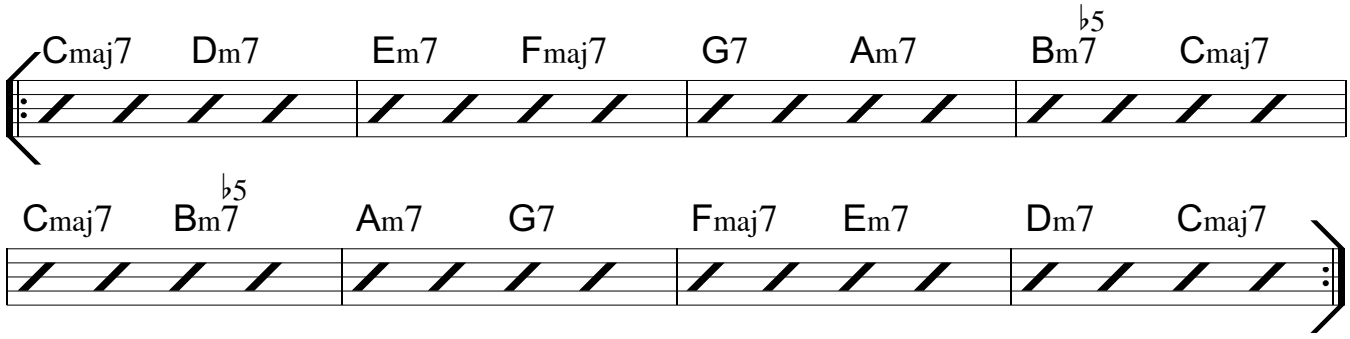
A Minor 7th chord is really just Major triad with a bass note added to it, a Min3rd below it's root. (I.e. Gm7 = B♭/G)

A Minor 7♭5 chord is really just a Minor triad with a bass note added to it, a Min3rd below it's root. (I.e. Em7♭5 = Gm/E)

Etc.

Hopefully you can see why it's so important to know your triads really well!

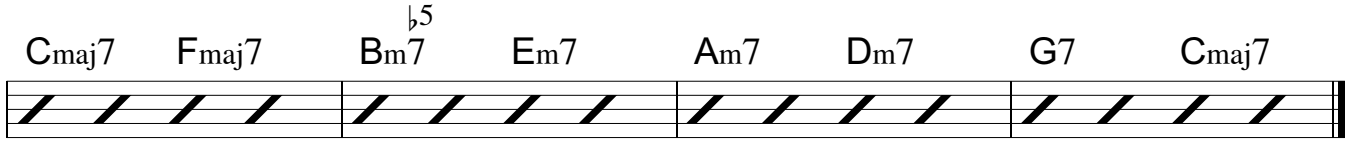
Ex. VI.B.2.-3



These are the diatonic seventh chords of the C major scale (see below) going through a step-wise progression. Use the techniques we've discussed to find many different ways to play these chords.

Transpose to all 12 keys.

Ex. VI.B.2.-4



These are also the diatonic 7th chords from C major but the chord's roots are moving through a cycle of 5ths like they often do within a real tune. Figure out many many ways to negotiate these chords then transpose to all 12 keys.

Ex. VI.B.2.-4

At the back of this chapter are chord charts for several jazz standards. learn to play these progressions with as many grips as you can muster.

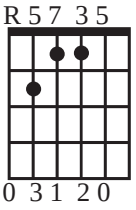
Note: If you think you now have a good handle on how 7th chords are contructed and executed on the guitar it would be a good idea to jump to Chapter VIII - Shell Voicings. The sound of the shell voicings is much more in line with the sound that jazz players actually use compared to the voicings that we've seen up to now. Plus they're easier!

3. Open Position 7th Chord Forms

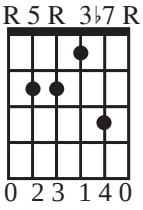
The following chord diagrams catalogue only some of the possibilities for seventh chords in and around Open Position. They all use at least one open string and therefore are not "movable". They all have all 4 chord tones (i.e. no omissions) except for one or two of them where I have omitted the 5th. There are many, many more possibilities for seventh chords with open strings when you use the entire fretboard and I encourage you to hunt for others.

Please experiment with your own fingerings for these chords as well.

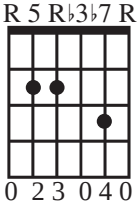
Emaj7



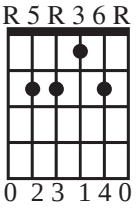
E7



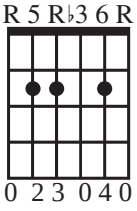
Em7



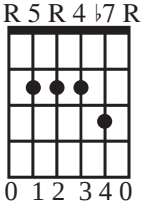
E6



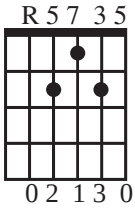
Em6



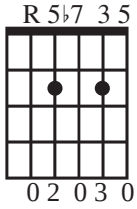
E7sus4



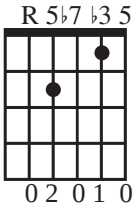
Amaj7



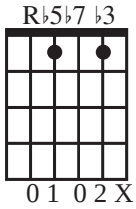
A7



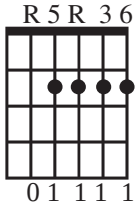
Am7



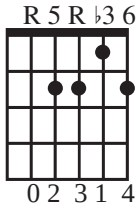
Am7♭5



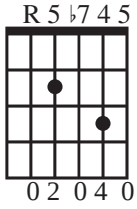
A6



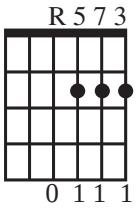
Am6



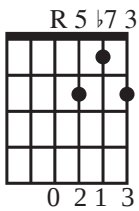
A7sus4



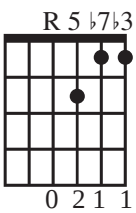
Dmaj7



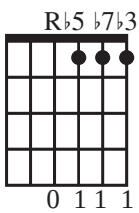
D7



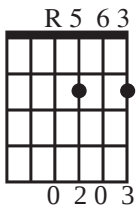
Dm7



Dm7♭5



D6



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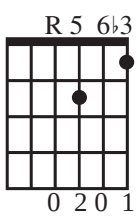
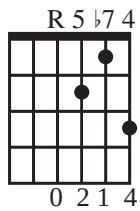
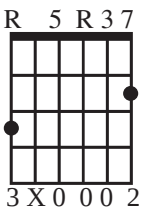


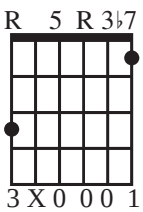
D7sus4



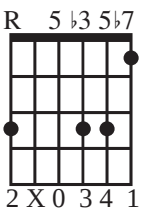
Gmaj7



G7



Gm7



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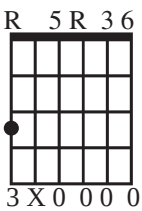

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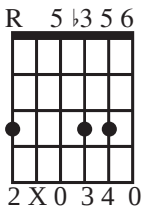
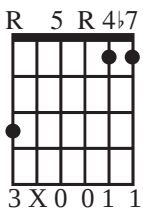
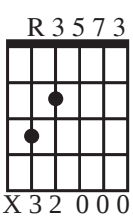


G7sus4



Cmaj7



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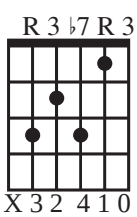

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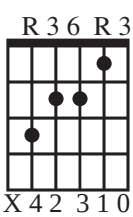
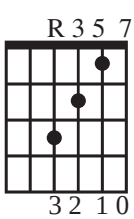
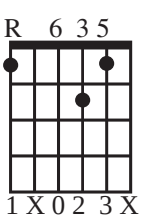


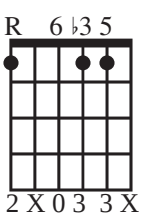
Fmaj7



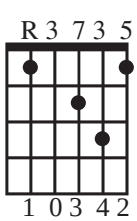
F6



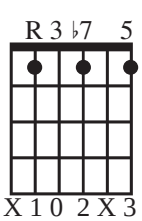
Fm6



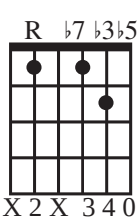
B♭maj7



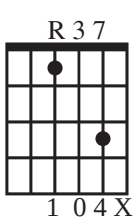
Bb7



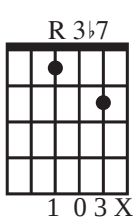
B♭m7♭5

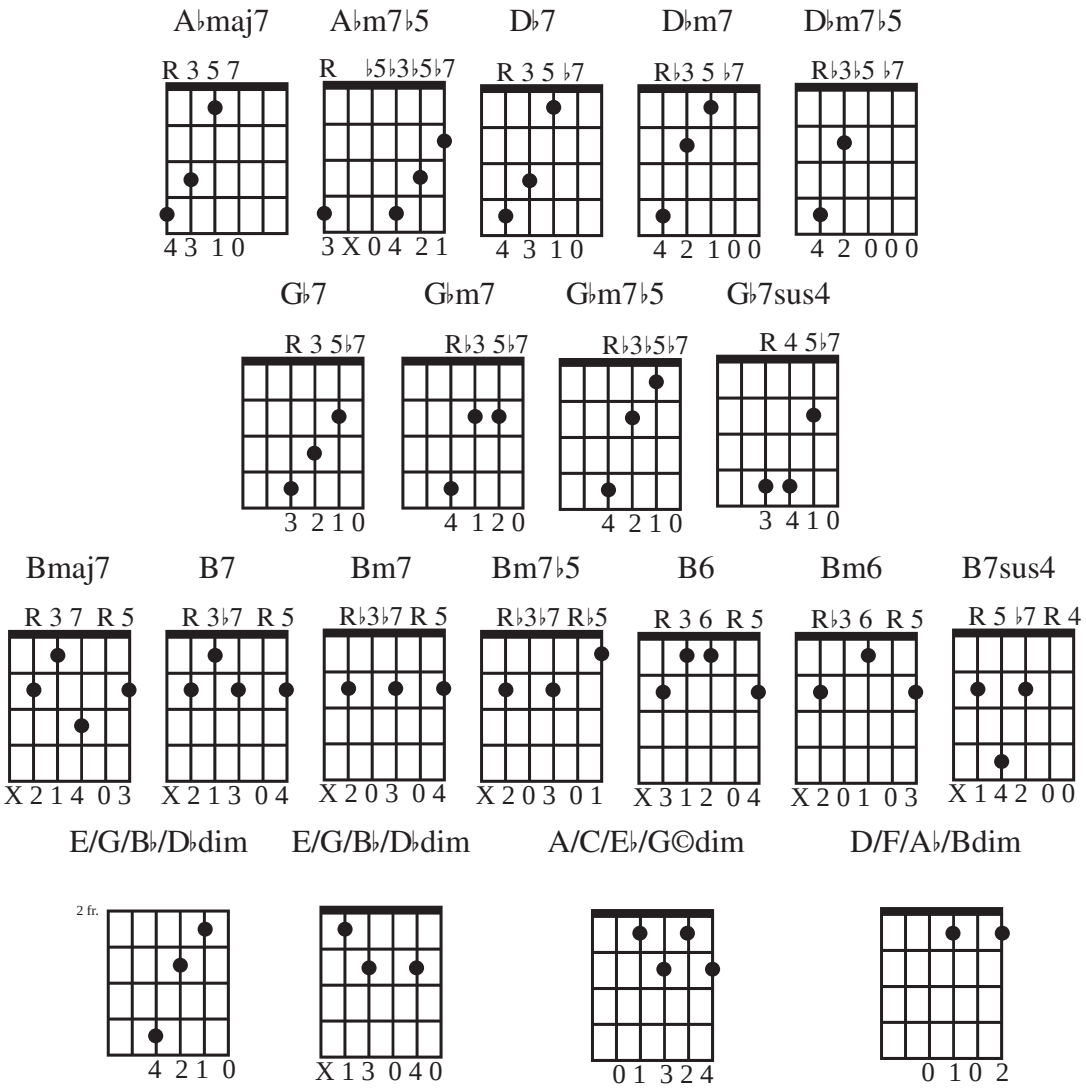


E♭maj7



E♭7





Note: Almost every chord presented so far (except for those in the triad inversion exercises) has been in Root Position. This is only the tip of a very, very big iceberg!

C. Chords With Added Tensions (briefly)

1. Construction

Definition: Available Tension = A Non Chord Tone that tends to blend vertically into the chord in a pleasing manner when sustained for a long duration or accented. An Available Tension tends to become a part of whatever chord it is sounded against.

The tertian chord building process can be continued in the same fashion we have used for triads and seventh chords to include 3 more notes. The largest chord that this process will yield will have 7 notes although we will find many ways around this limitation eventually.

The first new note will be some sort of a 9th above the root. (1 3 5 7 9)
The next note in the series will be some sort of an 11th above the root (1 3 5 7 9 11)
The last note will be some sort of a 13th above the root. (1 3 5 7 9 11 13)

9ths are called compound intervals because they span more than a single octave. The pitch names for 9ths and 2nds are the same.

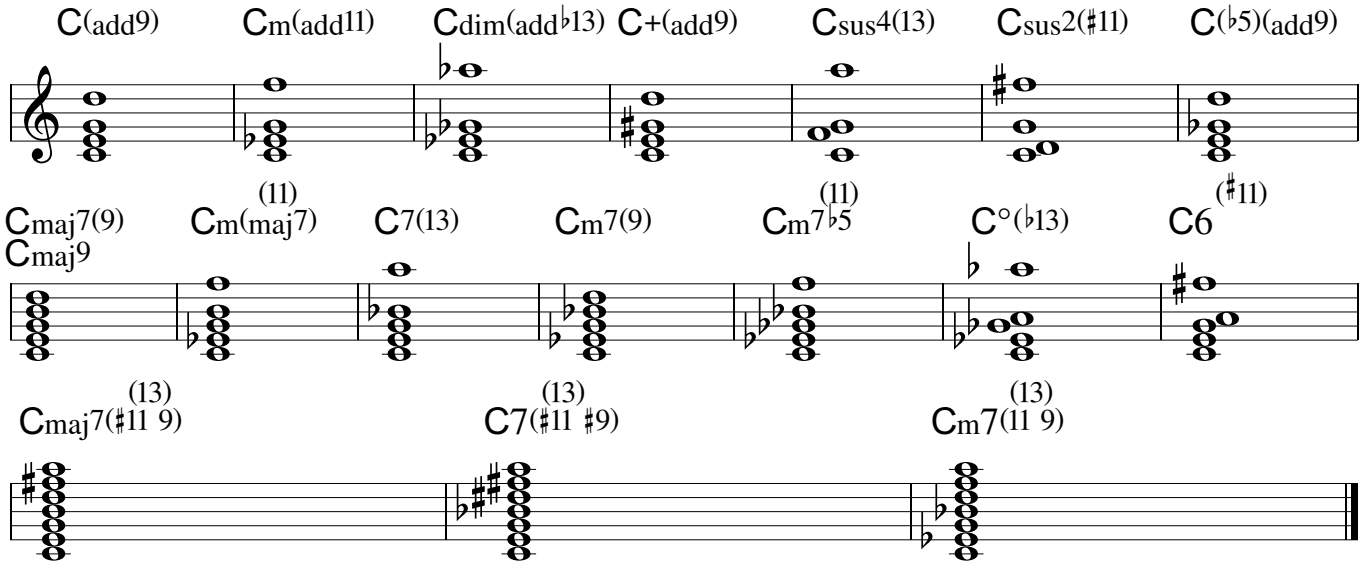
11ths are also compound intervals. The pitch names for 11ths and 4ths are the same.

The pitch names for 13ths and 6ths are also the same.

The various chord types have different tensions available for reasons that we will discuss later (see: Chord Scales Via Modal Theory (Parts 1 and 2).

For example: Most chords that have a major 3rd will not support Tension 11. The note F natural does not blend into a Cmaj7 chord or a C7 chord in a pleasing fashion, in most situations. However, the note F♯ does blend in. So we say that ♯11 is an "Available Tension" on a Major 7th chord or on a Dominant 7th chord. P11 is called an "Avoid Note" on a Major 7th chord or on a Dominant 7th chord. etc.

Here are just a few examples of triads and seventh chords with tensions added. We will not be playing any of these structures until the chapter titled "Shell Voicings". Feel free to jump ahead. Feel free to experiment on your own.



D. Simple Diatonic Harmony

For our purposes the term "diatonic" will mean "found within the major scale". For more specific definitions of this term and any other classical terms appearing in this book I would hope that you will consult a reputable reference book. We do not always use these terms in the "legit" way within the jazz community.

In the course of this book we will be looking at several scales and constructing tertian chords (as well as other types, eventually) from their constituent tones. The first of these scales is the Major scale.

Most of the music we in the West have grown up listening to is derived from the major scale in one form or another. Most popular music and most of the classical music for about the last 500 years has been written within a system called "Tonality". Very generally speaking, "tonality" is the system of composing music that is based around a "tonal centre". In classical music, up until approximately the early 20th Century, the idea of a tonal centre was inextricably tied up with the major/minor scale systems. Therefore any music that is not based on the major/minor scales is not really "tonal" in nature.

Much of the terminology used in the jazz community is mixed up with legit terminology but the terms are often not used in exactly the same ways. We are much looser about the idea of a tonal centre for instance. Many jazz players conceive of a tonal centre as being just that .... a tone that is the centre of melodic and harmonic activity. This tonal centre may or may not be related to the major/minor scale system. We might have other scales in mind. Contemporary classical composers have also explored these areas so this is by no means specifically a jazz thing.

Again, I encourage you to do some research within some good classical reference texts.

Back to the task at hand now.

If we build tertian chords off of each note of a major scale and use only notes that are members of that scale we find that we get the following arrangement of chord types:

Scale Degree	Chord Type	Examples From The C Major Scale
I	Major	Cmaj
II	Minor	Dmin
II	Minor	Emin
IV	Major	Fmaj
V	Major	Gmaj
VI	Minor	Amin
VII	Diminished	Bdim

This pattern is the same with every major scale.
Imaj, IIm, IIIm, IVmaj, Vmaj, VIm and VIIdim.

When a melody and a chord progression is seen to consist primarily of notes that are found within a particular major or minor scale we say that the piece is in the "key" (another classical term with some very specific connotations) of the "tonic" of the scale. Chord progressions are usually analyzed in terms of how the chords relate to the key (or keys) of a piece.
The study of harmony is quite vast. I am only touching superficially on this subject and again I must encourage you to do some research into this subject on your own. This is definitely not a harmony text!

I highly recommend Gordon Delamont's great series - Modern Harmonic Technique - Kendor Music Inc.
There is also a very good book by Allan Michalek called Modern Harmonic Progression that is used as one of the main jazz harmony books at Humber College in Toronto. I believe that this book must be purchased directly from Humber though.

We say that "in the key of G major the I chord is Gmaj". "The V chord in G is Dmaj". "The II chord in G is Am". Etc.
In B♭ major: the V chord is Fmaj and the IV chord is E♭maj. Etc.

This same technique is used to construct seventh chords on the scale degrees of the major and minor scales. We find the following pattern with the diatonic seventh chords:

Imaj7, IIm7, IIIm7, IVmaj7, V7, VIm7 and VIIm7♭5

Again this pattern is universal to all major scales and major keys.

The III chord in B♭ major is Dm7. The IV chord in D♭ major is G♭maj7. The VI chord in E major is C♯m7. Etc.

Minor key harmony is much more complex. I will not be dealing with this subject within these pages although later on I might analyze some tunes that happen to be in minor keys. Hopefully your extra-curricular studies of harmonic analysis techniques will jibe with mine and you will understand my analyses.

One of the ways to determine what key a chord progression is in and therefore what scale is appropriate to create melodies from over those chords is to look for spots where the chords fit into these diatonic patterns.

Here's some things to notice about the pattern of the diatonic triads and diatonic seventh chords:

There is only one spot within the pattern of the diatonic triads where we find two major chords whose roots are a whole step apart. Between IV and V. Therefore, if you see a progression that has two major triads a whole step apart it is a pretty good indication that the lower chord might be IV with the upper chord as V. Even if the chords are not actually functioning as IV and V the appropriate chord-scale for melodic improvisation will most likely be a mode of the major scale built on what would be I.

Examples:

F to G is probably IV to V in C major. Modes of the C major scale are probably the best chord-scales.

C to B♭ is probably V to IV in F major. Modes of the F major scale are probably the best chord-scales.

Etc.

There is only one spot where we find two minor chords whose roots are a whole step apart. Between IIm and IIIm. Therefore if you see a progression that has two minor triads a whole step apart it is a pretty good indication that the lower chord might be functioning as IIm with the upper chord as IIIm.

Examples:

Dm to Em is probably IIm to IIIm in C major. Modes of the C major scale are probably the best chord-scales.

Gm to Fm is probably IIIm to IIm in E♭ major. Modes of the E♭ major scale are probably the best chord-scales.

Etc.

There is only one spot where we find a major triad whose root is situated a semi-tone above the root of a minor triad. Between IIIm and IV. Therefore if you see a progression that has a minor triad a semi-tone below a major triad it is a pretty good indication that the lower chord might be IIIm with the upper chord as IV.

Examples:

Em to F is probably IIIm to IV in C major. Modes of the C major scale are probably the best chord-scales.

D♭ to Cm is probably IV to IIIm in A♭ major. Modes of the A♭ major scale are probably the best chord-scales.

Etc.

There is only one spot where we find a major triad situated a P4th above (P5th below) a minor triad. Between IIm and V. Therefore if you see a progression that has a minor triad moving up a 4th to a major triad it is a pretty good indication that the first chord might be IIm and the second chord is V. Etc.

Examples:

Dm to G is probably IIm to V in C major. Modes of the C major scale are probably the best chord-scales.

A to Em is probably V to IIm in D major. Modes of the D major scale are probably the best chord-scales.

Etc.

There is only one diminished triad found within the diatonic triads. Therefore many (not all or even most in this particular case) diminished triads are VIIdim.

There are two spots where we find a minor chord situated a whole step above a major chord. Between I and IIm and also between V and VIm. Therefore when you see this pattern there are two possible keys or scales. More information is needed to determine the right one.

Example:

C to Dm could be I to IIm in C major or V to VIm in F major. Etc.

However if the major chords are seventh chords the choice is much clearer.

Examples:

Cmaj7 to Dm could only be Imaj7 to IIm in C major.

C7 to Dm could only be V7 to VIm in F major.

There are two spots where we find a minor chord situated a major 3rd above a major chord. Between I and IIIm and also between IV and VIm. Therefore when you see this pattern there are two possible keys. More information is needed to determine the right one.

Examples:

C to Em could be I to IIIm in C major or IV to VIm in G major. Etc.

Am to F could be VIm to IV in C major or IIIm to I in F major.

Even if the chords are seventh chords the choice is not any clearer.

Example:

Cmaj7 to Em7 could still be Imaj7 to IIIm7 in C major or IVmaj7 to VIm7 in G major.

There are two spots where we find a minor chord situated a P4th above (P5th below) another minor chord. Between VIm and IIm and also between IIIm and VIm. Therefore when you see this pattern there are two possible keys. More information is needed to determine the right one.

Examples:

Em to Am could be IIIm to VIm in C major or VIm or IIm in G major.

Dm to Am could be IIm to VIm in C major or VIm to IIIm in F major.

There are two spots where we find a major chord situated a P4th above (P5th below) another major chord. Between I and IV and also between V and I. Therefore when you see this pattern there are two possible keys. More information is needed to determine the right one.

Examples:

C to F could be I to IV in C major or V to I in F major.

C to G could be I to V in C major or IV to I in G major.

However if the major chords are seventh chords the choice is much clearer.

Examples:

Cmaj7 to F could only be Imaj7 to IV in C major.

C7 to F could only be V7 to I in F major.

There are three spots where we find a major chord situated a minor 3rd above a minor chord. Between IIm and IV, between IIIm and V and also between VIm and I. Therefore when you see this pattern there are three possible keys. More information is needed to determine the right one.

Examples:

Dm to F could be IIm to IV in C major or VIm to I in F major or IIIm to V in B♭ major.

C to Am could be I to VIm in C major or V to IIIm in F major or IV to IIm in G major.

However if the major chords are seventh chords the choice is a little clearer.

Examples:

Dm to Fmaj7 could be IIm to IV in C major or VIm to Imaj7 in F major.

Dm to F7 could only be IIIm to V7 in Bb major. Etc.

See what other “key clues” (scale clues) you can discover within the diatonic triad and seventh chord patterns.

E. Elementary Voice Leading

The concept of voice leading is perhaps the single most important one of all of Western classical music's harmonic technique. Theorists and composers had deduced an elaborate system of voice leading "rules" which, if adhered to, would result in aesthetically pleasing sonorities within the classical style. The rules are based upon the idea that certain intervals are "dissonant" and require resolution to intervals which are "consonant". These are two terms that I do not want to address here. Again, look elsewhere please. These rules pre-date 12 Tone Equal Temperament but are adhered to even within the new tuning system. The development of chord progression as we know it today is a result of the great classical composers' explorations of these aesthetic guidelines, in my opinion.

We, at the end of the 20th Century, are the heirs of this great intellectual exploration and we find that many of the aesthetic achievements of the past are available to us today more or less subconsciously. We "hear" certain chord progressions as being musical, or strong, or right, because we have heard them before and because we are used to and enjoy the sound of these sonorities unfolding in this particular manner.

As the years have gone by it has become common practice among contemporary musicians to be rather lax with the original set of rules that was responsible for this growth in the repertoire of available harmonic progressions. We find now that after 500 years or so of the 12 Tone Equal Temperament system that pretty much anything goes, as long as the composer and his audience find the results musically appealing.

I find that in modern music the single most important criteria for whether a progression, a melody, or even an entire piece works aesthetically is whether there exists some thread of logical coherence that can be felt to be running through the music. We are much more forgiving than the music fans of Bach's time!

This thread of coherence can be achieved by means of rhythmic repetition and rhythmic development as is seen in much of today's dance music. It can be achieved by means of patterned tonal and harmonic sequences. It can be achieved by means of patterned dynamic sequences. Etc. I find that music can often be made to be a sort of an aural representation of certain mathematical phenomena like symmetry and that this underlying mathematics is often enough to achieve this coherence in a passage or a piece. Of course if there is no emotional content or emotional response from an audience or if the music is not appealing in some indefinable way it will all be for naught.

For our purposes the concept of "voice leading" will simply mean joining chords together in the smoothest manner with the least amount of leaping between voices.

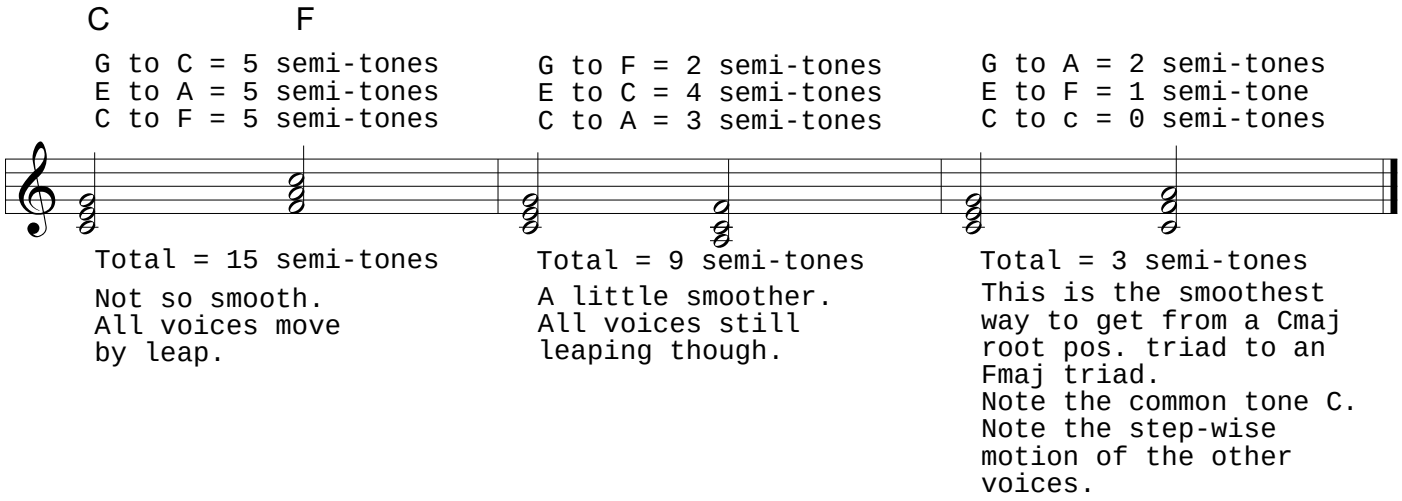
A "voice" will mean simply a chord tone in it's relation to the highest note of a chord's voicing. The highest note in a chord (usually the melody) will be labeled as the 1st voice. Also called "the lead". The next lowest note in the chord will be called the 2nd voice. Etc.

Voice leading should ideally result in a progression where each voice has it's own melodic logic.

Again I must reiterate that the way that I am dealing with voice leading here is an EXTREME simplification. This concept is DEEP and should be explored on it's own merits. The subject of tonal harmony itself is usually taught as being pretty much synonymous with the subject of voice leading. Again, I refer you to Gordon Delamont's - Modern Harmonic Progression.

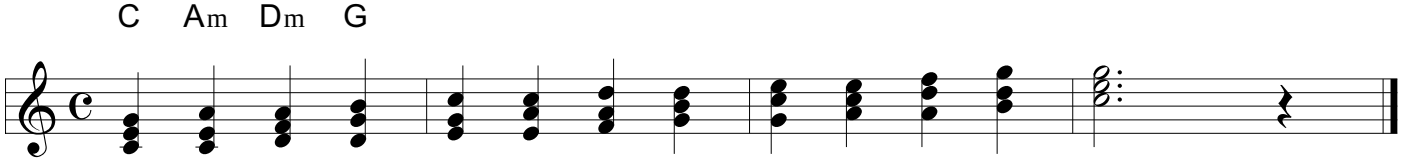
For the time being we will be looking at how to voice lead chords as if no particular melody is being harmonized. This is, of course, not realistic. In the real world, harmony and voice leading is about supporting a melody. We are simply looking for the potential points where the notes of one chord can join smoothly into the notes of the next chord.

When we attempt to voice lead close voiced triads in this fashion we will simply add up all the semi-tone movements involved in the various choices available to us and the choice with the least number of semi-tones involved will be deemed the smoothest choice. In other words we are trying to avoid leaps within a single voice. A leap will be defined as any interval larger than an augmented 2nd.

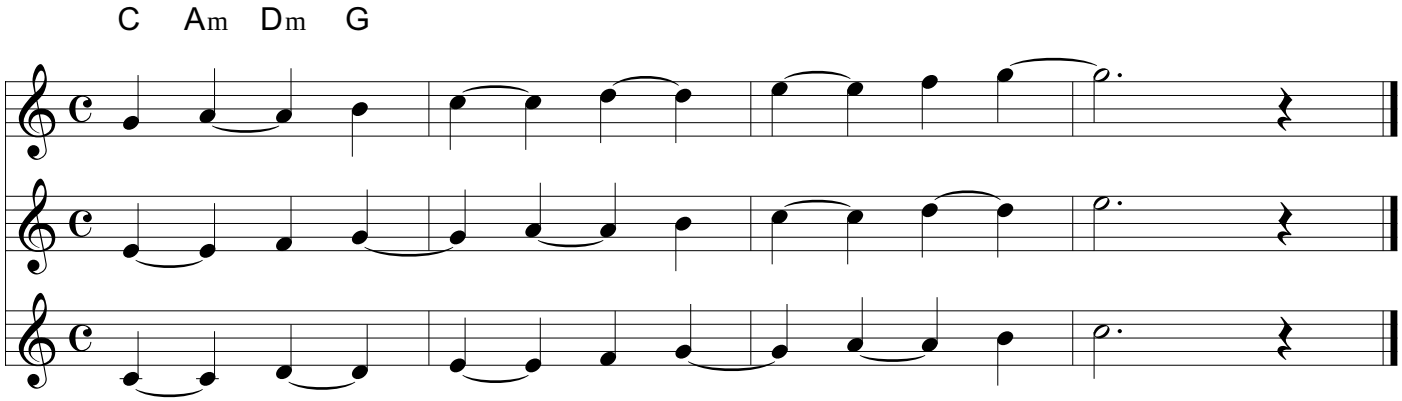


The first thing to look for is common tones. By keeping the common tones in the same voice you will almost always get the smoothest voice leading.

Here is the voice leading for the much used I VIm IIm V progression. Notice how it is different each time and tends to move, overall, in an upward direction.



This can and should be visualized as three separate melodic lines.



As you work on your melodic improvisation skills this concept will prove to be of the utmost importance. We usually strive, at the point of a chord change, to join the chords together by common tone or by step within our melodic lines. This adds a level of coherence to our lines. It is also because when joining chords by step it is actually much easier to achieve musically satisfying results than it is by leaping. Leaping from chord to chord is generally much more difficult to make sound musical.

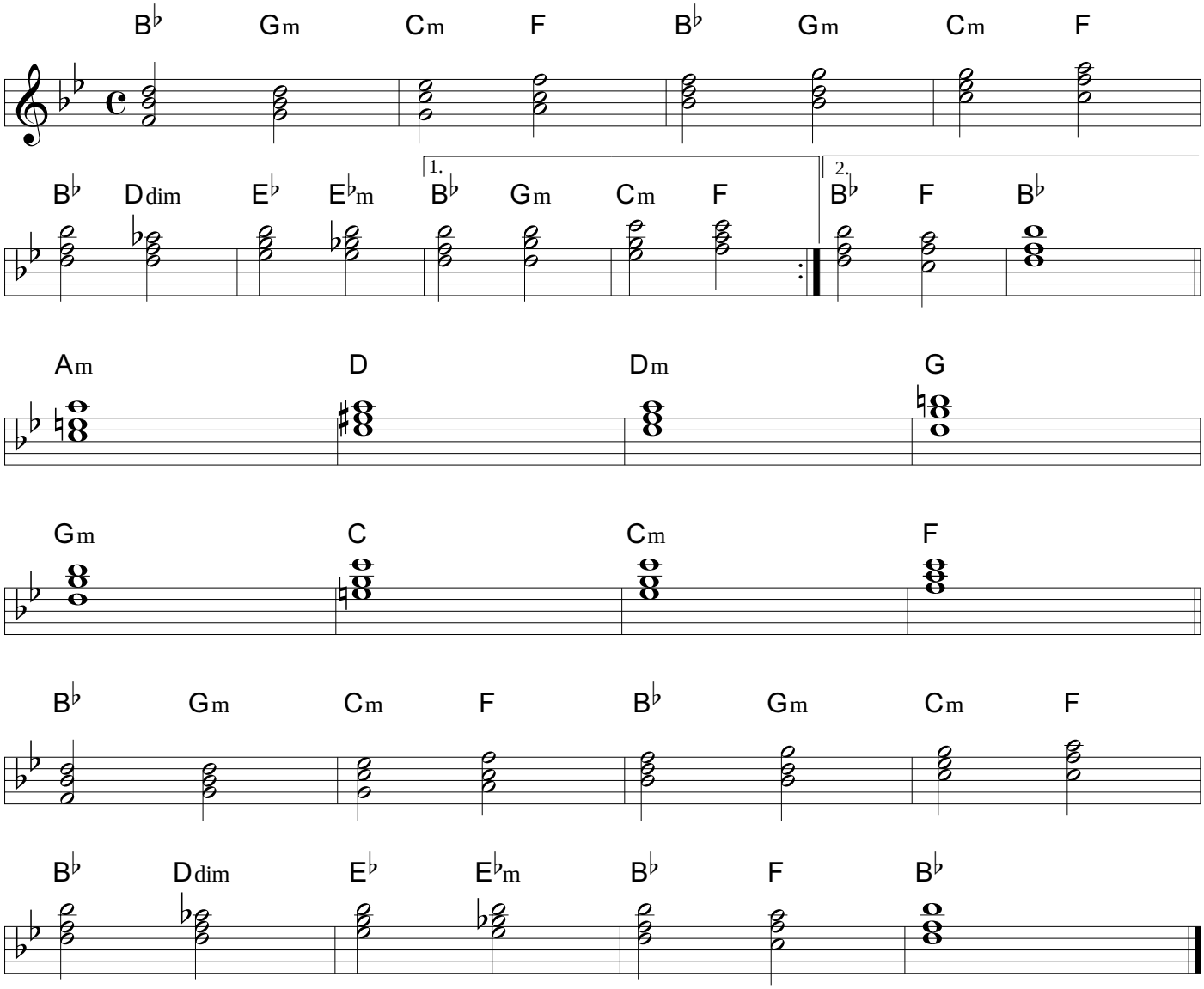
Here's a voice lead triadic version of "Rhythm Changes" in B♭.

The term Rhythm Changes refers to a chord progression that closely resembles the chords from George Gershwin's classic tune I Got Rhythm. The original I Got Rhythm has a slightly different form from the set of changes that most jazz musicians use when speaking of Rhythm Changes however.

The tune is usually played with seventh chords and sixth chords rather than triads. I have jumped down an octave after the first repeat so that the chords do not get into a range that is too high to be practical.

Notice the lines formed by the individual voices.

Attempt something similar with several other standards.



F. Changes To Some Standard Tunes

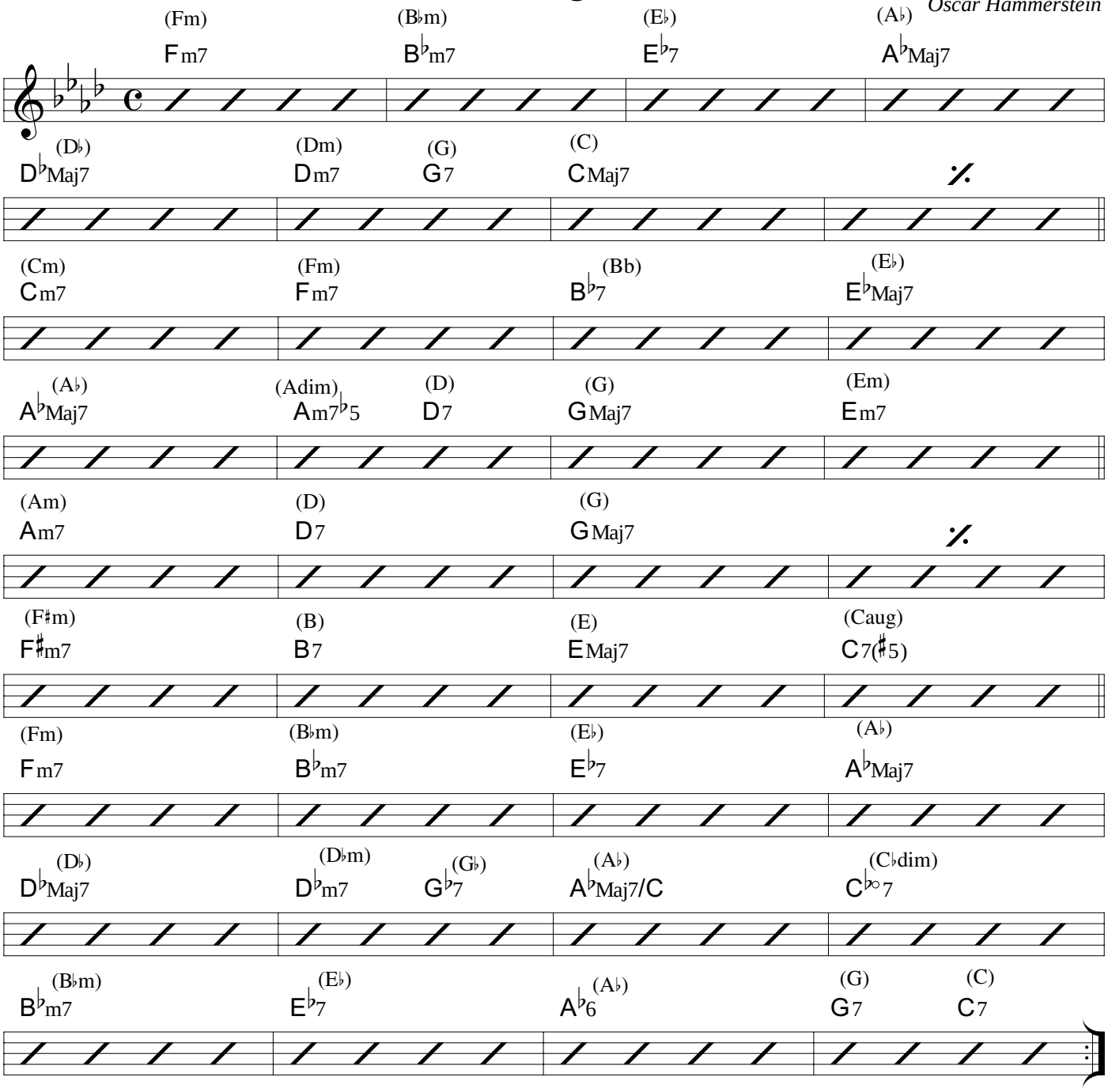
Here are the chord changes to some standards. I have chosen these particular tunes because within their forms are many of the common progressions that occur within many, many other tunes.

Learn them well.

1. Work out and memorize many different fingerings for each of the 7th chord types in these progressions.
2. Work out many logical and musical sounding ways to get from one chord to the next.
3. Play triadic versions of the 7th chords (Eg. Cm7♭5 = Cdim), as indicated, on the various possible 3 string groups and figure out how to voice lead one triad into the next etc.
4. See if you can find a lead sheet, in a fake book, for these tunes and try to learn the melodies as well as the chords. I am not printing the melodies here for copyright reasons.
5. If the tune has lyrics learn them too!
6. Memorize the progressions.
7. Transpose these progressions into all twelve keys and play them from memory.

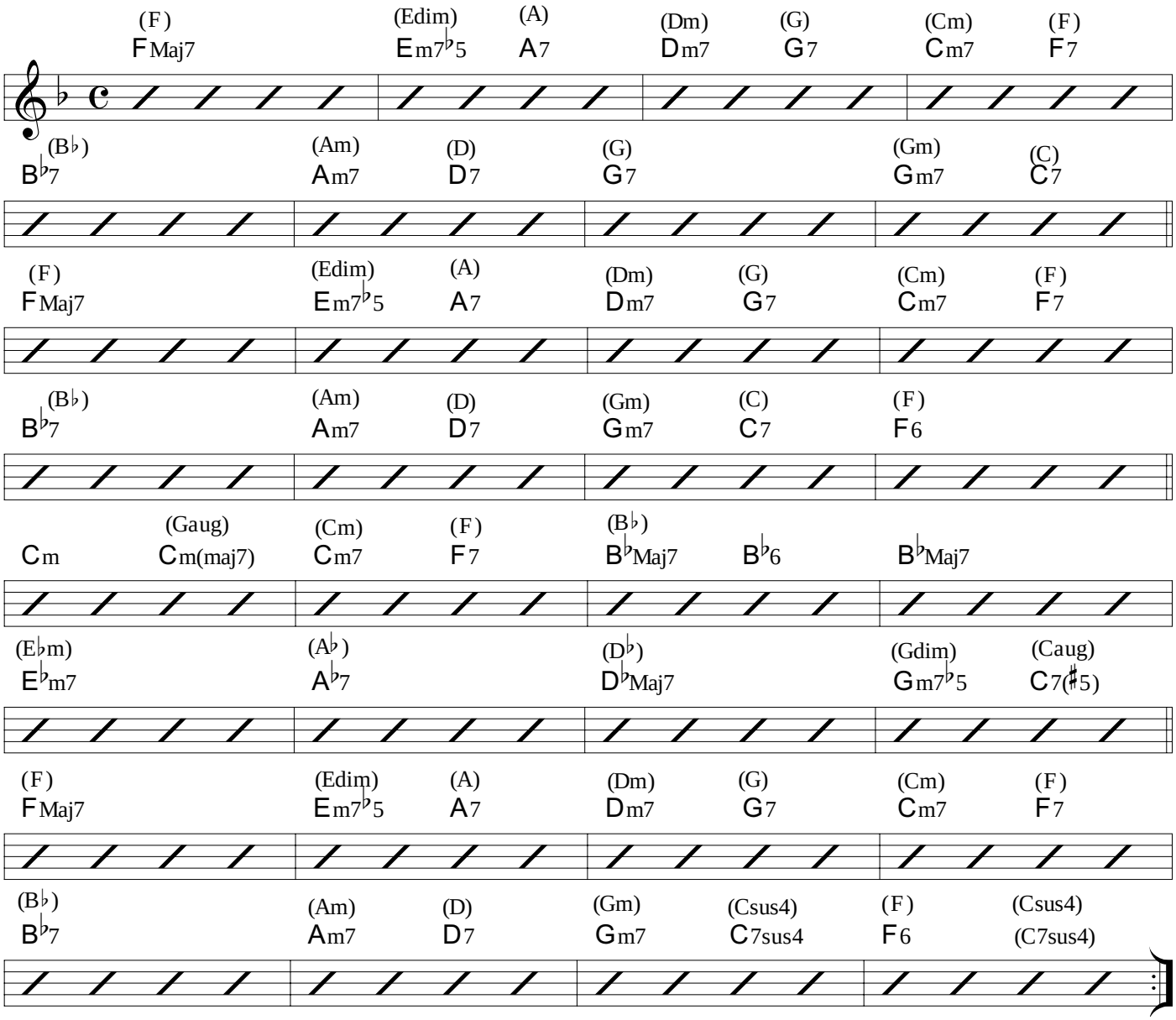
All The Things You Are

Jerome Kern
Oscar Hammerstein



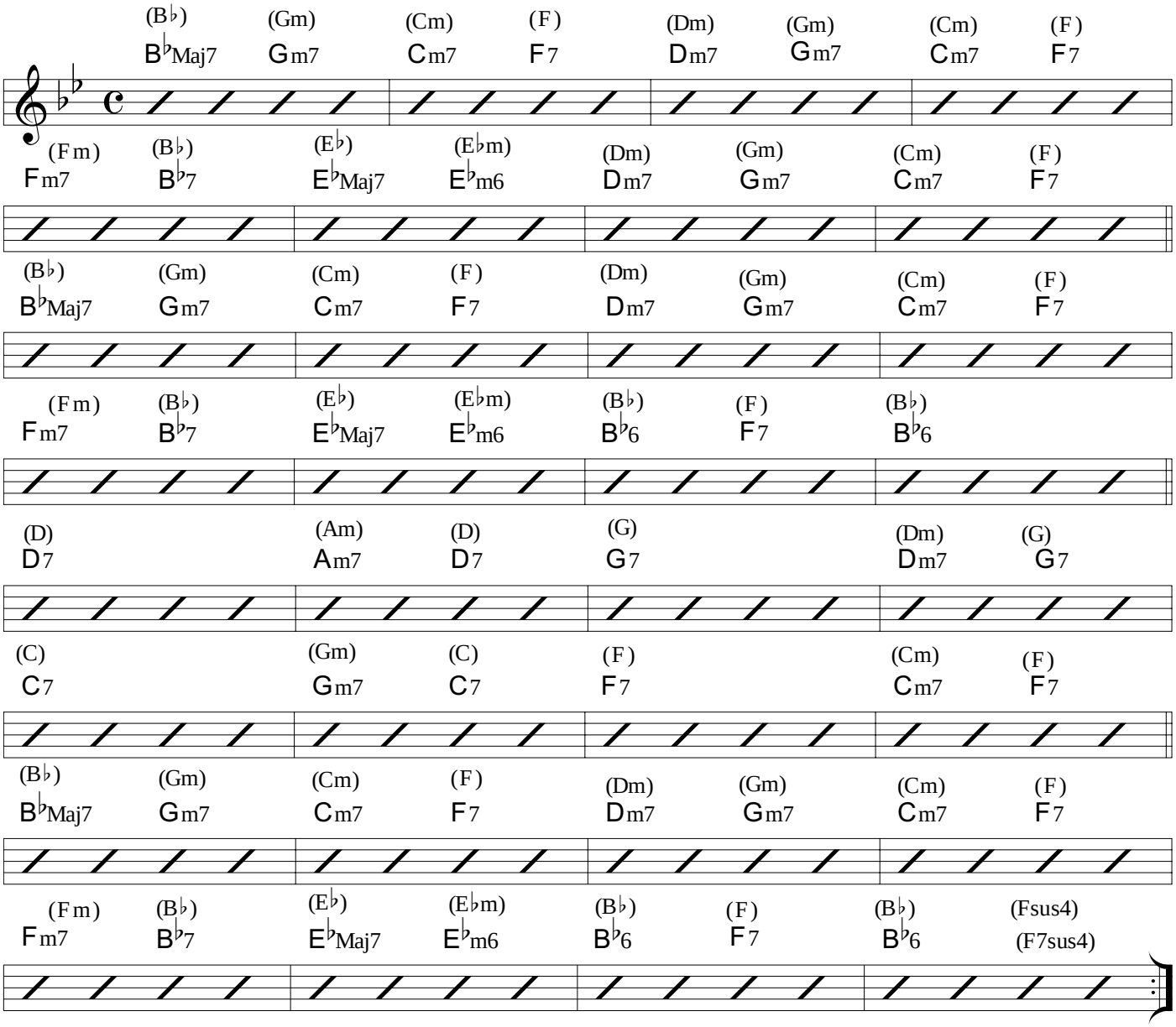
Confirmation

Charlie Parker



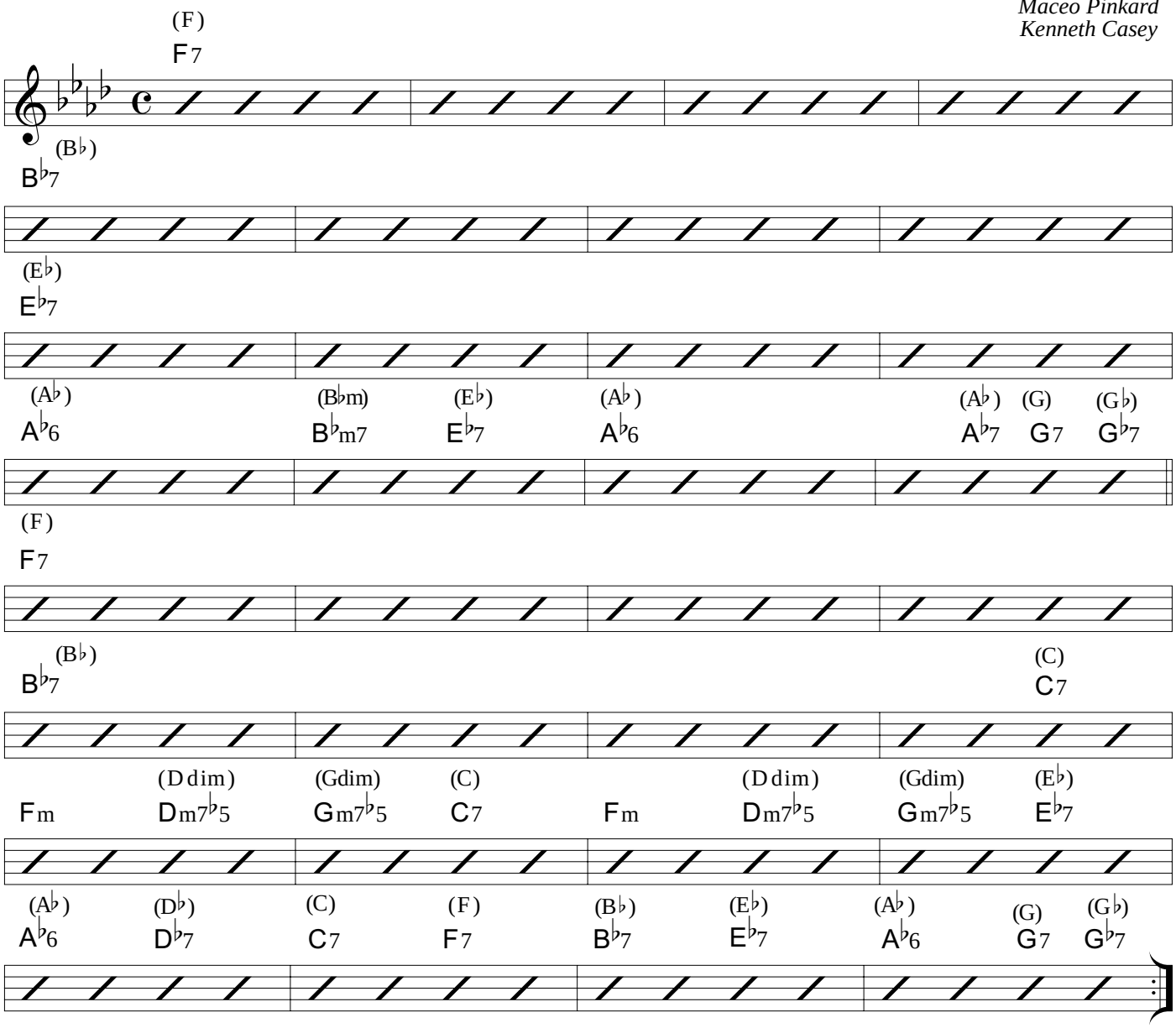
Rhythm Changes

George Gershwin



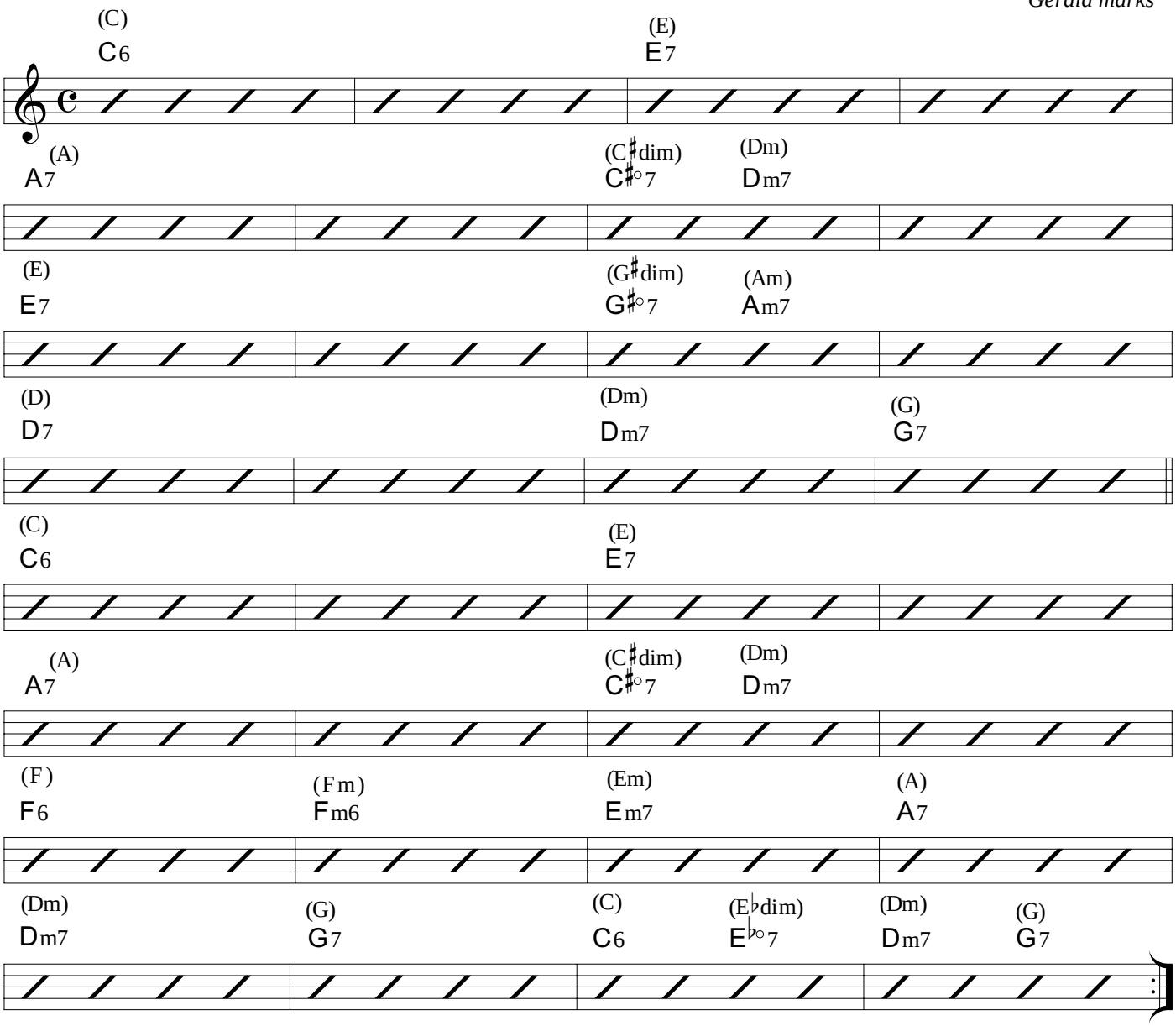
Sweet Georgia Brown

Ben Bernie
Maceo Pinkard
Kenneth Casey



All Of Me

Seymour Simons
Gerald marks



VII. Open Position

A. Overview

Position I is often called Open Position because the open strings are routinely used for the notes that occur at fret 0 (aka the nut).

Whenever we are talking about Position Playing we are speaking about a system whereby we get a relatively automatic fingering generated for single note lines based solely on where our hand happens to be on the fretboard at any particular time.

There is a brief description of the basic rules that determine when your fretting hand is in any particular position in Chapter IV. - H. Position Playing On Single Strings. Here, I'll elaborate a little more:

In Pos. I any notes that we need to play in the 1st fret are played only by the 1st finger.

In Pos. I any notes that we need to play in the 2nd fret are played only with the 2nd finger.

In Pos. I any notes that we need to play in the 3rd fret are played only with the 3rd finger.

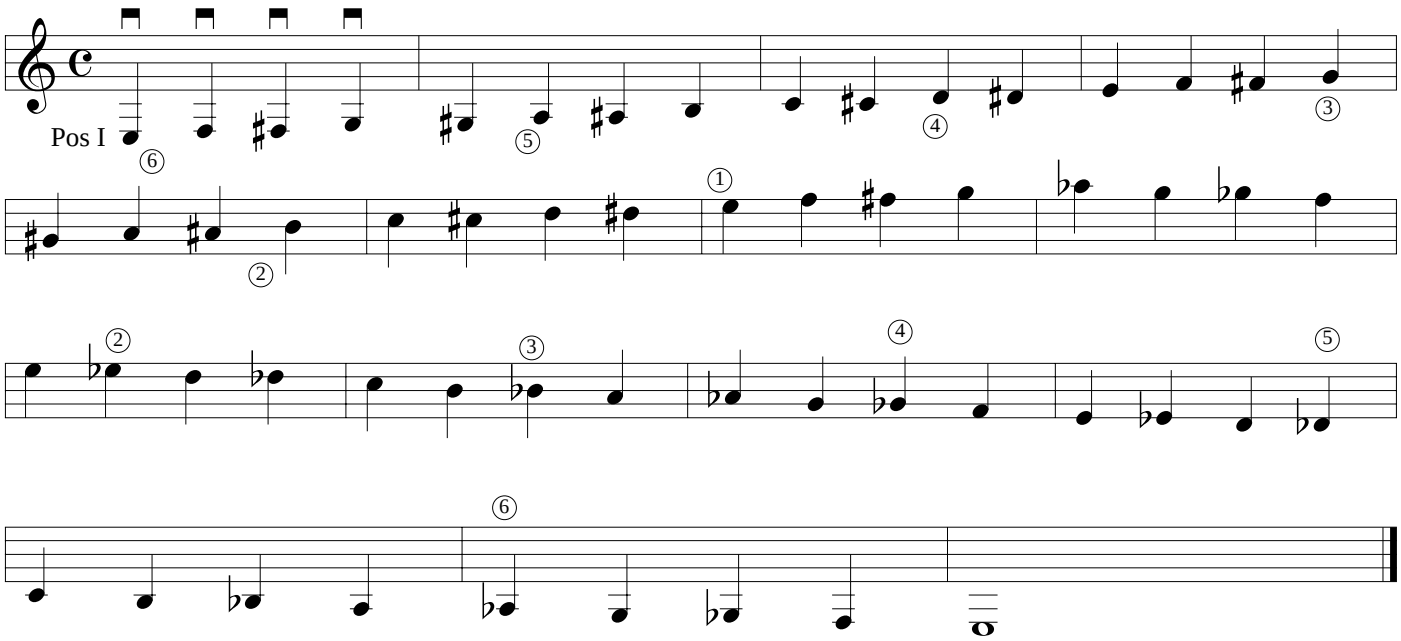
In Pos. I any notes that we need to play in the 4th fret are played only with the 4th finger except the note B natural on the 3rd string. This note is available as the open 3rd string so there is usually no need to use the fretted note. In Pos I the 1st string, 5th fret A can also be played with the 4th finger as a "stretch".

Any other notes that need to be played are available as open strings.

As soon as any finger plays a note in a different fret from the ones prescribed above you have shifted to another position.

Ex. VII.A-1 The Chromatic Scale in Open Position

Use all down picks (⊓) for now.



B. Picking Techniques

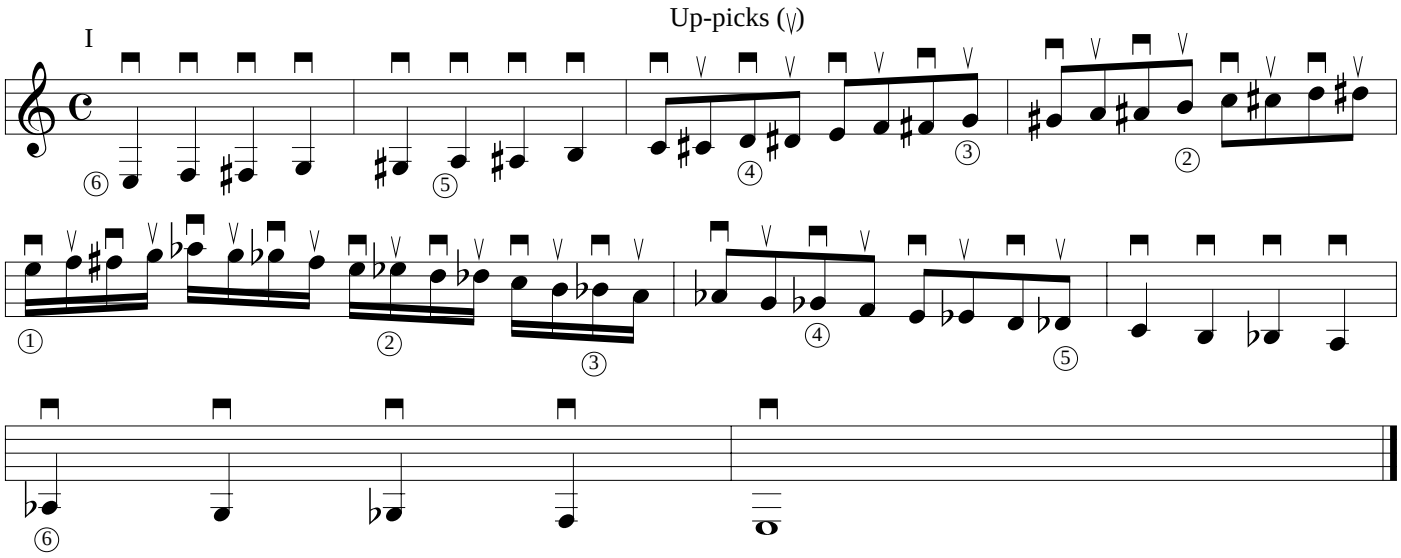
1. Alternate Picking

The alternate picking technique involves alternating down-strokes and up-strokes with the pick. In general, this technique is best applied to "duple" rhythms . Ie. When rhythms are grouped in pairs or in multiples of 2 such as 4 quarter notes in 4/4 time or 8 eighth notes or 16 sixteenth notes, etc. Triplets are the prime example

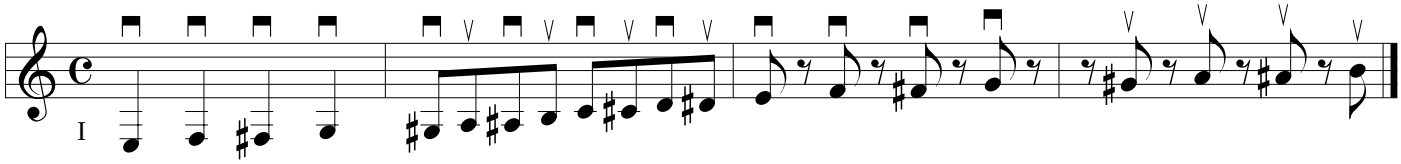
of a non duple rhythm as they are in groups of three rather than two. Triplets can be viewed as a duple rhythm plus an extra pulse: 2 + 1 or 1 + 2. So there really only exist duple rhythms and single pulses.

In it's strictest application normal alternate picking involves playing all down-beats with down-picks and all up-beats with up-picks.

Ex.VII.B.1.-1 Alternate Picking



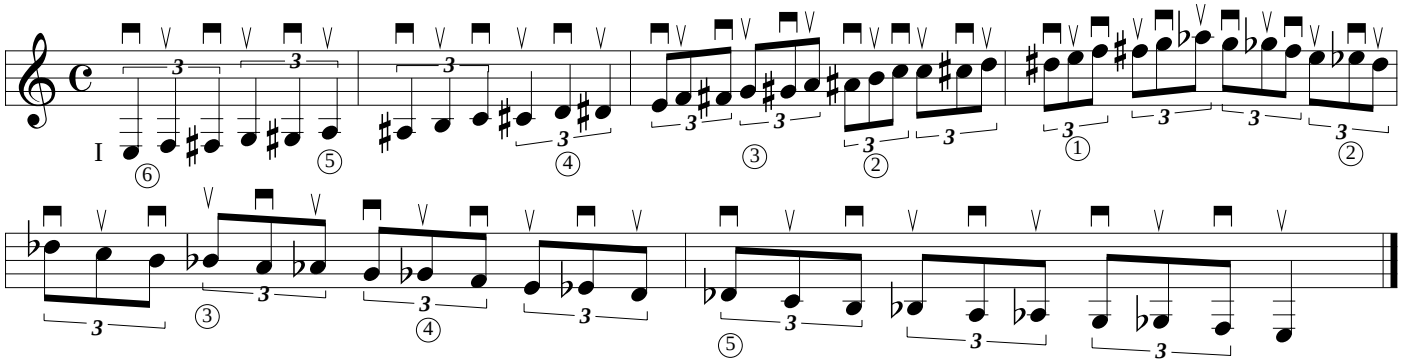
Ex.VII.B.1.-2 Alternate Picking



2. Triplet Picking Techniques

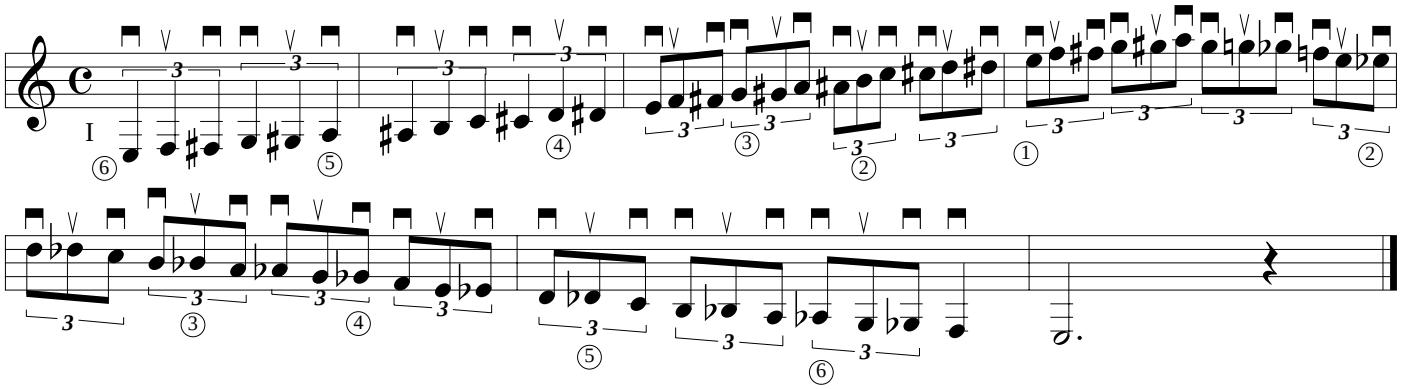
Triplet figures can be picked with a strict alternating picking pattern. This will result in some down-beats having up-picks which may seem awkward at first.

Ex.VII.B.2-1



Sometimes the pattern is adjusted so that all down-beats have down-picks. This involves two down-picks in a row which is physically clumsy sometimes but results in a better pulse overall.

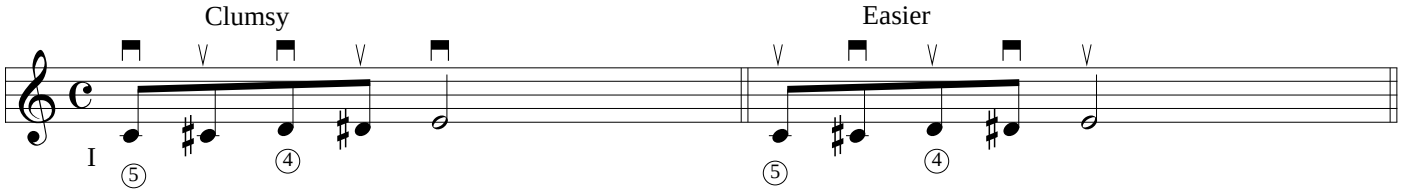
Ex.VII.B.2-2



3. Reverse Alternate Picking

When moving to a higher string after executing an up-pick the motion needed to accomplish a down-pick is often a little bit awkward. When moving to a lower string after executing a down-pick the motion needed for an up-pick is often clumsy as well. One way around this awkwardness is to play passages like this with Reverse Alternate Picking. Ie. With duple rhythms, down-beats are played with up-picks and up-beats are played with down-picks.

Ex.VII.B.3-1



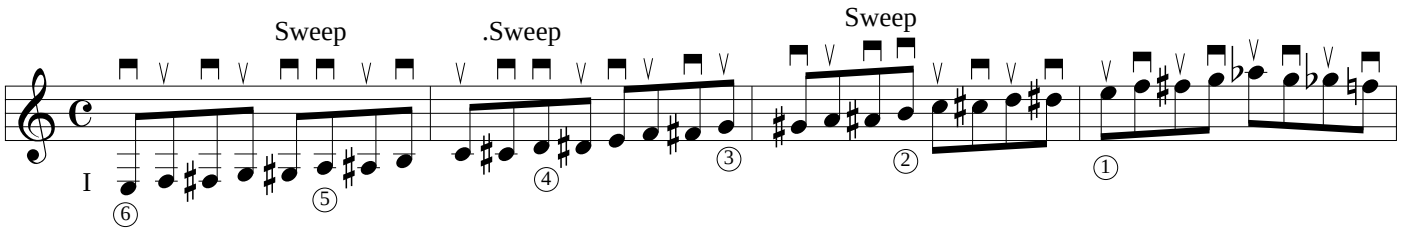
I will usually be suggesting that you practice all exercises in this book with strict alternate picking (as well as strict reverse alternate picking just for control). Most exercises are notated with economy picking though.

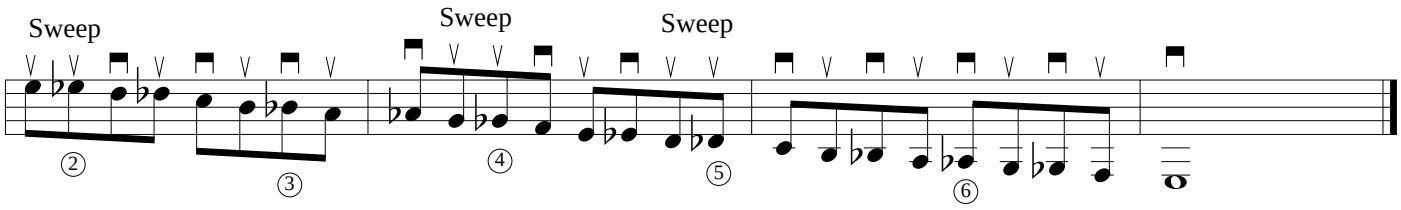
4. Sweep Picking (aka “Economy Picking”)

A passage of any length using either strict Alternate Picking or strict Reverse Alternate Picking is likely to result in several of these awkward situations when skipping strings. A type of picking that involves sweeping the pick in one direction across adjacent strings can often be the ticket around this clumsiness. It is much trickier than the other two picking techniques however and requires some extra developed coordination to execute. I think that sweep picking is much less suitable for improvising than Alternate Picking because it requires so much more forethought. Passages that use Sweep Picking pretty much need to be worked out before hand. Often the benefits of the sweep picking are overshadowed by the amount of thinking involved and the extra coordination. However it can enable some passages to be exceptionally smooth and fast.

The logic involved is sort of hard to explain in words. Hopefully my numerous examples of Sweep Picking in the following exercises will make it clear as to what the principles behind it are. Basically, the idea is to completely avoid the two awkward situations mentioned above. Alternate Picking or Reverse Alternate Picking is used until one of these clumsy situations is encountered and then the pick is swept in the same direction across two or several adjacent strings. Then the Alternate or Reverse Alternate Picking is resumed.

Ex.VII.B.4-1 Chromatic Scale With Sweep Picking Where Needed





The great American guitarist Jimmy Bruno has suggested another dialect of economy picking to me. The "rules" are quite simple.

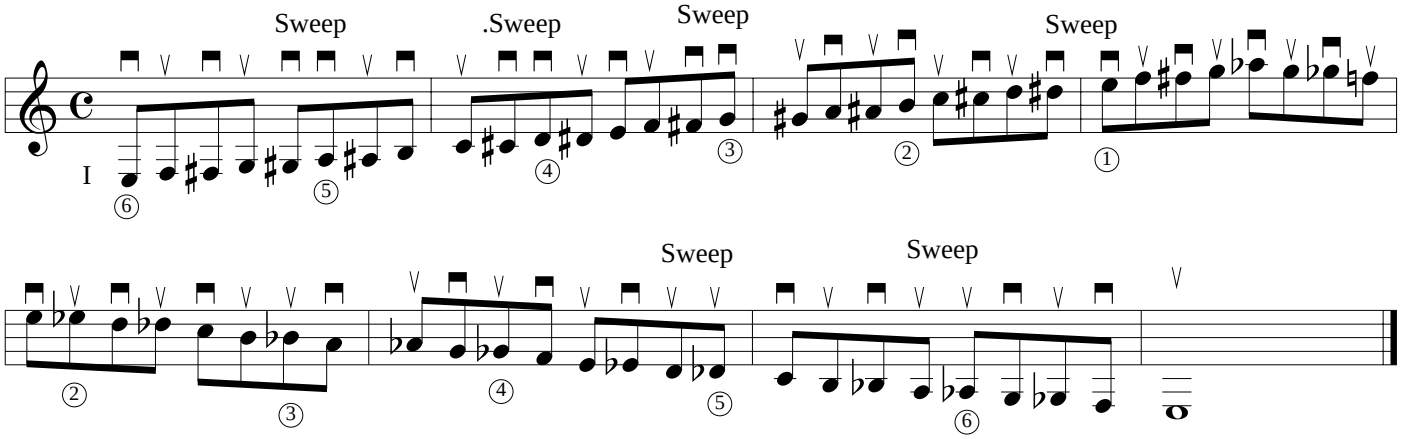
When you go to a higher string, it's a downstroke.

When you go to a lower string it's an upstroke.

This technique will precipitate frequent sweeps across several strings, depending on the passage of course, but it often also creates several more of the awkward situations that my style of economy picking is designed to avoid. Jimmy's thing does allow you to sort of go on autopilot in the same way that alternate picking does so it may prove to be a more effective technique for improvising than the type of economy picking that I will be presenting throughout this book.

I have not worked on Jimmy's technique enough to know whether it will be useful to me but Jimmy sure sounds good with it! I suggest that you try all the exercises in this book using Jimmy's style of economy picking as well as my own.

Ex.VII.B.4-2 Chromatic Scale With Jimmy Bruno Style Economy Picking



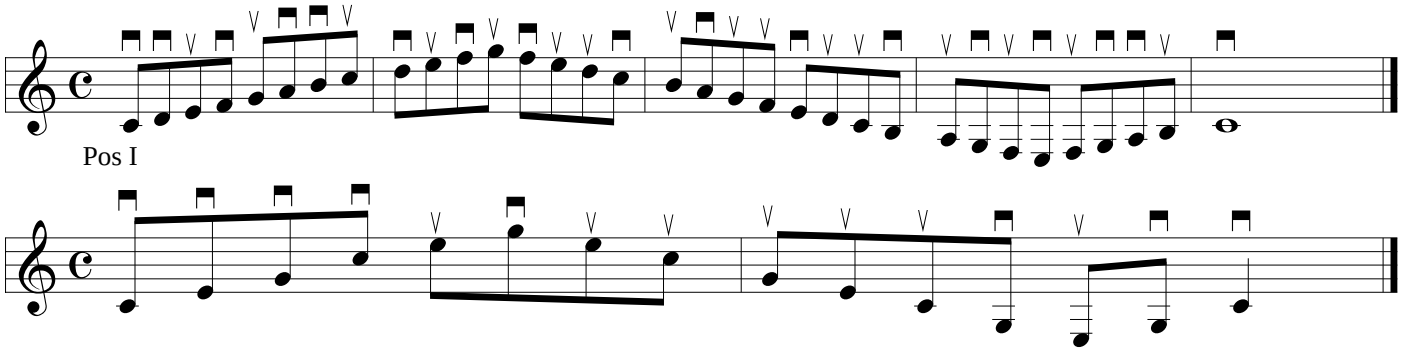
C. The Major Scales

The following series of exercises will simply map out where all the notes of all the major scales and of the major triad arpeggios built on the tonic of those scales happen to fall under the fingers when the hand is placed in Open Position. These are, as all Position Style fingerings are, simply automatically generated fingerings based solely on hand position. They are not necessarily the best fingerings or even good fingerings for these scales. They simply ARE. They exist. You should know about them. You should train your hands and your head to be able to play them. These fingerings are great for developing finger independence and strength. Position style scale fingerings are also a great tool for sight-reading as we shall see later.

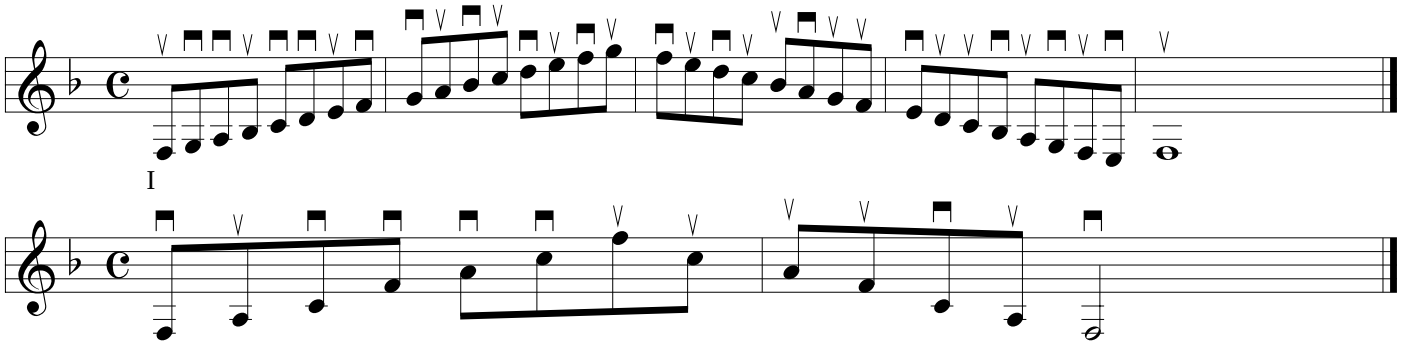
You will find that some of these fingerings become second nature to you right away. Some of them will always be difficult and you'll learn to avoid them for as long as you play the guitar. Some of the difficult ones will become easier over time.

Play the exercises with strict Alternate Picking as well as the Sweep Picking that is indicated. Also try strict Reverse Alternate Picking and Jimmy Bruno style economy picking. Treat all the exercises in this book in this same way with regards to picking.

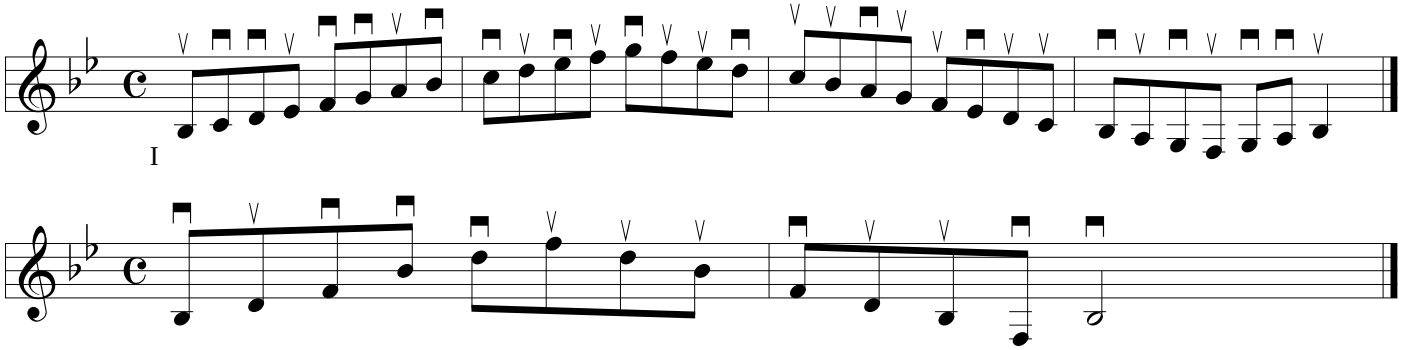
Ex.VII.C.-1 The C major scale



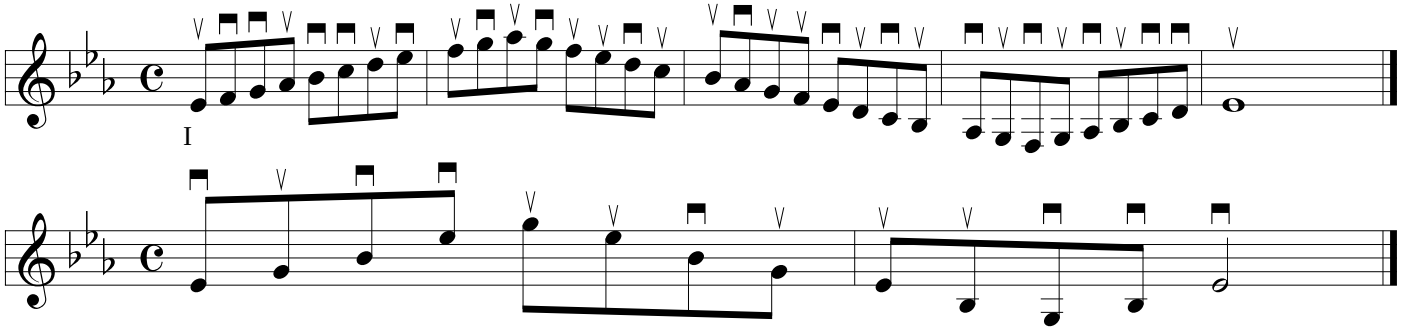
Ex.VII.C.-2 The F major scale



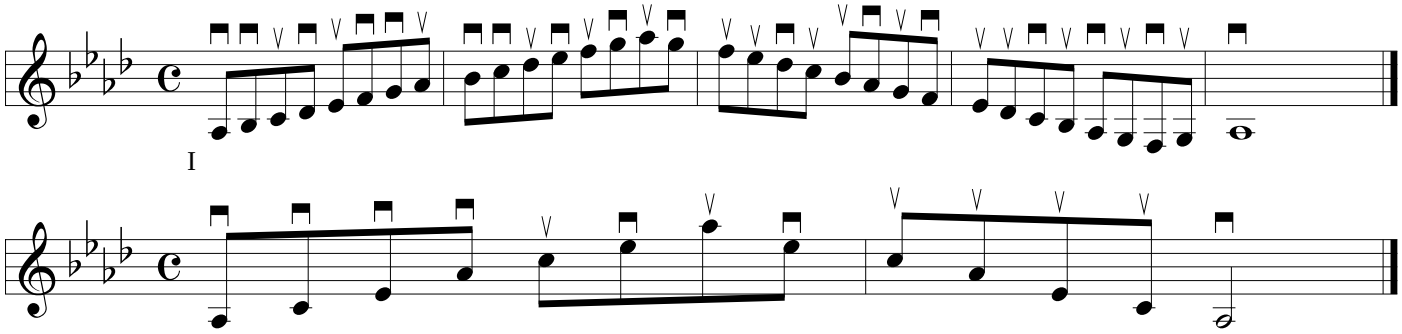
Ex.VII.C-3 The B♭ major scale



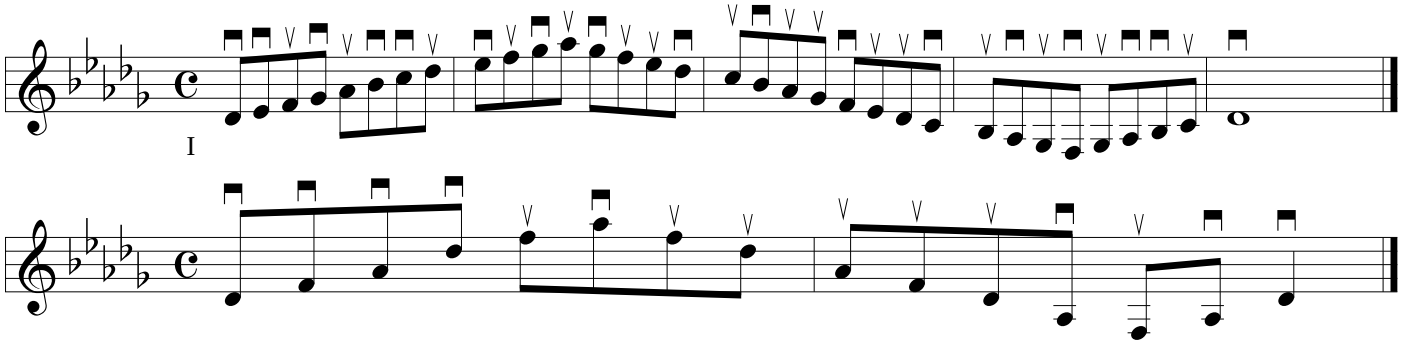
Ex.VII.C-4 The E♭ major scale



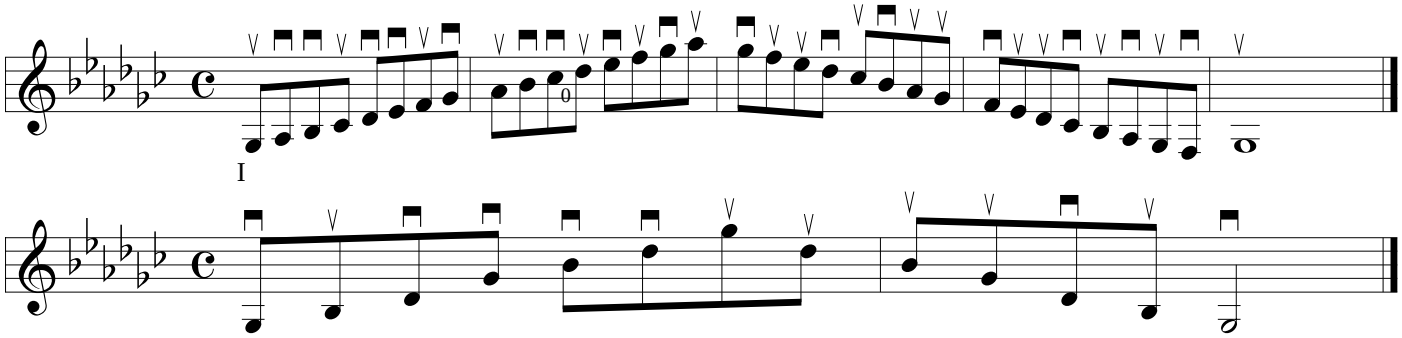
Ex.VII.C-5 The A♭ major scale



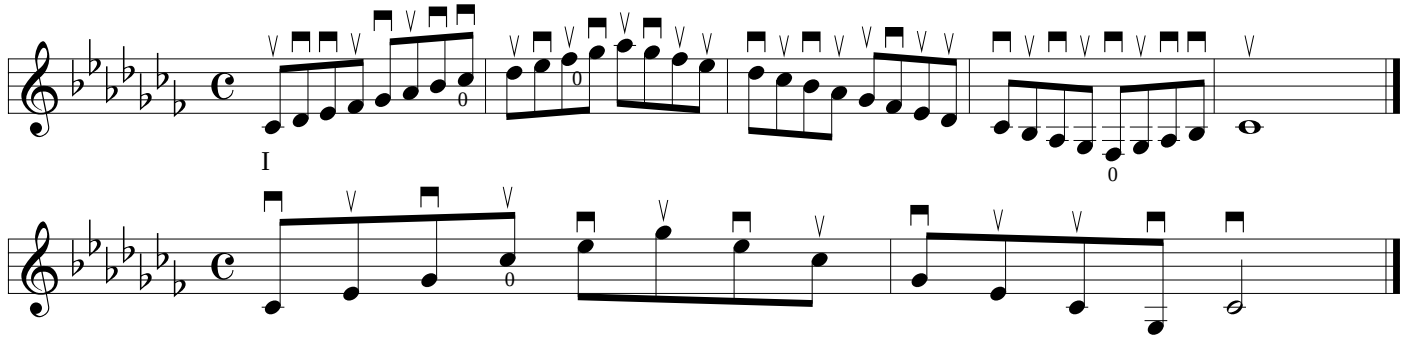
Ex.VII.C-6 The D♭ major scale



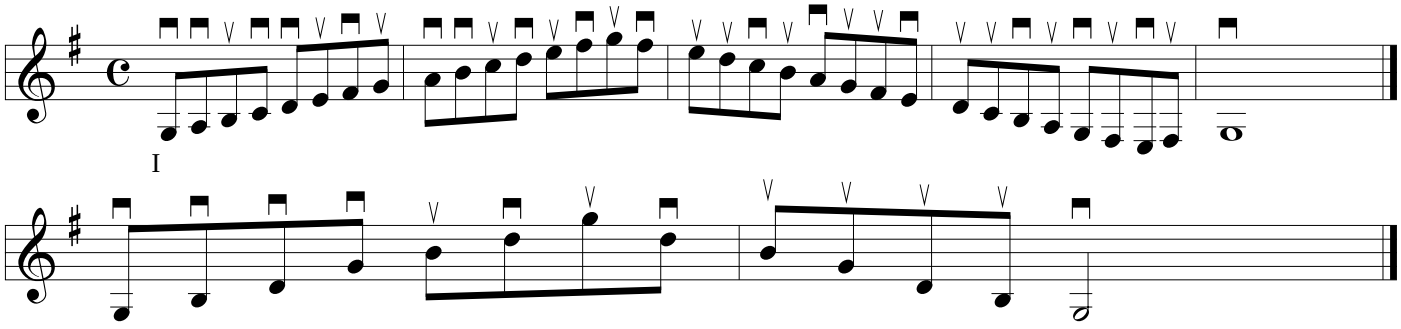
Ex.VII.C-7 The G♭ major scale



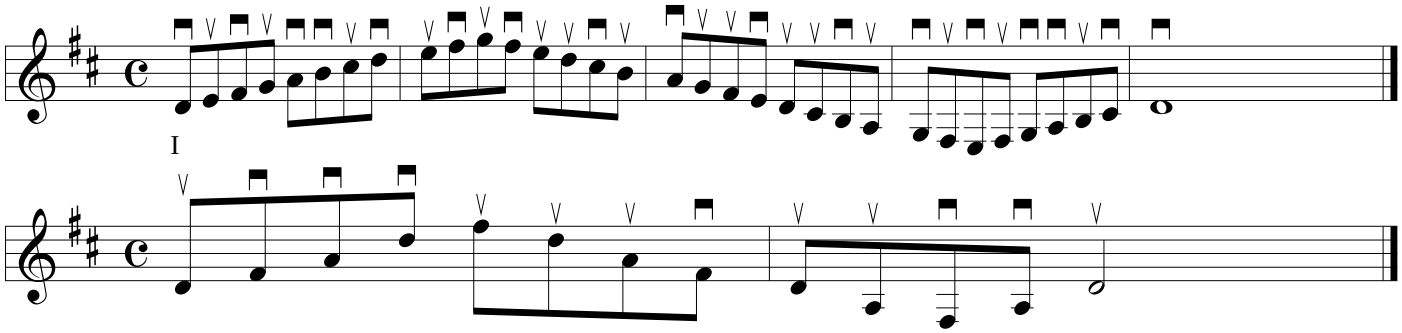
Ex.VII.C-8 The C♭ major scale



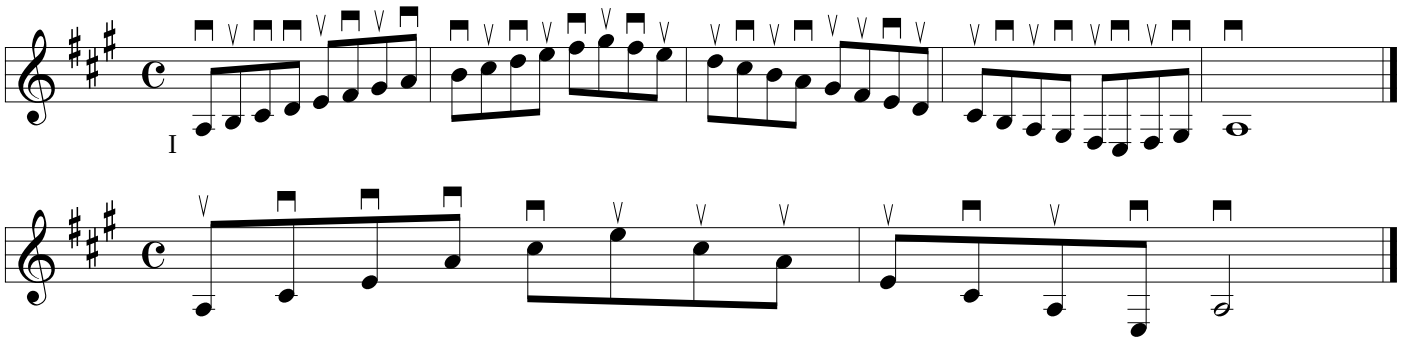
Ex.VII.C-9 The G major scale



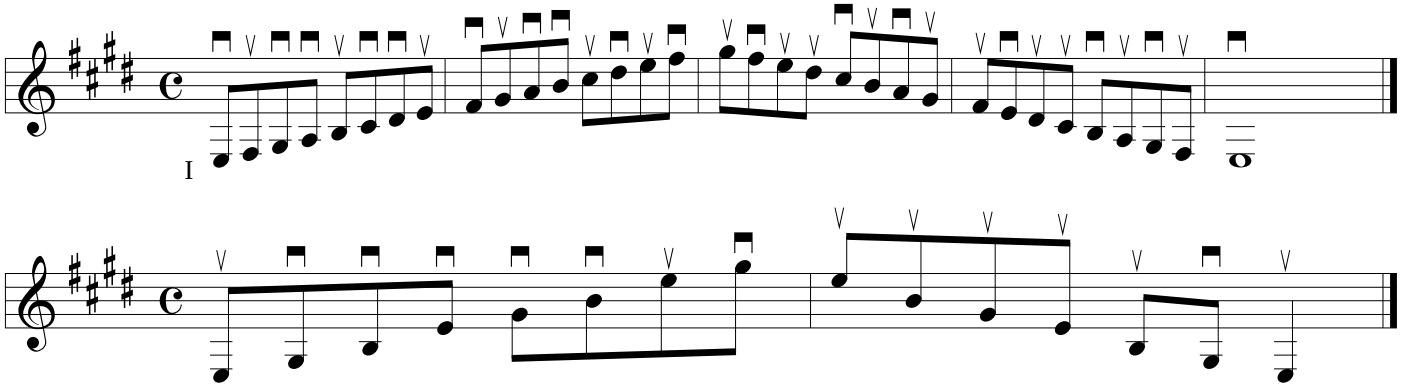
Ex.VII.C-10 The D major scale



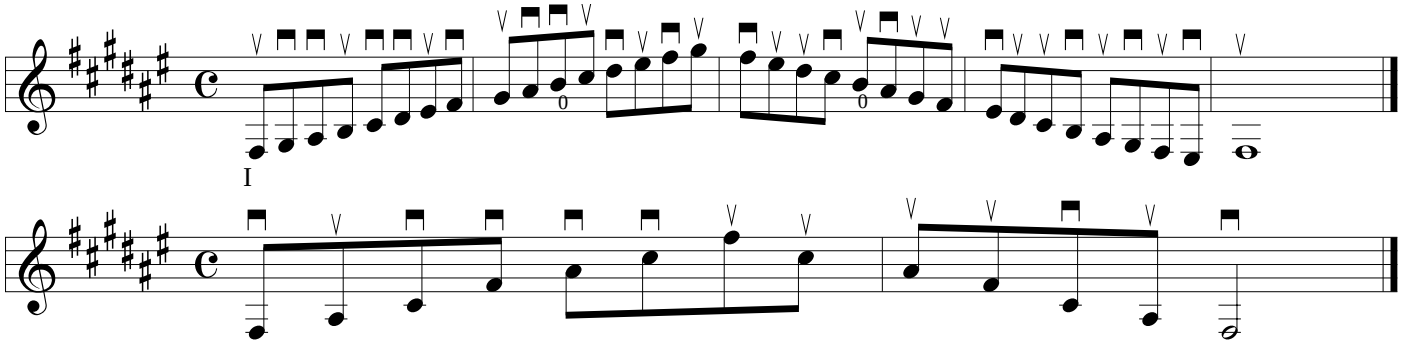
Ex.VII.C-11 The A major scale



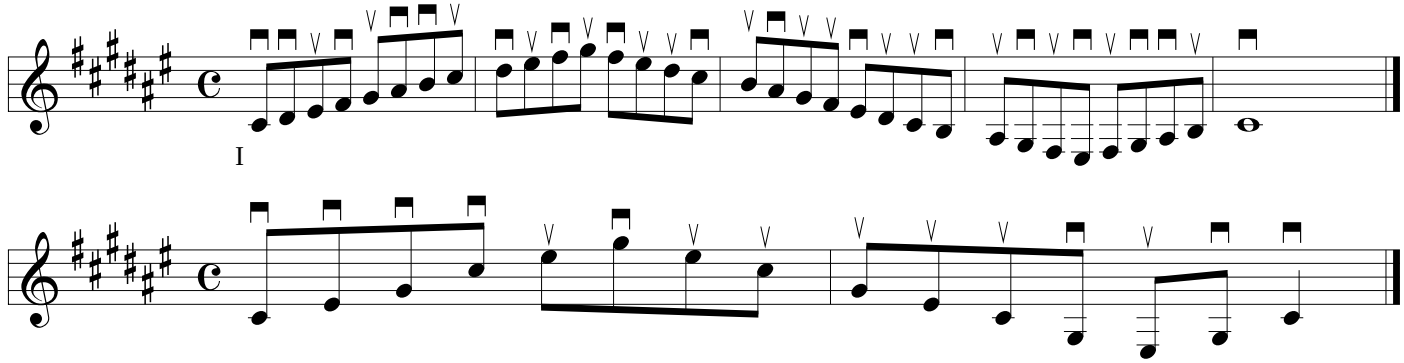
Ex.VII.C-12 The E major scale



Ex.VII.C-13 The F♯ major scale



Ex.VII.C-14 The C♯ major scale



Ex.VII.C-15

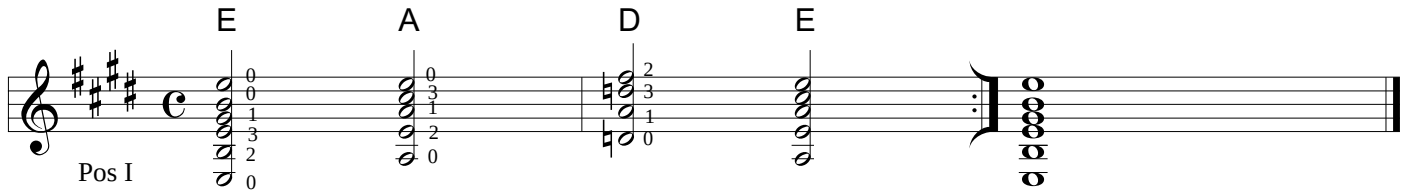
1. Try to play several melodies that you know really well (like Happy Birthday, etc.) by ear in Open Position, just like we did with the single string exercises. If you find that your melody's range goes higher than A♭ on the 1st string then simply begin your melody on a lower pitch. If you find that your melody's range goes lower than your low E then simply begin your melody on a higher pitch. Be sure to stay strictly in Pos. I for now.

Don't worry what key your melody is in at first, but if you realize that it is derived from a particular major scale whose fingering pattern you recognize then that information should help you decide which fingers are likely to be the best choice to execute whatever pitches you are hearing.

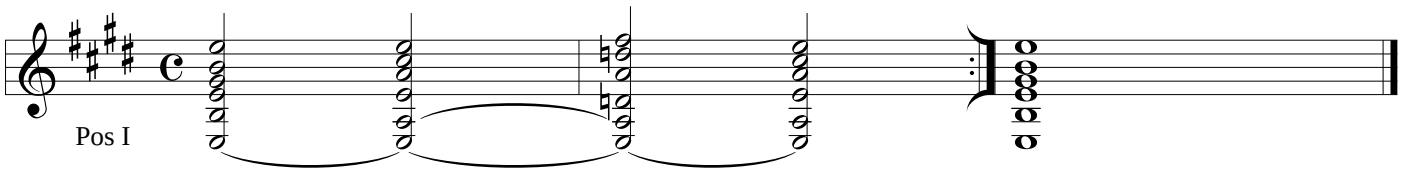
You will eventually find, with practice, that this sort of thing becomes second nature. You will be able to "feel" where on the fingerboard the next note you "hear" is located and choosing which finger to play it with will be no problem.

D. Miscellaneous Open Position Exercises

In Open Position string muting is quite important. Consider the following:



Unless considerable care is taken to mute the open E string between the first two chords and the open A string between the second and third chords the following is likely to result:



In some styles of playing this drone effect might be desirable. But, in general, you should have some way to mute open strings that are not required.

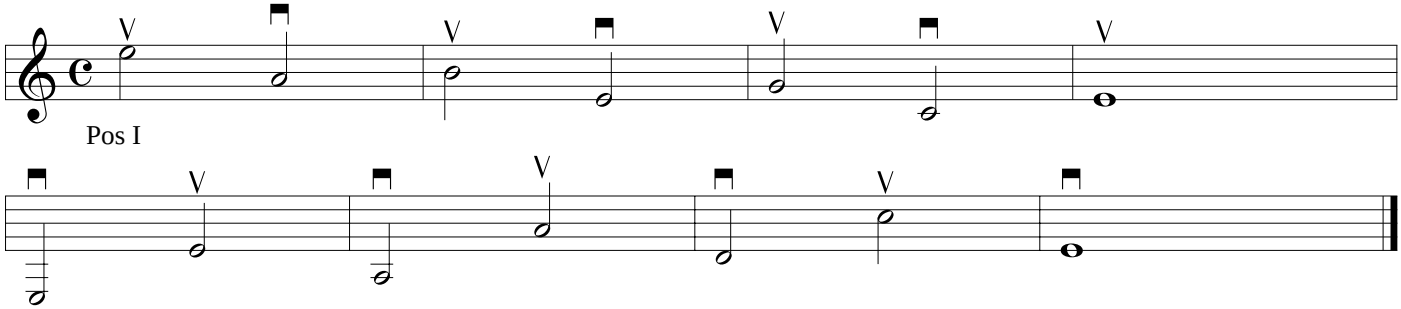
What I do is to lightly touch and mute the open E string with my fretting hand's free 4th finger just before I switch to the A chord (approximately above the 3rd fret).

Likewise, between the A chord and the D chord I lightly touch my A string with my fretting hand's 4th finger just before I switch chords.

Note: Between the A and D chords the high open E is no problem since it actually belongs to both chord voicings. In fact, the continuing drone between chords helps to make the switch sound smoother or more legato. If muting this string is also desirable, so that all the notes of each chord are muted momentarily between chords, then I suggest using the strumming hand's available fingers, or palm, for this task.

Note the fingering I have suggested for the A chord. Most people advocate using the 1st finger on the 4th string's E, the 2nd finger for on the 3rd string's A and the 3rd finger on the 2nd string's C♯. That fingering is fine on guitars with wide necks like that of a classical guitar but I find that on most electric guitar necks my fingering is easier to play accurately.

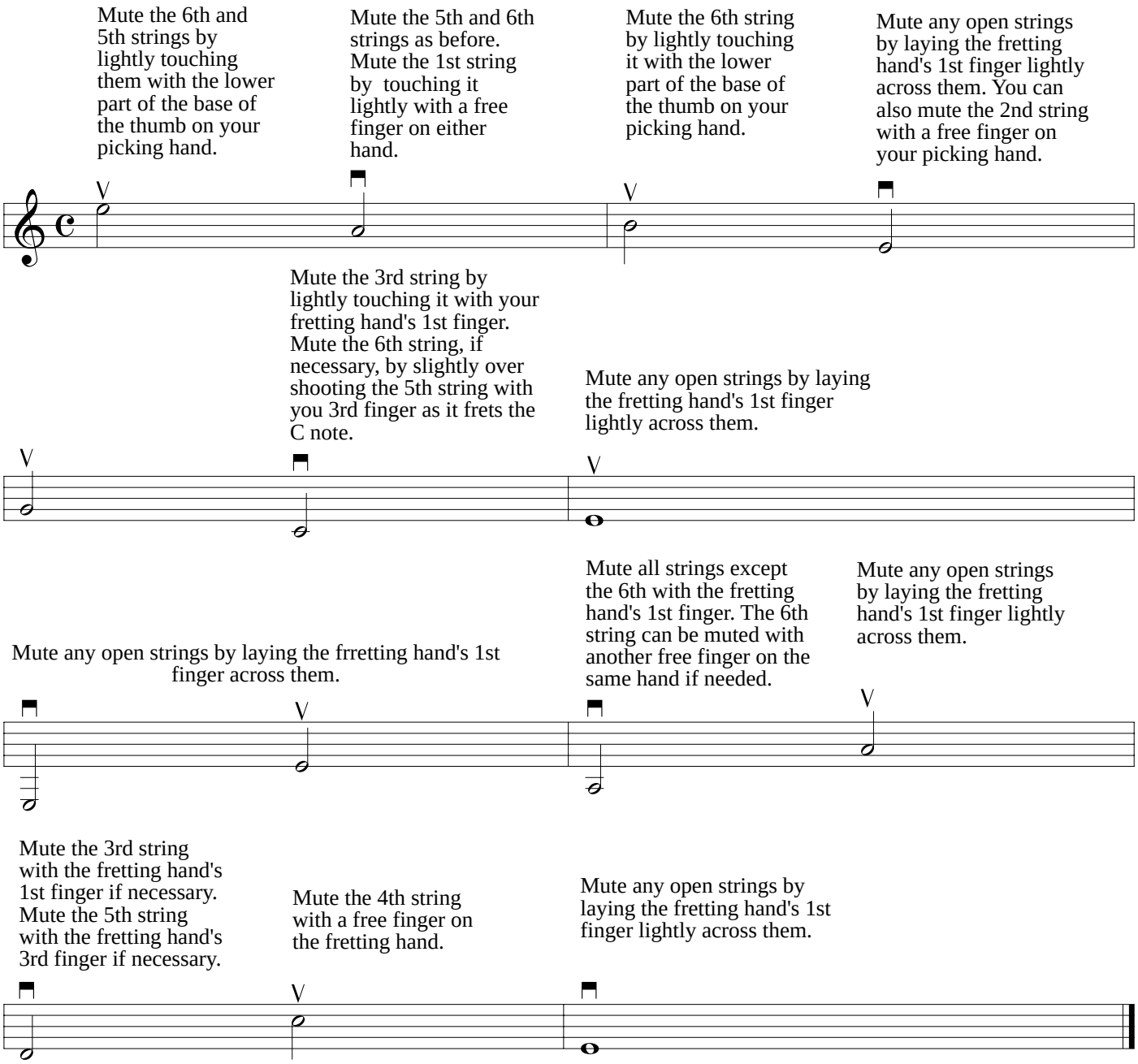
Consider the following:



When you first strike the high open E, your low open E and open A strings will both start vibrating sympathetically unless you do something about it.

Likewise when you strike the A on beat of 3 bar 1 your Open A string and both your open E strings will all start sounding. You might also hear a very high harmonic ringing out from your open D string. You have to find some way to mute your open 1st string anyways because it was struck on beat 1 but is no longer supposed to sound.

The following is the same exercise with some textual notes describing how I personally (everybody's different) go about muting strings that are not supposed to be sounding. The exercise is notated in Pos I. I assume that by now you know which fingers are supposed to play in which frets.:



E. Suggestions For Tunes To Learn

If you have the pre-requisite musicianship skills that I detailed at the beginning of this book (ie. basic rhythm reading skills, awareness of the formal conventions of notation, etc.) then at this point it should not be too hard for you to start learning some tunes out of your fake book.

If you can only read, so far, in Position I then so be it. But most fake book tunes should be read an octave higher because they are not written specifically for guitar. If the tune you are working on has a range that allows you to do this in Open Position then go ahead and try it. If not, then just read the lead sheet as if it were actually written for guitar. The ranges of the melodies of most standards will fit nicely in open Position. They will just be a little low that's all.

Here's a short list of some tunes that should work well in Open Position, are pretty simple rhythmically and that are also well worth learning just because they are great tunes. They can all be found in "The Real Book".

A Foggy Day, All Of Me, All The Things You Are, Alone Together, Angel Eyes, Beautiful Love, Black Orpheus, Blue Bossa, Body And Soul, But Beautiful, Come Sunday, Days Of Wine And Roses, Dearly Beloved, Here's That Rainy Day, I Could Write A Book, I Love You, In A Mellow Tone,. Just Friends, Misty, My Foolish Heart, My Funny Valentine, My Romance, Night And Day, Out Of Nowhere, Prelude To A Kiss, Some Other Time, Stella By Starlight, There Is No Greater Love, There Will Never Be Another You, What Is This Thing Called Love?.

Learn the melodies in Open Position for several of these tunes.

Figure out many different ways to play the chords. If you run across a chord symbol you do not understand then attempt to simplify it into one that you do understand. For example: You don't have to play the bass notes indicated in "slash" chords if you don't know how. (If you see Cm7/B♭, "Cmin7 with B♭ in the bass", just play Cm7.)

Break the chords down into triadic form and see if you can voice lead them as discussed earlier.

Try to memorize these tunes. Get used to playing them without the sheet music.

Tape record the chords while playing with a metronome and practice playing along with the melody.

Try improvising some chord tone melodies on these progressions by arpeggiating the triads.

Tape record the melody while playing with a metronome and practice playing along with the chords.

Find some other jazz music students or players to jam with and call these tunes.

Find and listen to some recordings of great jazz players playing on these tunes.

After you've memorized a tune try playing it an octave higher by ear. This will require you to venture out into the higher positions.

Try it on one string at first and then see if you can find a better fingering that spans 2, 3 or 4 strings. It's pretty rare to find a standard whose range needs more than 4 strings. At any position your hand happens to be in on the fretboard any group of 4 consecutive strings will cover the range of just a little bit less than a Perfect 12th. This is because most melodies are written for singers and most singers have a practical range of approximately a Perfect 12th.

VIII. Shell Voicings

A. The Concept

The 5th and often the Root can be omitted from most 7th chords.

Rationale: Most chords have Perfect 5ths. The P5th is also felt as the 3rd partial in the overtone series of the Root. Whether sounded or not it will be felt to be there. A Perfect 5th, therefore, does not tell the listener anything he doesn't already know about a chord and can usually be omitted.

Many times, the 5th of a chord can be omitted even in a chord with an altered 5th. The altered 5th is often implied by the key center or the chords immediately preceding the chord containing the altered 5th.

Example: F♯m7b5 in the key of C major. There is no real need to have a C natural in the voicing for this chord because C is felt so strongly as the tonic of the key.

When the altered 5th is not implied by context it can also usually be omitted because it is not essential to the chord's function.

Example: G7♯5 in the key of C major. In this example the ♯5 is really just a color tone. G7 will still function like G7 with or without the D♯.

When playing with a bass player the Root is usually taken care of by him. It is then possible to omit the root from a voicing without losing that much information.

The concept of "Root" is one that is inextricably tied up with acoustics and the overtone series. Any group of intervals sounded together as a double stop or as a chord will have an "acoustical root" that can be deduced by comparing the intervals in that group with the overtone series of a hypothetical fundamental root tone. This is much too complicated to go into here, but I learned about this stuff through Gordon Delamont's great books Modern Harmonic Technique (Vols. 1 and 2). I can't recommend these books highly enough. The point is, that another reason why we can get away with omitting the Root is because it is felt as the acoustical root of the other intervals in the chord's voicing whether it is actually there or not.

On the other hand: The 3rd tells the listener whether the chord is major or minor, in relation to the root, and the 7th further defines the chord. These notes are essential to a 7th chord most of the time, although there are situations where they can also be omitted from a 7th chord's voicing.

We are left then with either a 2 note (2 strings) or a 3 note (3 strings) voicing for any 7th chord. This greatly frees up the hands. Plus it allows for the embellishment of the chord with appropriate tensions and/or other chord tones since up to 4 strings are still available above the shell. Most color tones are added above rather than below a shell voicing. Sometimes though the extra color notes can be squeezed between the 3rd and the 7th. So can the root for that matter.

This technique can also help facilitate a quick and dirty type of chord melody style by simply placing the appropriate shell voicing underneath the melody note being harmonized. See Chapter XII.

Most of the action in effective line writing has to do with joining 3rds and 7ths together from one chord to the next. The resulting lines from this voice leading are often referred to as "guide tones". Pay special attention to how the 3rd of a chord whose root is moving up a 4th (down a 5th) joins into the 7th of the next chord. Pay attention to the way the 3rds and the 7ths of ALL 7th chords move from one chord to the next.

When I speak of "shell voicings" in the course of this book I will usually mean 7th chords with the 5th omitted. Sometimes the root may also be omitted.

Shell = R, 3, 7 (or just 3 & 7)

For now we will keep the Root on the bottom and we will start with the simplest formations that use the following formulas:

R 3 7 and R 7 3
On sus4 chords replace 3 with 4.
On 6th chords and diminished 7th chords replace 7 with 6 (or 𝄫7).

The following chart shows the approximate physical location on the fretboard (or at least the string number) where the 3rd and 7th happen to fall depending on where the Root is fretted (or merely visualized). Above each shell, on the remaining strings, there are also happen to be some color tones available and within reach.

1	7 or R or 9	7 or R or 9	11 or 5 or 13	11 or 5 or 13	R or 9 or 3	**3**	**7**
2	11 or 5 or 13	11 or 5 or 13	R or 9 or 3	**3**	**7**	**7**	**3**
3	R or 9 or 3	**3**	**7**	**7**	**3**	X	(R)
4	7	**7**	**3**	X	(R)	(R)	
5	3	X	(R)	(R)			
6	(R)	(R)					

The 1st column merely denotes the string number.

The 2nd column from the left shows what happens when the Root is fingered (or merely visualized) on the 6th string. You will then find that the 3rd just happens to be within reach on the 5th string. You will also find the 7th within reach on the 4th string.

Example: If you fret a C natural on the 6th string 8th fret you will find an E natural nearby on the 5th string at the 7th fret. You will also find a B natural nearby on the 4th string at the 9th fret. These 3 notes (C, E and B) sounded together are a shell voicing for Cmaj7. Put another way, these 3 notes are all you need to get the sound of Cmaj7 across to your listener.

If you were playing Cm7, the E and the B would be flat. If you were playing C6 you would substitute A natural for the B natural. If you were playing C7sus4 the shell would have F natural instead of E natural and the B would be flat. Etc. The shells for Cm7 and Cm7♭5 will be identical because we are omitting the 5th. The shells for Cm6 and C°7 will be identical for the same reason.

Within your reach, above the 4th string, you will find the Root, the 9th and the 3rd are available as extra color tones on the 3rd string.

Note: The Root does not make for a very good sounding doubled note on a chord with a Maj7 interval (like Cmaj7, Cm(maj7), Cmaj7♯5 etc.) when it is sounded above the major 7th. This is because it creates a rather harsh sounding min 2nd interval or an equally harsh sounding min 9th interval with the chord's maj 7th. These two interval are the most avoided sounds in tonal music, although they do have their uses. The root sounds fine on chords with ♭7's (like C7, Cm7 etc.) or Maj6ths (like C6, Cm6, etc.) because the intervals created are either maj 2nds or maj 9ths which are much more pleasant sounding to most people's ears.

Locating the tensions on the higher strings (the ones not being used for the basic shell) is easy if you start by locating the Root and/or the 5th first.

Get used to thinking of major 9ths as being found 2 frets above the Root. (9ths and 2nds are the same pitch, ie. the same letter name.) Minor 9ths (♭9) are 1 fret above the root. Augmented 9ths (♯9) are 3 frets above the root.

Major 13ths are found 2 frets above the Perfect 5th. (13ths and 6ths are the same pitch/letter name.) Minor 13ths (♭13) are found 1 fret above the Perfect 5th.

Perfect 11ths are found 2 frets below the Perfect 5th. (11ths and 4ths have the same pitch/letter name.) Augmented 11ths (♯11) are found 1 fret below the perfect 5th.

Whether the 9th should be major, minor or augmented depends largely on the chord type and on the context of the chord's occurrence within a progression. In general, "non-chord-tones" should not form a min 2nd or a min 9th with any chord tone BELOW it if it is to blend into the chord and be used as an "Available Tension". This is for the same reasons that the Root does not sound well when voiced above the maj 7th. (Ie.Because ♭2's and ♭9's are rather harsh sounding.) The main exception to this "rule" is the ♭9 tension which is used all the time on Dom7 chords. The reasons for this particular exception have to do with musical acoustics again so I refer you to Gordon Delamont once more.

Hint: C7♭9 = E°7/C. One of the acoustical roots of E°7 is C. So the ♭9 interval between C and D♭ is acceptable for acoustical reasons.

Example: With the shell for Cmaj7 (still column 2), adding a C natural (the Root) on the 3rd string doesn't sound so hot. This is because it is clashing with the B natural right below it. Either does the D♭ (♭9). This is because it is clashing with the C natural a ♭9 below it. The D natural (9) sounds fine. D♯ (♯9) is a little weird but not nearly as bad as the ♭9 was.

Example: With the shell for C6 (C, E, A), adding a C natural (the root) on the 3rd string sounds fine. The D♭ still clashes with the C natural below it. D natural is still good and D♯ although a little "out" sounds OK.

Example: With the shell for C7 (C, E, B♭), adding C (the root) or D♭ (♭9 - the exception to the rule!) or D♮ (9) or D♯ (♯9) are all fine.

Also, non chord tones should generally be derived from the key that a progression is in at any particular moment.

Example: Adding a maj 9th (D natural) to a Cm7 sounds fine when the chord is functioning as IIm7 in the key of B♭ major or VIm7 in the key of E♭ major but it might sound out of place when Cm7 is functioning as IIIm7 in the key of A♭ major because there is no D♮ in the A♭ major scale.

On a chord with a ♭5 (Cm7♭5 for example) you should consider the P5th to be an avoid note even if there is no ♭5 present in your shell voicing. This is because it is highly likely that someone else in your ensemble (the bassist or the soloist, etc.) might be sounding the ♭5 at any given moment and you might clash with them.

Tip: On a chord with a ♯5 the P5th doesn't sound too bad when sounded above the ♯5 chord tone as a Tension 12.

Please see Chapter XI. - Chord-Scales Via Modal Theory for a more detailed explanation of the various non-chord-tones available within any given chord-scale.

Within your reach (still using column 2 shells btw) on the 2nd string you will find the 11th, the 5th and the 13th. Whether or not to use a P11th or a ♯11th or a maj 13th or a ♭13 depends on the same considerations discussed above, namely avoiding the creation of ♭2's and ♭9's with lower chord tones and the context within the key.

It is quite possible to add two color tones at once to a shell voicing (on the 3rd string and the 2nd string, for example) if a decent fingering can be achieved. Sometimes the Root may need to be omitted.

Within your reach (still using column 2 shells btw) on the 1st string you will find the 7th, the Root and the 9th.

It is quite possible to add three color tones at once to a shell voicing (on the 3rd, 2nd and 1st strings, for example) if a decent fingering can be achieved. Sometimes the Root may need to be omitted. Or any combination of the above.

Important!:

Don't get too hung up on figuring out voicings with added tensions just yet. Concentrate, rather, on learning

all the basic shells (R, 3, 7 - R, 7,3, etc.) for all the basic 7th chord types with the Roots located on the various strings.

The 3rd column shows what happens when the Root is fingered (or merely visualized) on the 6th string also but the 5th string is skipped. You will then find that the 7th still happens to be within reach on the 4th string. The 3rd can be found nearby on the 3rd string, an octave higher than it was in the column 2 type shell voicing. On the 2nd string you will find the 11th, the 5th and the 13th still within your reach. On the 1st string you will find the 7th, the root and the 9th still within your reach.

The 4th column shows what happens when the Root is fingered (or merely visualized) on the 5th string. You will then find that the 3rd is nearby on the 4th string. The 7th can be found nearby on the 3rd string. On the 2nd string you will find the Root, the 9th and the 3rd within your reach. On the 1st string you will find the 11th, the 5th and the 13th within your reach.

The 3rd column and 4th column type shell voicings work exceptionally well together because the 3rds and 7ths are always on the same 2 strings. Also the 5th and 6th strings are reserved for the Roots. This often results in some very proper voice leading between the 3rds and 7ths without too much forethought. Of all the suggested fingerings for shell voicings found here these 2 are the most widely used and the most useful. Learn them well before you attempt to tackle the other ones.

The 5th column also shows what happens when the Root is fingered (or merely visualized) on the 5th string but the 4th string is skipped. You will then find that the 7th still happens to be within reach on the 3rd string. The 3rd can be found nearby on the 2nd string, an octave higher than it was in the column 4 type shell voicing. On the 1st string you will find the 11th, the 5th and the 13th still within your reach.

The 6th column shows what happens when the Root is fingered (or merely visualized) on the 4th string. You will then find that the 3rd is nearby on the 3rd string. The 7th can be found nearby on the 2nd string. On the 1st string you will find the Root, the 9th and the 3rd within your reach.

The 5th column and the 6th column shell types also work very well together for the same reasons that the 3rd and 4th column shell types work so well.

The 7th column also shows what happens when the Root is fingered (or merely visualized) on the 4th string but the 3rd string is skipped. You will then find that the 7th still happens to be within reach on the 2nd string. The 3rd can be found nearby on the 1st string, an octave higher than it was in the column 6 type shell voicing. There are no strings available above this shell for color tones.

The 8th column shows what happens when the Root is fingered (or merely visualized) on the 3rd string. You will then find that the 3rd is nearby on the 2nd string. The 7th can be found nearby on the 1st string. There are no strings available above this shell for color tones, obviously.

Shell Voicing Exercises

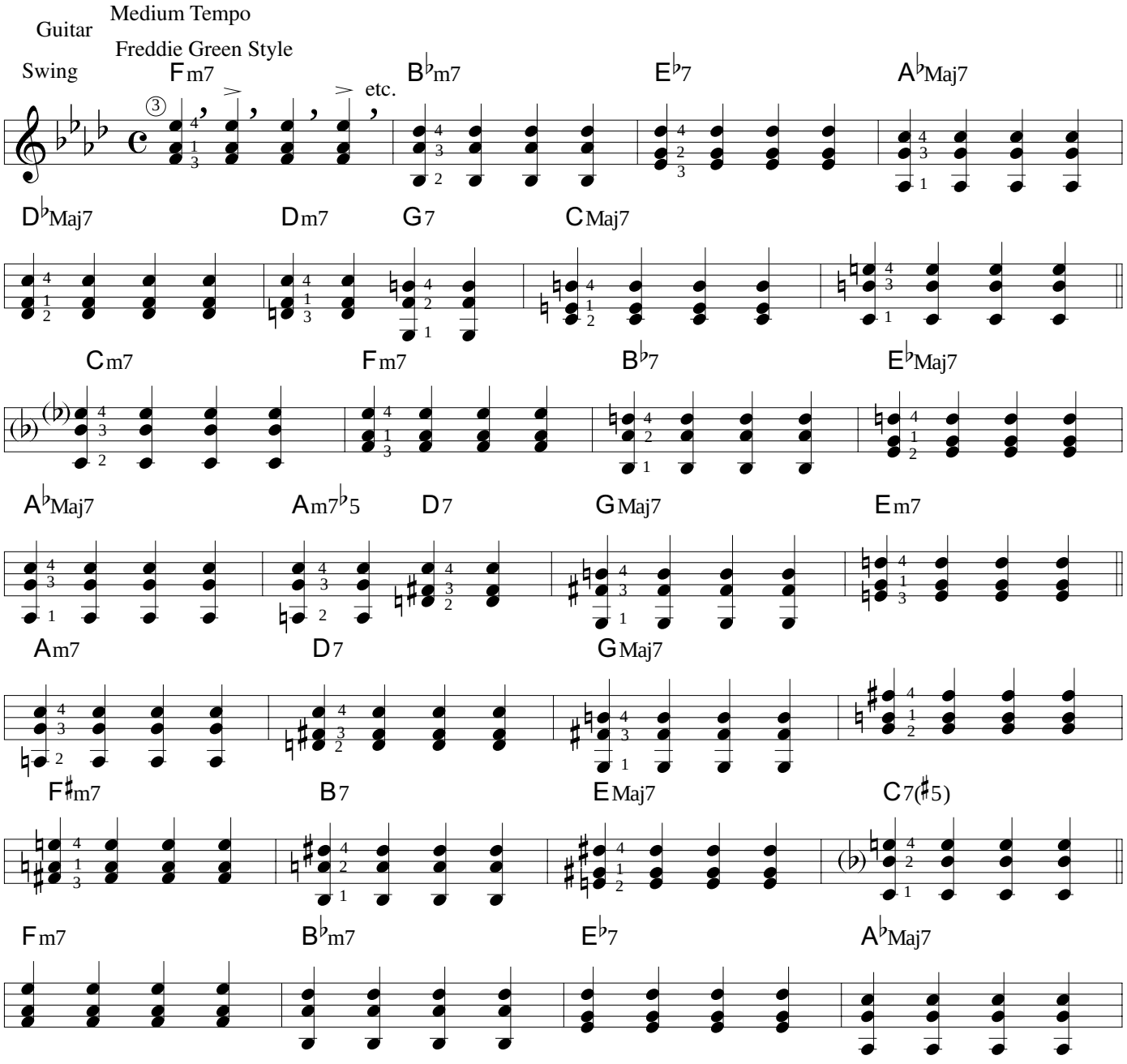
Use the shell types from columns 3 and 4 only for now.

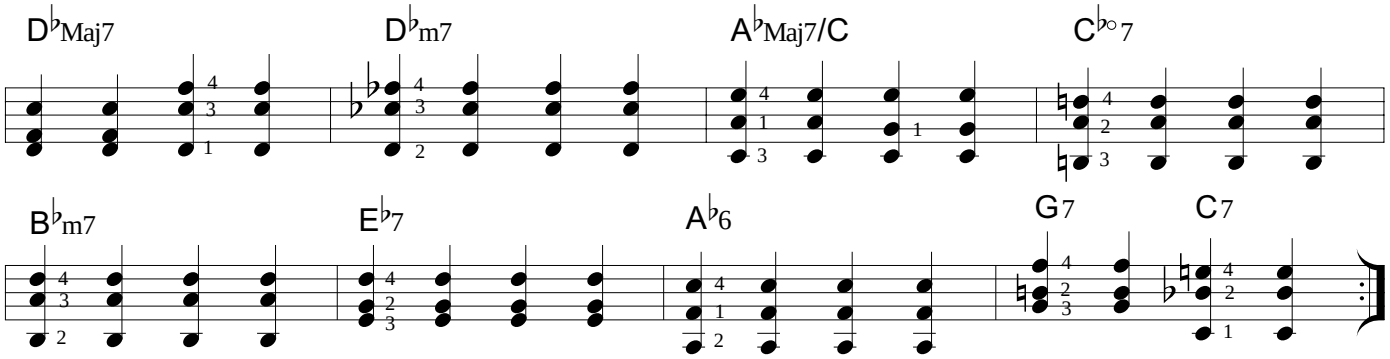
1. Learn to comp through a blues and several standard tunes (All The things You Are is great for this - see below) using these 2 structures (column 3 & 4 shells). Watch how the 3rds and 7ths join from one chord to the next.
2. When you are comfortable with this, try adding some appropriate tensions and/or desirable chord tones on the 2nd and 1st strings. It helps if you know the proper chord-scale relationships beforehand (see Chapter XI.) but try just using your ears for now. You might get lucky.
3. Repeat the above with the other shell voicing formations.

It is possible to take the concept of shell voicings much further.

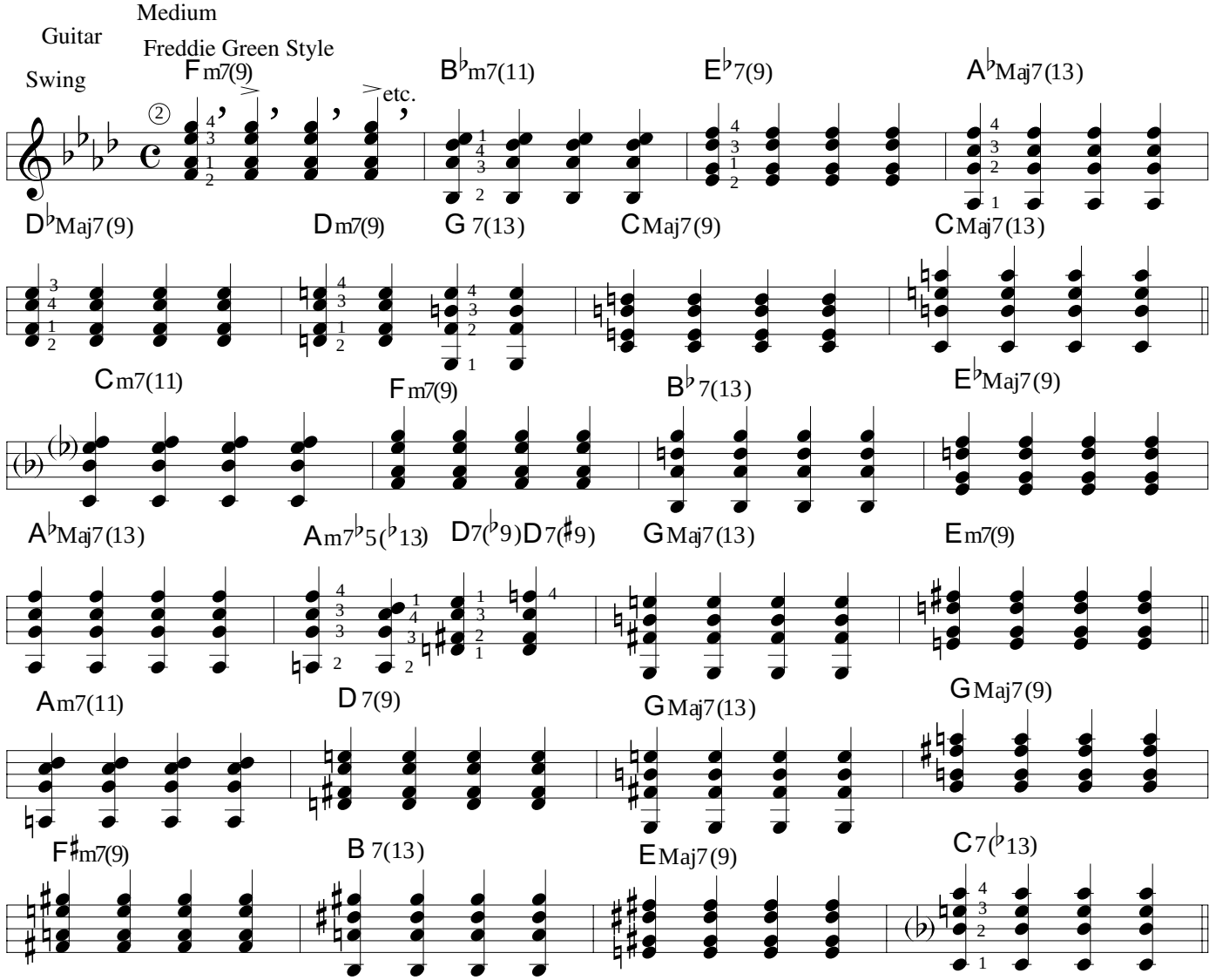
Consider this: If you are playing with a bass player and he plays the Root then anywhere on the fretboard that you play the notes E and B♭ will create the sound of a C7 chord between you and him. If you play the E on the 5th string at the 7th fret and the B♭ on the 1st string at the 6th fret then you have 3 strings in the middle of the shell in which to experiment with color tones.

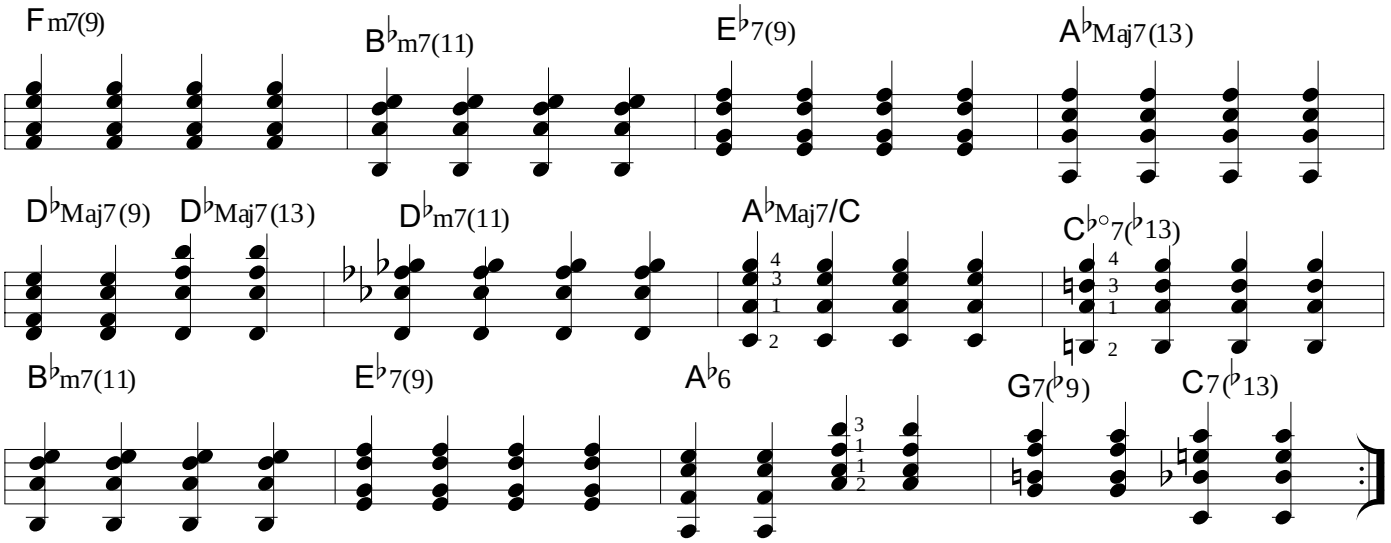
The possibilities are:
3rd on 6th string - 7th on 5th string or 4th string or 2nd string
7th on 6th string - 3rd on 5th string or 4th string or 2nd string
3rd on 5th string - 7th on 4th string or 3rd string or 1st string
7th on 5th string - 3rd on 4th string or 3rd string or 1st string
3rd on 4th string - 7th on 3rd string or 2nd string or 1st string
7th on 4th string - 3rd on 3rd string or 2nd string or 1st string
3rd on 3rd string - 7th on 2nd string
7th on 3rd string - 3rd on 2nd string
3rd on 2nd string - 7th on 1st string
7th on 2nd string - 3rd on 1st string
Here's an example of one way to play the basic shell voicings to All The things You Are using alternating column 3 and column 4 type shells. Note the suggested fingering.



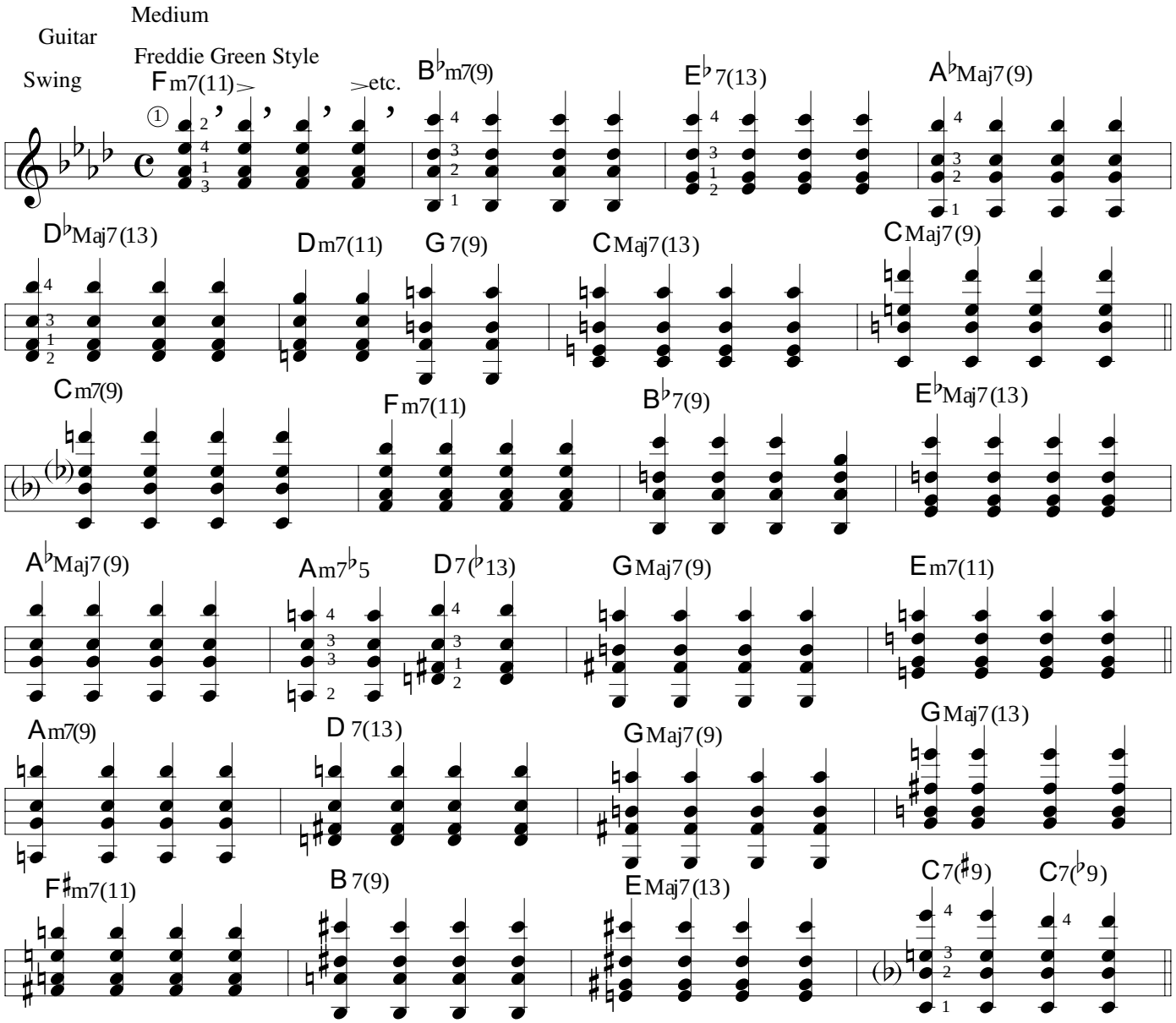


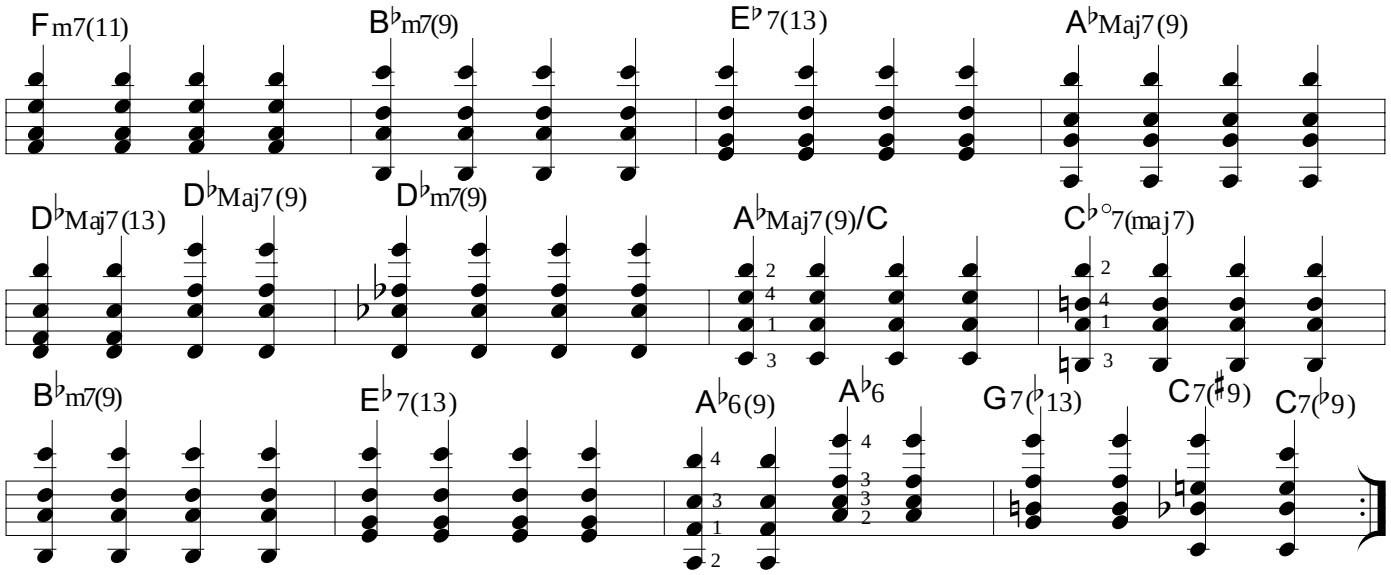
Here's the same tune with some available tensions added on the 2nd string. Note: These particular tensions might clash with the actual melody of the tune. The real art of comping has everything to do with supporting the melody. My choice of tensions here is to be thought of as a very generalized usage. The tensions I have picked are derived from the scale of the key of the moment. These fingerings are designed for strumming with the pick. It is possible to use much easier fingerings when playing finger-style or pick+fingers.



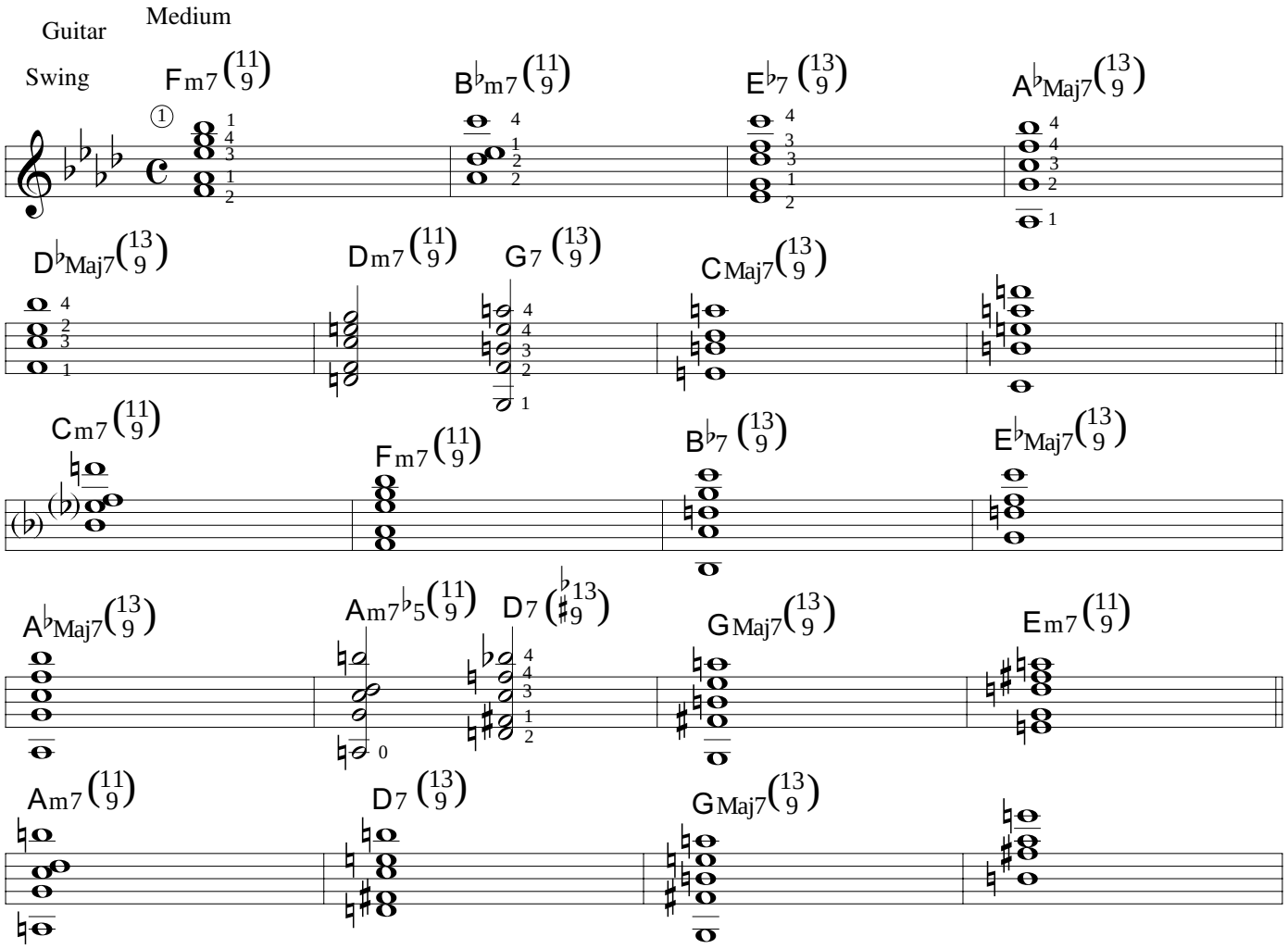


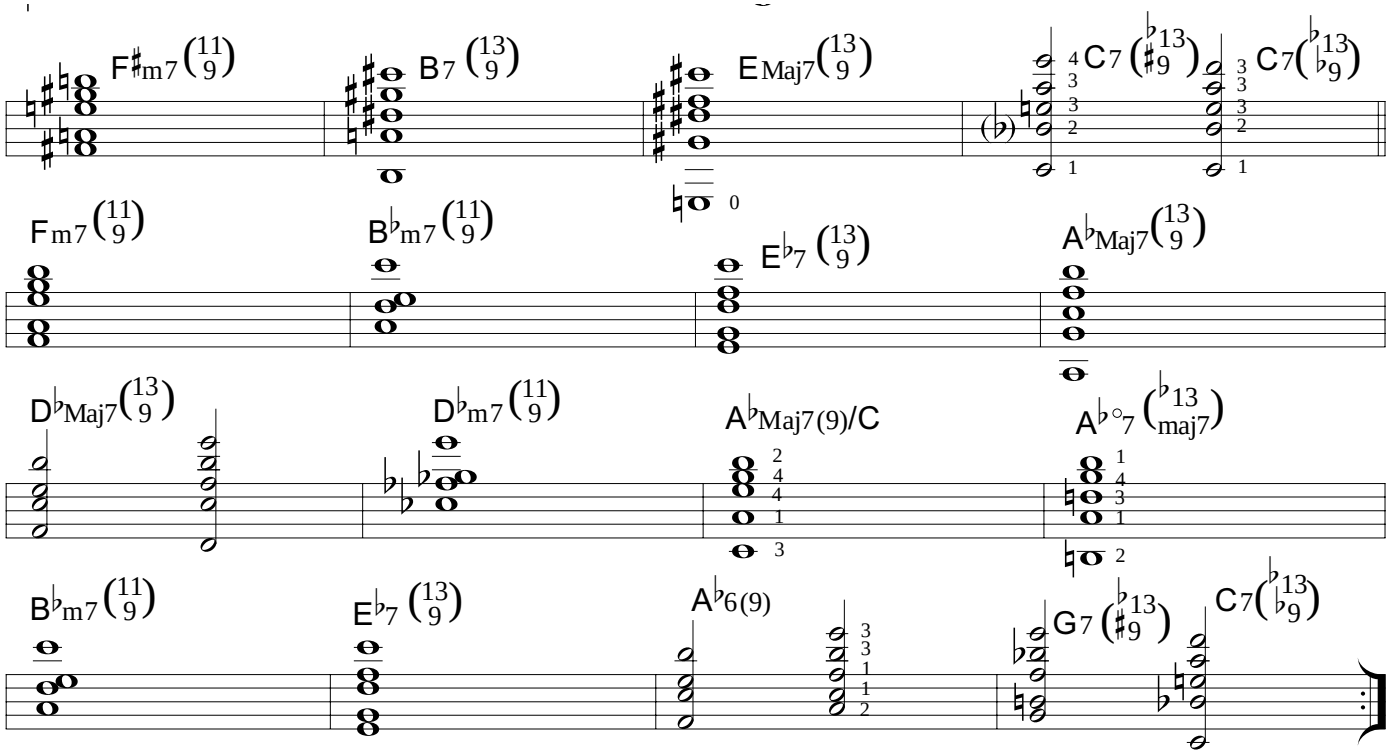
Here's the same progression with some available tensions added on the 1st string.





Here's the same tune with 2 tensions added per chord on the 1st and 2nd strings. I've had to omit the root occasionally. Some voicings may require fingerstyle technique.





B. Freddie Green Style - Part 2

1. Spread Triads

More often than not what is known as Freddie Green Style comping is accomplished with the same types of unadorned shell voicings that we have been using. These are the 3 note voicings that use 3 of the lowest 4 strings on the guitar. (i.e. the column 3 and 4 type shells). It is rare, in this style, to use the 2nd and/or the 1st string although this is often done in a more modern version of the style.

Shell voicings are by definition voicings for seventh chords. Sometimes within a texture of primarily seventh chords a triad is desirable. In order to keep the texture of the Freddie Green style shell voicings in tact a "spread triad" or "open voiced" triad is usually used instead of the more typical close voiced triad. This is a triad that spans more than a single octave because it's middle pitch has been dropped an octave.

Examples: C, E, G (bottom to top) becomes E, C, G.

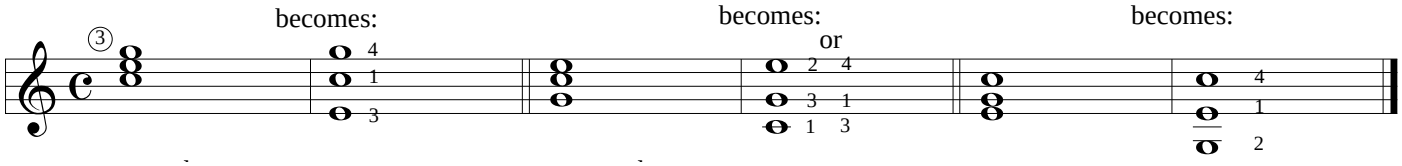
The middle note E has been dropped down an octave.

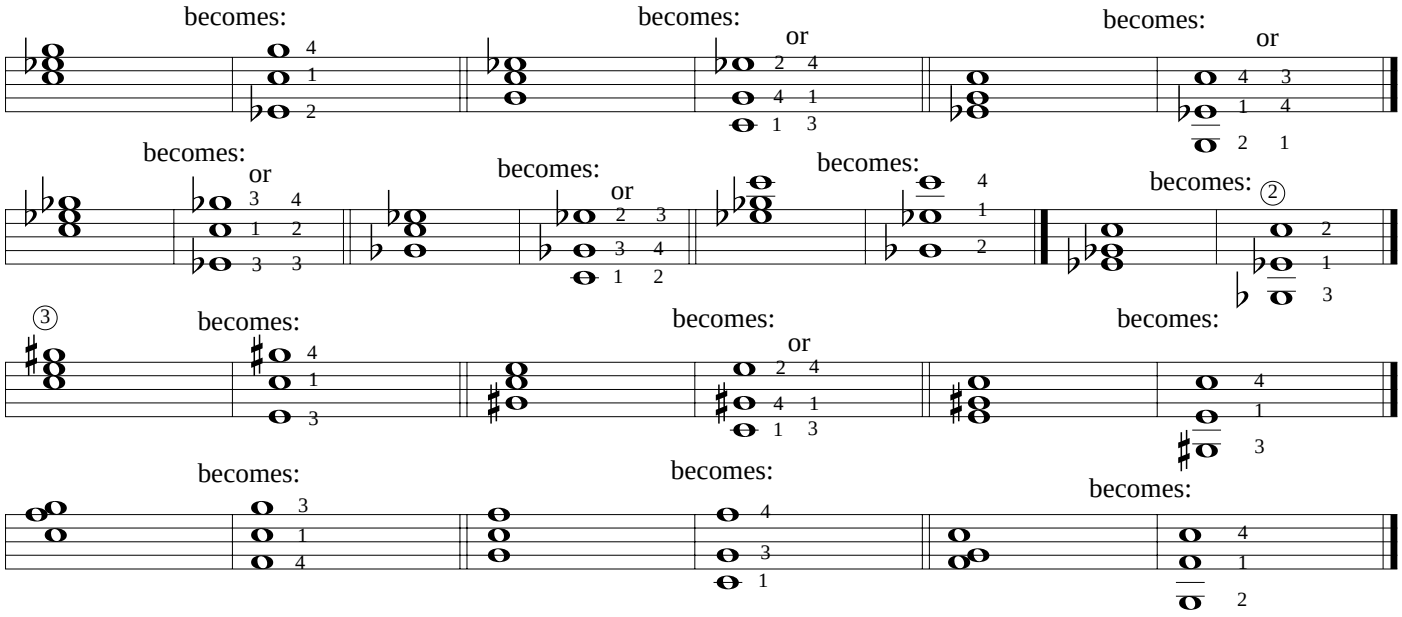
E, G, C becomes G, E, C

G, C, E becomes C, G, E

These are also called a "Drop 2" voicings. I.e. The 2nd voice from the top has been dropped down one octave.

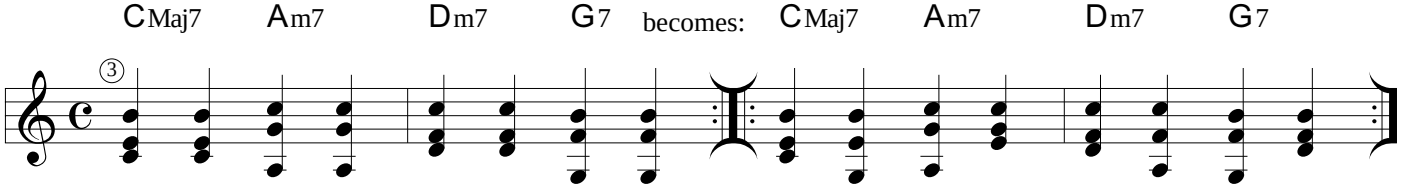
These voicings, in the lower ranges, are usually fingered on 3 of the lowest 4 strings, just like the column 3 and 4 type shell voicings. The top note is almost invariably fingered on the 3rd string when these types of chords are used in the Freddie Green style but sometimes it is necessary to use the 2nd string.





2. Alternating Root And 5th In The Bass

One very simple thing that is done to help create a feeling of forward motion is to alternate between the root and the 5th of a chord in the bass. This means that you might also think of the formula for a shell voicing as being 5, 3, 7 sometimes.

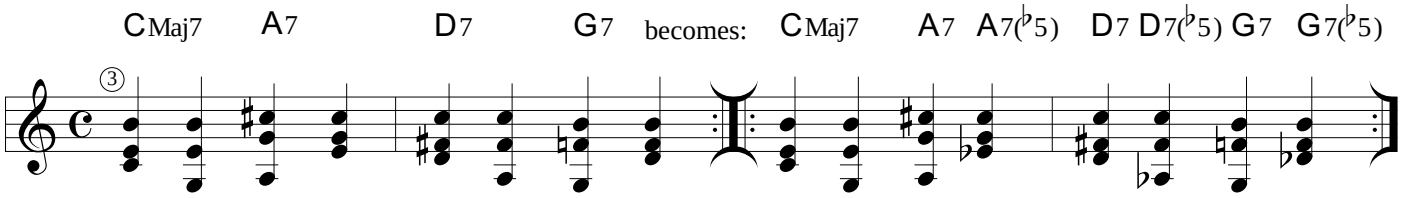


You may have noticed that the shell for Cmaj7 with it's 5th in the bass is identical to an Em triad in 1st inversion, that the shell for Am7 with it's 5th in the bass is identical to a Cmaj triad in 1st inversion, that the shell for Dm7 with it's 5th in the bass is identical to an Fmaj triad in 1st inversion and that the shell for G7 with it's 5th in the bass is identical to a Bdim triad in 1st inversion.

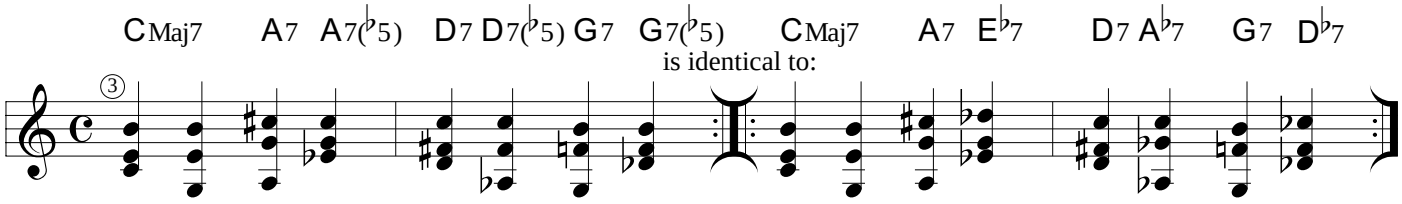
The same finger shapes and intervallic structures will be showing up in many guises and with many different names. Ultimately, the context in which these chords occur and their harmonic function will determine the name we give them and the chord symbol we assign to them.

3. Tri-Tone Substitution Introduction

On dominant 7th chords when the root motion of the progression is going up a 4th (or down a 5th) an interesting effect is often achieved by flatting the 5th as the Dom7 resolves into the next chord.



You should notice that the intervallic structure ♭5, ♭7, 3 is identical to the typical Dom7 shell R, 3, ♭7 (if the ♭5 is considered to be the root of a new chord) and the structure ♭5, 3, ♭7 is identical to the typical Dom7 shell R, ♭7, 3. (The ♭5 is the Root of another Dom7♭5 chord.)

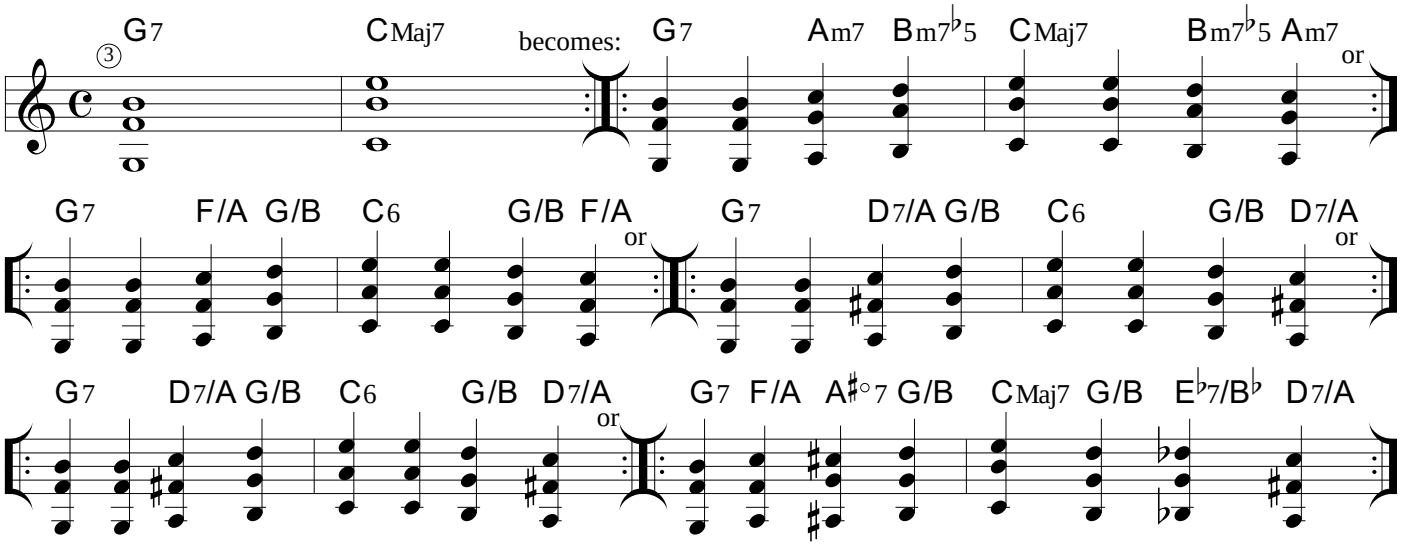


This has to do with the enharmonic equivalence of Dom7♭5 chords whose roots are a tri-tone (♯4/♭5) apart.
Example:
G7♭5 = G, B, D♭, F
D♭7♭5 = D♭, F, A𝄫 (= G), C♭ (=B)
G7♭5 = D♭7♭5
Another interesting symmetry having to do with tri-tones is that the 3rd and ♭7th of G7 (B and F) form the interval of a tri-tone and the ♭7th and 3rd of D♭7 (C♭ and F) are the same two pitches enharmonically and also form a tri-tone. As it happens, many melodies that work well over a G7 chord also sound good over a D♭7 chord. Thus the name “tri-tone substitute”. In jazz, in many ways, these two chords are almost completely interchangeable.

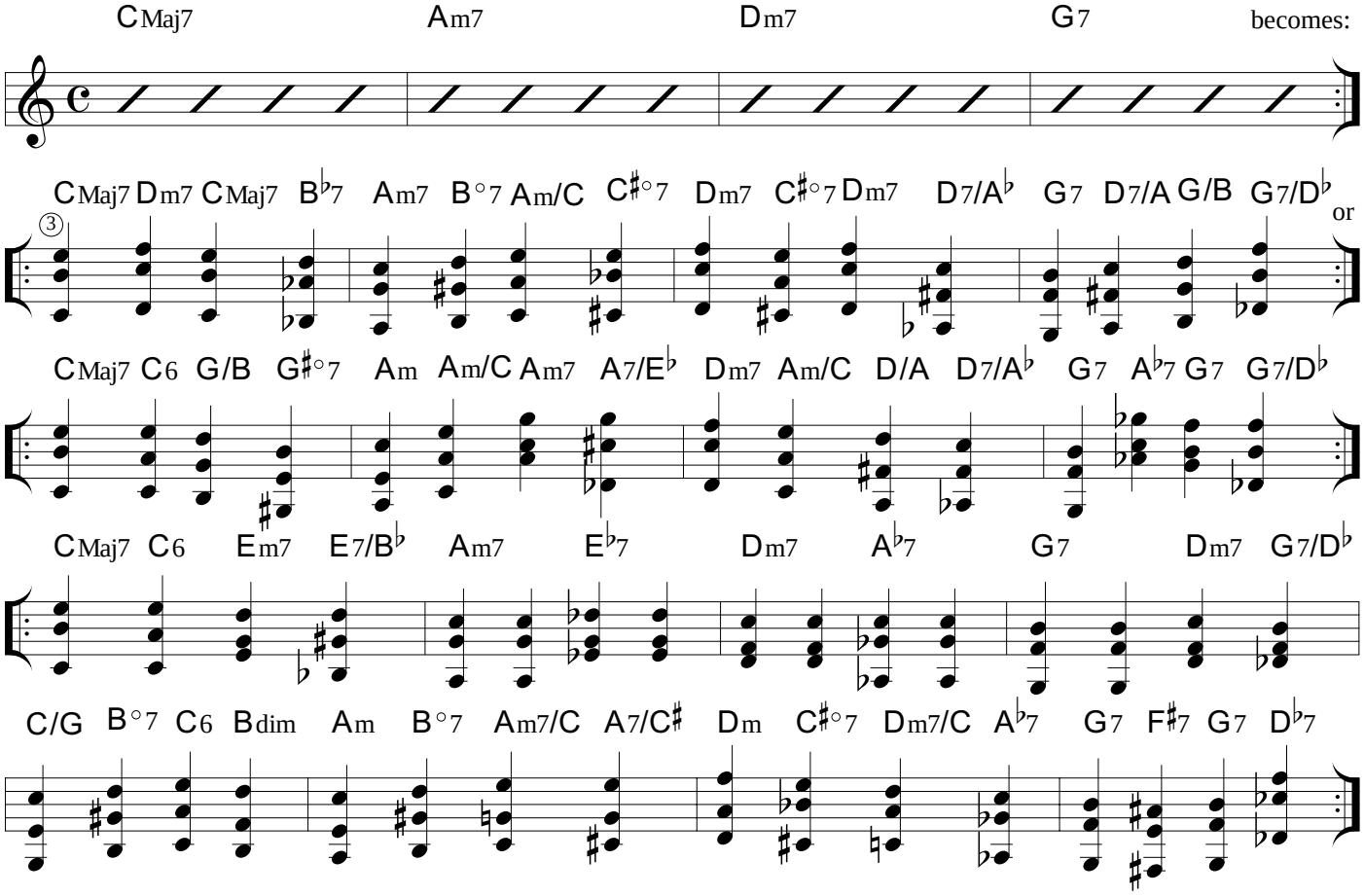
4. Passing Chords Introduction

Often, a chord that is of a long duration is embellished via a series of other chords moving more or less in parallel motion, in order to approach the next chord in a more interesting fashion. These are called “passing chords” and they follow the same principles as “passing tones”. The topic of Passing Tones is one that I do not fully deal with until Chapter XVI. - Melodic Uses Of The Non-Chord-Tones. Please feel free to look ahead.

Here are some examples of some cliched uses of passing chords that you may have heard before. The most important feature of these progressions is the relationship between the bass line and the top note of the voicing. If this relationship is strong, the middle note often seems to take care of itself.:

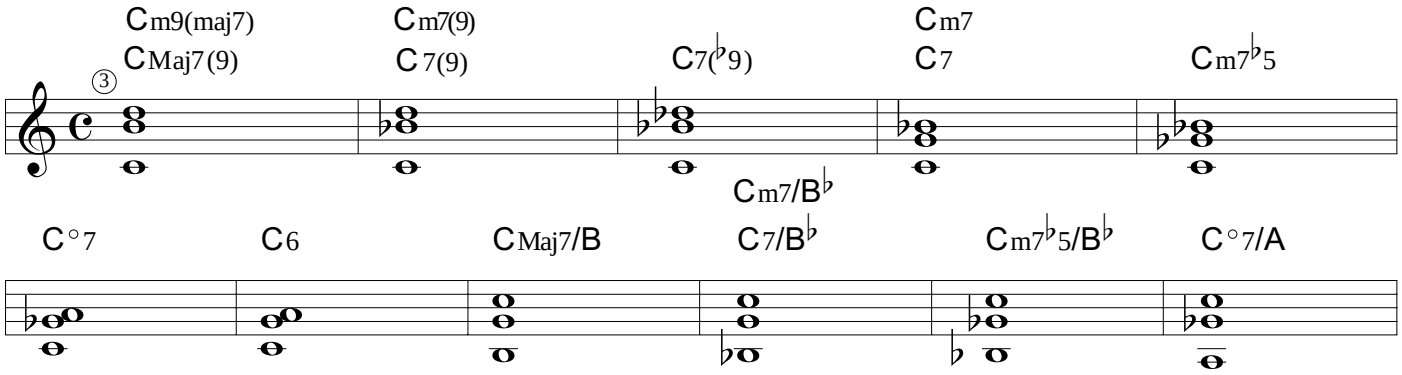


Here are some examples that utilize pretty much everything discussed so far: passing chords, alternating the Root and 5th in the bass, tri-tone substitutions and spread triads. Note: Some slight re-harmonisations are included just to keep it interesting and an accurate representation of common practice.



There are also a few chord formulations here that we have not seen before. For instance there is a Dm7/C voicing (in the last staff) that has no 3rd. This is because adding the 3rd would either ruin the voice leading or force me to use a 4 note chord which would sound out of place among all the 3 note chords. The 3rd (F natural) is felt anyway because of the chords surrounding the Dm7/C and because of the strong key feeling already established.

As time goes by you may notice several voicings that have the 3rd omitted that work quite well. Here's a few examples (there are many, many more) of voicings with the 3rd omitted that would work well in a Freddie Green style accompaniment:



5. Three Note Voicings For Inversions Of Seventh Chords

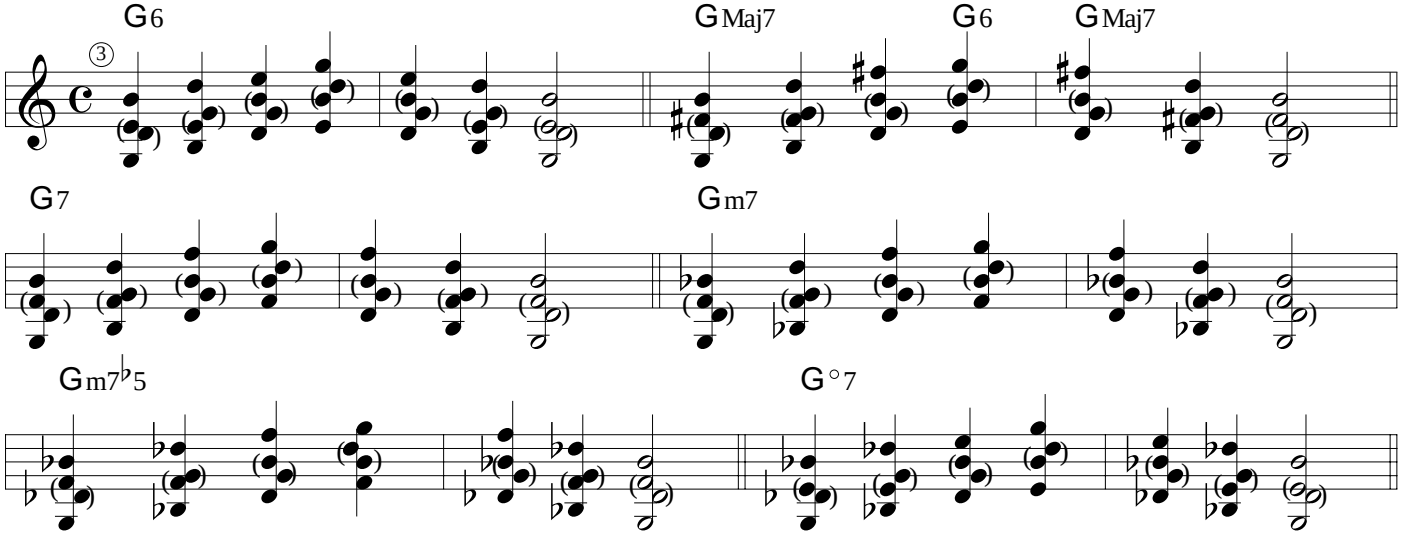
(All voiced bottom to top)

1. If the 3rd is in the lead the following 3-note voicings are possible: R, 7/6, 3 (a typical shell) or R, 5, 3 (a typical spread triad). I.e. Root position - the root is on the bottom.

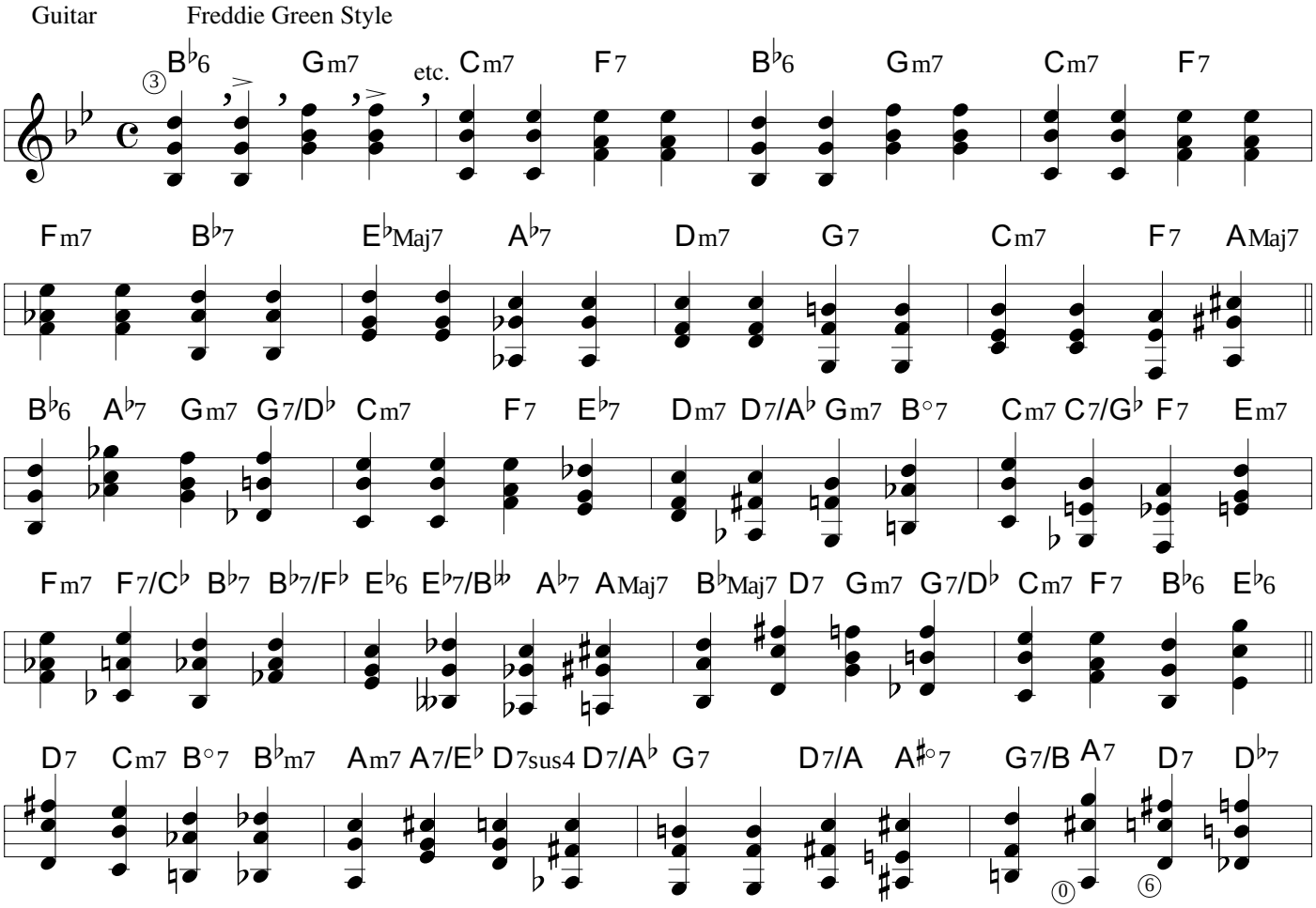
2. If the 5th is in the lead the following 3-note voicings are possible: 3, 7/6, 5 or 3, R, 5. I.e. First inversion - the 3rd is on the bottom.

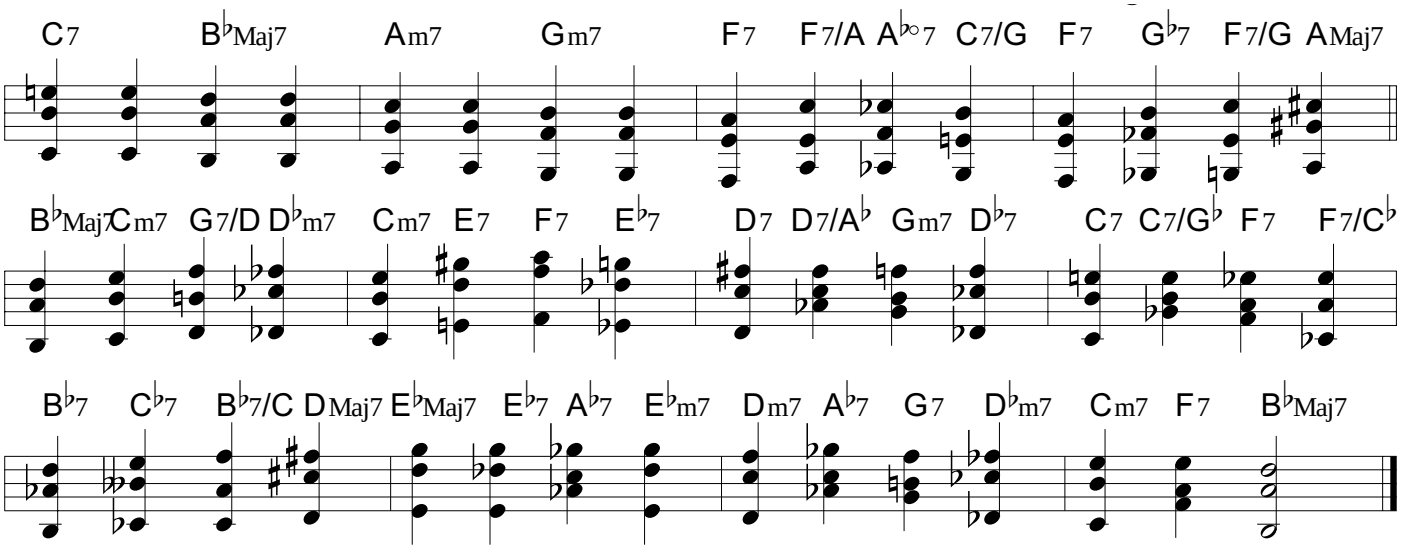
3. If the 7th is in the lead the following 3-note voicings are possible: 5, 3, 7/6 or 5, R, 7/6. I.e. Second inversion - the 5th is on the bottom.

4. If the root is in the lead the following 3-note voicings are possible: 7/6, 3, R or 7/6, 5, R. I.e. Third inversion the 7th (or 6th) is on the bottom.



Here's a chorus of Rhythm Changes using shell voicings in a Freddie green style accompaniment. The first 8 bars is pretty simple but it gets more involved after bar 9.





C. Guide Tones

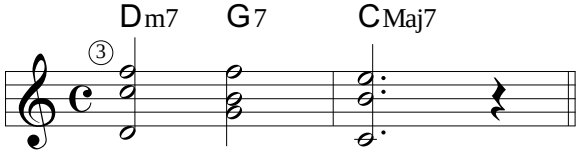
It is generally accepted that one of the qualities of a good jazz solo is that it should be able to stand on it's own without any accompaniment and still sound musical and coherent. The time feel and the harmony and the form of the tune should all be apparent just from the single note solo line. One way that the harmony is made clear is by targeting certain notes in the chords that are more essential than the others and by emphasizing the smooth step-wise joinings of these notes with each other as the chords are changing. These "essential" notes are usually the 3rds and 7ths of the chords and this is so for the same reasons discussed at the beginning of this chapter.

The term "guide tones" is used by jazz musicians to describe the notes that make up the more important inter-connecting lines of chord tones that are built into every chord progression. Guide tone lines can also contain Roots, 5ths and even some tensions but by and large a good guide tone line is centered on the relationship of the 3rd and 7th of one chord as they voice lead into the the 3rd and 7th of the next chord.

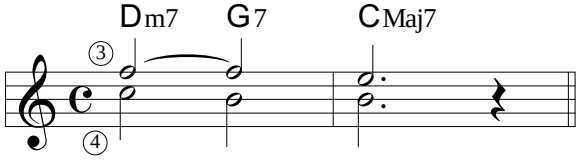
The shell voicings that we have been working on, especially the column 3 and 4 type shells, reveal this relationship quite clearly on the guitar fretboard. By targeting these notes in your solo lines you will be outlining the harmony quite clearly to any listener.

In progressions where the Root motion is down a 5th or up a 4th (known as "Cycle 5" Root motion) the 3rd of the first chord voice leads into the 7th of the next chord by common tone or by step and the 7th of the first chord voice leads into the 3rd of the next chord also by common tone or by step.

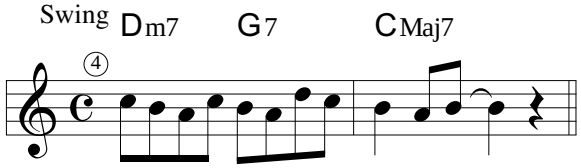
This:



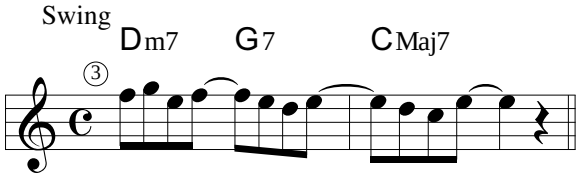
is the essentially the same as this:



Using the types of melodic embellishment devices discussed in “Melodic Uses Of The Non Chord Tones”:
The lower line can become this:



The upper line could become this:

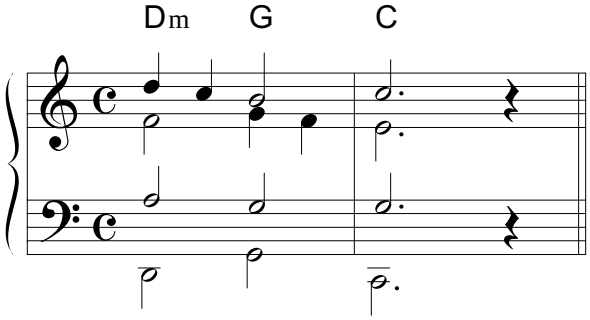


Classical music techniques require that certain intervals within certain chords must move in a strictly prescribed manner in order to comply with an aesthetic whereby all dissonances are resolved “properly”.

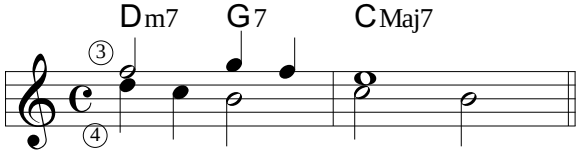
The 7th was not used as a chord tone in it’s own right until fairly recently. It was thought to be a dissonant interval and required a particular resolution. Minor 7th intervals were always required to resolve in a downward direction by step. Major 7th intervals had a little more leeway and could resolve in either direction by step. Sevenths were used primarily as passing tones to get smoothly from one tone of a triad into a tone on the next triad.

Also certain tones within a key centre are deemed to have tendencies to resolve either up or down by step. The most persuasive of these “tendency tones” is the “Leading Tone” (the major 7th). The Leading Tone “wants” to resolve upwards to the” Tonic” (the first note of the scale).

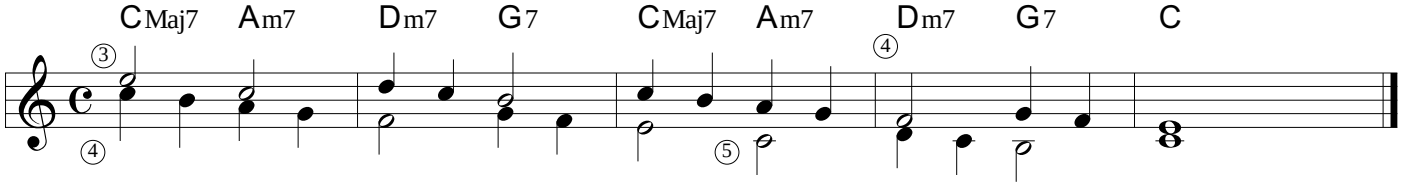
This is one way these “rules” might have been used on a ii - V - I progression in C major:



Notice how the lines start on the Root and then fall via the 7th on it’s way to the 3rd of the next chord.
Our original guide tones for Dm7 - G7 - CMaj7 might be adjusted like this in order to conform to the more classic voice leading techniques:



The IMaj7 - VIm7 - IIm7 - V7 progression’s guide tones can be thought of like this:

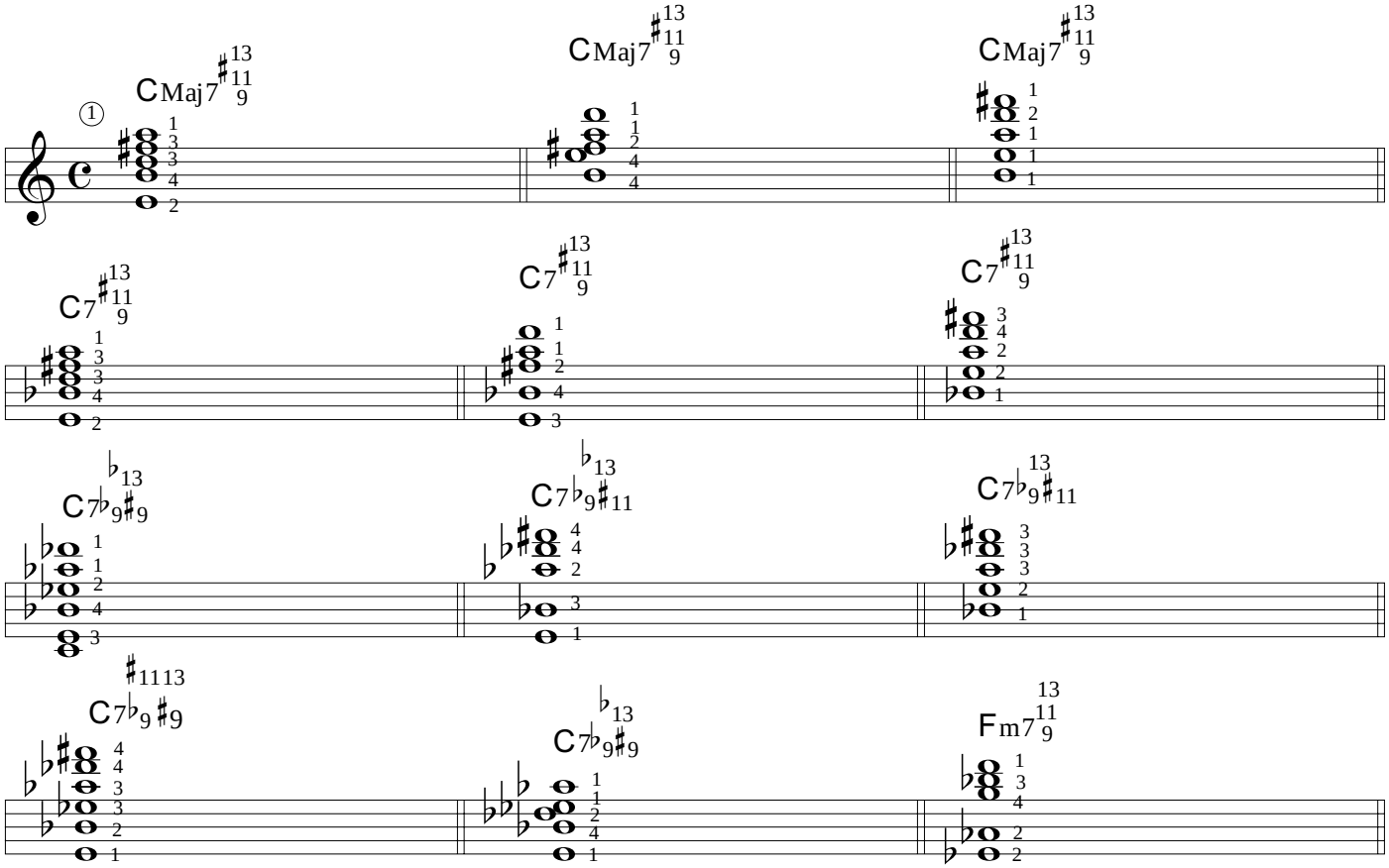


These guide tone lines are used then as the backbone for a more developed line. An accomplished player might jump around from one guide tone line to another or even jump between octaves for variation.

D. Voicings With 3 Or More Tensions

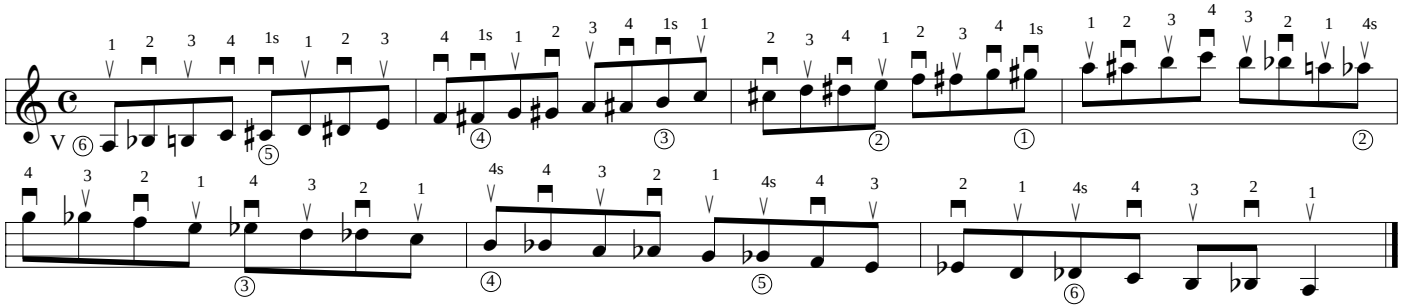
It is possible to play a few voicings with 3 tensions (and occasionally 1 or 2 more) on the guitar. Usually this requires omitting the Root (sometimes the 3rd as well) but not always. Here is a small sampling of some of the voicings possible with at least 3 tensions.

Note: I am not using any open strings here. Open strings can be real handy if they fit the chord because they free up your fingers to play other notes! Experiment.



IX. Position Playing

A. The Chromatic Scale In Pos. V



B. The C Major Scale In 12 Positions

By following the rules of position playing, as discussed earlier, it is possible to derive a movable fingering pattern (i.e. a transposable finger shape because it uses no open strings) for any single note structure, be it a scale or an arpeggio, based solely on the hand's position at any given time.

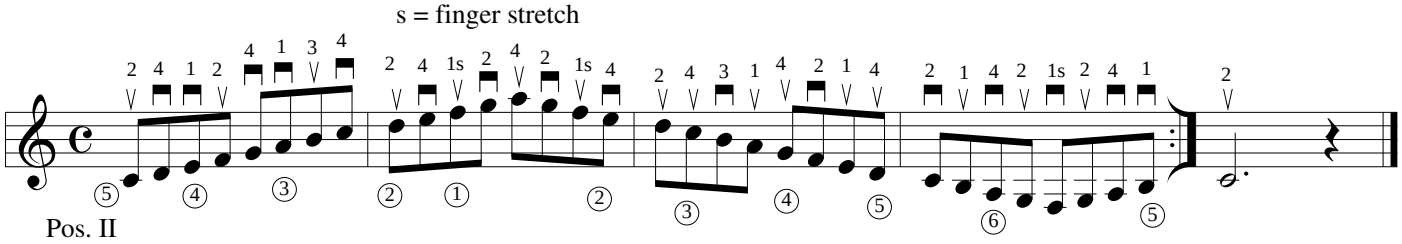
This is an important concept and skill for an improvising guitarist to have. By studying this technique you will develop the ability to be able to start any new ideas you have at whatever fretboard position your hand happens to be in when you have your idea. Practicing in position helps train you to intuitively know where under your fingers the melodies you are hearing happen to be. Practicing in position helps you to develop finger independence and strength. Practicing in position can do WONDERS for your sight reading abilities because it puts you on an almost equal footing with instruments like the piano where there is only one spot to play any particular pitch. Practicing improvising in position can help you see how arpeggios link up smoothly between chords.

Position playing is certainly not "the correct way to play". Many young guitarists fall prey to this misconception probably because position playing IS such a very powerful tool and conceptually it is similar to ideas like barre chords and the blues idea of "box" playing. But if anything you played stayed in a single position for any length of time your phrasing would likely sound very stiff. In the long run, finding a good fingering for a passage is about finding a fingering that lets you phrase things the way you hear them. This involves a liberal use of hammer-ons, pull-offs, glissandi, bends, etc., things that usually can not be accomplished unless you shift position A LOT. Try not to develop "positionitis". Don't be afraid to shift position when the phrasing dictates it.

There are 12 possible position style fingerings for the major scale. Seven of these are pretty comfortable for most players. The five remaining patterns are a little trickier but should be learned anyways because they do have their uses. First off we will learn the C major scale in the 12 possible positions (Positions II thru XIII.)

Use alternate picking at first but once you're comfortable with the scale patterns try the sweep picking as indicated. Try consistent reverse alternate picking too if you're getting bored!

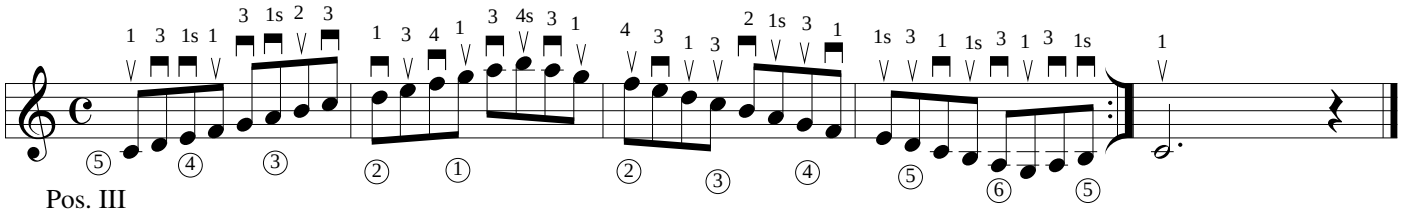
Ex. IX.A-1: The C major scale in Pos. II.



Note: This is one of the seven comfortable fingerings that most players know. It has 2 finger stretches, one on

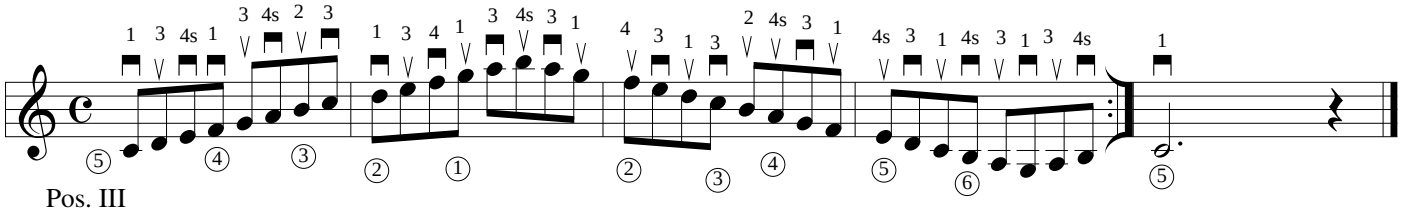
the 1st string and a similar one on the 6th string.

Ex. IX.A-2: The C major scale in Pos. III

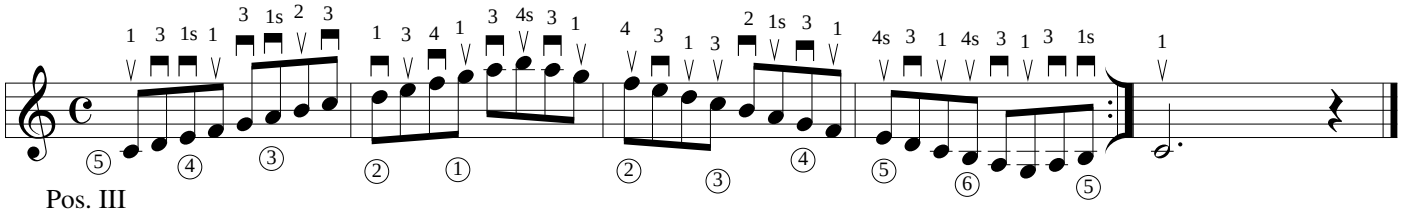


Note: This fingering uses only 1st finger stretches. In my experience 1st finger stretches work better than 4th finger stretches about 75% of the time especially on scalar passages. 4th finger stretches are often more useful on arpeggios though.

There are two spots in this fingering, when going up the scale, where a 1st finger stretch is immediately followed by a note 1 fret above it that also uses the first finger. This is a natural thing for your hand to want to do because after you stretch your 1st finger it naturally springs back in towards the the other fingers. On the way down the scale this is a little more awkward. It takes a bit more effort to push your 1st finger down 1 fret to make a finger stretch and then to play a note on a lower string with a different finger.



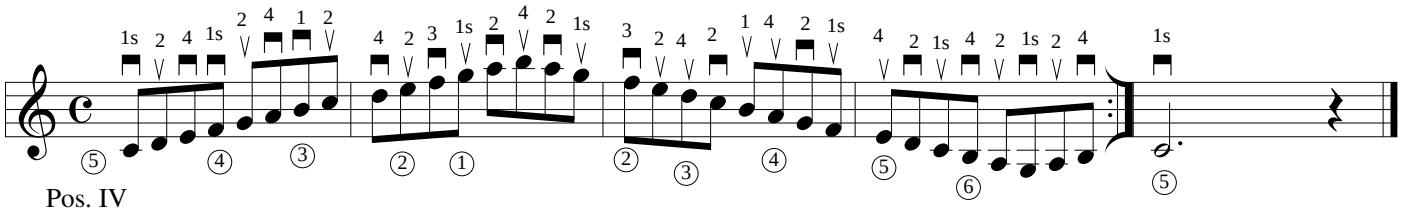
This fingering is also in Pos. III but I've used all 4th finger stretches. It's pretty tough all the way through. The lower part of the pattern (from the 4th string downwards to the 6th string) makes sense because it avoids the awkwardness discussed above with regards to 1st finger stretches where a half step is involved.



In this position, the above fingering is the one I prefer. It uses 1st finger stretches on the way up and 4th finger stretches on the way down, when a first finger stretch would be clumsy due to a half step slide.

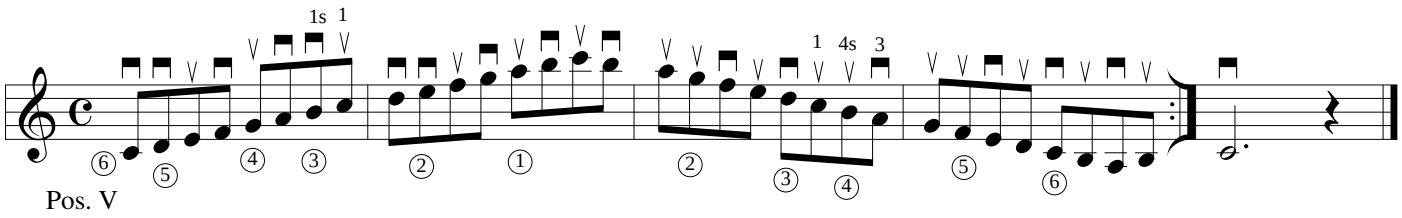
Note: The patterns for the C major scale in this position are not among the group of 7 comfortable fingerings although the upper strings are not too bad. What might be called for, in this area of the fretboard, is a combination of Pos. II or Pos. IV with Pos. III.

Ex. IX.A-3: The C major scale in Pos. IV



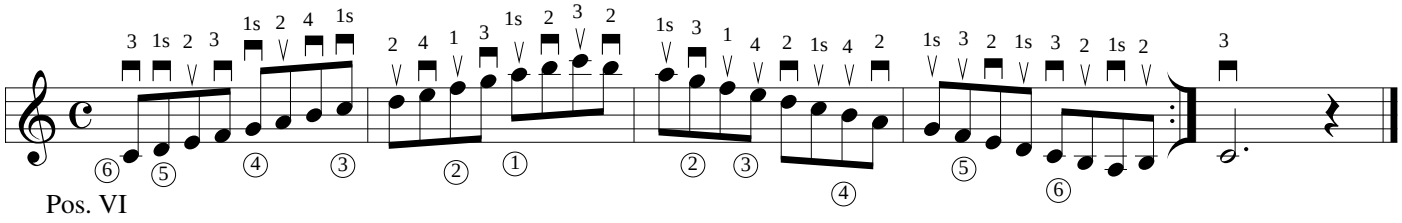
Note: The above pattern IS one of the 7 comfortable fingerings. Notice how it uses the same finger sequence on every string except the B string (6th string: 1s, 2, 4 - 5th: 1s, 2, 4 - 4th: 1s, 2, 4 - 3rd: 1, 2, 4 - 2nd: 2, 3 - 1st: 1s, 2, 4).

Ex. IX.A-4: The C major scale in Pos. V



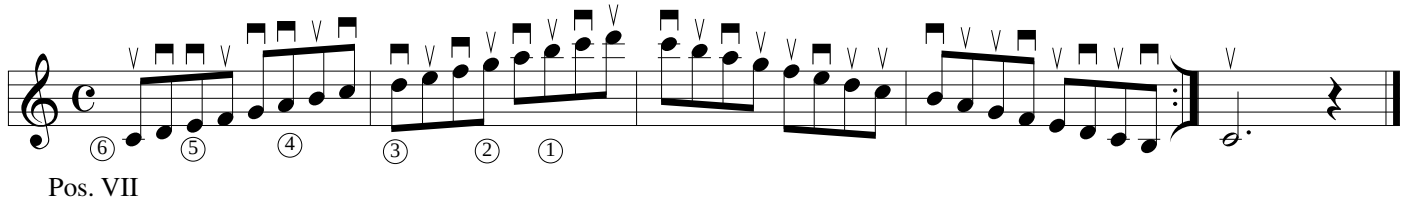
Note: This IS one of the 7 regular fingerings. It needs a finger stretch for the note “B” on 3rd line of the staff. On the way up the scale I have used a 1st finger stretch. On the way down the scale I have use a 4th finger stretch because of the half step involved. Practice all 3 possibilities (i.e. all 1st finger stretches, all 4th finger stretches and as written).

Ex. IX.A-5: The C major scale in Pos. VI



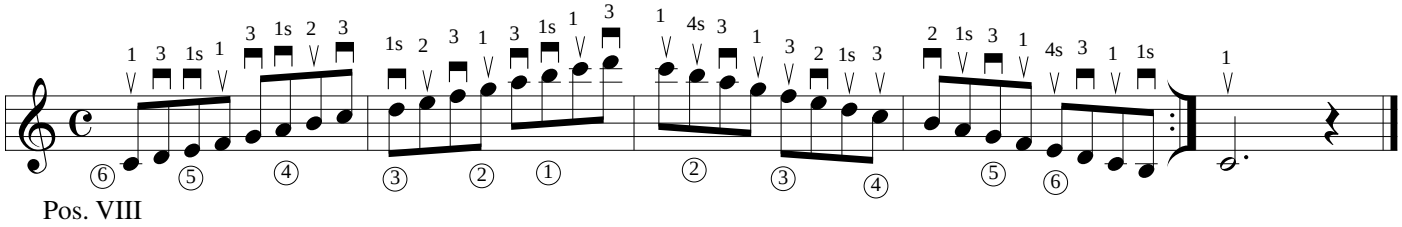
Note: This is not one of the 7 comfortable fingerings although the 3rd and 4th strings are sort of interesting. What might be called for, in this area of the fretboard, is a combination of Pos. V or Pos. VII with Pos. VI.

Ex. IX.A-6: The C major scale in Pos. VII



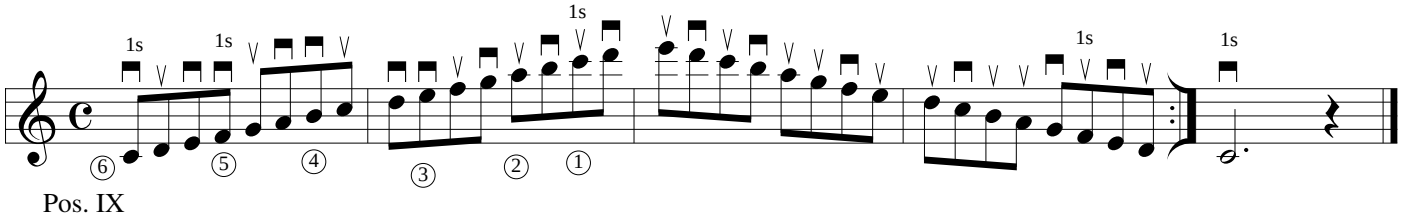
Note: This IS one of the 2 most comfortable fingerings of all. It has no finger stretches at all.

Ex. IX.A-7: The C major scale in Pos. VIII



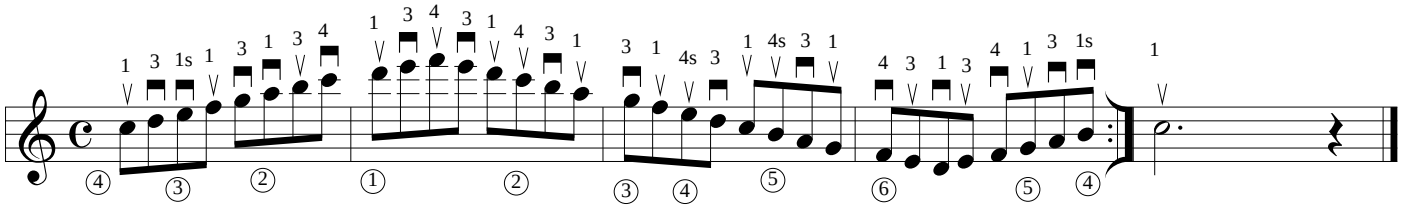
Note: This is not one of the most comfortable fingerings although the upper strings are quite sensible. What might be called for, in this area of the fretboard, is a combination of Pos. VII or Pos. IX with Pos. VIII.

Ex. IX.A-8: The C major scale in Pos. IX



Note: This IS one of the 7 normal fingerings. Notice again the common finger sequence on all but the 2nd string.

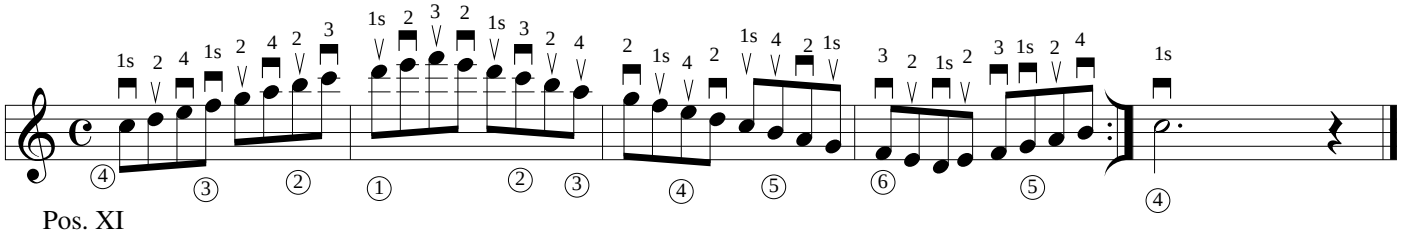
Ex. IX.A-9: The C major scale in Pos. X



Pos. X

Note: This IS one of the 7 regular fingerings. I've used 1st finger stretches on the way up the scale and 4th finger stretches on the way down due to the half steps. Practice it with only 1st finger stretches and only 4th finger stretches as well.

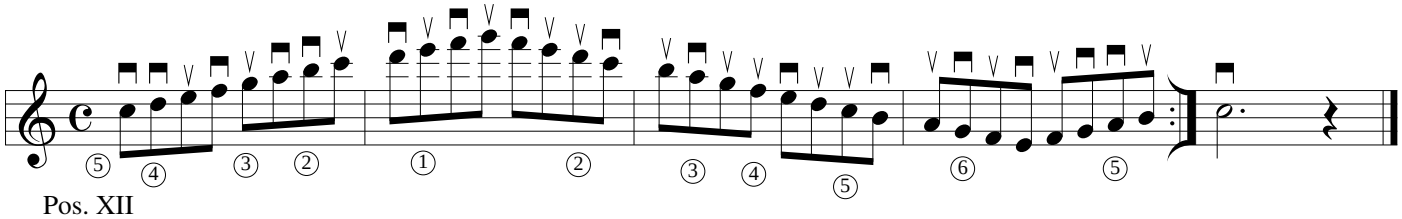
Ex. IX.A-10: The C major scale in Pos. XI



Pos. XI

Note: This is not one of the 7 comfortable fingerings although I find the 5th, 4th and 3rd strings quite useful for hammer-ons and pull-offs.

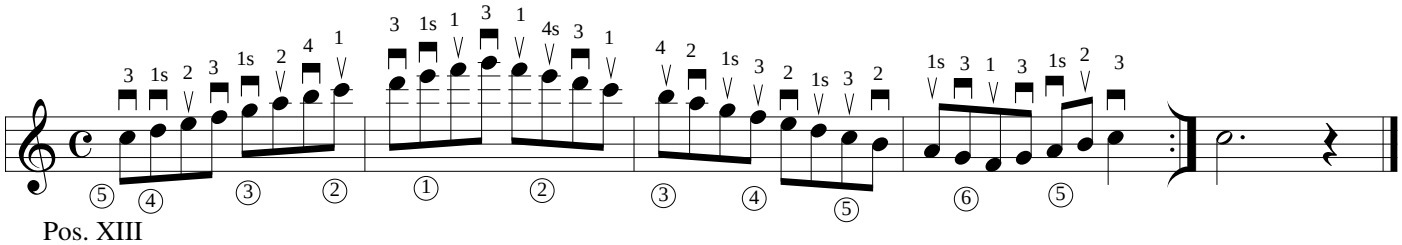
Ex. IX.A-11: The C major scale in Pos. XII



Pos. XII

Note: This is the other real popular scale fingering because it has no finger stretches at all.

Ex. IX.A-12: The C major scale in Pos. XIII



Pos. XIII

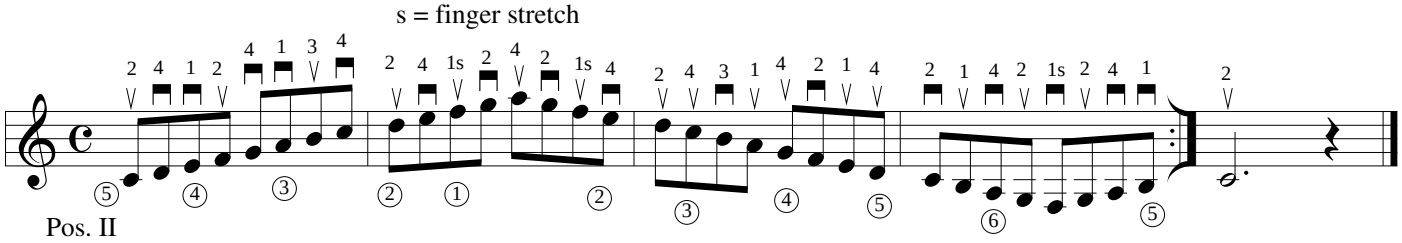
Note: This is not one of the 7 comfortable fingerings for obvious reasons! I've used 1st finger stretches whenever possible but 4th finger stretches on the way down the scale when there is a half step involved.

C. The 7 "Regular" Position-Style Major Scale Fingerings

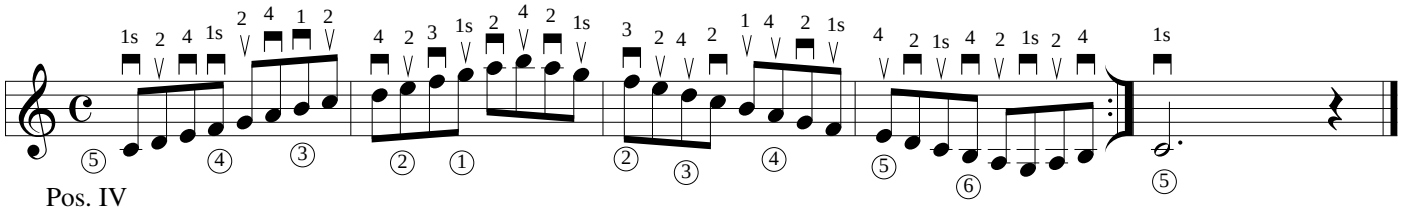
It should be said that when I suggest that you play a scale or an arpeggio in any particular position that I expect you to start on the lowest possible tonic of that scale in that position, to proceed to the highest note in that position that is also a member of that scale, to proceed back to the low tonic, to then proceed to play any other notes that also belong to that scale below the tonic and then to proceed back up to the tonic. What we are really doing is mapping out where all the notes of any particular single note structure happen to be under our fingers when our hand is placed in any particular position.

Here again are the 7 “regular” or “usual” or “familiar” position-style fingerings for the C major scale. This time pay more attention to which string and to which finger these patterns start on and less to the position number your hand happens to be in:

Ex. IX.B-1: The C major scale in Pos. II.

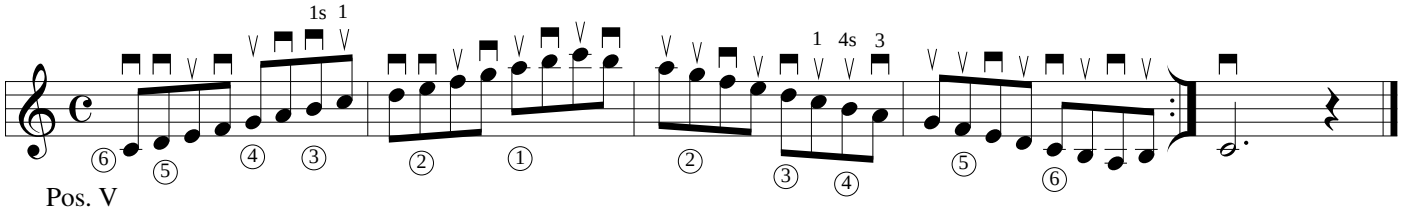


Ex. IX.B-2: The C major scale in Pos. IV



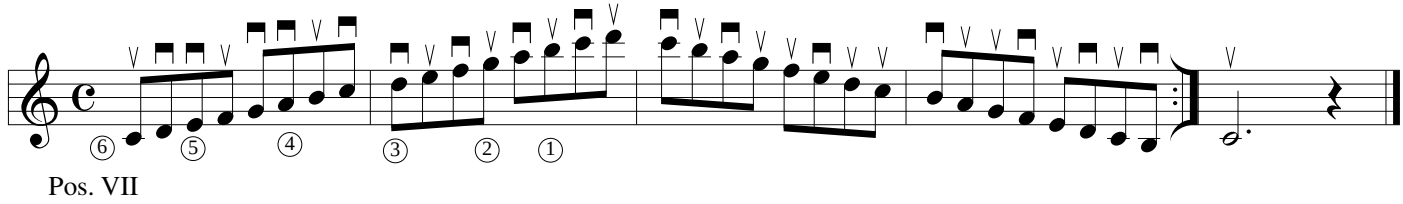
Note: Notice the same finger sequence on every string except the B string (6th string: 1s, 2, 4 - 5th: 1s, 2, 4 - 4th: 1s, 2, 4 - 3rd: 1, 2, 4 - 2nd: 2, 3 - 1st: 1s, 2, 4).

Ex. IX.B-3: The C major scale in Pos. V



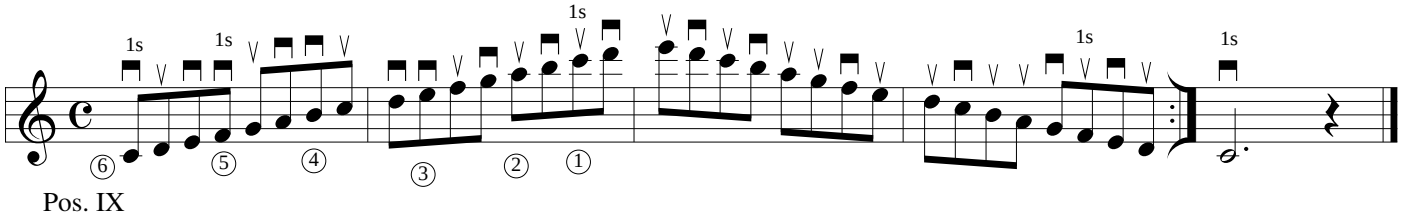
Note: Needs a finger stretch for the note “B” on 3rd line of the staff. On the way up the scale I have used a 1st finger stretch. On the way down the scale I have use a 4th finger stretch because of the half step involved. Practice all 3 ways possibilities (i.e. all 1st finger stretches, all 4th finger stretches and as written).

Ex. IX.B-4: The C major scale in Pos. VII



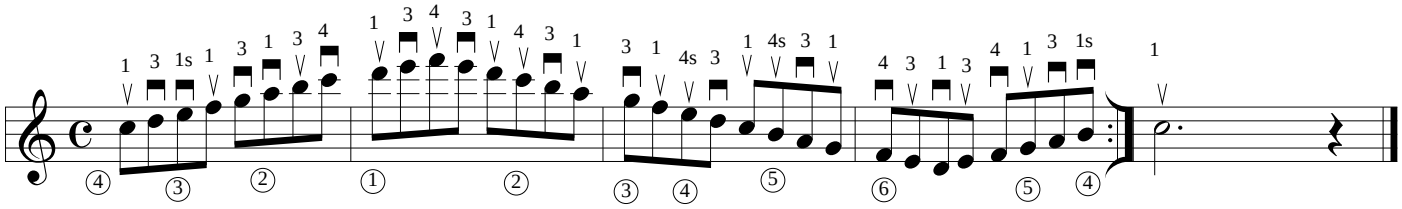
Note: This is one of the 2 most comfortable fingerings of all. It has no finger stretches at all.

Ex. IX.B-5: The C major scale in Pos. IX



Note: Notice again the common finger sequence on all but the 2nd string.

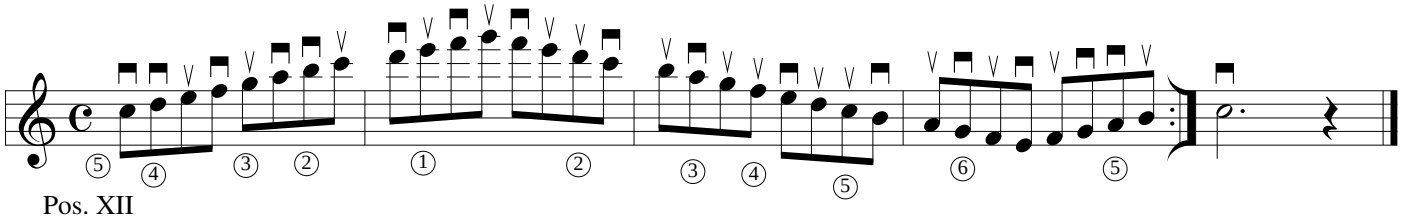
Ex. IX.B-6: The C major scale in Pos. X



Pos. X

Note: I've used 1st finger stretches on the way up the scale and 4th finger stretches on the way down due to the half steps. Practice it with only 1st finger stretches and only 4th finger stretches as well.

Ex. IX.B-7: The C major scale in Pos. XII



Pos. XII

Note: This is the other real popular scale fingering because it has no finger stretches at all.

Of these 7 finger patterns 3 of them start on the 6th string (4th finger, 2nd finger and 1st finger stretch). One of them starts on the 4th string with the 1st finger (no stretch). And 3 of them start on the 5th string (4th finger, 2nd finger and 1st finger stretch). It is therefore possible to completely blanket the entire fingerboard with just these 7 shapes.

Ex.IX.B-8

Figure out the 7 regular position-style fingerings for the A major scale beginning on the lowest part of the fretboard and working your way up.

The first pattern will start with your 4th finger on the 6th string. This happens to put your hand in Pos. II. This is the same finger pattern as the C major scale in Pos. V.

The next pattern will start with your 2nd finger on the 6th string. This happens to put your hand in Pos. IV. This is the same finger pattern as the C major scale in Pos. VII.

The next pattern will start with your 1st finger on the 6th string as a 1st finger stretch. This happens to put your hand in Pos. VI. This is the same finger pattern as the C major scale in Pos. IX.

The next pattern will start with your 1st finger on the 4 string. This happens to put your hand in Pos. VII. This is the same finger pattern as the C major scale in Pos. X.

The next pattern will start with your 4th finger on the 5th string. This happens to put your hand in Pos. IX. This is the same finger pattern as the C major scale in Pos. XII.

The next pattern will start with your 2nd finger on the 5th string. This happens to put your hand in Pos. XI. This is the same finger pattern as the C major scale in Pos. II.

The last pattern will start with your 1st finger on the 5th string as a 1st finger stretch. This happens to put your hand in Pos. XIII. This is the same finger pattern as the C major scale in Pos. IV.

You could continue up the fretboard a little bit farther by starting to repeat the cycle with the pattern that begins on the 6th string 4th finger etc.

Ex.IX.B-9

Figure out the 7 regular position-style fingerings for the D major scale beginning on the lowest part of the fretboard and working your way up.

The first pattern will start on the 5th string with the 4th finger.

The next pattern will start on the 5th string with the 2nd finger. Etc., etc.

Ex.IX.B-10

Figure out the 7 regular position-style fingerings for every major scale beginning on the lowest part of the fretboard and working your way up. Use the Cycle of 5ths to pick the sequence of tonics to practice.

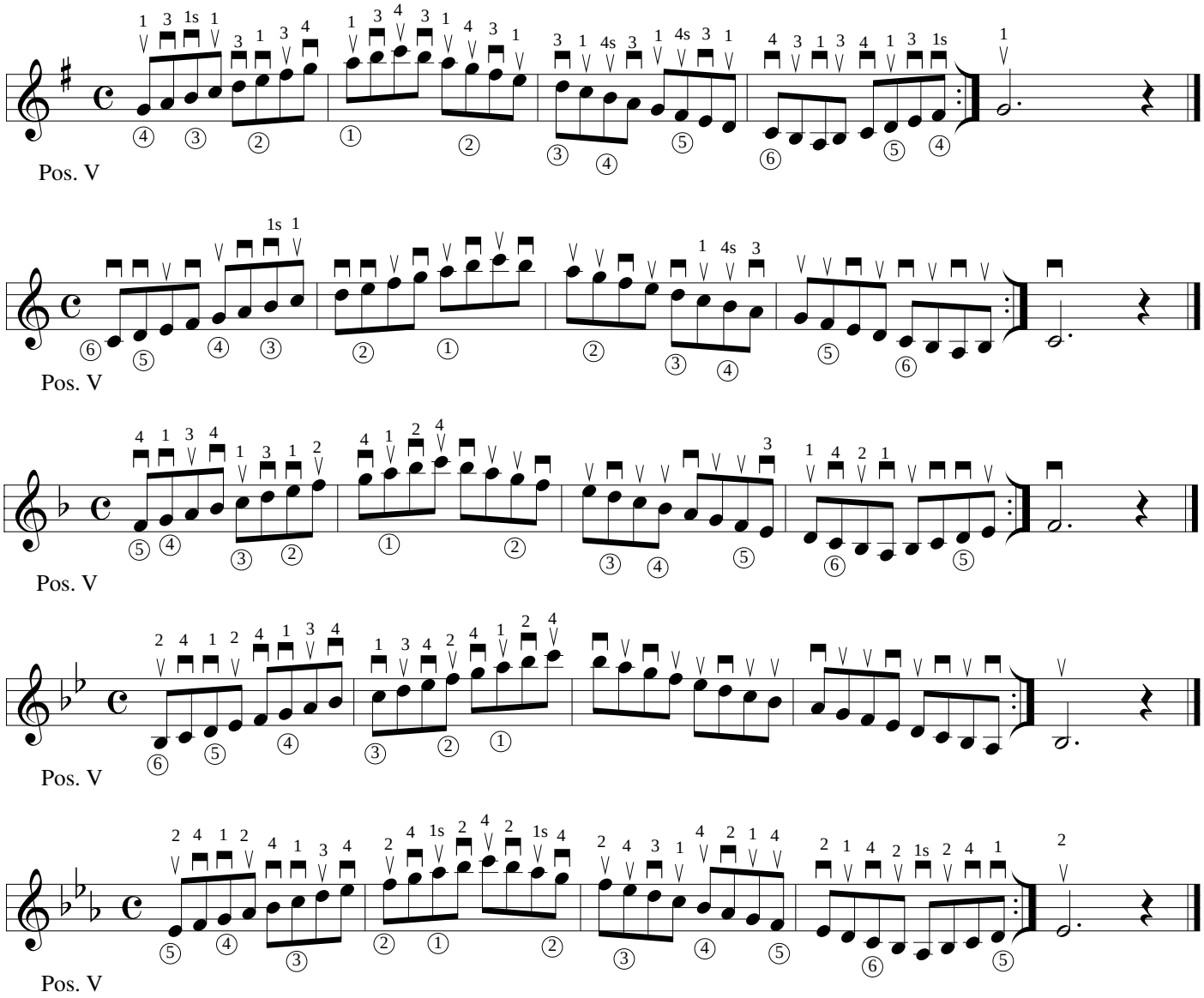
C, F, B♭, E♭, A♭, D♭/C♯, G♭/F♯, C♭/B, E, A, D, G, |C, etc.

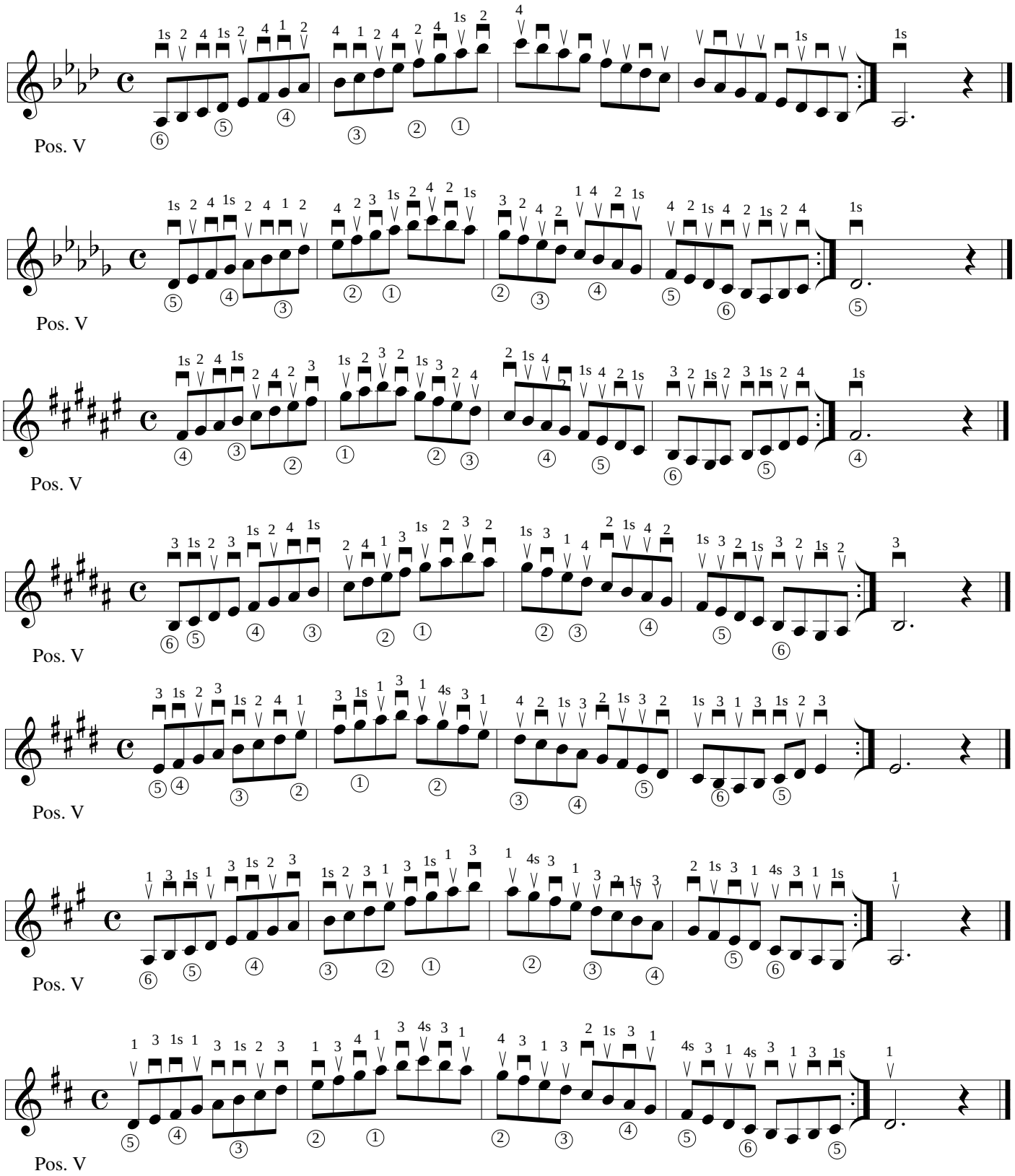
Ex.IX.B-11

Have a look ahead at the Chapter titled Chord Scales Via Modal Theory (Part 1) and attempt to improvise over the modal vamps using these major scale finger patterns.

D. All 12 Major Scales In A Single Position (Pos. V)

It is possible using this concept to play any scale in any position. Here are the position-style fingerings for all 12 major scales in Pos. V starting with G major and going through the cycle of 5ths. Notice that in this position, starting with G major, the first 7 patterns are the "regular" ones and that the last 5 are the oddballs.:





Learn how to play every major scale in every possible position.

E. Position-Style Arpeggios

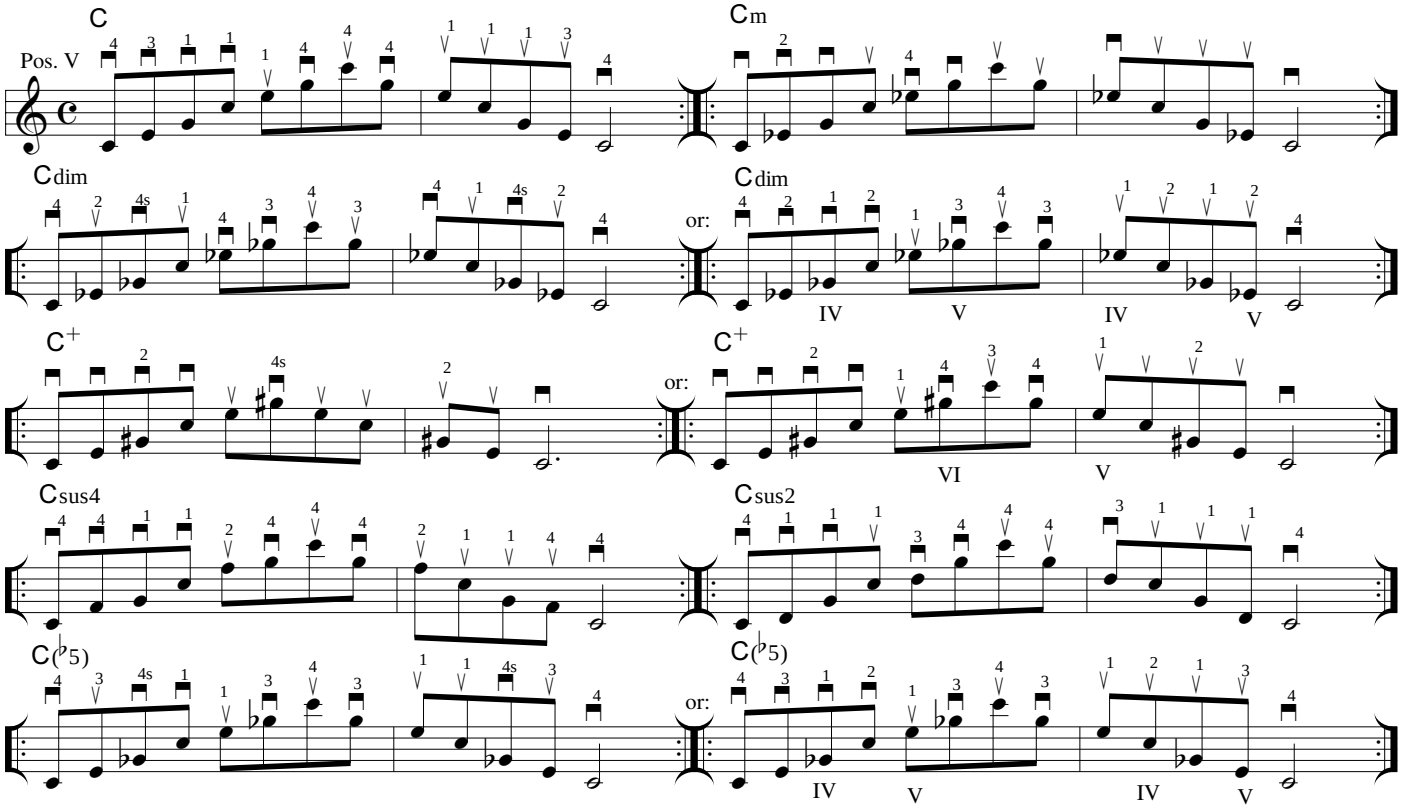
By following the position playing rules that gave us the 12 movable scale patterns it is also possible to devise a movable fingering pattern for any arpeggio based solely on the hand's position at any given time.

We derive these fingerings via a similar process to the one we used for chord construction. That is, we first learn the fingerings for the major chord arpeggios and for the major seventh chord arpeggios and we then alter their intervals and their fingerings to fit the formulas for the other types of triads and seventh chords.

We will be using the same process later on for modes. Ie. We will take the fingerings for the major scale and alter them to fit the intervallic formulas of the other scale types.

Position playing techniques are ideal for visualizing this process. Eventually, no matter where your hand happens to be on the neck, you will know where and how all of the intervals of any chord or scale that you need to play can be fingered somewhere nearby. You will know, inside out, what every interval looks like and sounds like and you will have a fingering handy anywhere on the fretboard with which to play them.

These are the position-style fingerings for almost all of the triad types, with C as the Root, in Pos V. Notice how some of the fingerings don't work all the way up and all the way down in just Pos V. Often a position shift is mandatory!:



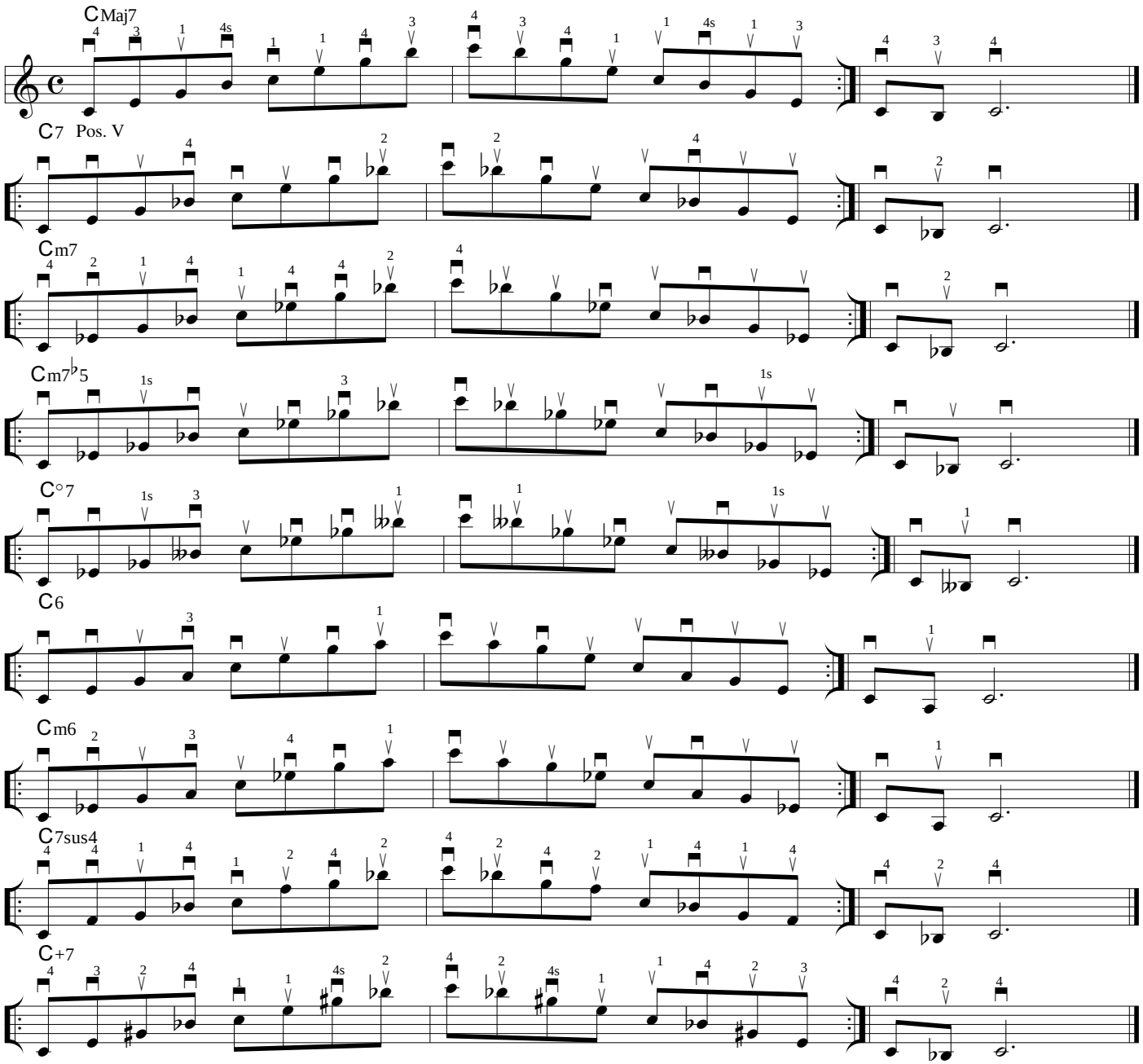
When you have to play two or more notes on adjacent strings in the same fret:

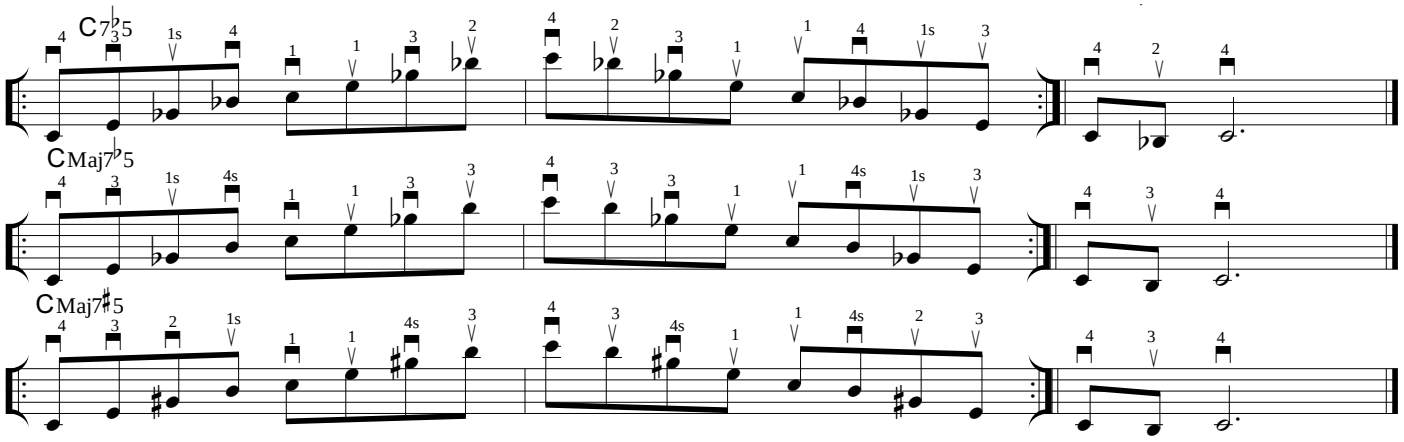
On the way up in pitch (down towards the floor): Finger the first note normally and then flatten your finger to fret the next note on the next higher string. At the same time roll your finger so that the previous note is muted. Only one note at a time should be sounding.

On the way down in pitch (towards the ceiling): When fingering the first note prepare the others beforehand by flattening the finger across all of the relevant strings at the outset. As you attack the lower pitches roll the finger away from the fretboard so that the previous notes are dampened.

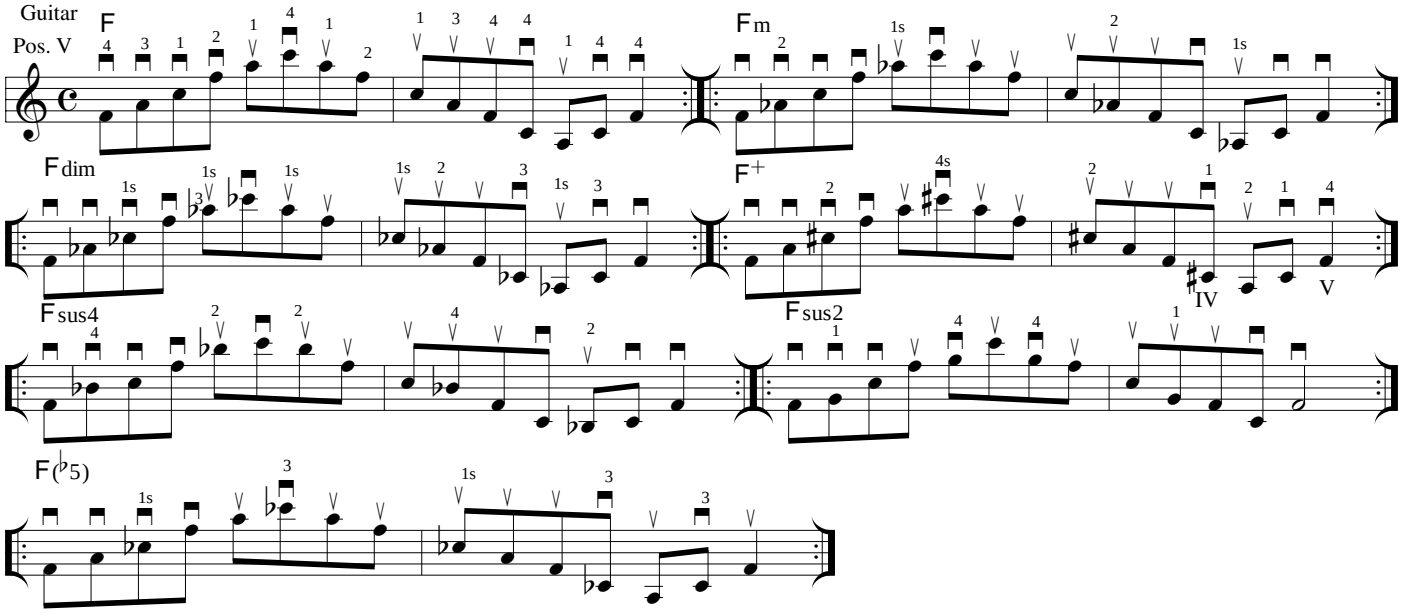
This process can be used to cover several strings if necessary. However, if doing this for more than 3 consecutive strings it might sometimes be necessary to jump the finger down (or up) to the next string to start a-new so to speak. Sometimes using a new finger in the same fret is what is called for.

These are the position-style fingerings for most of the seventh chord types, with C as the root, in Pos V. Notice how all of these fingerings do work all the way up and all the way down in just Pos V. (Sometimes a position shift would be required though. Try A7♯5 in Pos V and you should see what I mean.):

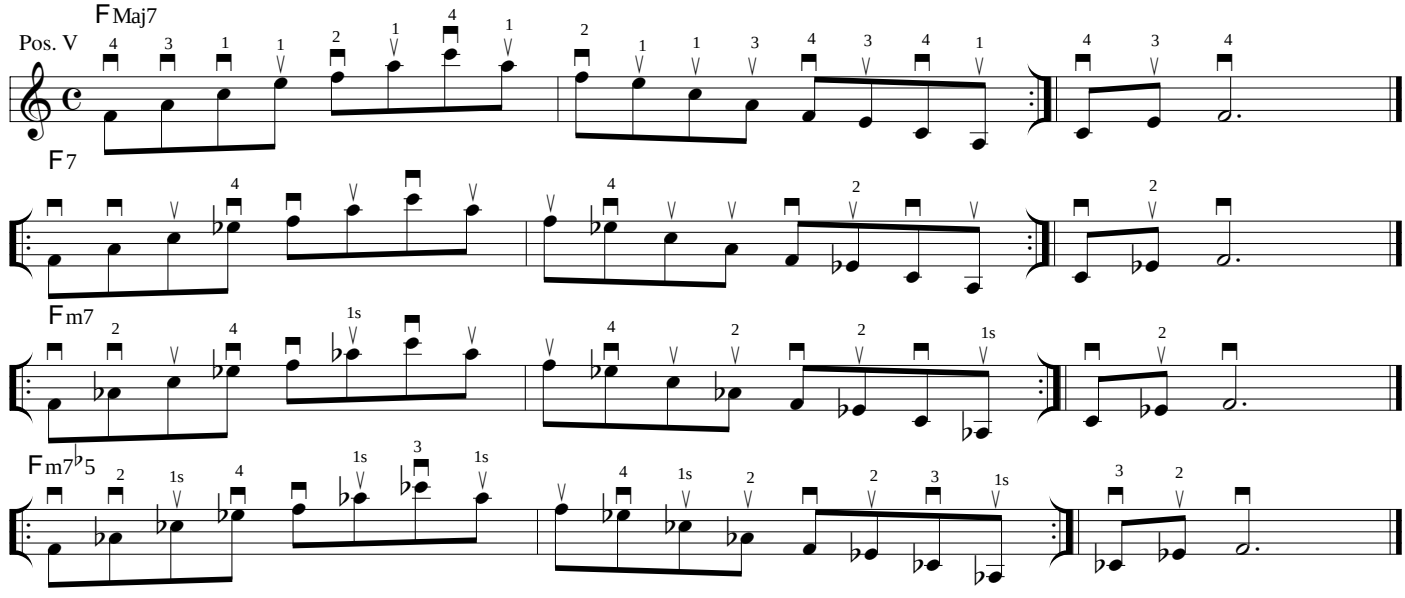


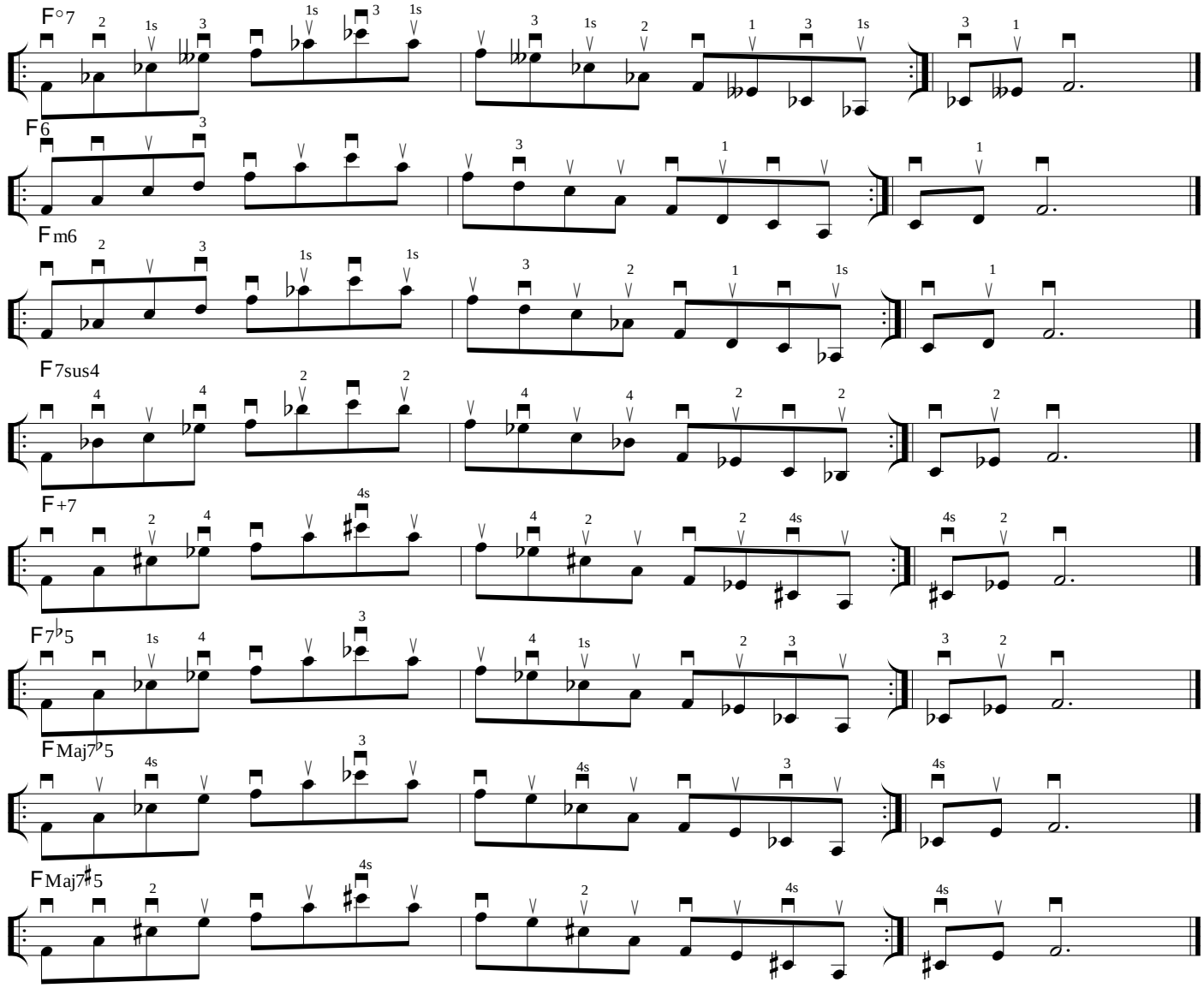


Here's the position-style fingerings for all of the triads with F as Root in Pos. V.

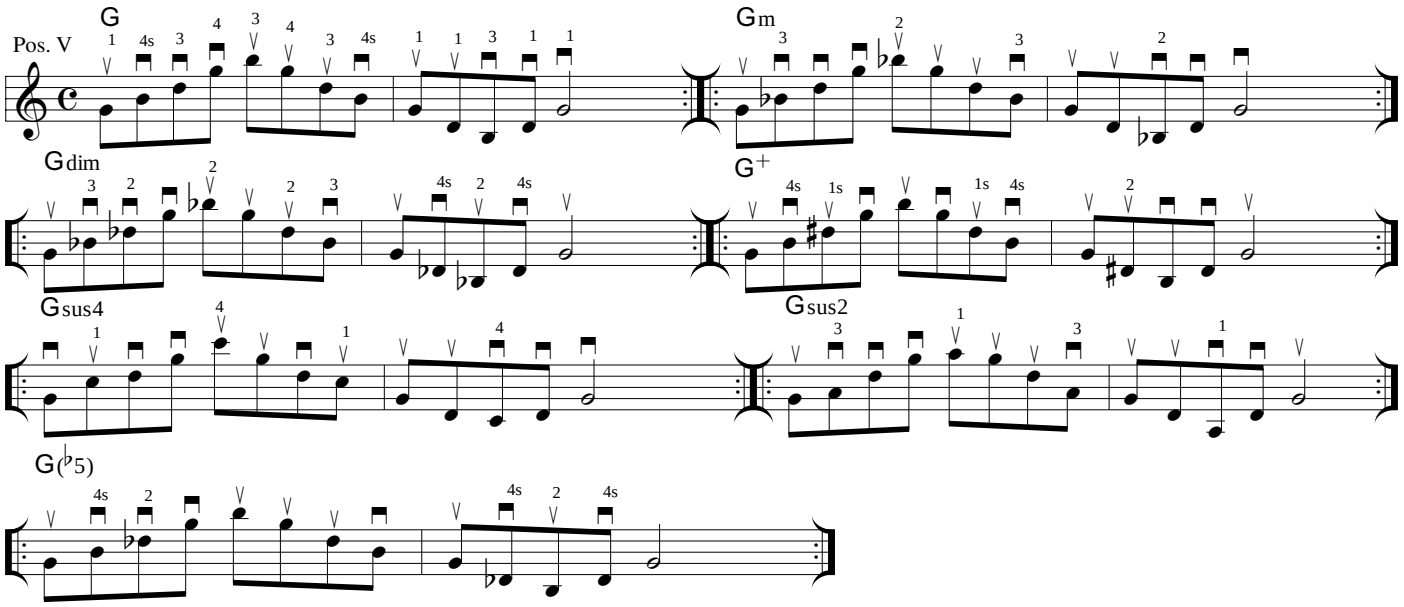


Here's the position-style fingerings for all of the seventh chords with F as Root in Pos. V.

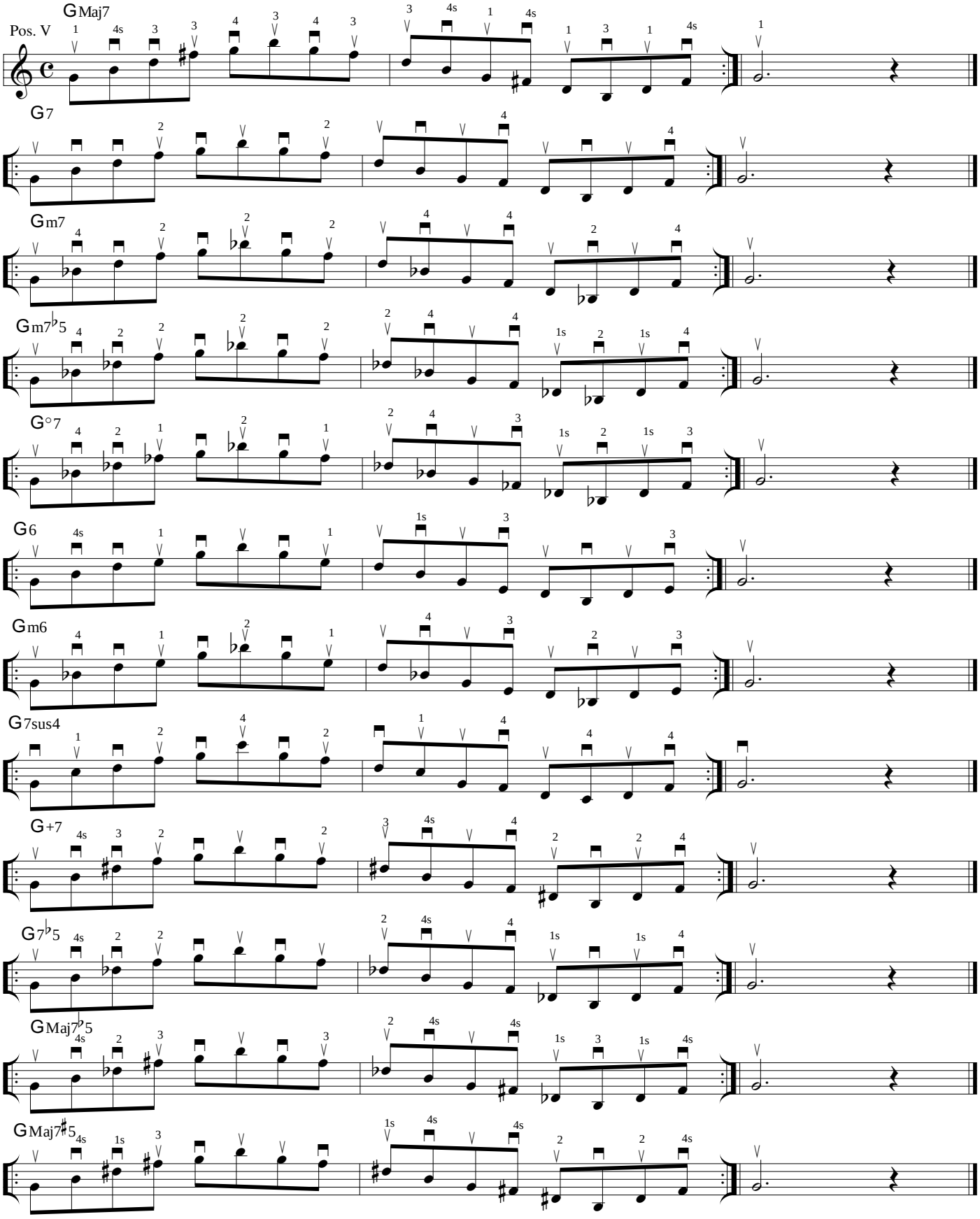




Here's the position-style fingerings for all of the triads with G as Root in Pos. V.



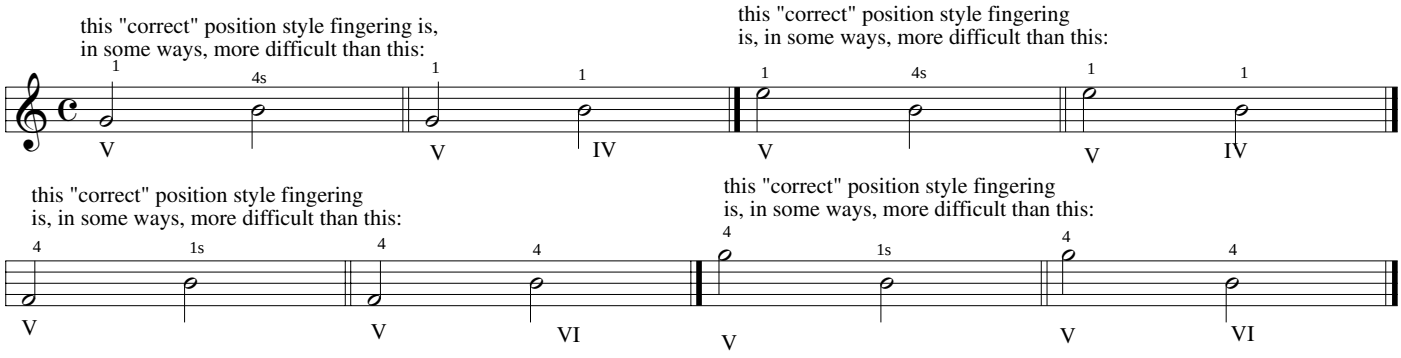
Here's the position-style fingerings for all of the seventh chords with G as Root in Pos. V.



You may have noticed that certain seemingly obvious fingerings for things are sort of deemed “illegal” in position technique. Things like using any finger, but especially the 1st or the 4th finger, in two different frets for two consecutive notes. Well these fingerings are not necessarily bad and often they are the best solution to a fingering problem but your hands are capable of executing the seemingly more difficult strict position fingerings too, so you should practice them. Be aware that using the same finger on a new string in a different fret will cause a bit of a gap between notes. If leagto phrasing is desired you should look for another solution.

All you can really say is that if your are attempting to play strictly in one position and you do execute one of these illegal fingerings is that you are not in the same position anymore. Whether or not this is “wrong” depends on what you are trying to accomplish. In my experience it has been well worth the effort to force myself to practice many different things strictly in one position. You may or may not have the same experience.

Example:



Learn all the other arpeggio types for all possible roots in Pos. V.

Repeat the above for every possible position on your guitar.

There’s a lot of work suggested in these last two sentences. Don’t be too hard on yourself if you don’t get this together in a week or two!

F. Phrasing Possibilities Within A Single Position

All of the same phrasing techniques (hammer-ons, pull-offs, etc.) are possible within a single position as were mentioned in the Chapter titled Single String Exercises for single strings but you are somewhat limited as to which fingerings within that position will allow you use each particular technique.

For Example, in Position V:

On the first string it is possible to execute hammer-ons or pull-offs between the notes B and A which are a whole step apart from each other but if you wanted to use these same devices for the notes A and G you would HAVE to change position.

Eventually, a fingering should be chosen because it allows you to play the best phrasing possible for the passage and not because you are more familiar with one position than another.

G. Sight Reading Tips

There is a difference between “reading” and “sight reading”. Being able to read music means that you have the skills necessary to figure out how to play something by using musical notation. Sight reading is about being able to play something reasonably well, in real-time, the first time you look at it.

Most good sight readers do not play a piece the best that they are capable of when sight reading it for the first time but they get a reasonable facsimile. There are certain tricks of the trade that come into play and, as

guitar players, the technique of Position Playing plays an important role in this so I will discuss it here briefly.

Use any time that the bandleader or conductor has allowed before he counts off the tune wisely. While the other guys are discussing their boats and their cottages you should be getting ready to play the chart. You're only a guitar player. This reading thing is much more difficult for you than for them. That's why they have boats and you don't!

First off: Check the initial key signature. Try to determine whether it is a major key or its relative minor. Next, look for any changes of key signature.

Secondly: Scan the form of the piece. Are there any repeat signs, 1st and 2nd endings, DS. al Coda markings, penciled in direction s like "1st X only", etc.

Third: Scan through the chart and look for any rhythms that look out of the ordinary and try to count through them, if there's time.

Develop the ability to read music without having to glance at the fretboard. Put another way ... Keep your eyes on the music. Position playing is very helpful in this regard. All the pitches within a fairly wide range (2 octaves plus a P4th) are available without moving your hand's position at all. Most of those notes have only one possible location within that position.

When you are choosing which position to start in, have a look at the range of the melody. What is the highest note? What is the lowest note? Is there a position that you are comfortable playing the major scale from the key signature that also encompasses this range? If yes, then try that position first. If no, then find a position that you are comfortable with that covers most of the lower part of the melody's range. When the high notes come around just shift position along the 1st string.

The ♯1 cardinal rule of sight reading is DON'T GET LOST! Under no circumstances should you ever allow yourself to lose your place in the form of the piece. If you do lose your place use any means necessary to find it again. Use your ears to try to hear familiar chord progressions that you recognize on the chart. Look at the piano player's left hand, the bass player's fingerings, anything.

The reason people do get lost is because they get hung up on their mistakes. They stop to mentally abuse themselves about what they should have played and lose sight of what is still going on in time around them. This is strongly related to being an effective improviser also. If you get hung up on the mistake you just made it WILL pave the way for the next one to happen. The band will not stop playing so that you can fix your mistake.

If the piece is rather difficult for you, just attempt to grab as many notes as you can accurately. This might involve laying out for quite a number of measures until something you CAN play, even if it's only the first note on the down beat of bar 9, comes along. Don't mentally bash yourself because you couldn't play anything in bars 1 through 8. That won't help at all and it WILL cause more mistakes. If you lose your place you won't even know when that one note that you CAN play in bar 9 is supposed to happen.

Sight reading is the art of playing what you CAN play in real time, the first time you attempt to play the music. Don't obsess about what you CAN'T play when you're trying to sight read or you won't even be able to play what you CAN.

For more experience with the position playing concept please consult William G. Leavitt's great series of books A Modern Method For Guitar (Vols 1-3). To gain some more expertise in sight reading using position-style fingerings please see the same author's Reading Studies For Guitar and Advanced Reading Studies For Guitar. (Berklee Press - Boston)

H. Tunes To Learn

Almost any medium tempo standard will work well with a position style fingering. Go through your fake book and try to read through many of these types of tunes. Try to sight read a few also. Try several different positions that fit the melody's range. Often the bridge is in another key. That's a good spot to use another position style fingering for the scale of the new key signature. Often though the new key is not indicated with a change of key signature. Have a look at the chords and the accidentals beforehand and see if you can determine what key they come from. For now, avoid tunes with lots of accidentals through-out because these will require many position shifts. Tunes that have many large interval leaps will also be problematic. Look for primarily step-wise melodies.

This is a short list of tunes in the Real Book that are exceptionally good vehicles for developing more skills in position style playing. You may not arrive at the best fingering for phrasing these melodies by using position playing techniques but you will gain proficiency in the technique by going through the process of trying to play them in position.

Remember these lead sheets are not guitar parts. Guitar players should read them an octave higher than indicated unless instructions to the contrary are suggested by myself, by the Real Book's authors or if the melody's range exceeds that of your guitar.:

1. A Fine Romance - try Pos IX. (play 8vb ["an octave below"] also - try Pos. II and Pos. V)
2. Coral (try Pos. X)
3. Crystal Silence - try Pos. XII (play the high A's with the 4th finger in Pos, XIV) (learn 8vb also - try Pos. V)
4. The Days Of Wine And Roses - try Pos. X (learn 8vb also - try Pos. II and Pos. V)
5. Eiderdown - try Pos. XII (8vb try Pos. V)
6. Green Dolphin Street - try Pos. X (8vb - try Pos. II, IV and V)
7. Green Mountains - 8vb only - first 4 bars try Pos. VII, next 4 bars try Pos. VIII, next 4 bars try Pos. V, last 5 bars try Pos. IV.
8. How High The Moon - try Pos. V (8vb - try Pos. II)
9. Impressions (8vb only - try Pos. V and VI)
10. I'm Your Pal - try Pos. X (8vb - try Pos. II)
11. Just Friends - try Pos. VII (8vb - try Pos. IV)
12. LazyBird - try Pos. XII (8vb - try Pos. II)
13. Limehouse Blues - try Pos. VIII (8vb - try Pos. III)
14. Little Waltz - try Pos. VIII (8vb - try Pos. III)
15. "Long As You Know You're Living Yours - try Pos. X (8vb - try Pos. II)
16. Long ago And Far Away - try Pos. V (8vb - try Pos. II)
17. Lucky Southern - try Pos. XIV mostly (8vb - try Pos. VII)
18. Lullaby Of Birdland - try Pos. VIII (8vb try - Pos. V)
19. Meditation - try Pos. VII (8vb - try Pos. II)
20. Minority - try Pos. X (8vb - try Pos. II)

Etc., etc.

Note: Almost every single one of these position suggestions will require at least one occasional position shift or an "illegal" fingering. Once you can play these tunes with a reasonable position style fingering see if you can come up with a fingering of your own that sounds good to you and also makes sense to you. Use your ears. Try to make it sound like you are singing the tune instead of playing it on the guitar.

I will discuss more of the processes involved in finding a good fingering for a line in the chapter titled Finding Good Fingerings For Single Note Lines.

I. Intervallic Patterns In Position

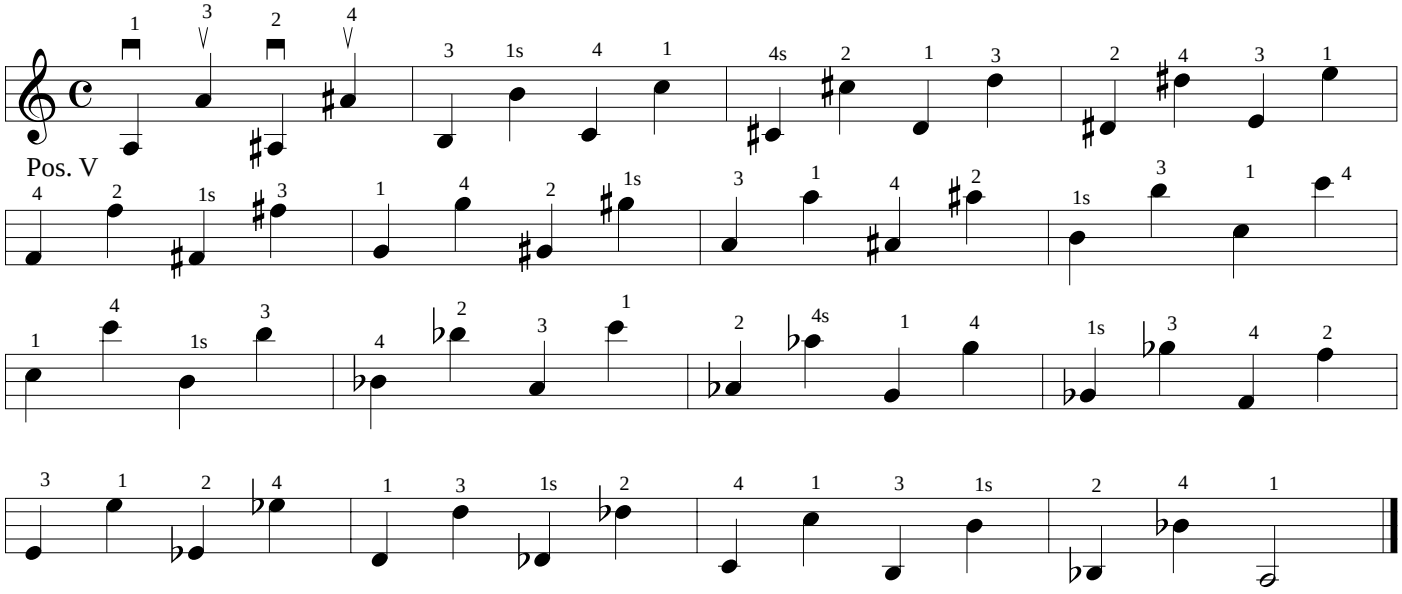
This first pattern is from a warm-up exercise that Mick Goodrick suggested to me when I was studying with him, way back when. It is a simple idea that is not of much use in an improvised line but it demonstrates the possibilities and the limitations of position playing to a large degree. It is a real good warm up. It gets your fingers pretty nimble and stretched-out in a short amount of time.

The idea is to play all of the possible interval types using a chromatic sequence up and down through a single position's range.

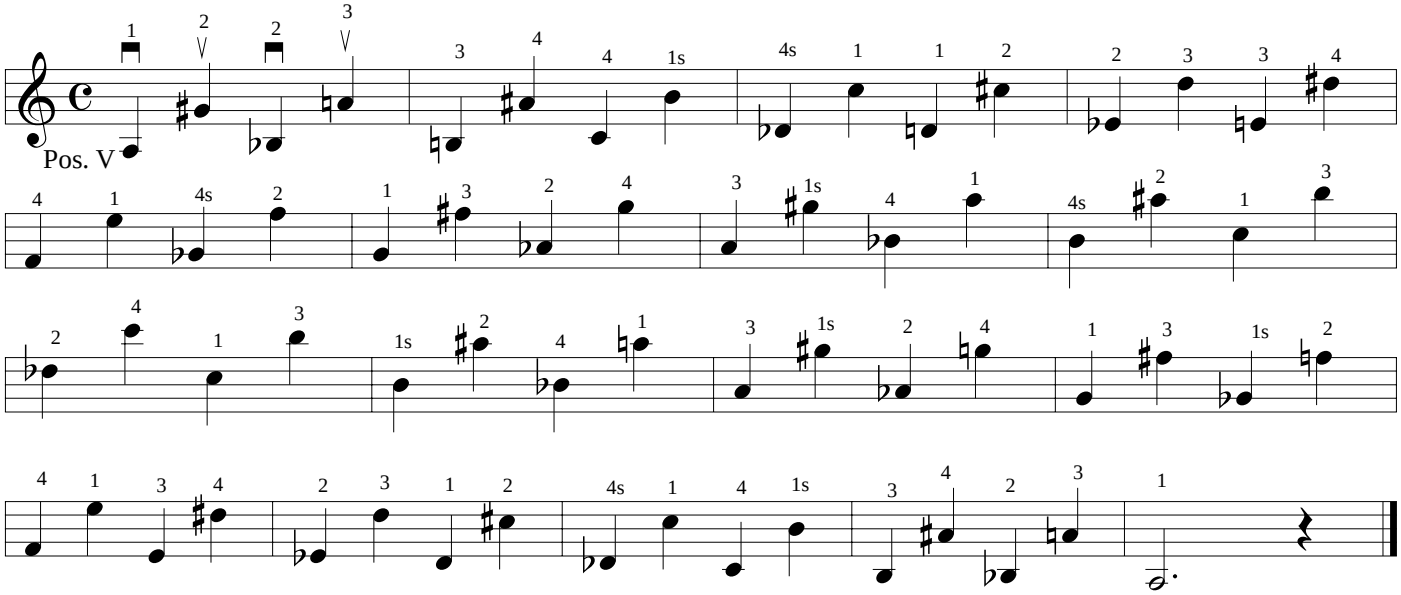
The first pattern uses the interval of an octave. The others I have written out use different intervals. I'll leave it up to you to figure out all the possible intervals available.

Try inverting the pattern also. I.e. High note first - low note second, etc. Change the picking pattern accordingly to reverse alternate picking.

Slowly and accurately

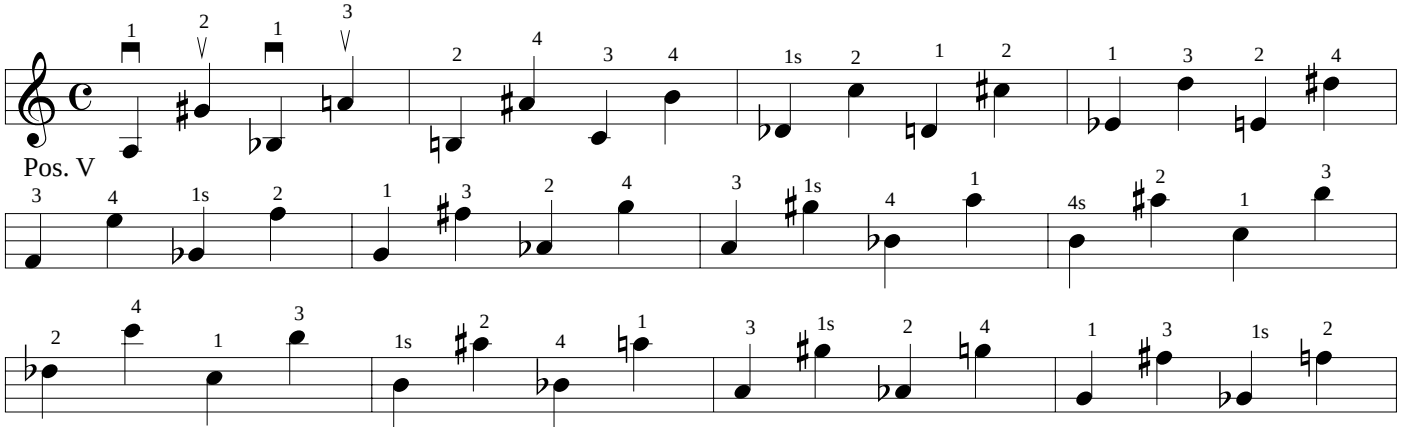


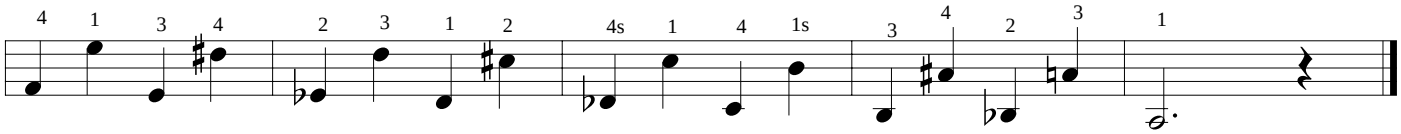
Slowly and accurately



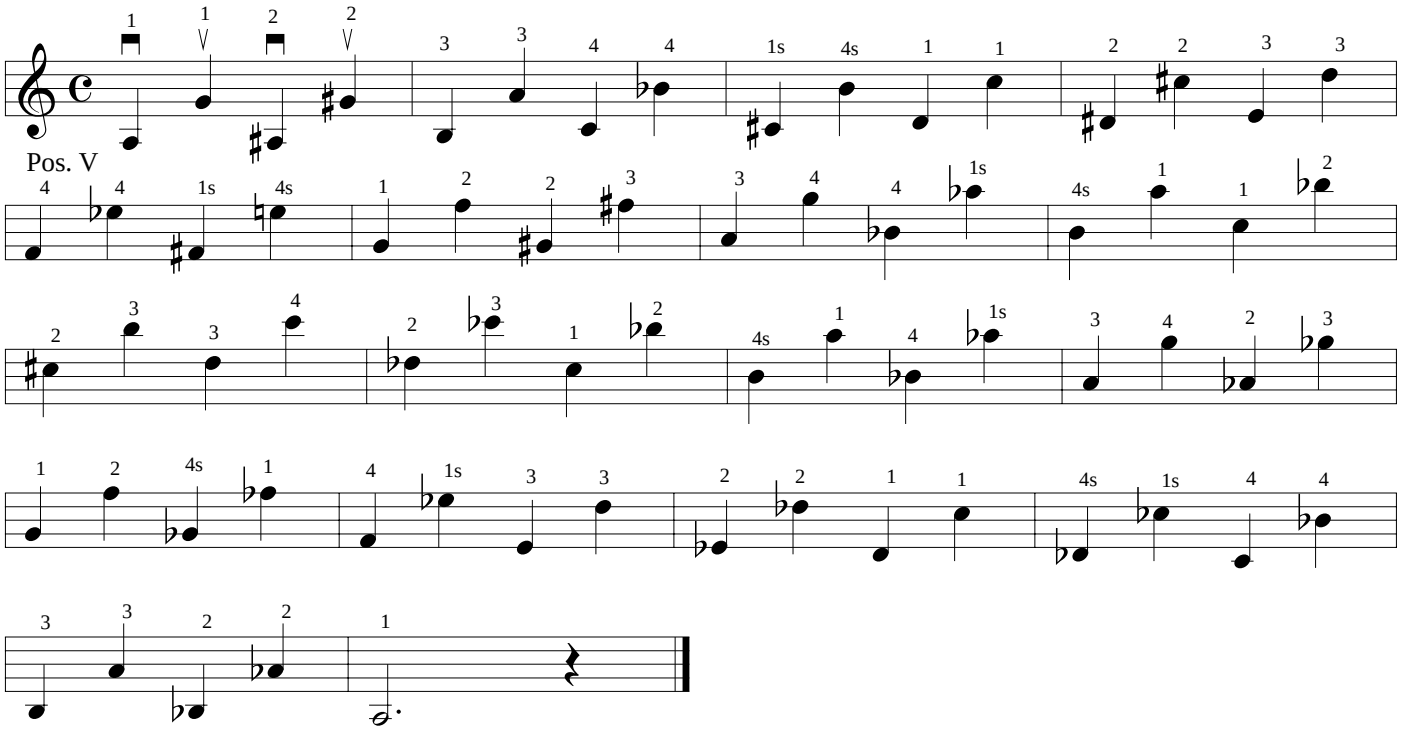
Try this fingering also for the above sequence also. It is not strictly a “position” fingering but it makes much more sense in some ways than the strict position fingering does.

Slowly and accurately



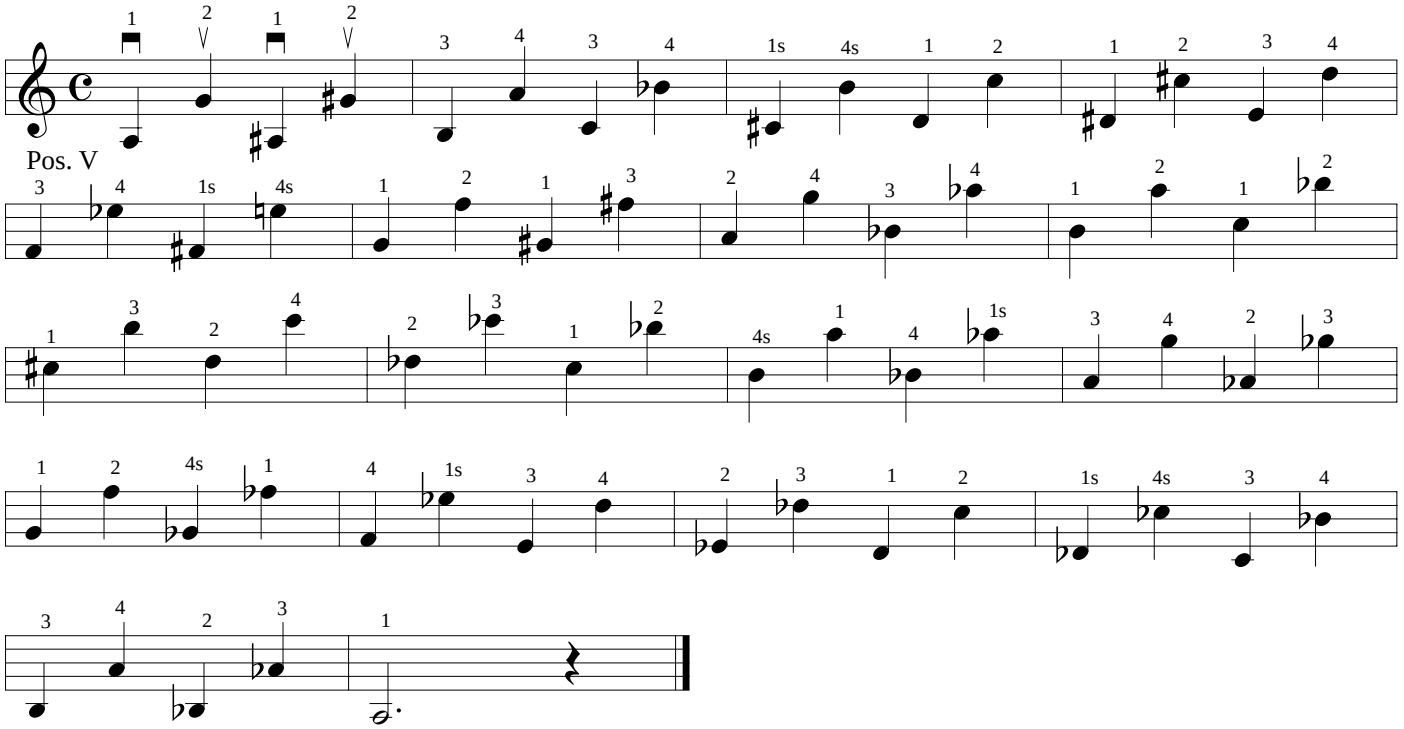


Slowly and accurately



Try this fingering also for the above sequence also.

Slowly and accurately



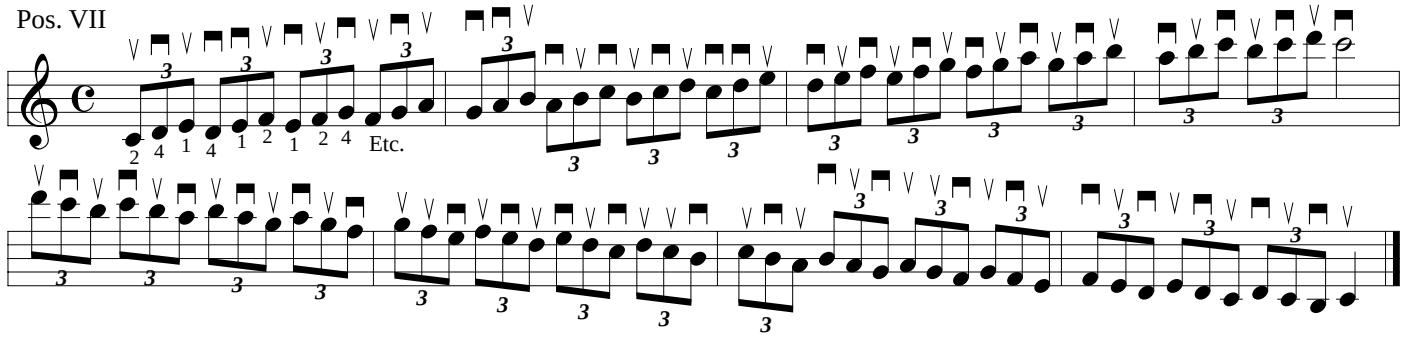
Etc., etc.

Following are some common scalar sequences. They can be played with any scale by simply observing the pattern of the scale steps and transposing them to whatever scale you are working on.

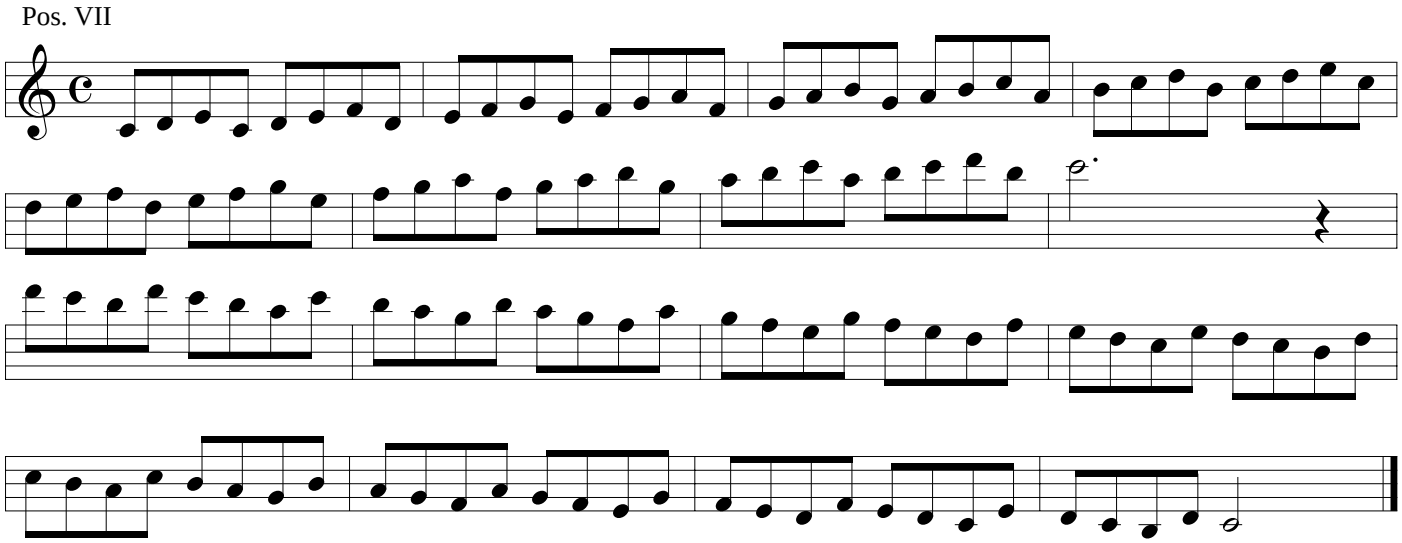
On the way up the scale this pattern uses the following sequence of scale steps: Up 1 step, up another step - Down 1 step - Up 1 step, up 1 step - Down 1 step - Up 1 step .... etc.

On the way down the scale it uses the mirror image of the same sequence: Down 1 step, down another step - Up 1 step - Down 1 step, down 1 step - Up 1 step - Down 1 step .... etc.

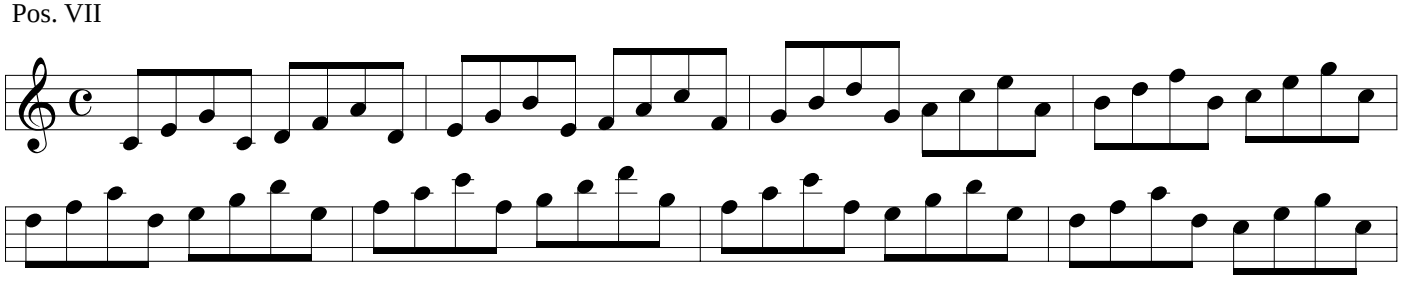
This pattern fits a triplet rhythm quite nicely because it is a 3 note repeating sequence. Use any picking pattern you feel comfortable with. the quasi-sweep picking is notated just for interest's sake.

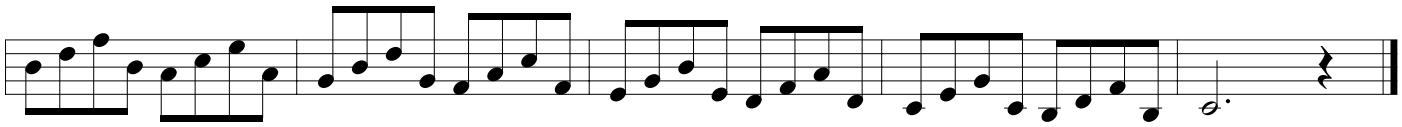


On the way up the scale, this next sequence goes up 3 consecutive steps then back to the note it started on and then up one step from where the sequence begins again. On the way down the scale the mirror image of this sequence is used.

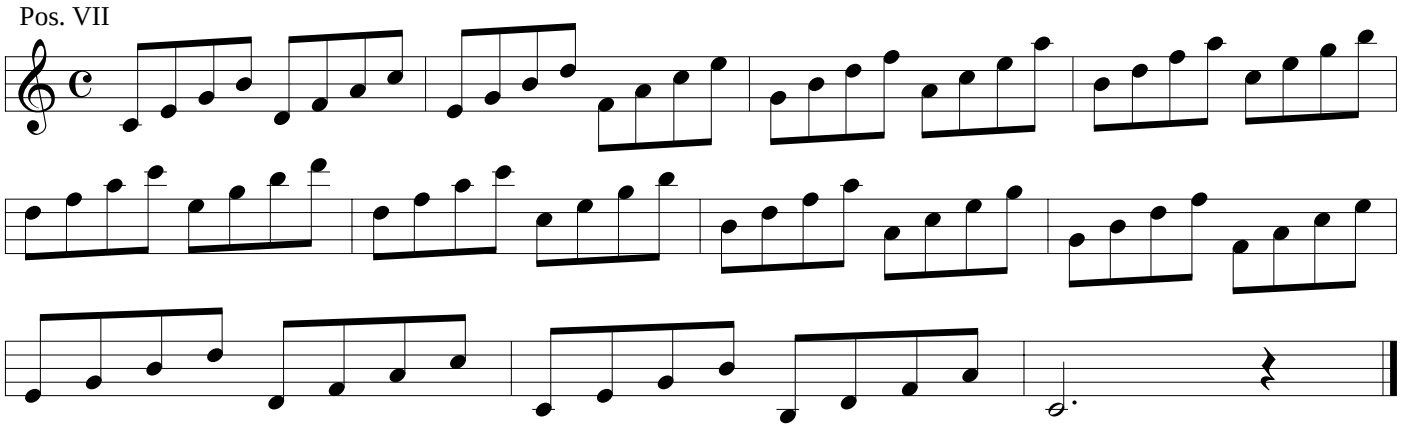


This next sequence arpeggiates the diatonic triads of the scale. Imaj (R, 3, 5, R), IIm (R, 3, 5, R), IIIm etc.

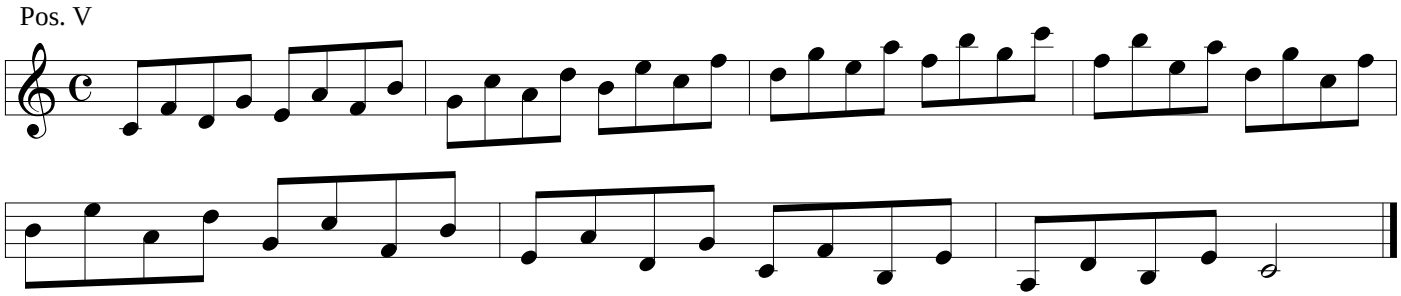




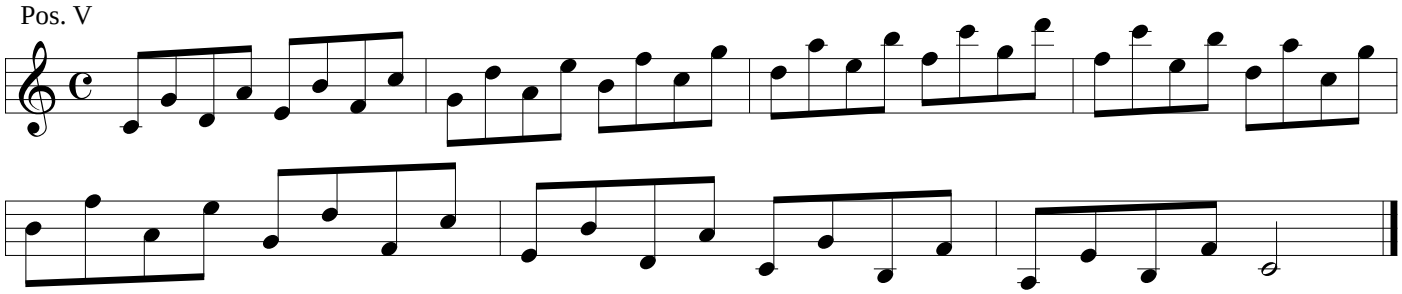
The diatonic seventh chords.



A sequence of diatonic 4th intervals.



A sequence of diatonic 5ths.



Make up some sequences of your own.

Play these sequences in many different positions with many different major scales.

If you already know how to play some other scale types like the harmonic minor, or the jazz minor, or the harmonic major, or any of their modes, etc. then try these sequences with those scale types.

The creative musician is someone who designs his own exercises to work on.

Snippets of these patterns will and should find their way into your jazz solos but be very careful not to overdo

it.

You should be trying to learn how to improvise melodies not patterns.

Don't get hung up on the mechanics and the technique if you can avoid it.

Concentrate more on what these shapes sound like and less on what they look like on the guitar fretboard or on any technical problems they present.

I always tell my students to sing out loud anything they are playing.

It is a lot harder to sing a bad note than it is to play one. This is because in order to sing something you HAVE TO be able to HEAR IT. In order to play something on the guitar you just have to put your finger somewhere on the fretboard and hit the string.

On the way towards developing the ability to play what you hear, which is the Holy Grail of jazz by the way, this business of forcing yourself to sing what you play and therefore hear what you are playing is incredibly helpful even though the process is sort of ass backwards from what really goes on in a good improviser's mind.

Let me put it this way. When you sing what you play you are forcing yourself to hear what you are capable of playing. When you improvise you should be hearing it first, in your mind, like an audio hallucination, sort of. The instrument, in our case the guitar, is just the vehicle for this. Being able to play the guitar well is not nearly as important to being a jazz improviser as being able to sing a melody to yourself.

However, exploring certain sounds on the guitar even from a technical perspective is one real good way to help train yourself to hear new things. For example, it is a lot easier to play intervals like the tri-tone or the minor 9th on the guitar than it is to sing them cold. By learning to sing these sounds while you are playing them you will come all the more closer to being able to really hear them. Plus you will know where to find them on your chosen instrument.

J. Combining The Single String Approach With The Position Approach

What follows is a scheme for exploring a scale or arpeggio across the entire fretboard. We will simply be observing and working out where the notes of any particular scale or arpeggio happen to lie under our fingers in any particular position on any particular string or combination of strings. This will allow us to work out most of the possible and practical fingerings for the structure being examined. I accomplish this by asking myself a series of questions.

1. On the (x) string(s), in Position (y) what notes of the scale or arpeggio (z) happen to be under my fingers?
2. What is the lowest note that belongs to this scale or arpeggio that is also in this position on this (these) string(s)?
3. What is the highest note that belongs to this scale or arpeggio that is also in this position on this (these) string(s)?

Once these fingerings are mapped out you can start looking for intervallic patterns that map out better across the fretboard than they do in a single position. You can also explore fingerings for double-stops, triads and even larger chords across the fretboard.

Let's do this with the C major scale on single strings:

Q. - In Pos. I what notes are available on the 1st string, that are members of the C major scale?

A. - E (Open), F (1st finger), G (3rd finger) and a (4th finger stretch).

Q. - In Pos. II what notes are available on the 1st string, that are members of the C major scale?

A. - F (1st finger stretch), G (2nd finger) and A (4th finger).

Q. - In Pos. III what notes are available on the 1st string, that are members of the C major scale?

A. - G (1st finger), A (3rd finger) and B (4th finger stretch).

Repeat all the way up the fretboard.

Repeat on the 2nd, 3rd, 4th, 5th and 6th strings.

Now let's do this with the C major scale on combinations of 2 strings:

Q. - In Pos. I, what notes are available on the 1st and 2nd strings that are members of the C major scale?

A. - B (Open), C (1st finger), D (3rd finger), E (Open or 4th finger stretch), F (1st finger), G (3rd finger) and A (4th finger stretch).

Q. - In Pos. II, what notes are available on the 1st and 2nd strings that are members of the C major scale?

A. - C (1st finger stretch), D (2nd finger), E (4th finger), F (1st finger stretch), G (2nd finger) and A (4th finger).

Q. - In Pos. III, what notes are available on the 1st and 2nd strings that are members of the C major scale?

A. - D (1st finger), E (3rd finger), F (4th finger), G (1st finger), A (3rd finger and B (4th finger stretch).

Repeat all the way up the fretboard.

Repeat with the following string combinations: 2 and 3, 3 and 4, 4 and 5, 5 and 6, 1 and 3, 1 and 4, 1 and 5, 1 and 6, 2 and 4, 2 and 5, 2 and 6, 3 and 5, 3 and 6, 4 and 6.

Repeat with all possible combinations of 3 strings.

Repeat with all possible combinations of 4 strings.

Repeat with all possible combinations of 5 strings.

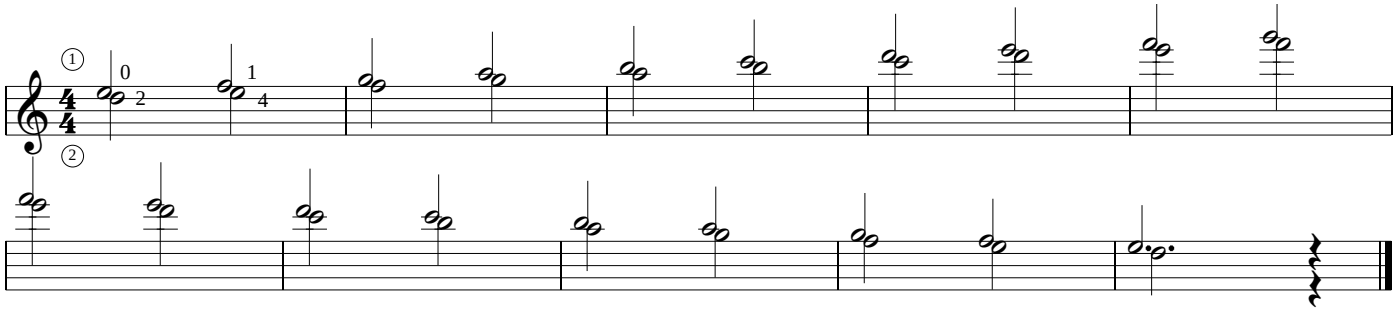
Repeat with all possible combinations of 6 strings. This is, of course the same as the C major scale in all positions.

This concept can be used to explore any single note structure whether it be a scale or arpeggio across the entire fretboard.

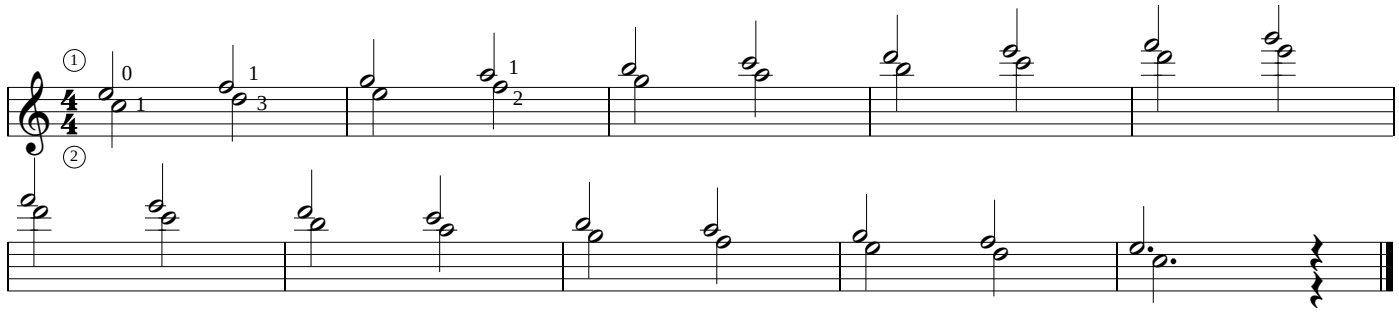
Now lets look at the diatonic chords and double stops that can be played across the fretboard with the various string combinations.

Using strings 1 and 2 it is possible to play all of the following intervals as double stops: 2nds, 3rds, 4ths, 5ths, 6ths and if you have really wide hands 7ths too.

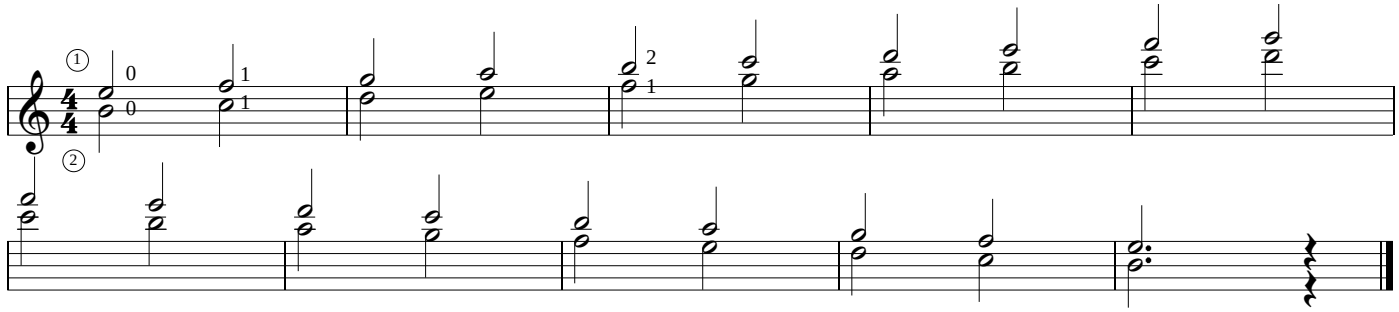
The following example goes through the C major scale using a pattern of consecutive diatonic 2nds across the 1st and 2nd strings.



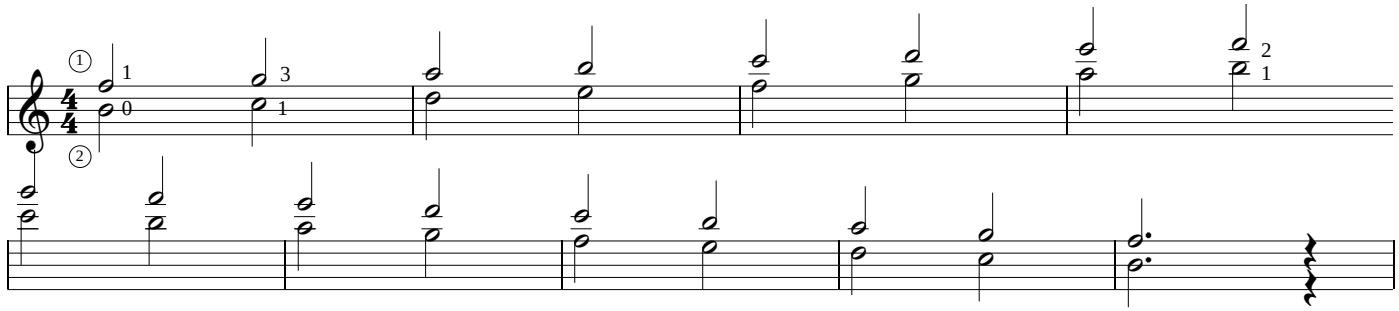
The following example goes through the C major scale using a pattern of consecutive diatonic 3rds across the 1st and 2nd strings.



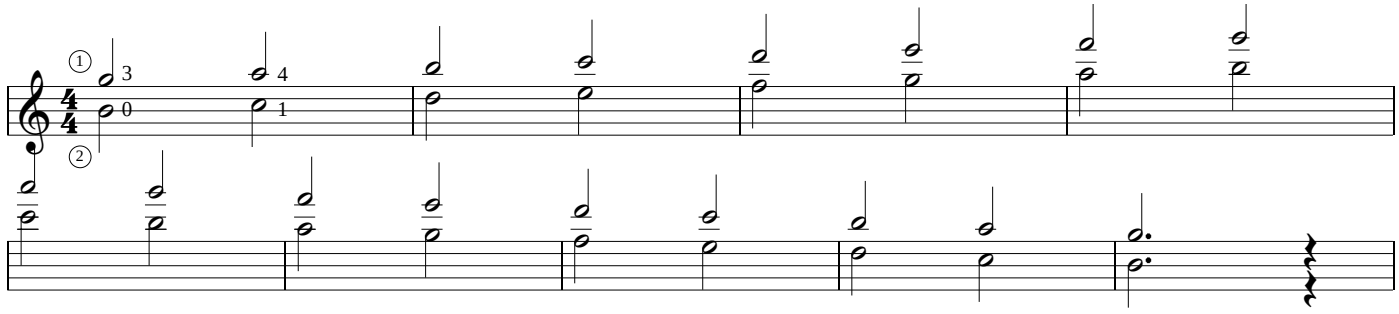
The following example goes through the C major scale using a pattern of consecutive diatonic 4ths across the 1st and 2nd strings.



The following example goes through the C major scale using a pattern of consecutive diatonic 5ths across the 1st and 2nd strings.



The following example goes through the C major scale using a pattern of consecutive diatonic 6ths across the 1st and 2nd strings.

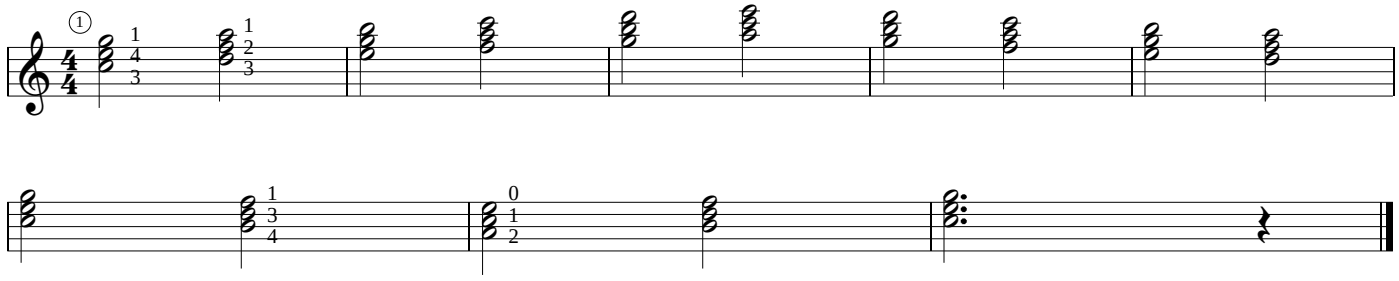


When you are improvising you can often play these shapes for little chordal embellishments as double-stops or you can simply use the intervallic shape for a single note melodic pattern (i.e. 1 note at a time.).

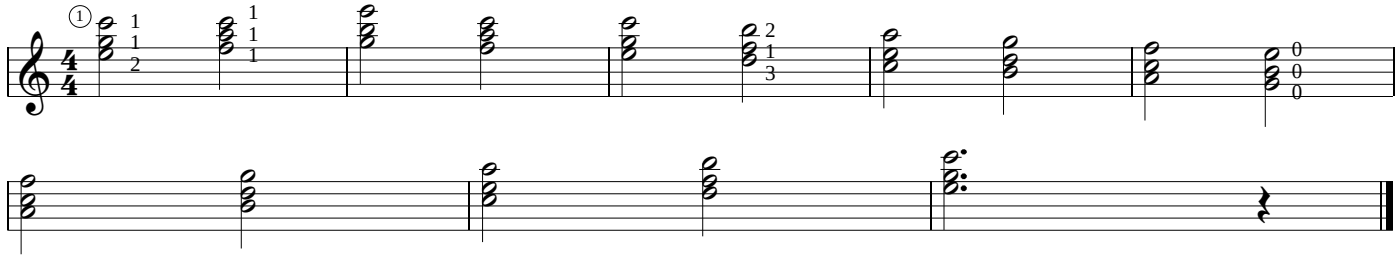
What intervals can be played as double stops between the 3rd and 4th strings?

What intervals can be played as double stops between the 4th and 5th strings?
5th and 6th?
1st and 3rd? 1st and 4th? 1st and 5th? 1st and 6th?
2nd and 4th? 2nd and 5th? 2nd and 6th?
3rd and 5th? 3rd and 6th?
4th and 6th?

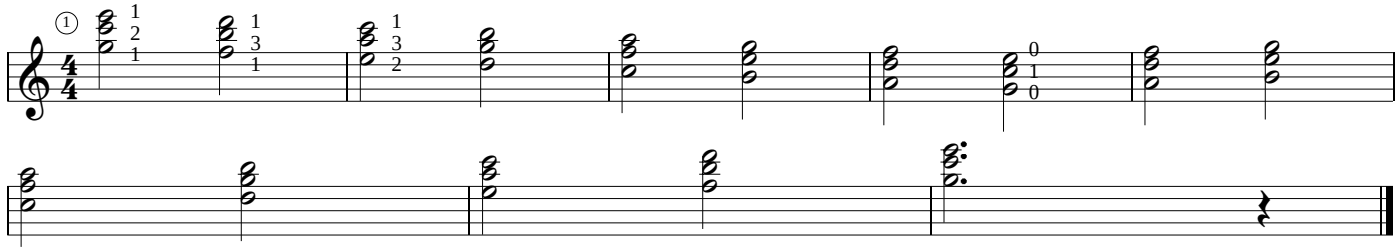
We can also do something similar with 3 strings at once.
This first example is using the close voice, root position, diatonic triads of C major on strings 1, 2 and 3.



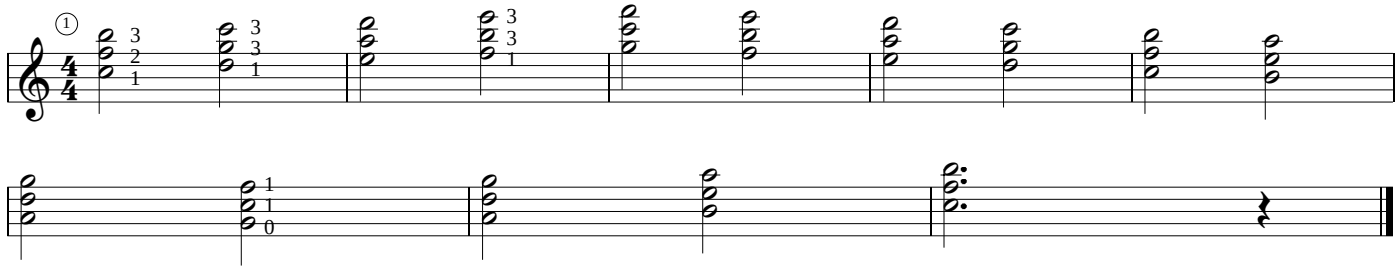
This next example is using the close voice, 1st inversion, diatonic triads of C major on strings 1, 2 and 3.



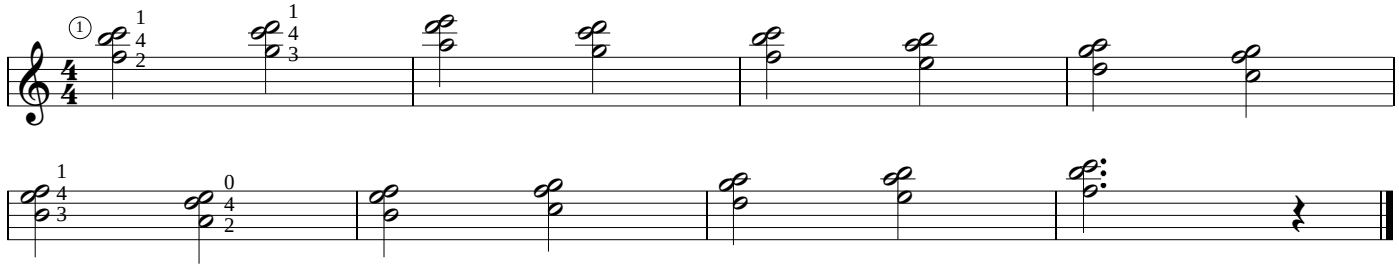
The next example is using the close voice, 2nd inversion, diatonic triads of C major on strings 1, 2 and 3.



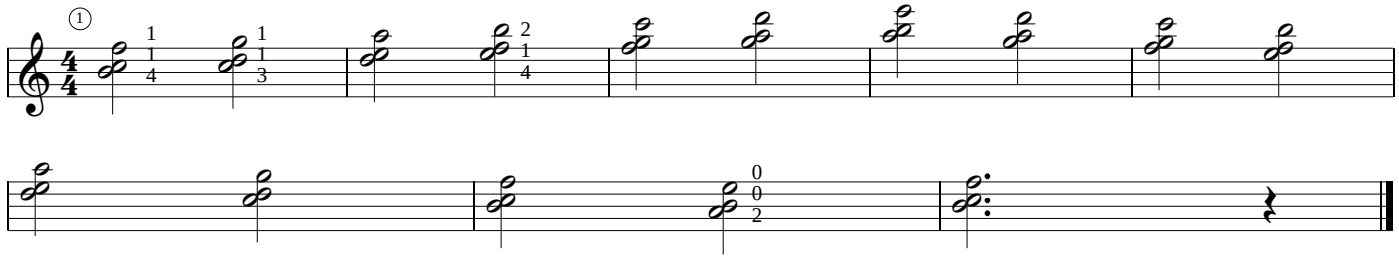
The next example is using root position quartal (i.e. built in fourths) diatonic triads of C major on strings 1, 2 and 3.



Here are the same diatonic quartal triads in 1st inversion.



Here are the same diatonic quartal triads in 2nd inversion.



Basically we are just going up and down the C major scale simultaneously on 3 strings.

What other 3 note diatonic chords are possible on these 3 strings? (Hint: Try starting on C, D and E or C, D and F or C, E and B or C, D and B.

How about 3 notes where one of them is an octave double like: C, E and C or C, F and C or C, G and C?

What about other combinations of 3 strings, contiguous and non contiguous?

What about combinations of 4 strings, contiguous and non contiguous?

5 strings?

All 6?

When you are improvising over the modal vamps in the later sections of this book try comping using these various combinations of the scale's tones. In many modal situations you can create chord voicings using any and all the of notes in the appropriate chord-scale. It's as if you are creating your voicings from the chord-scale itself rather than the chord symbol.

The only caveat is to be careful how you use the avoid notes and to be aware of how the notes in the scale stack up against the new chord that you are actually playing.

Example:

When using the E Phrygian scale on Em7 the notes F and C will be avoid notes. But if those two notes are actually in the chord voicing (Eg. F/E) the clashes will be nullified.

X. Improvising With Chord Tones

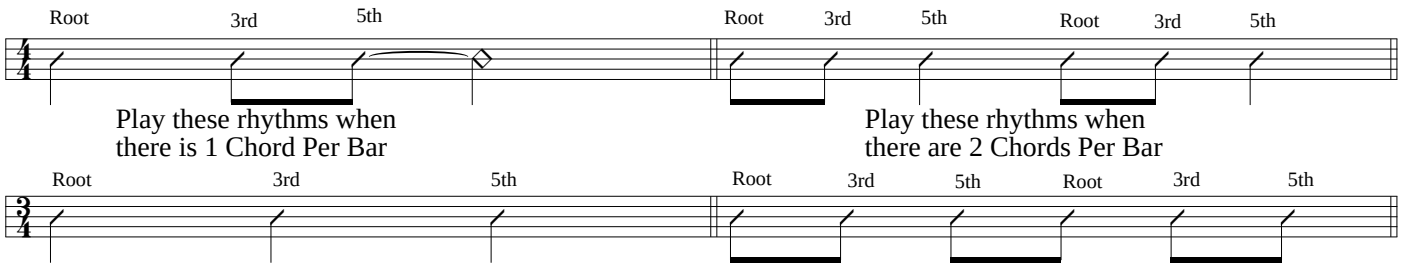
In most academic establishments with jazz programs these days the first concept discussed with regards to deriving melodic material for improvisation is usually the “chord-scale”. There is merit to this approach, especially for guitar players, because the fingering patterns for the scales are usually well known. But in my experience, guitarists who start to learn this way develop some serious blind spots that need to be addressed at sometime. Sometimes this can go on for years and years.

The blind spot that I am speaking of is the relationship of those scales to the chord itself. It’s one thing to know that the C major scale works well over a G7 chord but if you are totally unaware of where the notes that are members of the G7 chord happen to be found within the C major scale you will be missing the point. If you run up and down this scale thinking of it as a C major scale there is a real good chance that you will be emphasizing the note C quite a bit and C is one of the most unstable notes you can choose to emphasize on a G7 chord.

I start my students off improvising with chord tones rather than chord scales for several reasons. The first is historical. I am not a jazz historian by any stretch of the imagination but I think it likely that the earliest pioneers of this music probably started out with a melody that they knew by ear. They found some ways to harmonize these melodies for accompaniment purposes. They then began to embellish the melody by changing its rhythms (syncopation, etc.) and by decorating its pitches with neighboring tones. I’m sure they were aware of the key centers of their compositional choices and probably invented some of their own improvised melodies from the basic scales underlying those keys. They then probably turned their attention to the notes in the chords themselves. Being that most interesting sounding progressions have some amount of chromaticism (notes from outside the key) it is through the exploration of the notes in the chords themselves combined with the notes in the key that the concept of the chord-scale eventually emerged. In my estimation “chord-scales” as such were not spoken of in the jazz community until the 1950’s when Berklee College Of Music was first formed. Berklee was the first academic establishment that actually had a jazz curriculum.

My second reason for starting out with chord tones rather than chord-scales is that so many guitar players have such a hard time with them conceptually, whereas they are a very simple thing to see for most other instrumentalists. Bass players are always arpeggiating chords in their bass lines. Piano players can see the note positions for an arpeggio every time they play a chord voicing. It is only on the guitar where the fingering for an arpeggio is not made obvious from either a scale fingering or from a chord voicing’s fingering.

A. Chord Tone Exercise #1



Play the above pattern through the chord progression of any tune you happen to be working on. Avoid starting the pattern on the 6th string, for now, or it may sound too much like a bass line. Attempt to discover all the possible fingerings available via the process of beginning on each of your 4 fingers and just seeing what fingering seems logical. (see below)

Once you are comfortable with this you can change the order of the notes and the rhythm and try to improvise some simple chord tone melodies. See if you can create some melodies that sound musical using just R, 3 and 5.

Don’t overplay. This IS NOT about running through each arpeggio like a speed demon. It IS NOT about moving your fingers in all sorts of interesting and difficult looking shapes on the fretboard. It IS about learning to play simple singable melodies using just chord tones. Pretend you’re a singer.

Resist the urge to play what you hear, for now, because it is likely that you will hear some really nice sounding things that fall outside of the parameters of this particular exercise. This exercise is designed to help you learn

to hear the chord tones themselves. By doing this sort of thing you will develop a feeling for when you want to play a chord tone and when you want to play something else. You will also develop a feel for where on the fretboard these chord tones are and what fingering makes the best sense to execute them.

Try to invent and develop some sort of a rhythmic theme. Almost anything will sound convincing if the rhythm feels right!

Tip: Look for ways to join one chord's arpeggio into the next smoothly via common tone, step or half step.

Try going down to the 3rd rather than up and also experiment likewise with the 5th.

Also Try:

3 5 R, 5 3 R, etc.

3 5 7, 3 7 5, etc.

5 7 R, 5 R 7, etc.

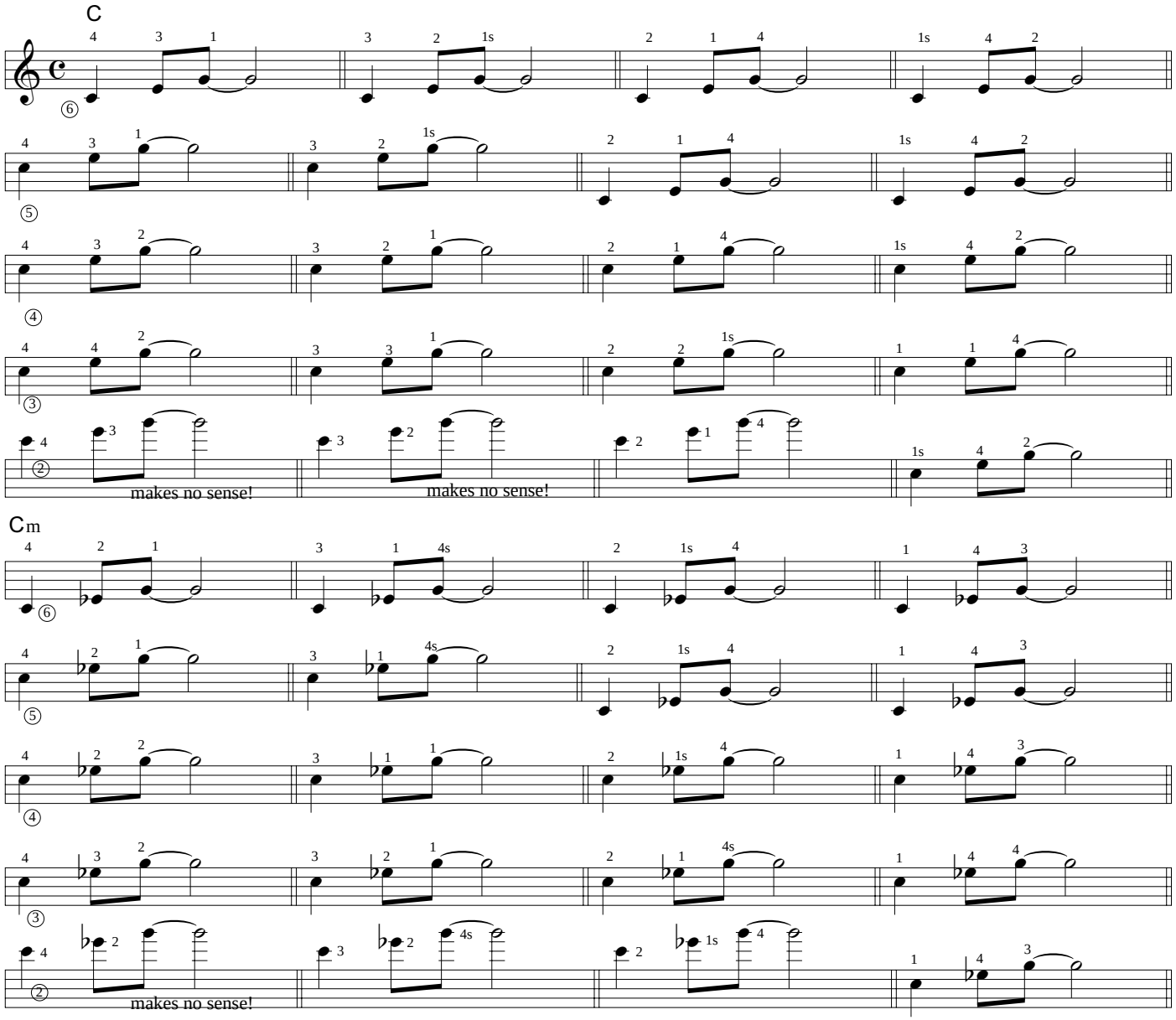
7 R 3, etc.

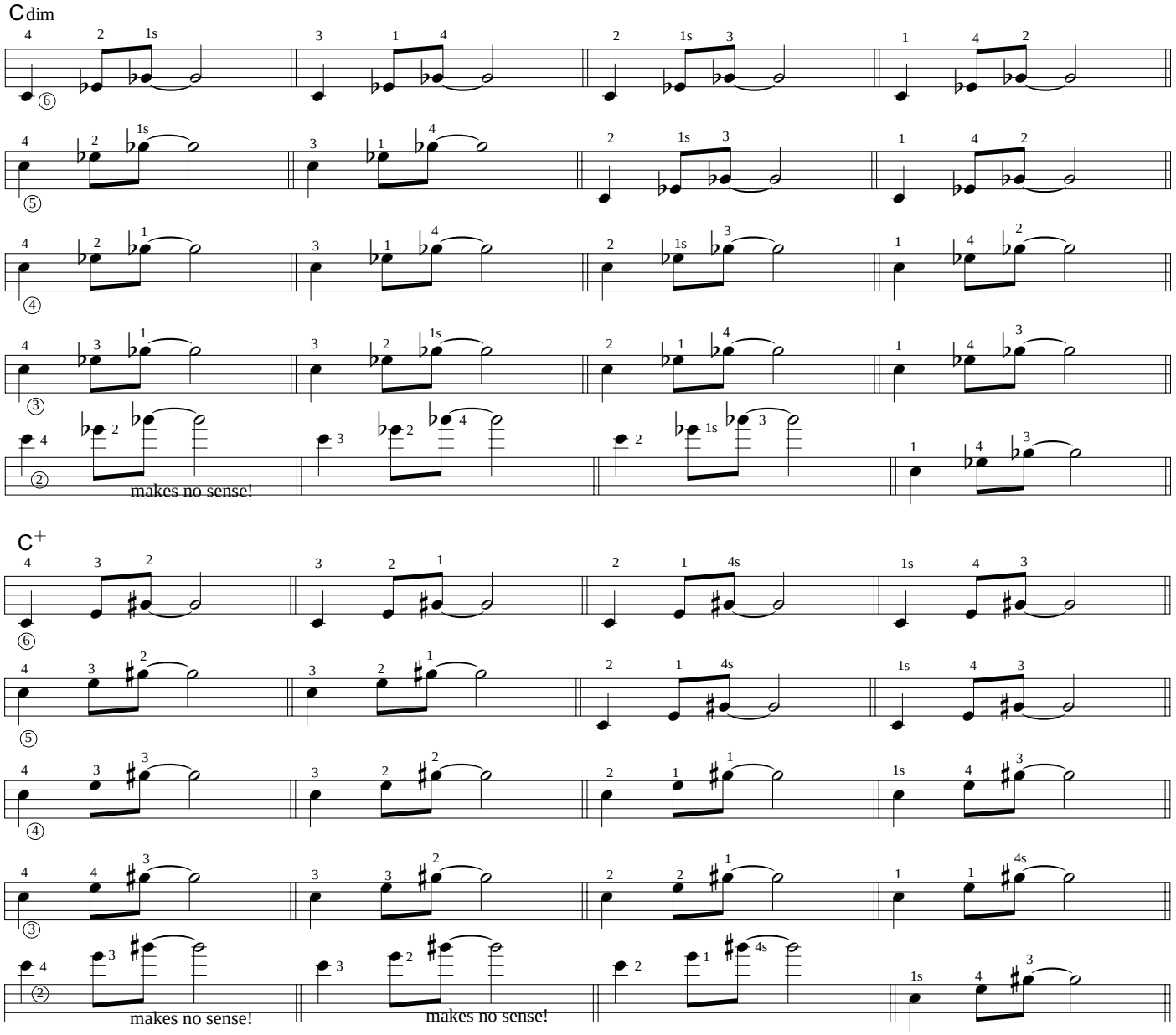
Summary: Learn to improvise a decent chord tone melody on any tune.

Try this pattern with running eighth notes in 4/4 time: 3 5 1 7 > 3 5 1 7

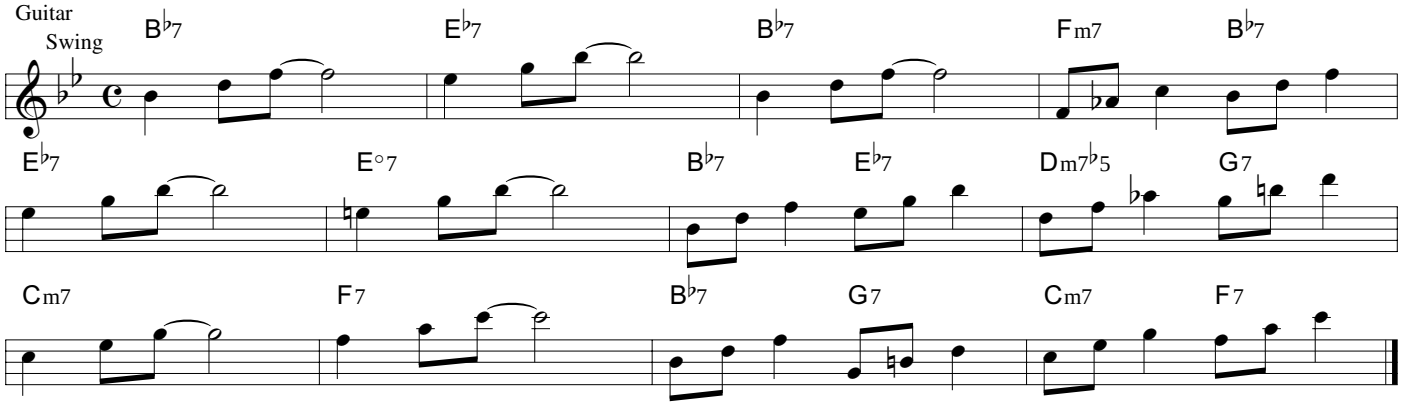
Pay special attention to how the 3rd on one chord often leads into the 7th on the next and visa versa.

Here are the most likely fingerings for the 4 basic triad types starting on each finger on each string:

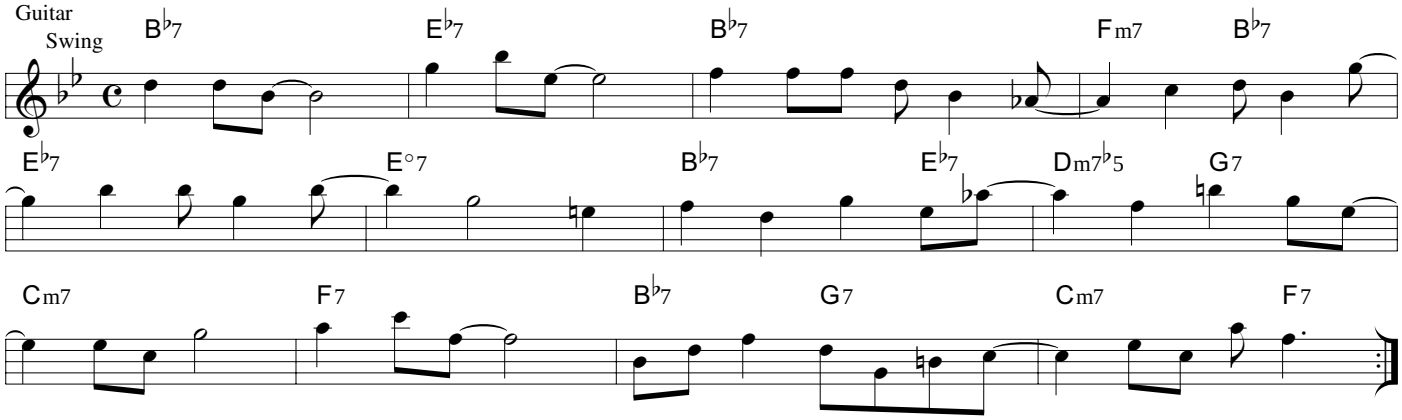




Here's an example of one way to work out Chord Tone Exercise #1 over a B♭ blues progression. Notice how the last note of each arpeggio (the 5th) goes to the closest Root of the next chord except for just a few instances. The fingering is up to you:

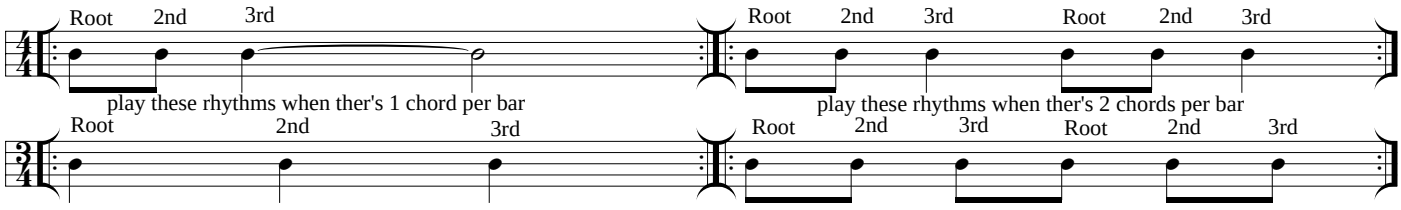


Here's an example of a melody I might improvise using these same exact note groupings.



Get in the habit of playing through Chord Tone Exercise #1 on EVERY new tune you are learning! Definitely go through each of the chord progressions presented in this book and apply this and the following exercise!

B. Passing Tone Exercise #1



Try also:
3 2 1
3 4 5
5 4 3
5 6 7
and
7 6 3

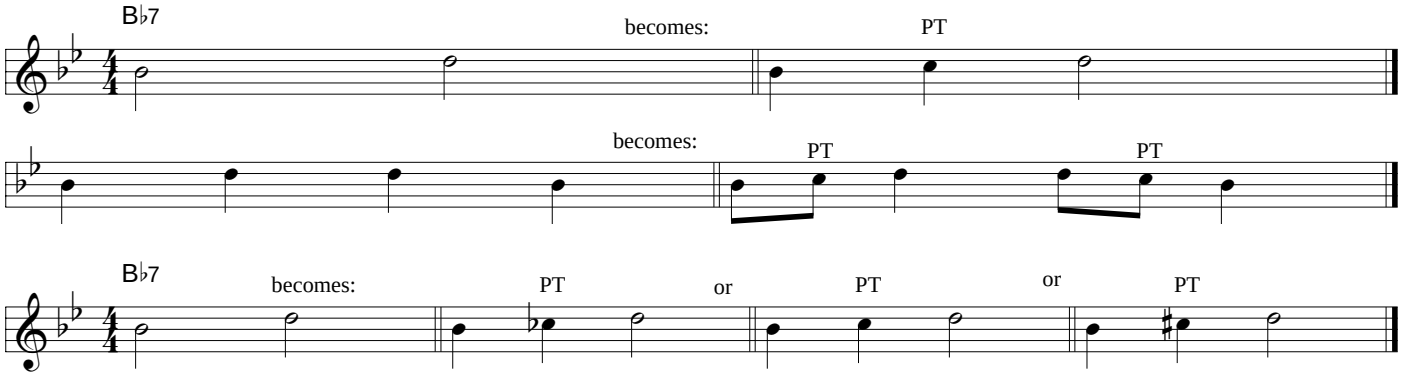
Once you know where the notes of a chord lie on the fretboard and you are comfortable with how they sound it is then time to start looking at the non chord tones. At first we will "just" use our ears and try to find a note in between each of the chord tones that we like the sound of and we will make mental notes of what the other choices also sound like. For more ideas as to how to choose the non chord tones see the chapter: Chord Scales Via Modal Theory (Part 2) - Determining A Chord-Scale Via Horizontal Considerations.

First off we will look at the gap between the root and the 3rd of a dominant seventh chord. Let's use our Blues In B♭ progression again.

The root of B♭7 is the note B♭. Its 3rd is the note D. What kind of 2nd sounds good to you? I.e. What kind of C sounds good to you? The choices are C♭ (♭2), C♮ (2) or C♯ (♯2). Listen to these notes as "passing tones". I.e. use them to pass from B♭ to D or visa versa.

Passing tones are decorative notes that are used to join two notes that are a 3rd or more apart in a step wise fashion. Passing tones are always played on weaker metrical positions than the notes they are joining together. For now, we will be confining our passing tones to the "weak" beats. In 4/4 time beats 2 and 4 are said to be weaker than beats 1 and 3 which are often called the "strong" beats. We might use a passing tone on beat 2 when it joins up a note on beat 1 to a note on beat 3. We might use a passing tone on beat 4 when it joins up a note on beat 3 to a note on beat 1 of the next bar. Also, between any two downbeats the upbeats are considered to be weaker. More on this idea of strong beats and weak beats later in the chapter titled Melodic Uses Of The

Non Chord Tones.



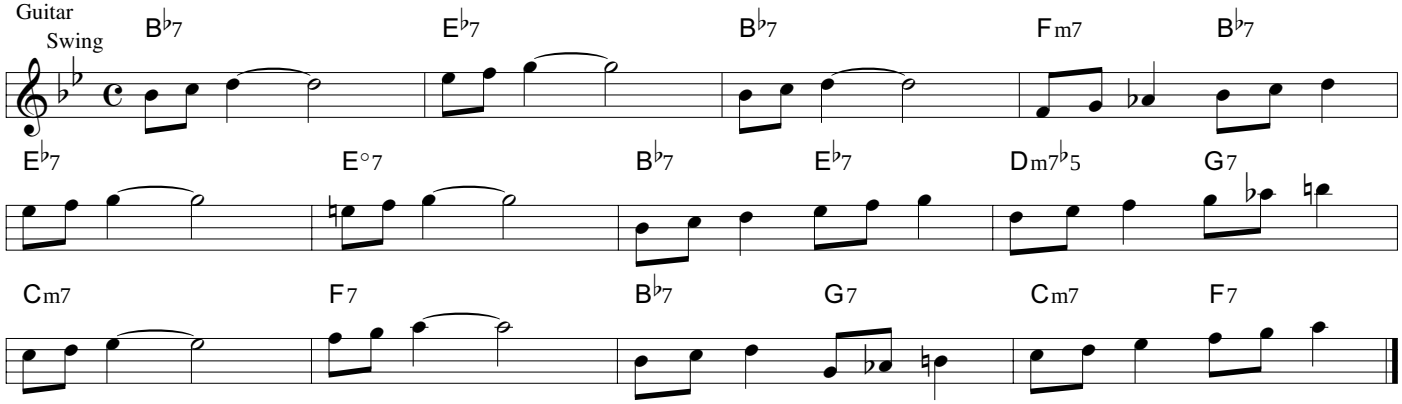
If you're like most people when you hear a B♭7 chord out of the blue, with no other chords sounded before it to establish a "key" feeling, you will most likely prefer the sound of the C♮ to the other two choices above. The other two (C♭ and C♯) definitely have their uses also and you experiment with them but the C♮ sounds much more "normal" in this particular instance to most people. More on why this might be so in Chapter XIV - B: Chord Scales Via Modal Theory (Part 2) - B. Determining A Chord Scale Via Horizontal Considerations.

In our Blues In B♭ progression pretty much every chord will sound best, to most people, with a major 2nd interval as our passing tone choice between the Root and the 3rd. There are a few exceptions though.

The E°7 in bar 6 will probably sound best with an F♮ passing tone between its chord tones E and G. Try F♯ too. It sounds fine. It might sound even better to you than the F♮ does. F♮ is a little bit more "inside" the key of B♭ however.

The Dm7♭5 chord will probably sound best with an E♭ between its chord tones D and F. This is because E♭ is in the key and E♮ is not.

Both the G7 chords in this progression will probably sound with best A♭ between its chord tones G and B♮. This is because A♭ was a chord tone of the chord immediately preceding (Dm7♭5 and/or B♭7) the G7. Try the other choices (A♮ and A♯) too. They are both right inside the key of B♭. Note A♯ is enharmonically equivalent to B♭.



Try this same exercise going backwards (3, 2, 1).

Try to improvise over this progression using each chord's scale degree 2 mostly as a passing tone. If you accidentally play S2 (chord-scale degree 2) on a strong beat every once in a while nobody will beat you up but try to use it as a passing tone (on weak beats joining the other two strong chord tones together) for the most part.

Now let's look at the gap between the 3rd and the 5th of each chord. What kind of 4th degree makes sense?

On B♭7 between D and F you will probably hear that E♭ is the most straightforward choice. E♮ is not in the key and E♭ is.

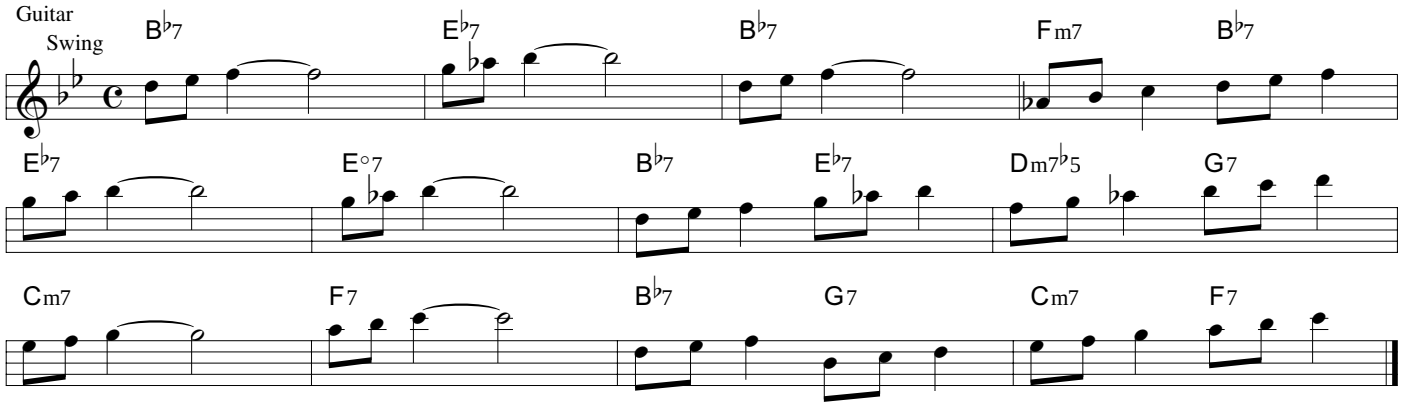
On E♭7 you might hear A♮ as the stronger choice between G and B♭. You might hear A♭ though. A♮ is the 7th degree (aka the "leading tone") of the B♭ major scale. A♭ is a member of the B♭7 chord immediately preceding the all the E♭7 chords.

IN GENERAL: The non chord tones used to embellish a chord should be notes taken from within the key of the progression.

This is not a RULE. This scheme is broken all the time and for many reasons.

You HAVE to use your EARS.

The choices that I have made for S4 in the following example of Passing Tone Exercise #1 (3 4 5) are my own. Try using the other choices. See what they sound like. Note on minor chords S♭4 makes a particularly poor choice because it is enharmonically equivalent to a major third.



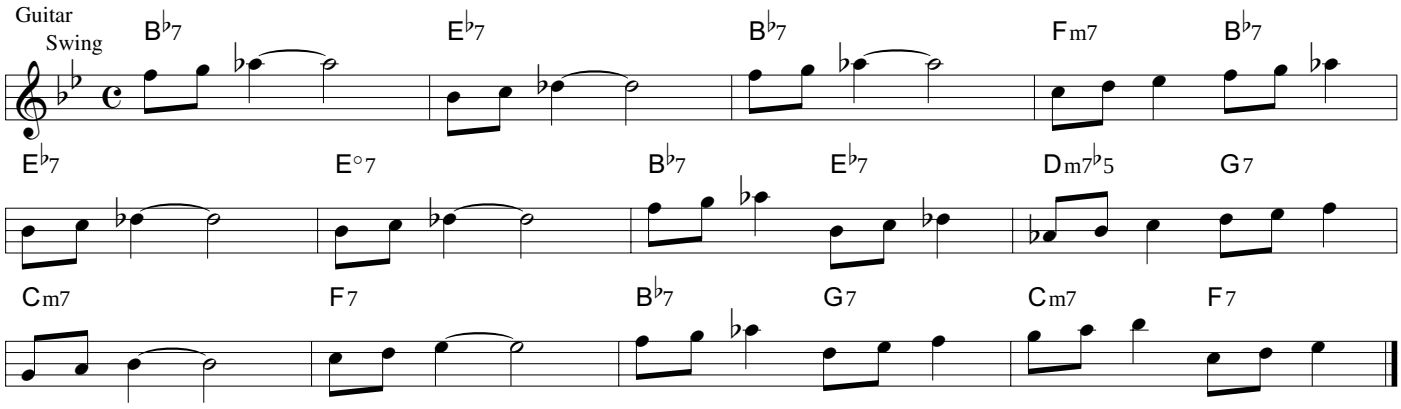
Try the same exercise backwards (5 4 3).

Try improvising over this progression using only chord tones plus S4 as an occasional passing tone.

Try improvising over this progression using only chord tones plus S4 and S2 as an occasional passing tone.

Now let's look at the gap between the 5th and the 7th of each chord. What kind of 6th degree makes sense?

Use your ears. This is how I hear the passing tones for our blues, today, in the mood I'm now.



Try the same exercise backwards (7 6 5).

Try improvising over this progression using only chord tones plus S6 as an occasional passing tone.

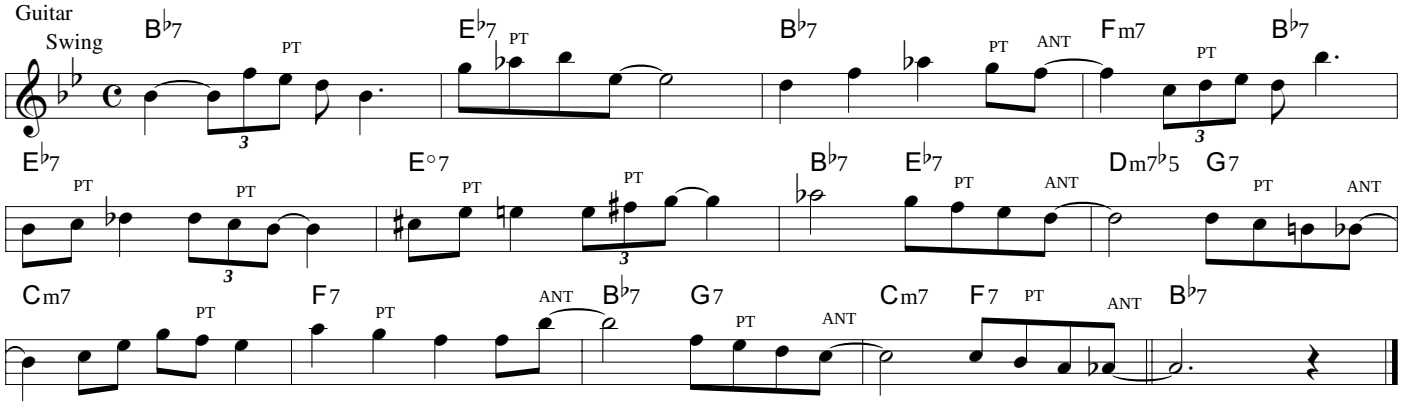
Try improvising over this progression using only chord tones plus S6, S4 and S3 as an occasional passing tone. If you haven't noticed, that's an entire 7 note scale!

Here is an example of our B♭ Blues with a melody that uses only chord tones and simple passing tones.

I've used a jazz, rhythmic syncopation technique known as the "Anticipation" (ANT) in a few spots.
The anticipation is a device, used in the melody at the point of a change in harmony, whereby a note belonging to the upcoming chord is struck slightly earlier than expected.

For example:
The last F♮ of bar 3 should be thought of as being an anticipation of the 1st beat of bar 4. It will be heard as relating to the Fm7 chord rather than the B♭7 chord of bar 3.

Anticipations are rarely "pushed" much further than a 1/4 note ahead of the change of harmony. Usually they only involve an 1/8 note push, as I have done below.

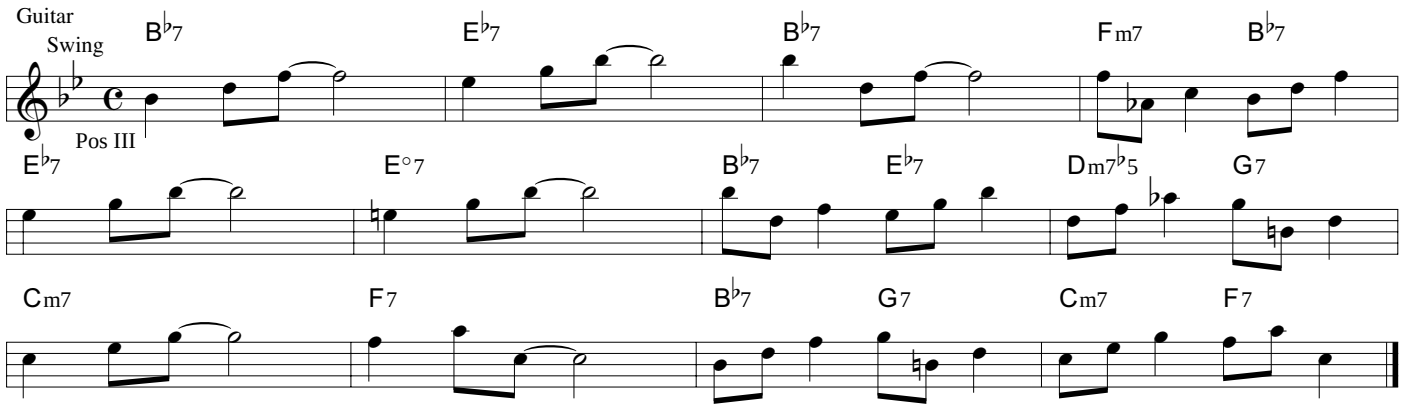


C. Other Similar Exercises

1. Chord Tone Exercise ♯2

This is the same as C. T. Ex. ♯1 except that we will further limit ourselves by imposing a range on the exercise. We will start with the range of a single octave between Concert B♭ below Middle C and the B♭ an octave above. For the most part we will still try to always go up the arpeggio but there will be many times when we will need to down (rather than up) from the root to the 3rd or from the 3rd to the 5th, etc. We will also force ourselves to stay in Position III.

Here it is worked out over our B♭ blues progression again.



Notice how all the chords seem to join together more smoothly with less leaping.

Repeat with all the various possible permutations (3, 5, 7 - 5, 7, 1 - etc.)

Practice improvising chord tone melodies within this single octave.

Try it within any octave. Eg. F to F.

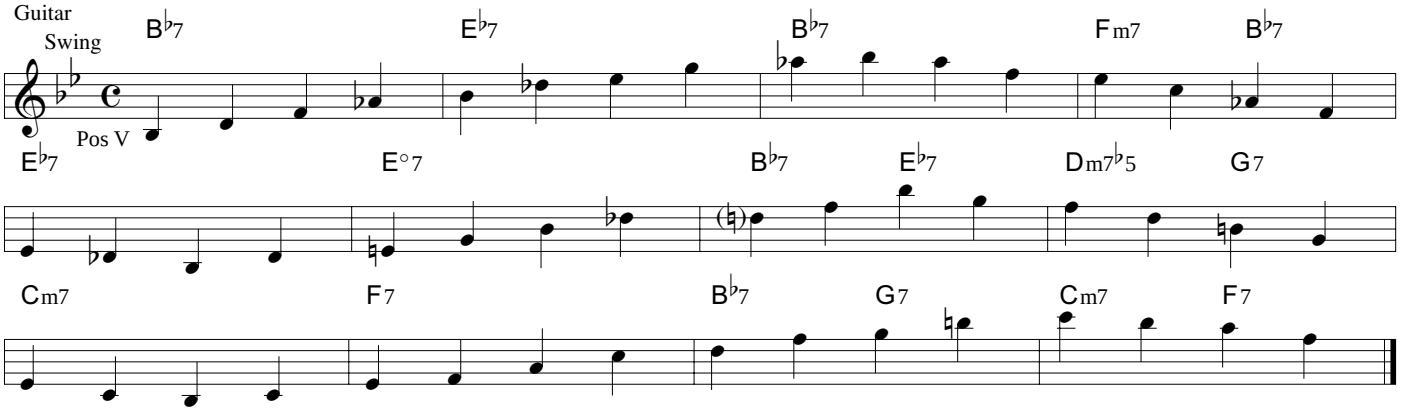
Try the passing tone exercises within a single octave.

Try all of these exercises within a single position. Eg. Position VII. Etc.

2. Chord Tone Linking Exercise ♯1

Here we will simply be running up and down each chord using quarter notes and at the point of a chord change we will use notes from the new chord. We will start with a low range of our low A♭ and a high limit of our C♯ a minor 9th above concert Middle C. This is the range encompassed by Position V. We will also keep our fingerings within Position V. When we reach the limit of our range we will simply change direction and continue.

Here's our blues again:



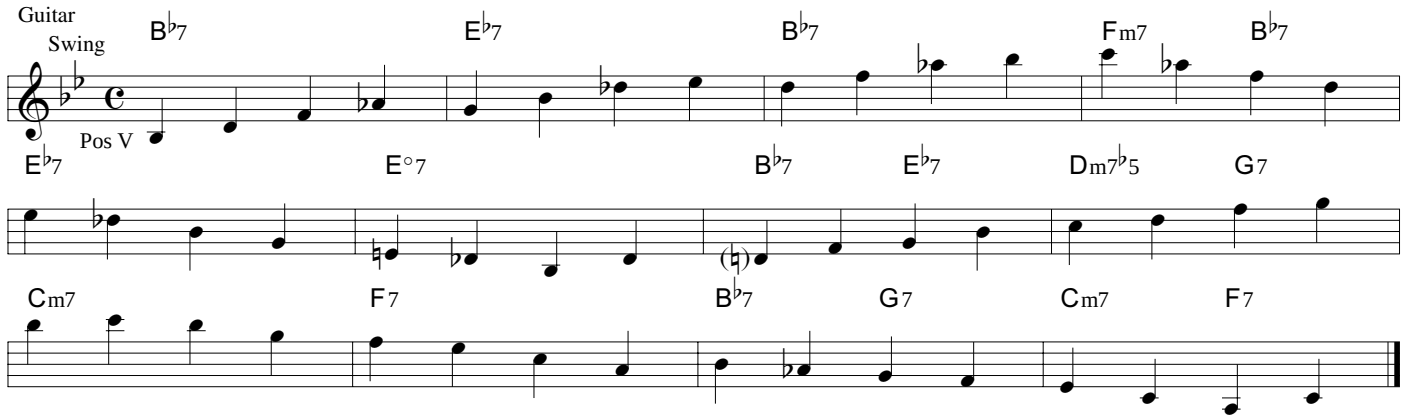
If we were to continue back to the top of the form the next note would be D on the B♭7 chord. Continue.

The above example ignores some very strong voice leading tendencies built into the progression at at least one spot.

For example:

The last A♭ of bar 1 has a much stronger tendency to resolve by half step into the note G on the E♭7 chord than it does to go to the B♭.

Try the above exercise again but this time, at the point of a chord change, move to the nearest chord tone of the new chord even if it means a temporary change in direction. If a choice exists between rising up a half step to the root of a chord or falling down a half step to its flatted 7th degree choose the root.



If we were to continue back to the top of the form the next note would be D on the B♭7 chord. Continue.

Try the same exercise in several different positions.

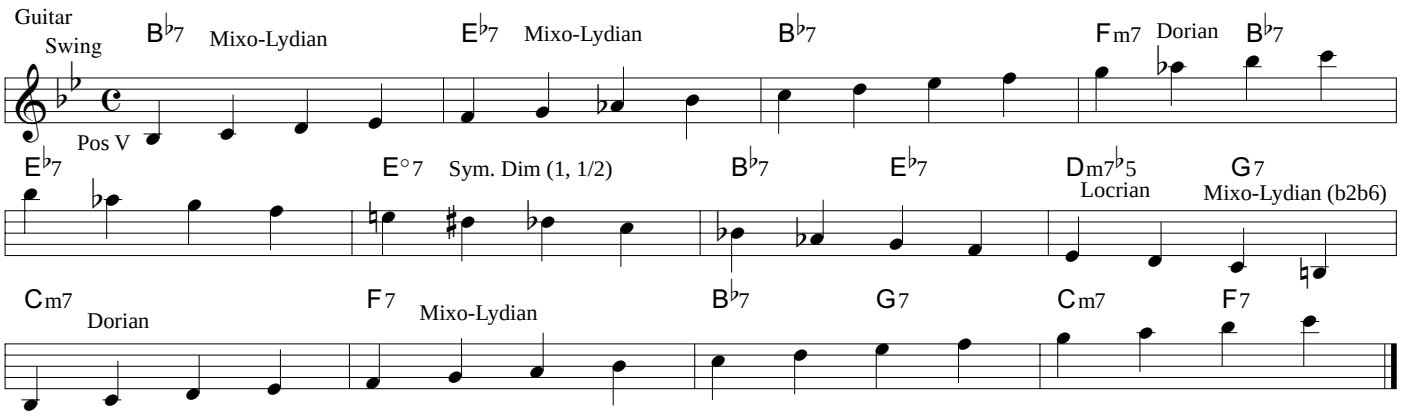
Try the same exercise within the range of an octave.

Try the same exercise on 1 string at a time so that the range of the string becomes the range limitation for the exercise.

Try the same exercises using other rhythmic values. (eighth notes, triplets, etc.)

3. Scale Linking Exercise #1

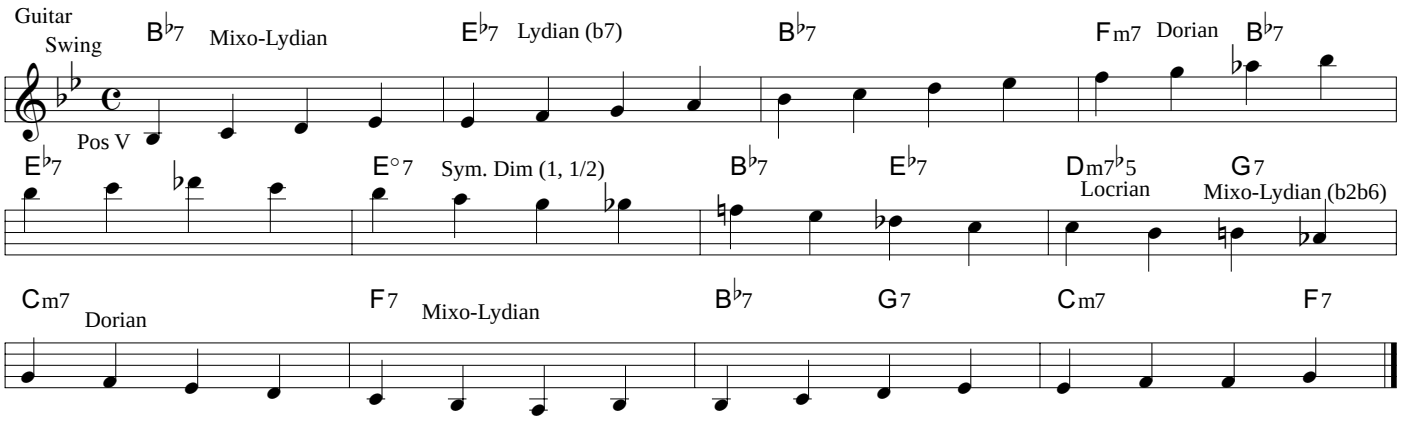
Just like our chord tone linking exercise but we'll use the entire chord-scale for each chord. We will simply run up and down each chord scale adjusting our notes to fit the chord-scale of the moment. This presumes, of course that you already know these chord-scales which may not yet be true.



Sounds a little vague doesn't it?

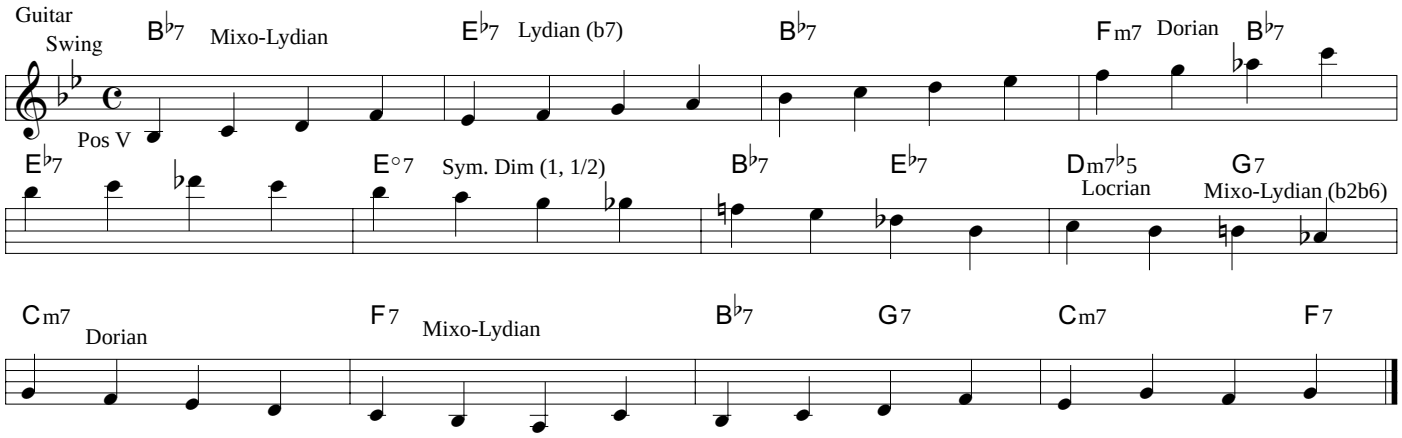
This is because too much emphasis has been given to non chord tones on strong beats and at the points of the chord changes.

This time at the point of a chord change, if a choice exists to have the first note of the new chord be a chord tone rather than a non chord tone then choose the chord tone even if it means a temporary change in direction. Also, place a chord tone at the point of a chord change even if it means repeating the previous note.



Still not as strong as it could be because of all of the repeating notes.

This time if we would normally need to repeat a note in order to get a chord tone on the down beat at a chord change we will leap 1 step past the target note on the beat just before the chord change.



Much better, isn't it? Please see Melodic Uses Of The Non Chord Tones for a detailed explanation of why this is so.

The next note would be A♭ on the B♭7 chord at the top of the form. Continue in the same manner.

Try the same exercise in various positions, on single strings and within a more or less restricted range.

XI. Chord-Scales Via Modal Theory (Part 1)

A. Terminology And Definitions

Scale: A group of notes assembled in some sort of of ascending and descending order. A scale normally covers an octave, and usually moves in steps (i.e. Major or Minor 2nds). (Delamont)

Diatonic Scale: The 7 note scale that is derived from the first 7 notes of a cycle of 5ths. (Eg. F C G D A E B = C D E F G A B C or D E F G A B C D, etc.) It consists of 5 whole tones and 2 semi-tones.

Chord-Scale:
A scale as seen in relation to a chord. Chord-scales are used as raw material from which to derive melodies and/or chord voicings.

Chord Tone (abbr: CT):
One of the component tones of a chord.

Non Chord Tone (NCT):
A note that is not normally a component of the chord being considered.

Available Tension (T) (sometimes AT):
Any Non Chord Tone (NCT) that blends vertically with a chord when held for a long duration or accented. Usually found a major or augmented 2nd above a Chord Tone (CT).
When held for a long duration a tension will become part of the chord itself, in a pleasing manner.
For instance, sounding the note D for a long duration on a C major chord will result in the chord C(add9). The D blends into the chord and becomes a part of it in a pleasing manner.
When a Tension is actually a component of a chord's voicing and not merely a melodic device we can treat it essentially as if it were itself a Chord Tone, in many ways.

Avoid Note (AN):
Any NCT that clashes with a chord when held for a long duration or accented. Avoid notes usually need to be resolved by step into a nearby chord tone.

Avoid notes are usually found a half step above a CT.
Main exception: ♭9 on Dom7 chords is perfectly acceptable. ♭9 (aka ♭2) is a half step above the Root.
Also: ♭13 on Dom7 chords is fairly routine. ♭13 (aka ♭6) is a half step above the chord's 5th. More often than not the 5th is omitted on a Dom7♭13 chord. Therefore it is often written Dom7♯5 instead. (♭6 is enharmonically equivalent to ♯5.)

Avoid notes create harsh sounding ♭2 or ♭9 intervals with one of the chord tones. The ♭9 interval is the most avoided interval in tonal music.

For Example:
Sounding the note F somewhere above the E in voicing for a C major chord will create either a ♭2 or a ♭9 with the E. In most melodic writing styles the ♭9 interval requires some sort of resolution into a more consonant structure. The usual "tendency" of the note F on a C major chord is to resolve into the nearby chord tone E.

However, if the F is sounded below the E a less harsh major 7th interval is created. The resulting chord might

be called C(add4) [C F G E - bottom to top - is one possible voicing] or C/F [F C E G] but it's character would be quite different from that of a regular C major chord. Another possible chord symbol for this type of voicing is Csus4(add3). This is sometimes written Csus4(add10).

Note: On a Sus4 chord adding a major 10th (same pitch as a major 3rd) above the 4th creates no ♭2's or ♭9's with the 4th and is therefore an Available Tension! The resulting chord is often written as Csus4(add10). Some people prefer to refer to T10 as T17.

Another variation of this sound is voiced with the E and the F right next to each other, in a cluster (Eg. C E F C G). The chord might also be labelled C(add4) or Csus4(add3), etc. This voicing works because the min 2nd created by the E and the F is not exposed in the upper voices. The harsh sounding min 2nd interval is softened by the intervals above it. If voiced C G E F it would be much less satisfactory.

If you find the note F when sounded above the E in a C major chord to be "pleasing" then to you that F is probably an "Available Tension". In some ways the idea of an "Available Tension" is subjective. The chord you would be creating could be called C(add11) [voiced C E G F perhaps]. Most people avoid this sound however.

On most chords that contain a major 3rd the Perfect 11th is considered an avoid note.

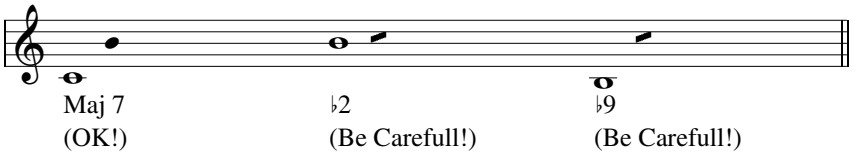
"Avoid Notes" are really not to be avoided per se. They just have to be treated a little bit more carefully than most other notes and they should usually resolve into a nearby chord tone. An avoid note works very well as a passing tone between the two chord tones on either side of it. Avoid notes are often the notes that give a particular scale its characteristic sound. If you leave them out entirely it is impossible to get the flavour of that scale across.

Conditional Avoid Note (CAN) (my term):

A note that is usually stable (i.e. a CT or an AT) but one that circumstances have placed a half step above (or a min 9th above) another stable note creating an undesirable min 2nd and/or min 9th interval.

Example:

On a Cmaj7 chord, sounding the note C (the root!) above the chord tone B will create a ♭2 or a ♭9 with the B. If C is the melody note on what would usually be a Cmaj7 chord, the chord is usually changed to either C6 or C6/9 or C(add9) in order to avoid this clash (aka "rub"). C itself is therefore what I call a Conditional Avoid Note on a Cmaj7 chord. (Even though it is the chord's root!)



Another Example:

On the chord G7(13), sounding the note F (the chord's ♭7th degree) above the note E (the chord's added T13) will result in either a ♭2 or a ♭9 with the F. This is usually avoided.

These ideas of "dissonance", "consonance", the resolution of dissonant intervals, "tendency tones", etc., if not already well understood, should be studied with a good harmony teacher or from a good text, like the Delamont books. Here, we will be dealing with these concepts in a much more casual way. Avoid notes will usually need to resolve into the chord tone immediately below (sometimes above). Available tensions (see below) can be used more or less freely almost as if they themselves are chord tones. As always, use your ears!

Modes: Historically the term "mode" was only applied to the scales that result by treating each degree of the

Diatonic Scale as if it was the first and last note ("finalis") of it's own scale.

For example:

By emphasising the notes D E F G A B C D and particularly the note D a "key" feeling quite different from what we now call C Major was produced. That scale was said to be a mode of the diatonic scale. It is known as the D Dorian Mode, sometimes the D Dorian Scale.

What we now call the Major Scale was (and still is) referred to as the Ionian Mode. Several hundred years ago the Ionian Mode was not nearly as popular as most of the other modes. It is a fairly recent phenomenon (approx. 1500) that the Ionian Mode or the Major Scale and its relative minor, the Aeolian Mode (aka The Natural Minor Scale), became so dominating of Western compositional practices.

There are therefore 7 possible modes of the Diatonic scale. For our purposes you can think of these modes as being much like inversions of the Major Scale.

Although the modes of the minor scales have been used to compose melodies within both major and minor keys it would be pretty unusual for a composer to think of any passage of music, let alone an entire piece, as being in the key of one of the modes of the harmonic minor scale or the melodic minor scale. The modes of these scales are not quite satisfactory as tonal centres of their own. Some people would argue therefore that these scales should not really be called "modes".

Around the beginning of the 1900's classical composers like Stravinsky, Debussy and Shoenberg were experimenting with melodic and harmonic materials that were not so exclusively based on the major/minor scale "tonal" system anymore. Later on several jazz composers, like Miles Davis and John Coltrane, began to investigate the use of the Medieval modal tonal centres again. Jazz musicians have dabbled in atonal and pantonal music as well but by far the bulk of the jazz repertoire is based on the major/minor tonal system.

For our purposes the term "mode" will be used to describe a scale starting on a different tone than the one that it is normally constructed upon. We will routinely be speaking about things like the modes of the Jazz Minor Scale, the modes of the Symmetrical Diminished Scale, the modes of the Symmetrical Augmented scales, etc.

B. The Modes Of The Diatonic Scale

The diatonic scale has 7 possible modes. For example:

The 1st mode: C D E F G A B C is called C Ionian (aka C Major).

The 2nd mode: D E F G A B C D is called D Dorian.

The 3rd mode: E F G A B C D E is called E Phrygian.

The 4th mode: F G A B C D E F is called F Lydian.

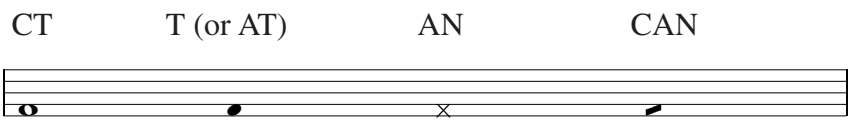
The 5th mode: G A B C D E F G is called G Mixo-Lydian.

The 6th mode: A B C D E F G A is called A Aeolian (aka A Natural Minor).

The 7th mode: B C D E F G A B C is called B Locrian.

We will be looking at these modes as possible chord-scales for the diatonic triads and seventh chords that can also be built upon the scale degrees of the C major scale. Each scale is notated to show the vertical relation of each scale tone to the notes in the chord being considered.

Legend For The Following Notation



Modal vamps (short repeating chord progressions) are given for practicing purposes.

1. Record these vamps using your guitar. Don't use your synth or computer if you have one. Do use a metronome.

2. Practice improvising over these vamps using all of the fingerings for the C major scale that you know at this point. This includes single string playing, string combinations and all the possible Position Style fingerings. If you know other ways to finger the C major scale then explore them too. Use these vamps as a means to famil-

iarise yourself with all the various sounds contained within the C major scale and with all the possible fingerings for the C major scale.

3. Transpose the vamps into all 12 keys using the circle of 5ths (I.e. C, F, B♭, E♭, A♭,D♭/C♯, G♭/F♯, C♭/B, E, A, D, G) and improvise over them with the corresponding major scales, exploring as many fingerings as you can. This includes single string playing, string combinations and all the possible Position-Style fingerings. If you know other ways to finger these major scales then explore them too. Use these vamps as a means to familiarise yourself with all the various sounds contained within all the major scales and with all the possible fingerings for the major scales.

4. Learn to spot and resolve any Avoid Notes within these chord-scales. They are always a half step above a chord tone.

Tip: Try playing the scales and omitting the avoid notes.

5. Learn to spot and resolve any Conditional Avoid Notes within these scales. Example: On Cmaj7 the note B is much more stable than the note C (when C is sounded above the B in the chord voicing).

Tip: Try playing the scales and omitting both the Avoid Notes and the Conditional Avoid Notes.

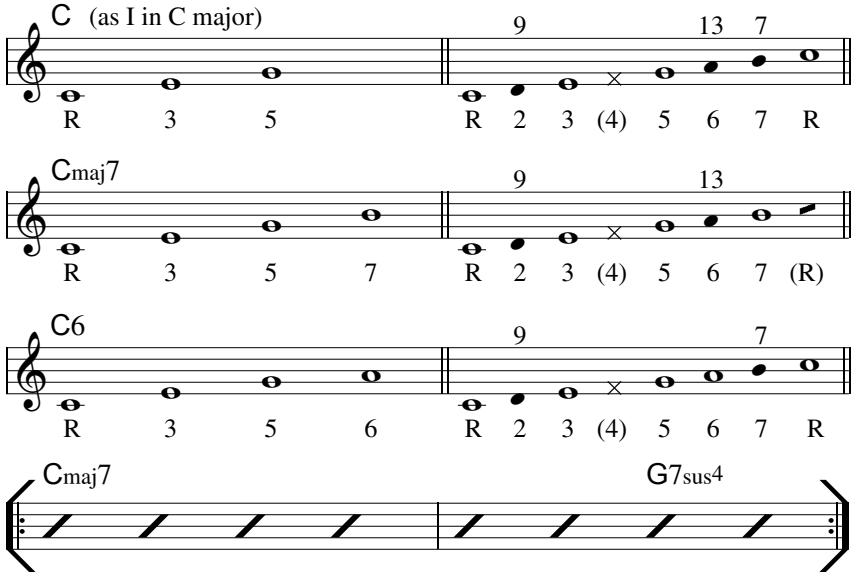
What is left?

6. Try to use the Avoid Notes mostly as passing tones to get from one Chord Tone to another.

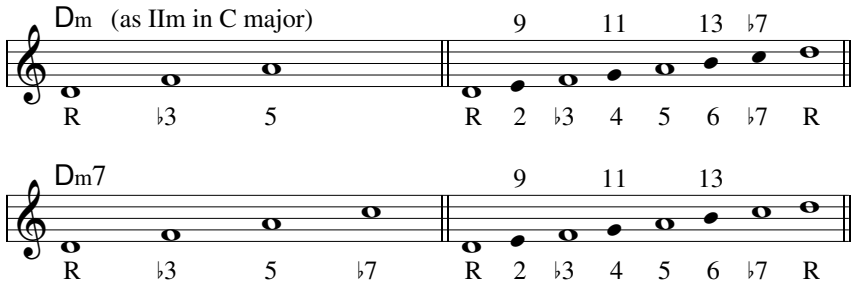
7. When non chord tones are available as tensions learn to construct shell voicings that that utilise them. Memorise which tensions are available on which type of chord. Eg. What tensions are available on a IIm7 chord? VIm7? IIIm7? etc. Imaj7? IVmaj7? etc.

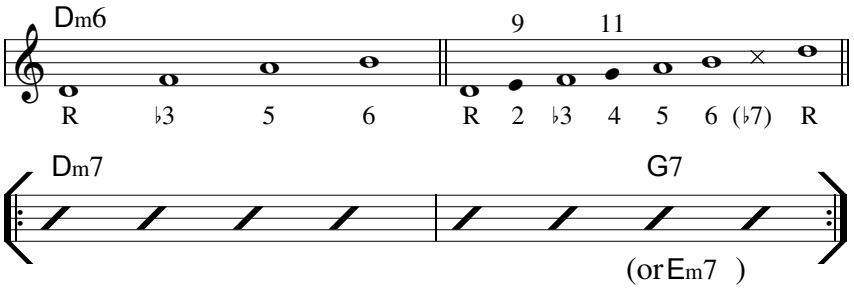
8. Practice singing everything you are playing. Try singing something with one of these scales and then playing it!

1. C Ionian (Mode 1 = Ionian)

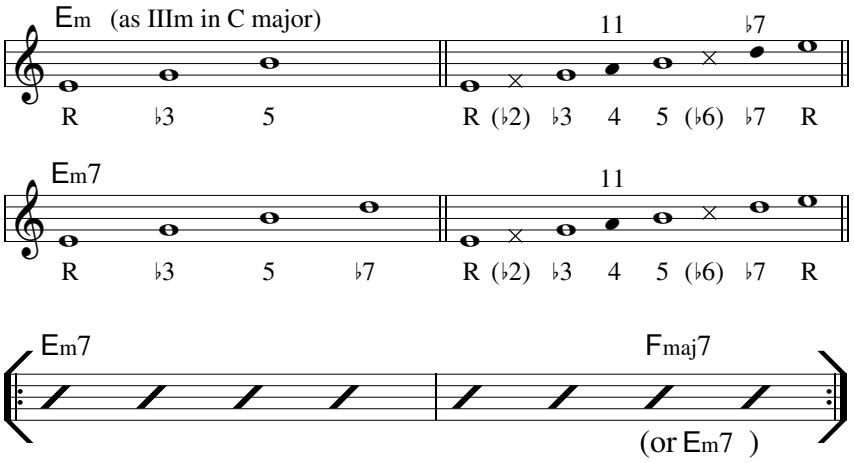


2. D Dorian (Mode 2 = Dorian)

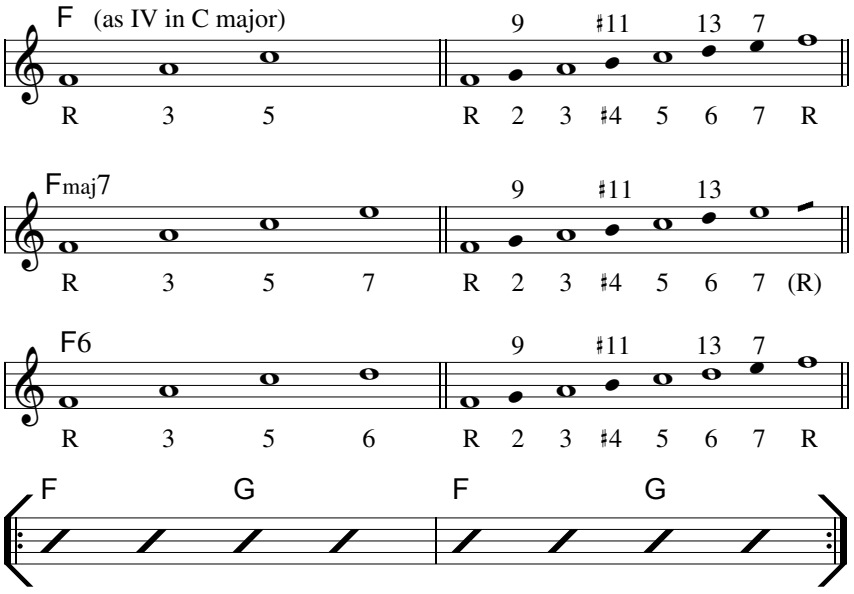




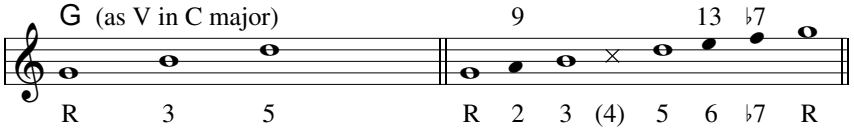
3. E Phrygian (Mode 3 = Phrygian)

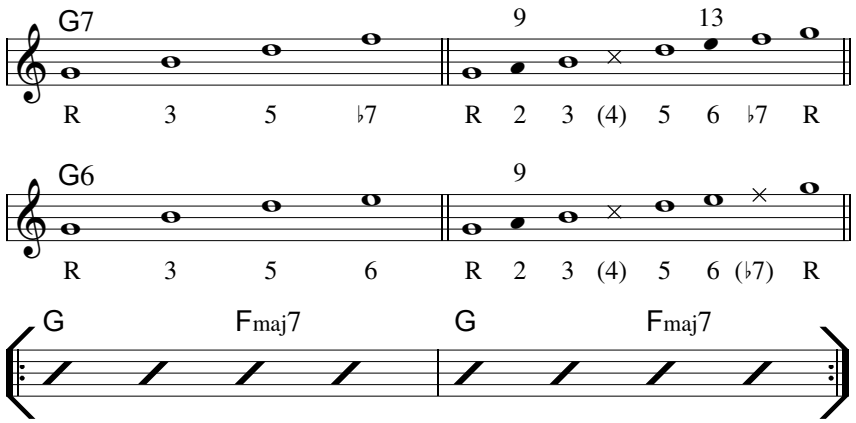


4. F Lydian (Mode 4 = Lydian)

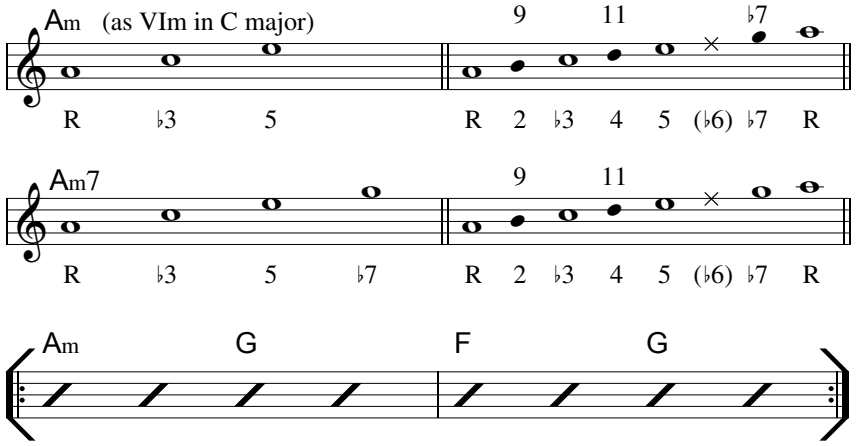


5. G Mixo-Lydian (Mode 5 = Mixo-Lydian)

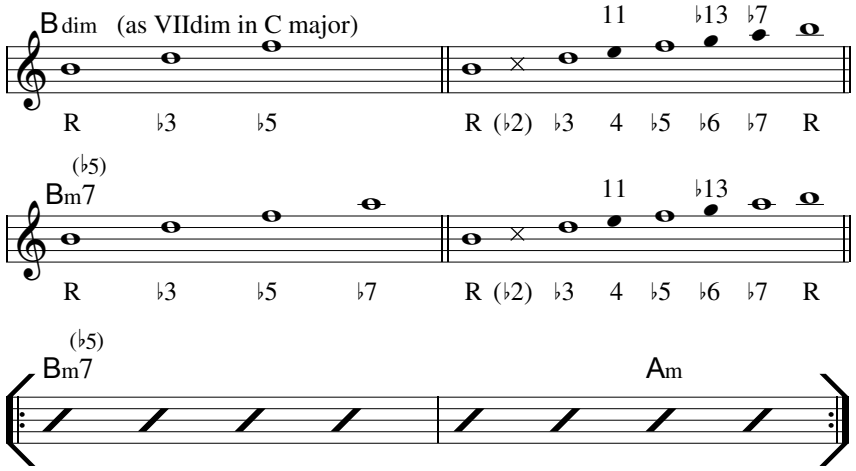




6. A Aeolian (aka A Natural Minor) (Mode 6 = Aeolian)



7. B Locrian (Mode 7 = Locrian)



Some notes about these modal vamps:

These short repeating chord progressions create an harmonic setting where the particular modal scale being studied will be felt as the strongest scale choice with which to create melodies. This is accomplished by emphasising the 1st chord in the vamp over the 2nd chord. I have placed the 1st chord on a much stronger metrical position than the 2nd chord and have usually given it a longer duration as well. The 1st chord and its associated chord-scale, a scale built on its root, will therefore be felt as the tonal centre.

The 2nd chord in the vamp serves to further define the scale. It always contains at least 2 scale tones that the

1st chord is lacking. If you put all of the notes of both chords side by side in a step-wise order you would have all 7 or at least 6 of the notes of the scale being studied.

For Example:

The C Ionian vamp uses the chords Cmaj7 (C E G B) and G7sus4 (G C D F).

If you arranged all of the notes of these chords as a scale you would have (C D E F G B):

C - from both chords, D - from G7sus4, E - from Cmaj7, F - from G7sus4, G - from both chords and B - from Cmaj7.

That's 6 of the 7 notes of a C major scale. The only note missing is A. You might therefore try a scale that uses A♭ rather than A♮ over this vamp because there is nothing in the chords themselves that will clash too badly with it. A♮ will most probably sound more "normal" though.

The only reasons why this vamp sounds like C is the tonal centre rather than G is because of the duration of the Cmaj7 chord (it lasts for 6 beats while the G7sus4 chord only lasts for 2 beats) and because Cmaj7 is sounded at a comparatively much stronger metrical position (i.e. on the downbeat of bar 1 while the G7sus4 is relegated to the last 2 beats of the 2nd bar).

If you reversed these 2 chords (G7sus4 for 6 beats and Cmaj7 for 2 beats) you would have a fine G Mixo-Lydian vamp.

Emphasis is everything!

Consider this also: For the last 2 beats of bar 2 the avoid note on the C chord (F) will sound fine because it is a chord tone on the G7sus4 chord. You have to use your ears and your taste at every step of the way.

Another Example:

The E Phrygian vamp contains the chords Em7 (E G B D) and Fmaj7 (F A C E).

If you arranged these notes as a scale you would have (E F G A B C D):

E - from both chords, F - from Fmaj7, G - from Em7, A - from Fmaj7, B - from Em7, C - from Fmaj7 and D - from Em7.

That's the entire E Phrygian scale.

The only reason this vamp sounds like Em7 is the tonal centre rather than Fmaj7 is because of the duration of the Em7 chord (it lasts for 6 beats while the Fmaj7 chord only lasts for 2 beats) and because it is sounded at a comparatively much stronger metrical position (on the downbeat of bar 1 while the Fmaj7 is relegated to the last 2 beats of the 2nd bar).

If you reversed these 2 chords (Fmaj7 for 6 beats and Em7 for 2 beats) you would have a good F lydian vamp.

If we introduced any other notes in our scale, not found within this composite group of chord tones, they would quite likely sound a little out of place.

The harmonic setting of the E Phrygian vamp sounds nothing at all like the key of C major. Although in some academic circles it is not proper to consider that a "key" of E Phrygian actually exists this is exactly what is going on. This vamp IS in the key of E Phrygian in the sense that E is the "tonal centre" and the scale colour is Phrygian rather than major or minor.

Increasingly, we will be treating the modes, such as E Phrygian, as scales in their own right, with their own intervallic formulas (Eg. 1 ♭2 ♭3 4 5 ♭6 ♭7), and not simply as modes of some other more familiar scale. We will find that it is incredibly valuable to think of the chord-scales we are using as actually being built from the root of the chord we are actually playing on rather than as modes of some other scale, whether they really are modal scales or not.

This idea of combining the chord tones of the chords within a progression in order to construct a chord-scale will play an increasingly important role in our melodic explorations in this book.

Credit where credit is due: I first became aware of the idea of using modal vamps such as these when I was studying with Mick Goodrick. His book The Advancing Guitarist has a similar section in it with very similar modal vamps. In my mind this is his teaching material. I hope he doesn't mind me presenting this stuff in my own book and I hope he doesn't sue me!

XII. Pentatonic Scales

A. Formation

A “pentatonic” scale is simply a scale that consists of 5 notes. There are a few pentatonic scales that are more frequently used than most and when someone speaks of a pentatonic scale chances are they are speaking about one of these.

The “Major Pentatonic Scale” is identical to a major scale with the 4th and 7th degrees omitted. This results in a very stable sonority that does not possess any prime dissonance (i.e. no tri-tones, no minor 2nds, no major 7ths and no minor 9ths).

The intervallic formula for the Major Pentatonic scale is: 1 2 3 5 6 1

So a C major pentatonic scale consists of the following pitches: C D E G A C

It can also be thought of as resulting from the first 5 notes within a cycle of 5ths. (E A D G C)

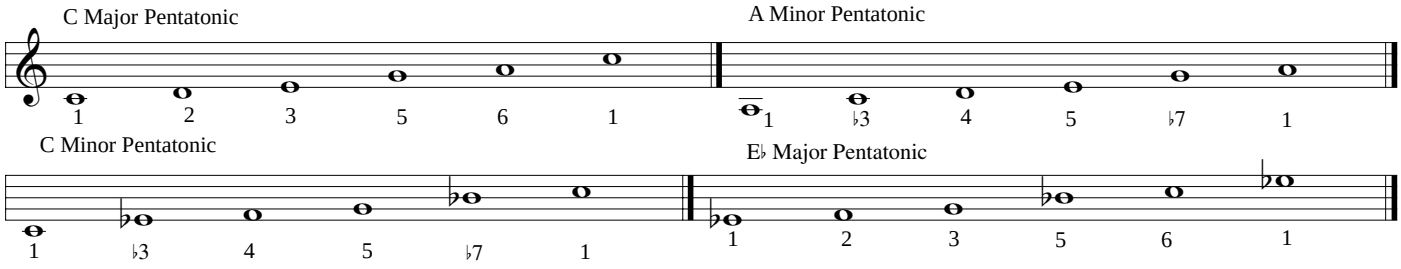
There are two pentatonic scales that are often called “Minor Pentatonics”. The first one is actually a mode or an inversion of the major pentatonic scale. If you begin the C major pentatonic scale on A you will have the A Minor Pentatonic scale. (A C D E G A) This is the scale that I will be referring to when I speak of the “Minor Pentatonic scale”.

The intervallic formula for the Minor Pentatonic scale is: 1 ♭3 4 5 ♭7 1

So a C minor pentatonic scale consists of the following notes: C E♭ F G B♭ C

This is the same group of notes found within the E♭ major pentatonic scale.

The relationship between the major pentatonic scale and it’s relative minor pentatonic scale is the same relationship as the major scale has to it’s relative minor scale. C major is relative to A minor etc.

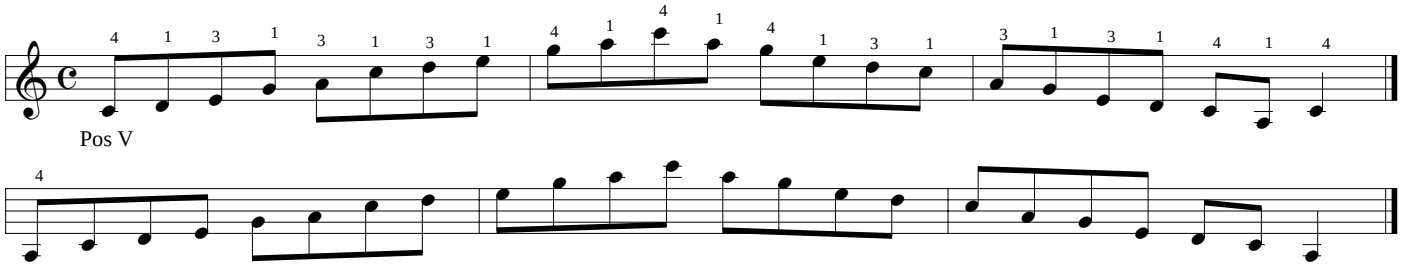


The other pentatonic scale that is sometimes called a “minor pentatonic” has this intervallic formula:

1 2 ♭3 5 6 1

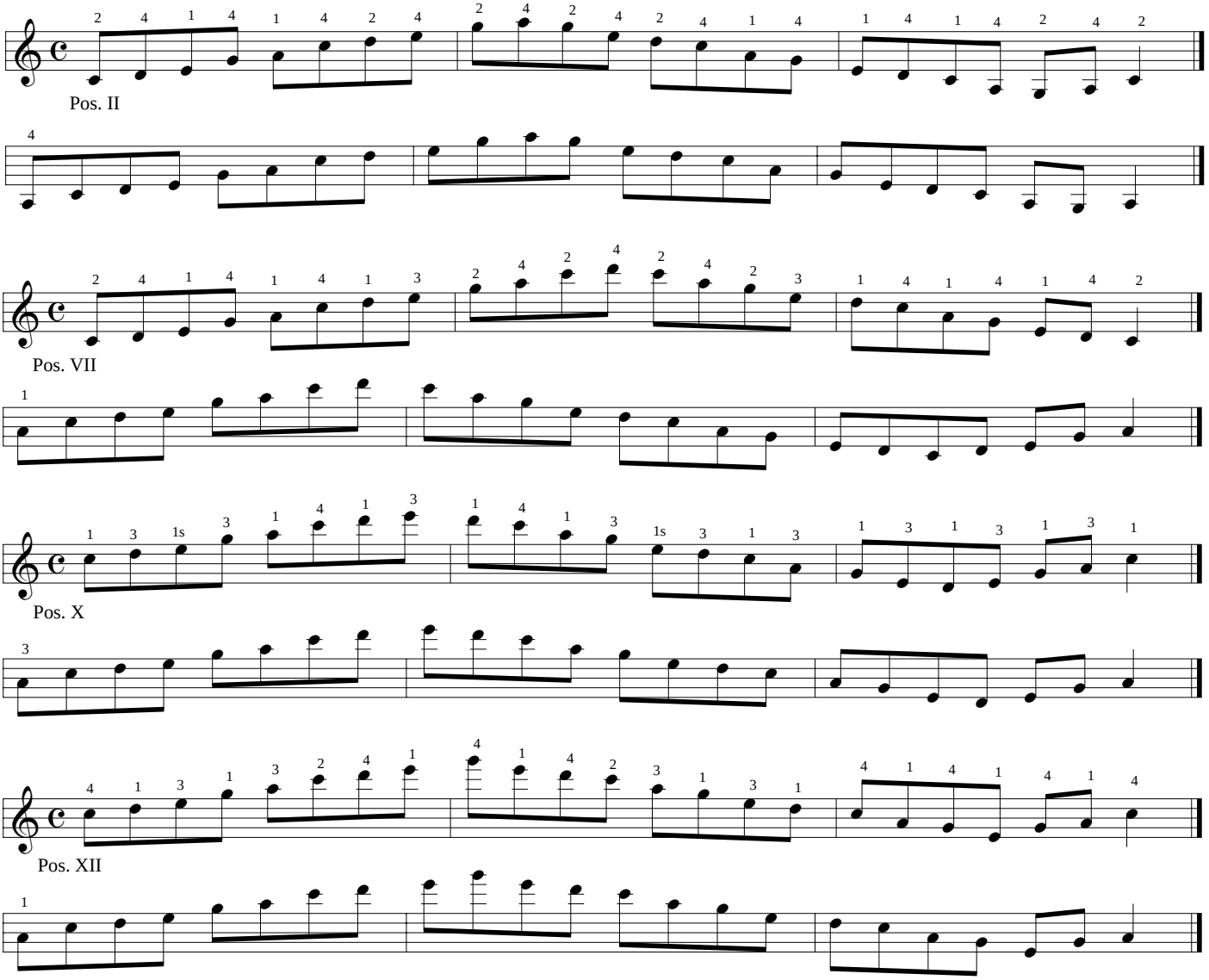
I will not be referring to this scale very often within this book and if I do I will refer to it by it’s intervallic formula rather than as a “minor pentatonic scale”.

Here is the position style fingering for C major pentatonic and A minor pentatonic in Position V.



This is one of the most common finger patterns on the guitar. It has been used in every rock and blues guitar solo under the sun because it is so easy to play but mostly because it sounds good! Learn it well.

Here are a few of the more popular position style fingerings for the C major pentatonic and A minor pentatonic scales.

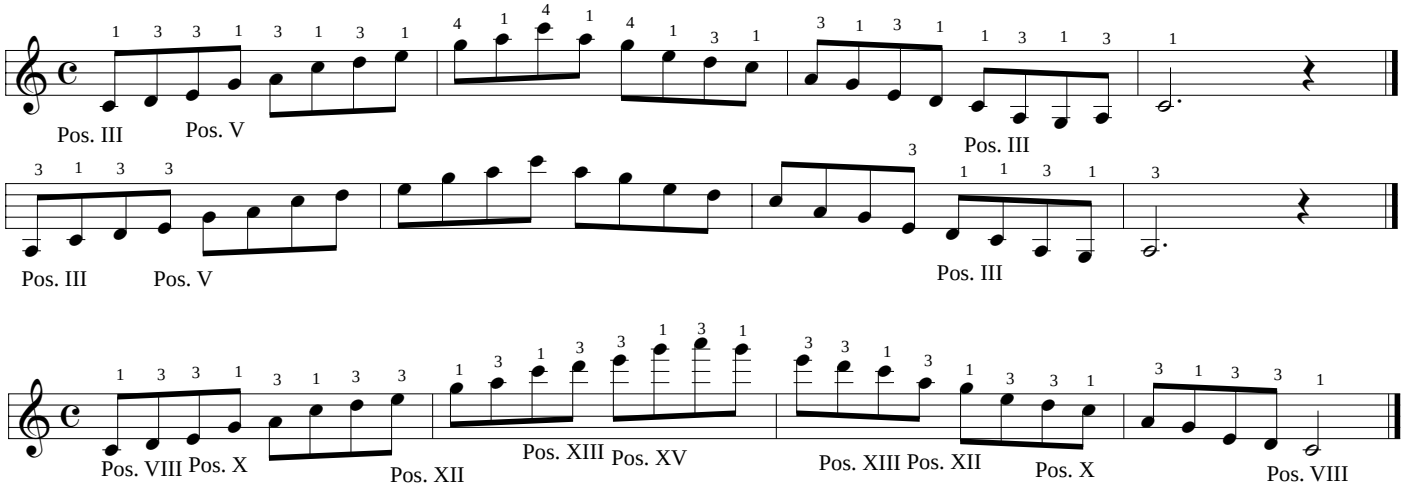


This last one is quite popular as well with rock and blues players.

Learn to play the major/minor pentatonics in every other position.

Learn them on single strings also. Get to know where these notes lie everywhere on the fret board.

These last two fingerings use position shifts accomplished with finger slides.



B. Occurrences Within The Major Scale

Within every major scale the component tones required for the construction of 3 separate major (or minor) pentatonic scales can be found.

Within the C major scale you will find all of the tones needed to construct:
a C major pentatonic scale (A min pent) (C D E G A)
an F major pentatonic scale (D min pent) (F G A C D)
and a G major pentatonic scale (E min pent) (G A B D E)

This will obviously be similar for any major scale in that there is a major pentatonic to be found built on I, IV and/or V and a minor pentatonic built on VI, II and III respectively.
Examples:
Within the G major scale you will find all of the notes needed to construct a G major (E minor) pentatonic scale (I), a C major (A minor) pentatonic scale (IV) and a D major (B minor) pentatonic scale (V).
Within the E♭ major scale you will find all of the notes needed to construct an E♭ major (C minor) pentatonic scale (I), an A♭ major (F minor) pentatonic scale (IV) and a B♭ major (G minor) pentatonic scale (V).
etc.

C. Uses Of

Because of the melodic stability and playability of pentatonic scales they are quite useful for melodic improvising. A general rule of thumb regarding the appropriateness for the application of a pentatonic scale as a chord scale is this: If the pentatonic scale does not create any avoid notes with the chord it will be a suitable scale from which to derive melodies.

Example:
In the key of C major, on a Cmaj7 chord (Imaj7) the C major pentatonic and the G major pentatonic will sound quite good while the F major pentatonic is quite unstable. This is because the F major pentatonic contains the note F which is an avoid note on this chord.
Record the Ionian vamp from the chapter “Chord Scales Via Modal Theory (Part 1)” and try using these pentatonic scales instead of the entire C major scale.
In this harmonic setting you might actually hear the C major pentatonic as sounding much like a horizontally

executed arpeggio (i.e. all notes within a single octave) for C6/9.

You might hear the G major pentatonic as being an expression of the chord Cmaj7(9).

There's something quite interesting going on when you superimpose a G major pentatonic scale over a Cmaj7 chord. In a sense you are playing in two keys at the same time. This is what is meant by bi-tonality or it's more complicated cousin poly-tonality. G maj pent over a Cmaj7 chord is not really a drastic usage of this technique because there are no tones within the G major pentatonic scale that are not also found within the C major scale.

Example:

In the key of G major, on a Cmaj7 chord (IVmaj7) the G major pentatonic (I), the C major pentatonic(IV) AND the D major pentatonic (V) will all blend into the chord quite nicely because none of these scales contain any avoid notes on this chord.

The D major pentatonic has an especially bi-tonal feeling to it due to it's F♯ which is heard as tension ♯11 on this chord.

If you were playing on Cmaj7 on a tune in the key of C major and you outlined a D major pentatonic scale you would most definitely be creating a bi-tonal effect (C major + G major or C major + D major) because the note F♯ is "outside" of the key of C major.

Try it!

Here is a summary of the typical uses of the diatonic major pentatonic scales on the diatonic seventh chords. The choices are arranged in order of the closest relationship to the chord.

Imaj7: Try I Major Pent and/or V Major Pent. The IV Major Pentatonic scale contains an avoid note.

The avoid note when using the Ionian mode on a Maj7 chord is scale degree 4 (S4). When using the C Ionian mode on Cmaj7 the avoid note is F.

IIm7: Try IV Major Pent (II Minor Pent), I Major Pent (VI Minor Pent) and/or V Major Pent (III Minor Pent). There are no avoid notes when using the Dorian mode on a Min7th chord. When using the D Dorian mode on Dm7 there are no avoid notes.

IIIm7: Try V Major Pent (III Minor Pent) only. The other two possible pentatonic scales both contain avoid notes.

When using the Phrygian mode on a Min7 chord the avoid notes are S♭2 and S♭6. When using the E Phrygian mode on Em7 the avoid notes are F and C.

Note: Sometimes IIIm7 is being used as or is heard as a 1st inversion Imaj9 chord. In these situations the I Maj Pent (VI Minor Pent) might sound fine. Use your ears.

IVmaj7: Try IV Major Pent, I Major Pent and/or V Major Pent.

There are no avoid notes when using the Lydian mode on a Maj7th chord.When using the F Lydian mode on Fmaj7 there are no avoid notes.

V7: Try V Major Pent only. The other two possible pentatonic scales both contain the avoid note.

The avoid note when using the Mixo-Lydian mode on a Dom7 chord is S4. When using the G Mixo-Lydian mode on G7 the avoid note is C.

VIm7: Try I Major Pent (VI Minor Pent) and/or V Major Pent (III Minor Pent). The IV Major Pentatonic scale contains an avoid note.

The avoid note when using the Aeolian mode on a Min7 chord is S♭6. When using the A Aeolian mode on Am7 the avoid note is F.

VIm7♭5: Try V Major Pent (VI Minor Pent) only. The other two Major Pentatonic scales contains the avoid note.

The avoid note when using the Locrian mode on a Min7♭5 chord is S♭2. When using the B Locrian mode on Bm7♭5 the avoid note is C.

Use the previous modal vamps to experiment improvising with these sounds.

There are many other ways that modern jazz musicians have found to use pentatonics in their compositions and improvisations. Usually it will have to do with the idea of superimposition, as in poly-tonality. I encourage you to experiment with these scales. One of the first things to do if you are interested in this type of an approach is to have a listen to all 12 possible major pentatonic scales played against the various chord types.

What does F♯ major pentatonic sound like over C7? What does A♭ major pentatonic sound like over G7sus4? What does B major pentatonic sound like over Cmaj7? Etc.

D. The Blues Scale

I'm not sure of the history of all of this but somehow over the course of time black people, brought as slaves to America, began adding traditional African sounds to the 12TET tonal music of the Americans. It is my understanding that the minor pentatonic scale or something very similar is quite prevalent in traditional African music (but don't quote me on this <g>).

One of the most interesting things that this culture clash has developed into is the practice of superimposing the primarily minor sound of the minor pentatonic scale onto a primarily major sounding song form. The resulting multi-cultural song form and harmonic texture has become known as the "Blues".

The typical setting for this sound is a 12 bar song form consisting of mostly primary chords (i.e. I, IV and V) where a minor pentatonic scale built on I serves as the raw material for melodic development. So, a blues tune that is actually in the key of C major would derive it's melody notes mostly from a C minor pentatonic scale and sometimes from a C major scale while the chords are derived mainly from the C Major scale and sometimes from the C minor pentatonic scale.

The minor pentatonic scale built on I is used throughout the entire form regardless of the chord that is being sounded at any particular time:

On the I chord - use I minor pentatonic

On the IV chord - continue to use I minor pentatonic

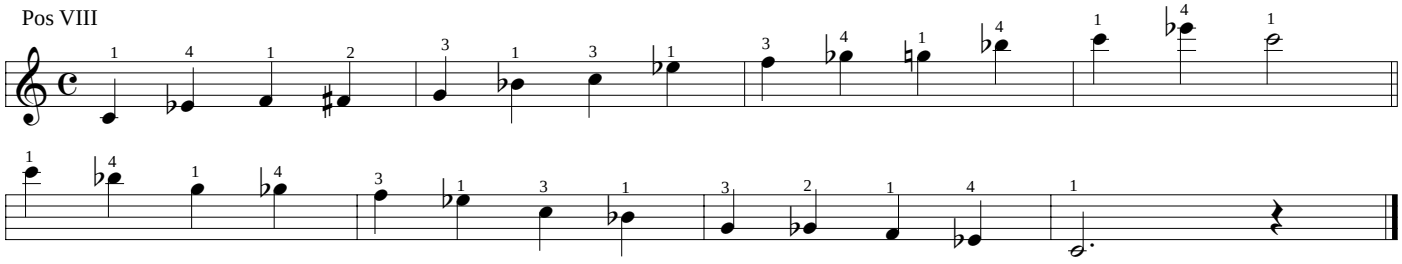
On the V chord - continue to use I minor pentatonic

Etc.

Eventually an extra note, the ♭5/♯4, began to be used within the "Blues Scale". What is typically called the blues scale today is a six note scale with the following intervallic formula: 1, ♭3, 4, ♯4/♭5, 5, ♭7.

The C blues scale consists of the following notes: C, E♭, F, F♯/G♭, G and B♭.

Here is the most easily played movable fingering on guitar for the C blues scale.



It can be thought of as being identical to a C minor (E♭ major) pentatonic scale with an added ♯4/♭5 scale degree.

The notes in the minor pentatonic scale that are outside of the major scale are said to be the “blue notes”. In C (major or minor) the blue notes are E♭ (♭3), F♯/G♭ (♯4/♭5) and B♭ (♭7). Minor keys already have 2 of the blue notes in the key signature.

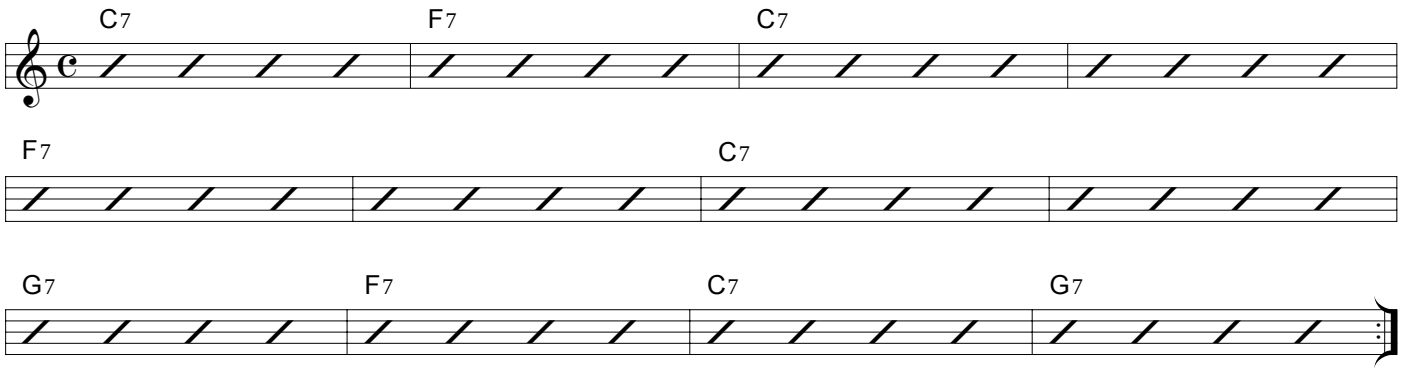
Typically, in a blues progression in a major key, the I chord is usually a dominant 7th rather than the 100% diatonic major seventh chord. The flatted 7th chord tone should be thought of as coming from the blues scale.

Eg. In a blues in C the I chord is usually C7 rather than Cmaj7. The ♭7 (B♭) of the I7 chord should be thought of as a blue note coming from the blues scale.

Also, in a major key blues the IV chord is usually a dominant 7th rather than the 100% diatonic major seventh chord. The flatted 7th chord tone should be thought of as coming from the blues scale.

Eg. In a blues in C the IV chord is usually F7 rather than Fmaj7. The ♭7 (B♭) of the IV7 chord should be thought of as a blue note coming from the blues scale built on I.

Try improvising over the following chord progression using just the C blues scale and nothing else. Stick to the above fingering for now. Keep it simple. Stick to just running the scale up and down sequentially at first. No fancy leaps or finger pyro-technics.



Doesn’t it feel like every note wants to resolve back to C? Like C is “home”?

Now try to figure out a few more position style fingerings for this scale and try improvising using them over these chords. Pos. III, Pos. VI, Pos. X and Pos. XIII are all pretty useful.

Figure out where these notes are on your 1st string only. Try improvising using just the 1st string.

Figure out where these notes are on your 2nd string only. Try improvising using just the 2nd string.

Etc.

Etc.

Etc.

Etc.

Try using combinations of strings 1 and 2, 2 and 3, 3 and 4, etc.

Try using combinations of strings 1 and 3, 2 and 4, 3 and 5, etc.

Try using combinations of strings 1, 2 and 3, 2, 3 and 4, etc.

Etc.

Try using the entire fretboard.

E. Mixing The Blues Scale With Chord Tones

Now let's see what happens when we combine chord tone improvising with the blues scale.

Improvise over the progression by alternating 2 bars of chord tone melodies with two bars of C blues scale melodies.

Now try one bar each.

See if you can find some areas on the neck where you are comfortable improvising with the chord tones as well as with the C blues scale so that your hand doesn't have to jump all over the place.

Improvise over the progression by alternating 2 bars of C blues scale melodies with two bars of chord tone melodies.

Now try one bar each.

Now switch when you want to.

When you combine the notes of a C7 chord with the notes in the C blues scale you get the following group of notes: C E♭ E♮ F F♯/G♭ B♭.

On C7 these notes function as 1 (a chord tone -the root), ♭3 (♯9 - an available tension), 3 (a chord tone), 4 (an avoid note), 5 (the 5th) and ♭7 (a chord tone).

This hints at the sound of C7♯9.

When you combine the notes of an F7 chord with the notes in the C blues scale you get the following group of notes: C E♭ F F♯/G♭ G A B♭.

On F7 these notes function as 5 (the 5th), ♭7 (a chord tone), ♭9 (an available tension), 9 (an available tension), 3 (a chord tone) and 4 (an avoid note).

This hints at the sound of F7(♭9) or F7(9).

Note: It's pretty rare to see a voicing for a dom7 chord with both the minor 9th and a maj 9th at the same time because it does not sound very good. If the ♭9 is voiced above the ♮9 it might work from time to time though.

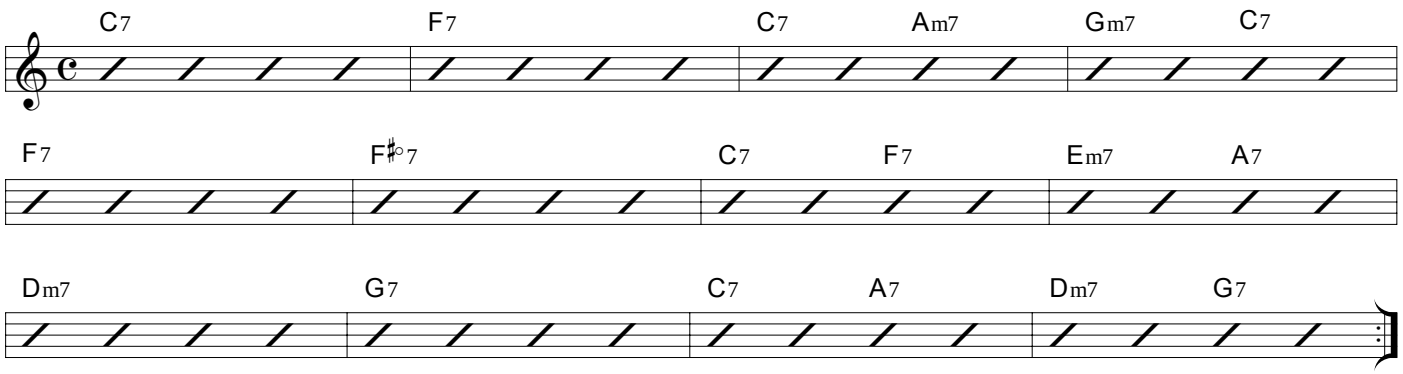
When you combine the notes of a G7 chord with the notes in the C blues scale you get the following group of notes: C D E♭ F F♯/G♭ G A B♭ B♮.

On G7 these notes function as 4 (an avoid note), 5 (the 5th), ♯5/♭13 (an available tension), ♮7 (an avoid note), 1 (the root), 9 (an available tension), ♭3 (♯9 an available tension) and 3 (a chord tone).

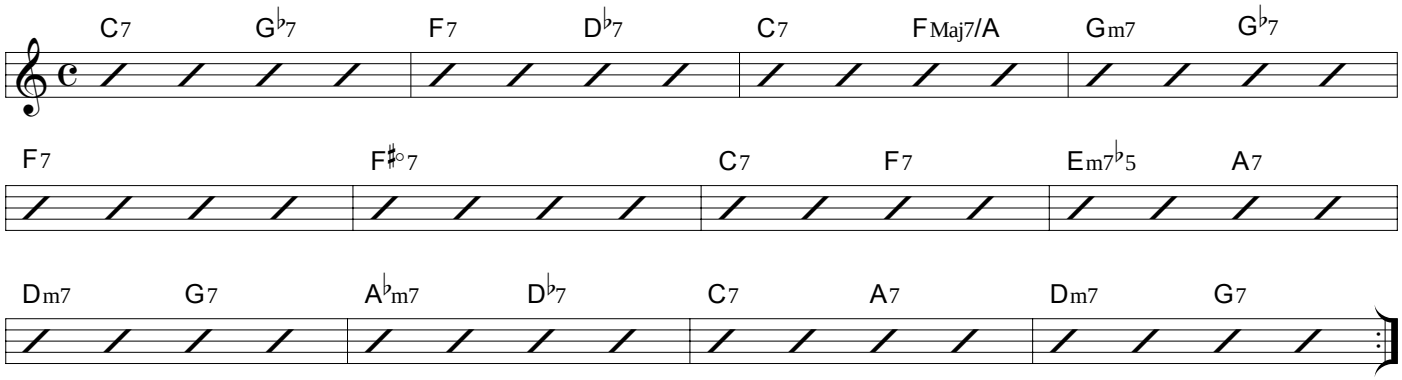
This hints at the sound of G7(♯9♯5).

Note: On a dom7 chord with added tension ♭13 it is best to omit the 5th from the chord because they create a ♭9 interval together. This is therefore better notated as a Dom7♯5 chord.

Try all of the above exercises on the following modified blues progression.



And on this one too.



What group of notes do you get when you mix the C blues scale with the notes of an A7 chord?

Answer: A B♭ C C♯ E♭ E♮ F F♯ G

How do those notes function on A7?

Answer: 1, ♭9, ♯9, 3, ♭5/♯11, 5, ♭13, ♮13, ♭7

What sorts of voicings does this combination of notes imply?

Answer: A7♯5(♭9♯9♯11), or A13(♭9♯9♯11), etc. (Note: ♭13 and ♮13 don't mix very well in the same voicing.)

How 'bout F♯dim7?
G♭7?
Am7?
Etc., etc.

This business of using one scale to improvise through an entire progression is often called a "horizontal" approach to melody. In a non blues setting this might be done with the major or minor scales implied by a tune's key centres.

The idea of arpeggiating up and down each individual chord as it occurs is called a "vertical" approach.

In good jazz improvising this balancing act between the horizontal approach and the vertical approach is of the utmost importance!!

In order to play well using either approach you have to be aware of how the other way of thinking factors in anyways.

If you are using the blues scale or the key's implied major or minor scale all the way through a progression you have to understand how each note in that scale or key fits each individual chord vertically speaking.

If you are arpeggiating each chord or running up and down an associated chord-scale you need to understand how each note in that arpeggio or chord-scale functions within the key or the blues scale being used.

When you use the minor pentatonic based blues scale over harmonic material that is primarily in a major key you are really creating a bi-tonal harmonic texture. The C blues scale is derived from Eb major pentatonic (enharmonic equivalent to C minor pentatonic) scale. When used on a progression that outlines the key of C major you are really playing two keys simultaneously!

To me, this simple technique of using the minor sounding blues scale on primarily major sounding progressions is the prime idea at the heart of what jazz musicians usually refer as "playing outside". When done elegantly almost all musical sounding "outside" playing can be attributed to playing "inside" of harmonic material from key centres other than the expected one. See my chapter on Superimposition for more on this topic.

XIII. Chord Scales Via Modal Theory (Part 2)

A. Modes as Scales In Their Own Right

We have seen that each of the modes of the major scale has it's own individual qualities. When using the modes as chord-scales for melodic improvisation there will always be two distinct yet complimentary ways of viewing them and of constructing them.

Up until now we have considered that, for example, the Mixo-Lydian mode is simply a major scale starting on it's 5th degree or put another way that the Mixo-Lydian scale is the 5th mode of some other major scale. That's pretty simple to understand and if you know your major scales really well you can always figure out some way to play one starting on it's 5th degree.

Consider this though:

On G7, in the key of C major, the usual chord-scale would be G Mixo-Lydian.

The only avoid note in this scale on a G7 chord is C.

If you are thinking of G Mixo-Lydian as being some sort of a C scale chances are you will wind up playing "C-ish" types of things and you will probably be hitting that avoid note more often and with more emphasis than is musically desirable.

If, on the other hand, you view G Mixo-Lydian as being some sort of a G scale, a G scale with a flatted 7th degree, and you are consciously relating all of the intervals in the scale to how they vertically fit the G chord you are actually playing on you stand a better chance of playing "G7-ish" types of things.

G Mixo-Lydian IS a C major scale starting on G.

It can also be thought of as a group of intervals, starting on G, with the following intervallic formula:
1 2 3 4 5 6 ♭7

There are, to be sure, many situations where the first way of thinking makes more sense but in my experience there are far more situations where the second way of thinking makes for a better conceptual overview.

Here is a summary of the 7 modes and their own intervallic formulas:

Mode 1 - Ionian (Major Scale) - 1 2 3 4 5 6 7 - used most often on Imaj7
Mode 2 - Dorian - 1 2 ♭3 4 5 6 ♭7 - used most often on IIm7
We often say that "the formula for Dorian is ♭3 and ♭7".
Mode 3 - Phrygian - 1 ♭2 ♭3 4 5 ♭6 ♭7 (♭2 ♭3 ♭6 ♭7) - used most often on IIIm7
We often say that "the formula for Phrygian is ♭2, ♭3, ♭6 and ♭7".
Mode 4 - Lydian - 1 2 3 ♯4 5 6 7 (♯4) - used most often on IVmaj7
We often say that "the formula for Lydian is ♯4".
Mode 5 - Mixo-Lydian - 1 2 3 4 5 6 ♭7 - used most often on V7
We often say that "the formula for Mixo-Lydian is ♭7".
Mode 6 - Aeolian (Natural Minor Scale) - 1 2 ♭3 4 5 ♭6 ♭7 - used most often on VIm7 (Im7 in minor)
We often say that "the formula for Aeolian is ♭3, ♭6 and ♭7".
Mode 7 - Locrian - 1 ♭2 ♭3 4 ♭5 ♭6 ♭7 - used most often on VIIm7♭5
We often say that "the formula for Locrian is ♭2, ♭3, ♭5, ♭6 and ♭7".

This second way of constructing the modes can be thought of as the process of comparing the intervals in the mode with the intervals of a major scale built on the mode's 1st degree.

Examples:

G Major = G(1) A (2) B(3) C(4) D(5) E(6) F♯(7)
G Mixo-Lydian = G(1) A(2) B(3) C(4) D(5) E(6) F(♭7)
G Mixo-Lydian is identical to a G major scale with a flatted 7th degree.

D Dorian can be thought of as a D major scale with a ♭3 and a ♭7.
E Phrygian can be thought of as an E major scale with a ♭2, a ♭3, a ♭6 and a ♭7.
F Lydian can be thought of as an F major scale with a ♯4.
A Aeolian can be thought of as an A major scale with a ♭3, a ♭6 and a ♭7.
B Locrian can be thought of as a B major scale with a ♭2, a ♭3, a ♭5, a ♭6 and a ♭7.

This concept can be made clearer by first constructing each of the modes with C as the 1st degree.

Take all of the position style fingerings that you know for the major scale (especially the 7 comfortable fingerings) and alter them to conform to the formulas for the modes.

For Example:

Stay strictly in Pos II throughout.

1. Play the fingering for C major.

2. Play the same scale but raise the 4th degree (F to F♯) and you will have a Pos II fingering for C Lydian.
What major scale is C Lydian a mode of?
Can you see that the finger patterns for G major and for C Lydian are exactly the same? Play a G major scale now in Pos II. Exact same fingering as C Lydian, right?
But when you were playing C Lydian you were not thinking of a G major scale at all! C Lydian really is a scale in it's own right.

3. Play the C major scale again but this time lower it's 7th degree (B to B♭) and you will have a Pos II fingering for C Mixo-Lydian.
What major scale is C Mixo-Lydian a mode of?
Can you see that the finger patterns for F major and for C Mixo-Lydian are exactly the same? Play an F major scale in Pos II. Exact same fingering as C Mix, right?
But when you were playing C Mixo-Lydian you were not thinking of an F major scale at all! C Mixo-Lydian really is a scale in it's own right.

4. Play the C major scale again but this time lower it's 3rd degree (E to E♭) as well as it's 7th degree (B to B♭) and you will have a position style fingering for C Dorian.
What major scale is C Dorian a mode of?
Can you see that the finger patterns for B♭ major and for C Dorian are exactly the same?
But when you were playing C Dorian you were not thinking of a B♭ major scale at all! C Dorian really is a scale in it's own right.

5. Play the C major scale again but this time lower it's 3rd degree (E to E♭), it's 6th degree (A to A♭) as well as it's 7th degree (B to B♭) and you will have a Pos II fingering for C Aeolian.
What major scale is C Aeolian a mode of?
Can you see that the finger patterns for E♭ major and for C Aeolian are exactly the same?
But when you were playing C Aeolian you were not thinking of an E♭ major scale at all! C Aeolian really is a scale in it's own right.

6. Play the C major scale again but this time lower it's 2nd degree (D to D♭), it's 3rd degree (E to E♭), it's 6th degree (A to A♭) as well as it's 7th degree (B to B♭) and you will have a Pos II fingering for C Phrygian.

What major scale is C Phrygian a mode of?

Can you see that the finger patterns for A♭ major and for C Phrygian are exactly the same?

But when you were playing C Phrygian you were not thinking of an A♭ major scale at all! C Phrygian really is a scale in it's own right.

7. Play the C major scale again but this time lower it's 2nd degree (D to D♭), it's 3rd degree (E to E♭), it's 5th degree (G to G♭), it's 6th degree (A to A♭) as well as it's 7th degree (B to B♭) and you will have a Pos II fingering for C Locrian.

What major scale is C Locrian a mode of?

Can you see that the finger patterns for D♭ major and for C Locrian are exactly the same?

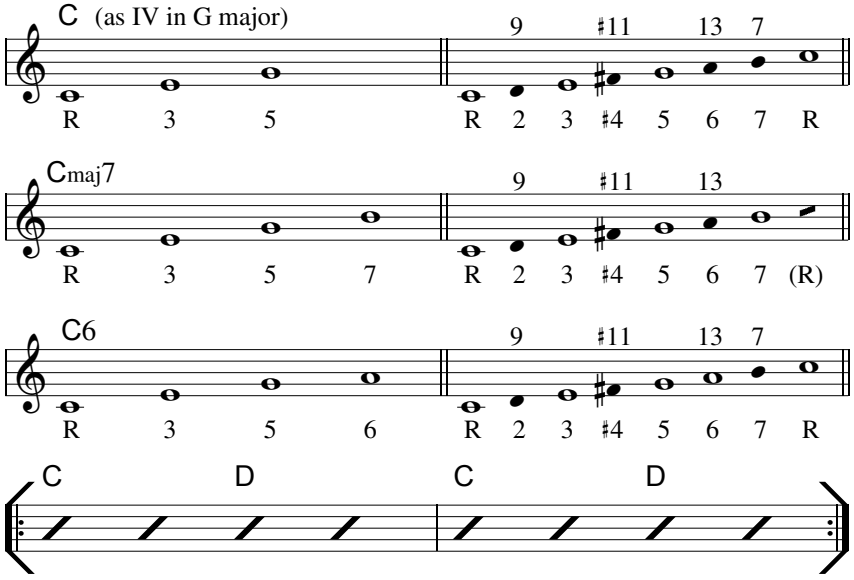
But when you were playing C Locrian you were not thinking of an D♭ major scale at all! C Locrian really is a scale in it's own right.

Repeat in Positions IV, V, VII, X and XII. These are the other 6 comfortable fingering positions for the C major scale.

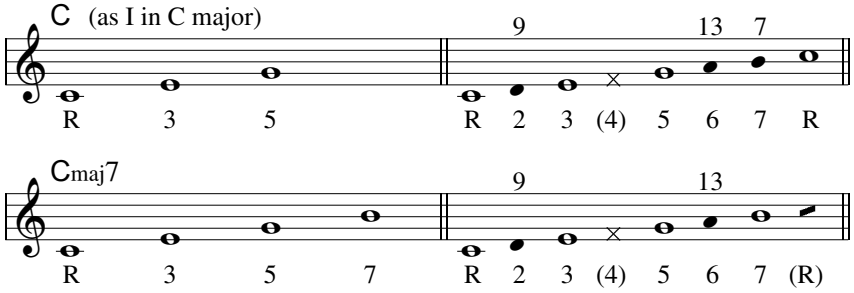
Repeat in every possible position.

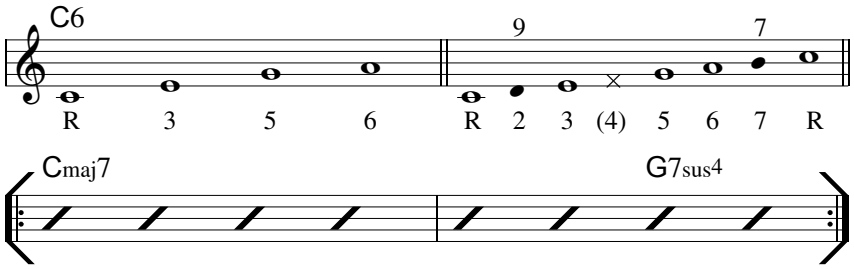
Transpose the vamps into all 12 possible keys.

1. C Lydian

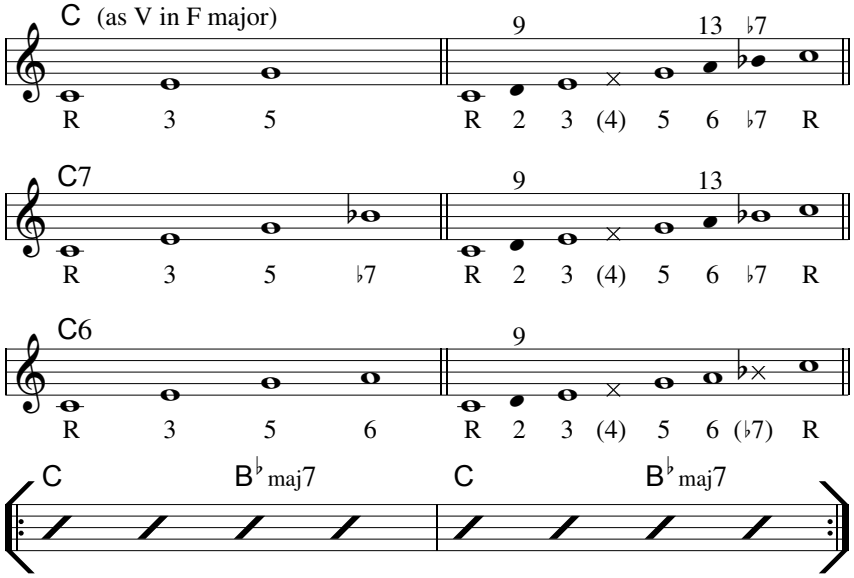


2. C Ionian

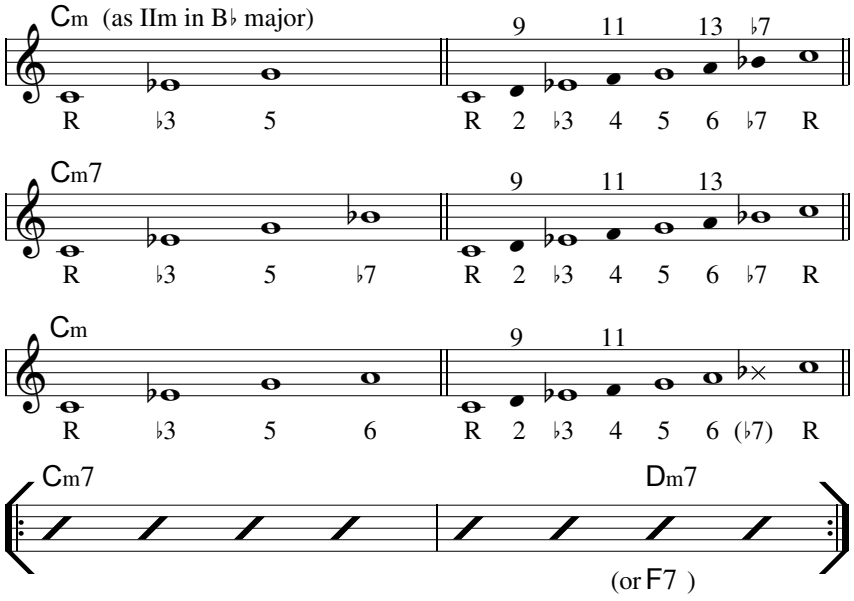




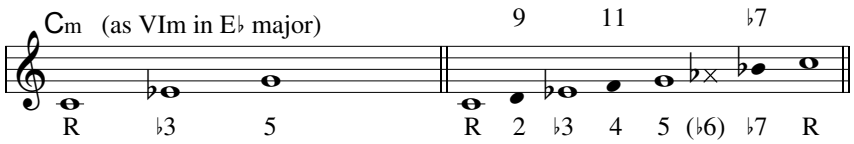
3. C Mixo-Lydian

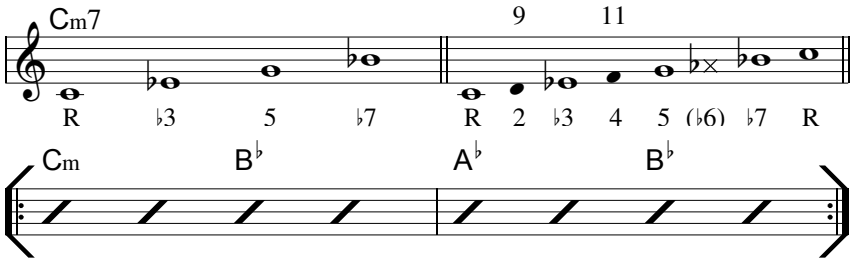


4. C Dorian

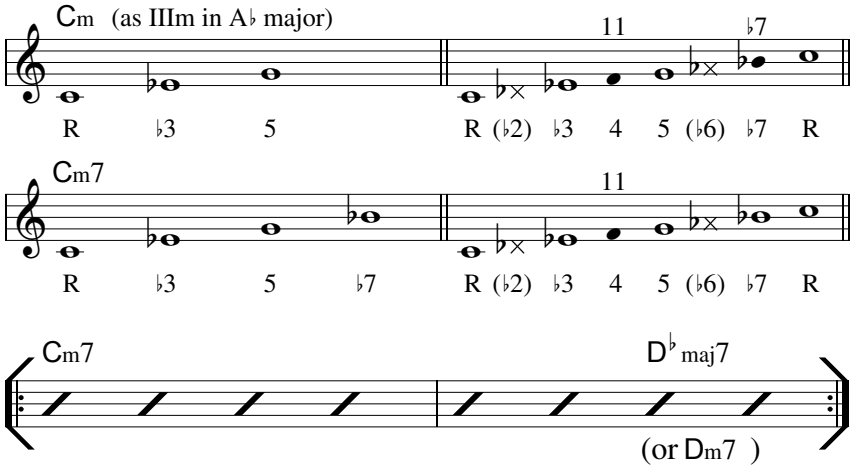


5. C Aeolian

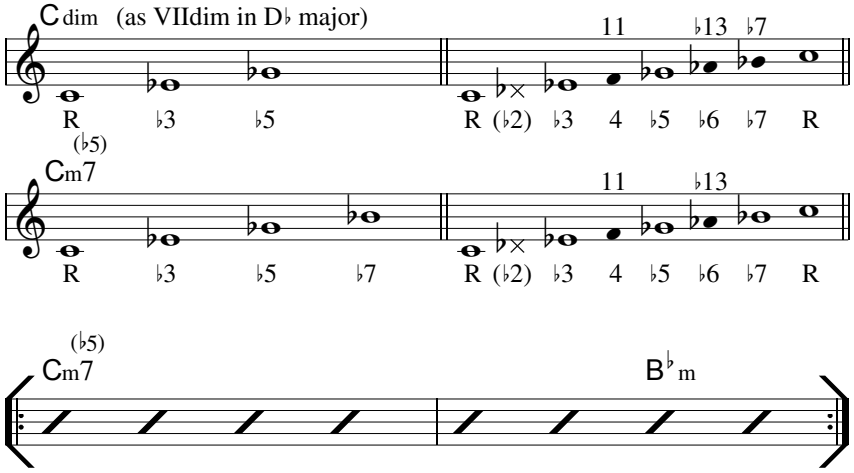




6. C Phrygian



7. C Locrian



Note: I highly reccomend jumping ahead to sub-chapter 8. of this chapter - Determining A Chord-Scale Via Horizontal Considerations - before you get too bogged down with all of these modal scale formulas.

B. Modes Of Other Scales

There are a few more scales which we routinely (and not so routinely) use as raw material for chord construction and for chord-scale construction. We will be looking at 8 more scales, their modes (if any) and the chords that can be constructed using their tones.

The scales that are suitable for this technique usually consist of 7 tones where there are never 2 consecutive semi-tones. These scales will span a single octave only. There are only 6 such scales possible including the diatonic/major scale.

When building chords off of the various scale degrees in 3rds, the first 4 of these scales all have standard triad types and seventh chords available.

The 5th scale (The Jazz Minor ♭5 Scale) and the 6th scale (The Harmonic Minor ♭5 Scale) have a few tertian chords (i.e. chords built in 3rds) where the lowest note is not actually the root (see below). Because of this these scales are considerably less useful for tonal improvisation.

1. The Major Scale: 1 2 3 4 5 6 7 1 - Eg. C D E F G A B C
2. The Harmonic Minor Scale: 1 2 ♭3 4 5 ♭6 7 1 - Eg. C D E♭ F G A♭ B C
3. The Jazz Minor Scale (aka Melodic Minor Ascending): 1 2 ♭3 4 5 6 7 1 - Eg. C D E♭ F G A B C
4. The Harmonic Major Scale: 1 2 3 4 5 ♭6 7 1 - Eg. C D E F G A♭ B C
5. The Jazz Minor ♭5 Scale (Rare): 1 2 ♭3 4 ♭5 6 7 1 - Eg. C D E♭ F G♭ A B C
6. The Harmonic Minor ♭5 Scale (Rare): 1 2 ♭3 4 ♭5 ♭6 7 1 - Eg. C D E♭ F G♭ A♭ B C

We will also be looking at 3 symmetrical scales and their diatonic chords and modes.

1. The Symmetrical Diminished Scale (an 8 note scale with 1 mode): 1 2 ♭3 4 ♭5 ♭6 ♮6 7 1 - Eg. C D E♭ F G♭ A♭ A B C
2. The Whole Tone Scale (a 6 note scale with no modes): 1 2 3 ♯4 ♯5 ♭7 1 - Eg. C D E F♯ G♯ B♭ C
3. The Symmetrical Augmented Scale (a 6 note scale with 1 mode): 1 ♯2 3 5 ♭6 7 1 - Eg. C D♯ E G A♭ B C

The Jazz Minor ♭5 Scale and the Harmonic Minor ♭5 Scale can perhaps best be understood as being 7 note subsets of the 8 note Symmetrical Diminished Scale.

C Sym Dim (1, 1/2) = C D E♭ F G♭ A♭ A B C

C Jazz Minor ♭5 = C D E♭ F G♭ A B C (like C Sym Dim without the A♭)

C Harmonic Minor ♭5 = C D E♭ F G♭ A♭ B C (like C Sym Dim without the A♮)

The scales are all presented below in the same fashion. Each note in the scale is notated in it's direct intervallic relationship to the notes in the chord it will be used upon. I.e. As a chord-scale.

Note each scale's intervallic formula and learn to construct the scale with all possible roots.

Note each chord's construction and it's placement within the scale.

Memorise the notes that are available as tensions on each chord and with which scale.

Memorise the notes that are avoid notes on each chord with which scale.

Memorise the conditional avoid notes if any.

Eventually you will have been exposed to several different choices of chord-scale for any given chord type.

Practice improvising with these scales using the given vamps transposed to all 12 keys.

Use position playing techniques to figure out a fingering for each scale in every position and starting on all 12 possible roots..

Use position playing techniques to figure out a fingering for each arpeggio in every position and starting on all 12 possible roots.

Learn each scale and arpeggio on 1 string at a time. Then try string combinations. See if you can learn each scale and arpeggio all over the fretboard.

Practice improvising using just the chord tones.

Practice improvising using the non chord tones as passing tones.

Sing out loud everything that you are playing.

Learn to sing each scale without playing it.

Try to sing a melody using the notes in the scale first and then figure out what you sang on the guitar.

Note: The names of some of these modal scales are standardised while some are not. There are some guidelines for scale naming that should be mentioned.

1. Any scale with a maj 3rd and a maj 7th will most likely be used on a ma7 chord of some sort. The names for these scales are usually variations of Ionian (or Lydian if there is a ♯4 also).

2. Scales with a maj 3rd and a ♯4 are often named as a variation of the Lydian scale.

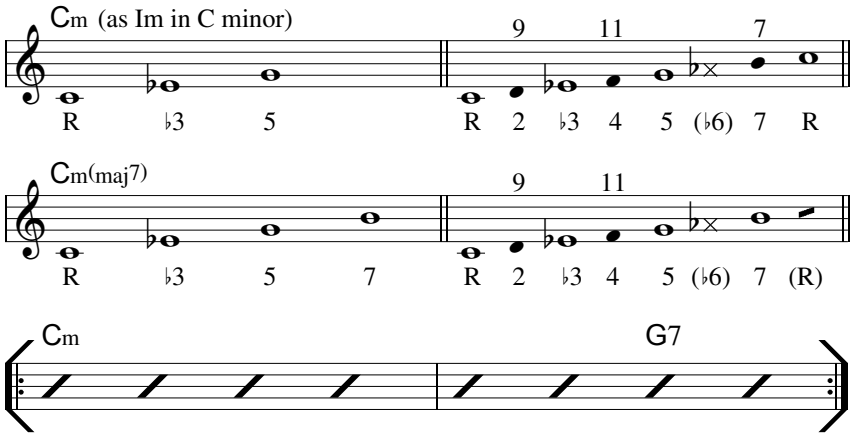
3. Any scale with a maj 3rd and a ♭7 will most likely be used on a dom7 chord of some sort. Often these are named as variations of the Mixo-Lydian scale.

4. Scales with ♭3's, P5ths and ♭7s will usually be used on min7 chords. If the scale also has a maj 6th it will probably be named as a variation of the Dorian scale.

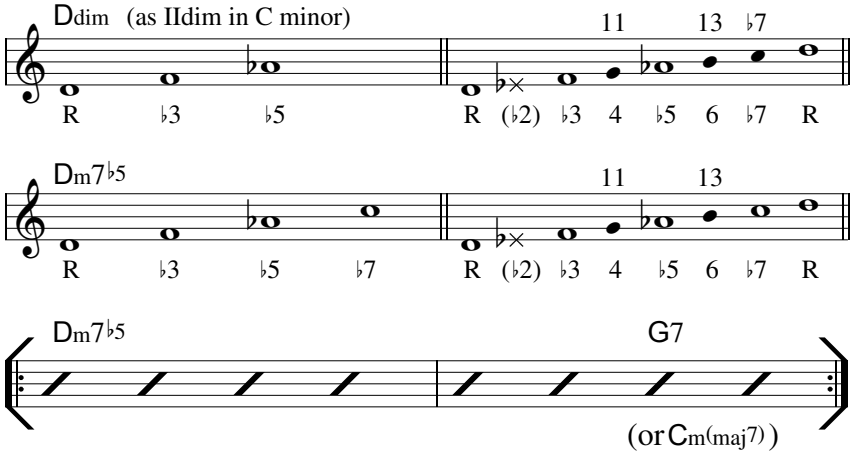
5. Scales with ♭3's, ♭5's and ♭7s will usually be used on min7♭5 chords. These will probably be named as a variation of the Locrian scale.

1. The Modes Of The Harmonic Minor Scale

a.) C Harmonic Minor

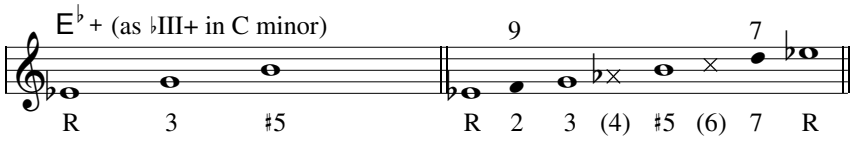


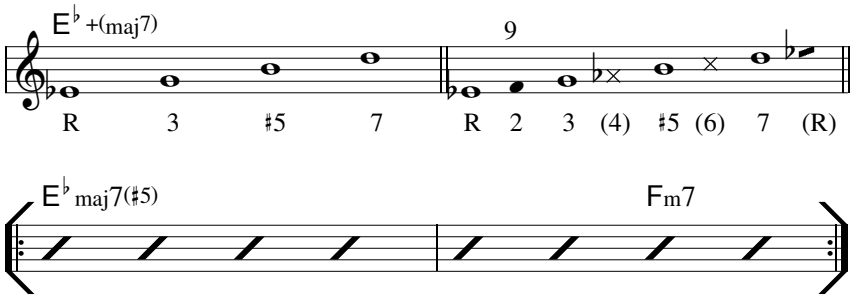
b.) D Locrian ♮6 (aka Locrian #6)



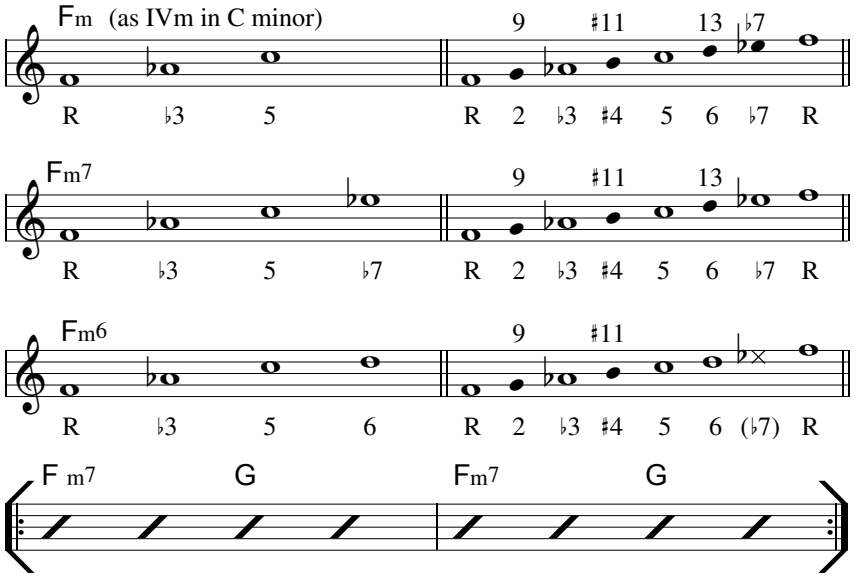
Note: It is also possible to use this scale on Ddim7.

c.) E♭ Ionian Augmented



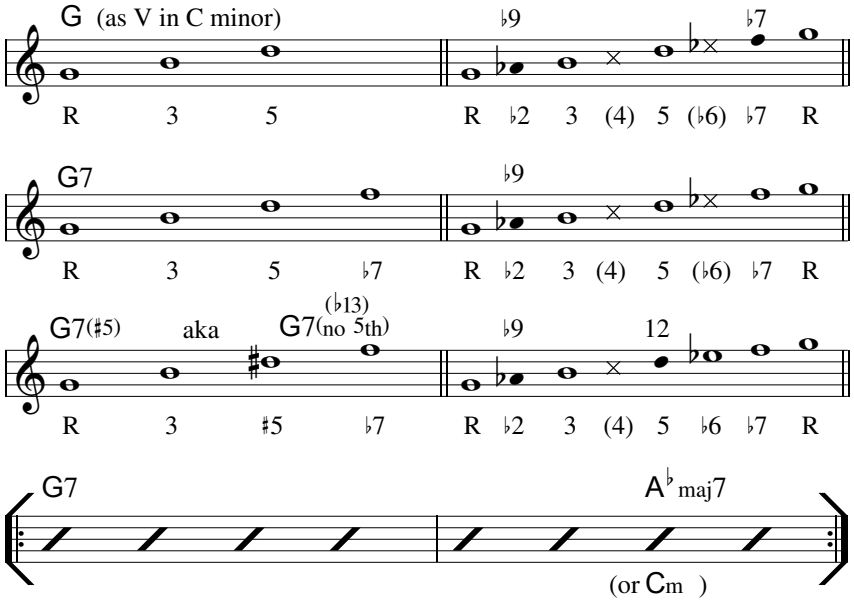


d.) F Dorian ♯4



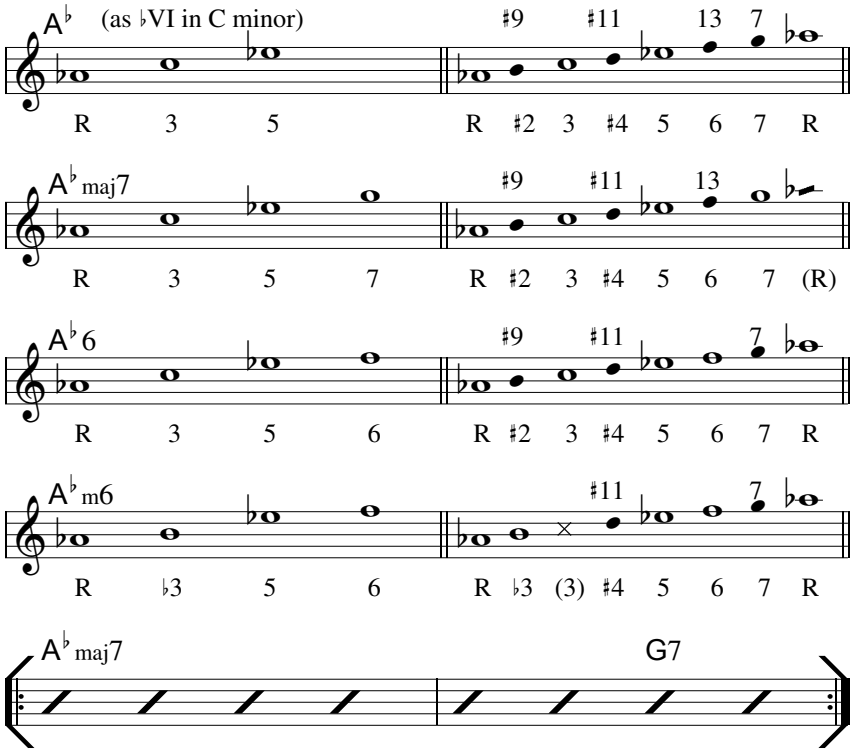
Note: It is also possible to use this scale on Fdim7.

e.) G Mixo-Lydian ♭2♭6

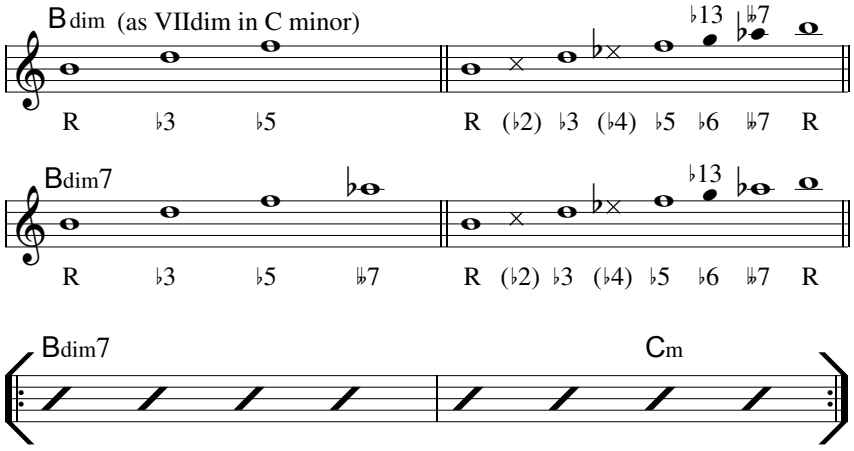


Note: ♭13 is usually considered to be an avoid note on any chord with a Perfect 5th. However, if the 5th is omitted then the ♭13 functions rather like a ♯5 and the P5th is available as a tension 12 as long as it is voiced above the ♯5. The chord symbol Dom7♭9♭13 is used routinely but the P5th is almost always omitted from the voicing.

f.) A♭ Lydian ♯2



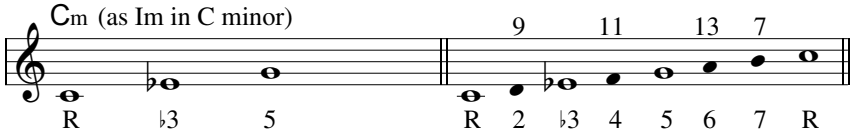
g.) 7th Mode Of C Harmonic Minor

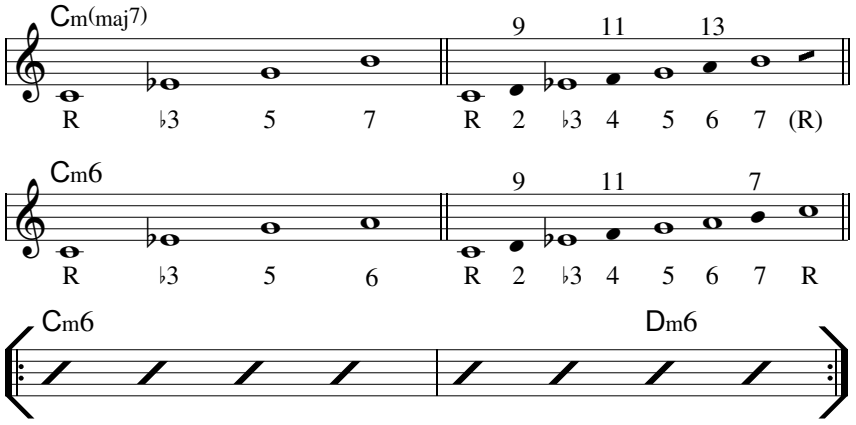


Note: There is no regularly used name for this scale that I am aware of. I've seen this scale named the Mixo-Lydian ♯1 Scale but that seems a little far-fetched to me. Super Locrian ♭♭7 might be a better name. Mick Goodrick has also called this scale Altered Dominant ♭♭7.

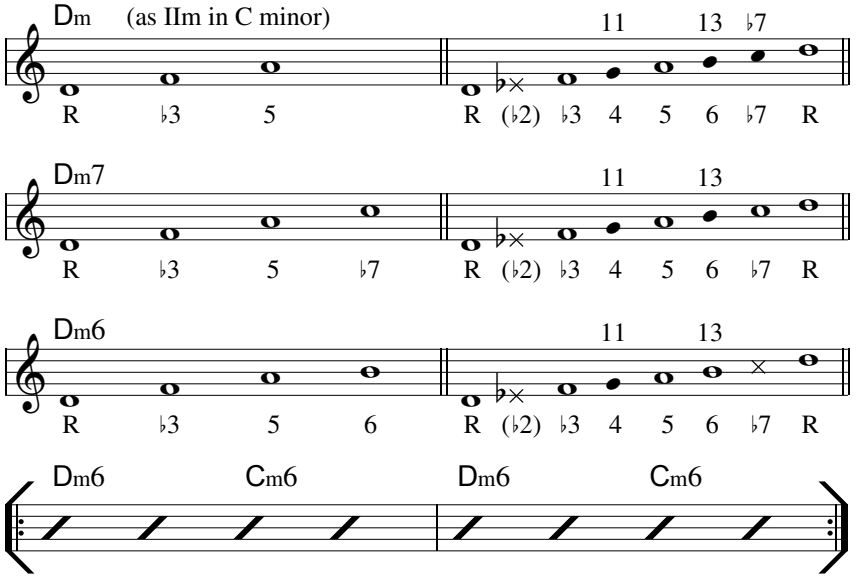
2. The Modes Of The Jazz Minor Scale

a.) C Jazz Minor

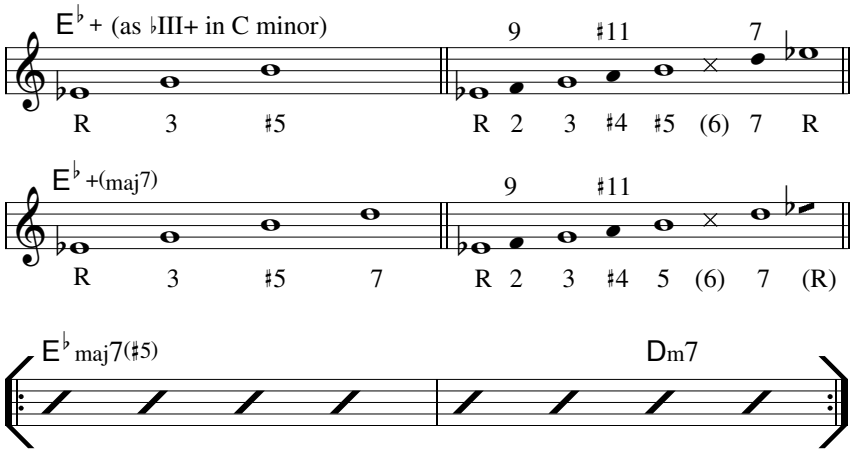




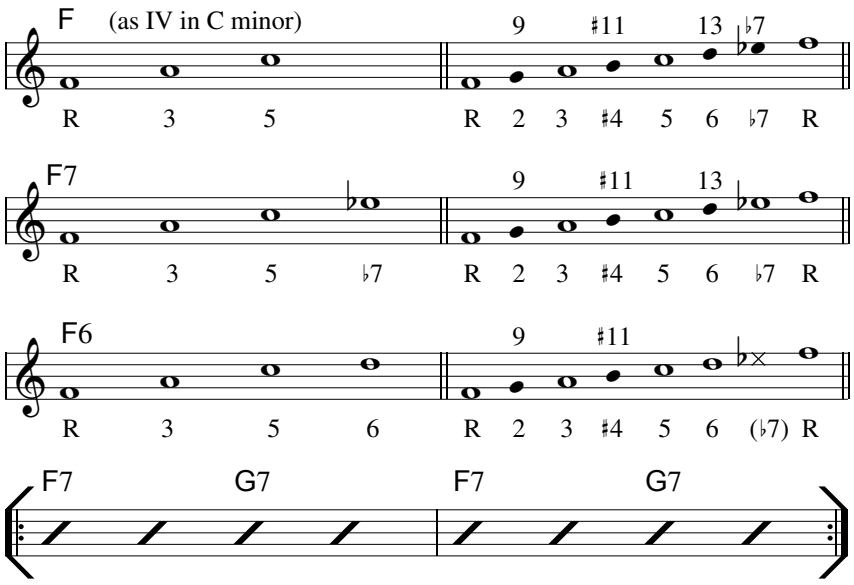
b.) D Dorian ♭2



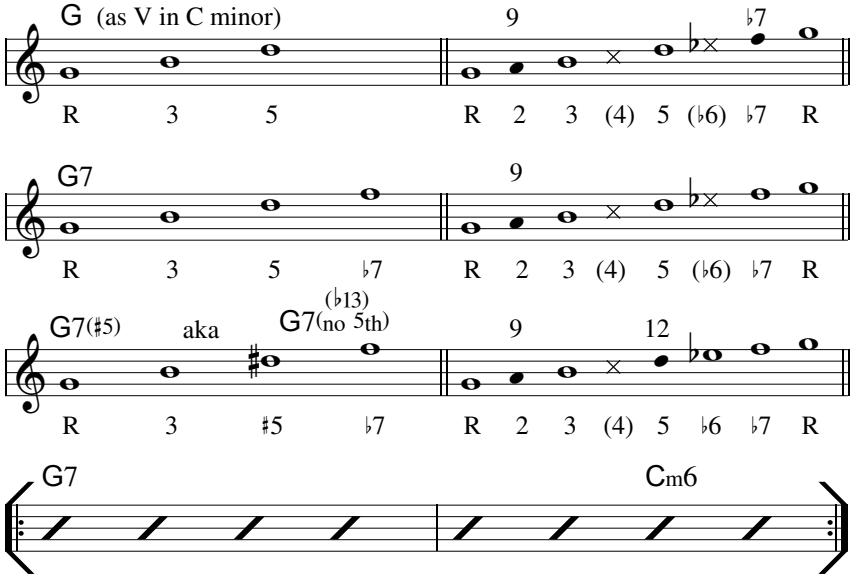
c.) E♭ Lydian Augmented



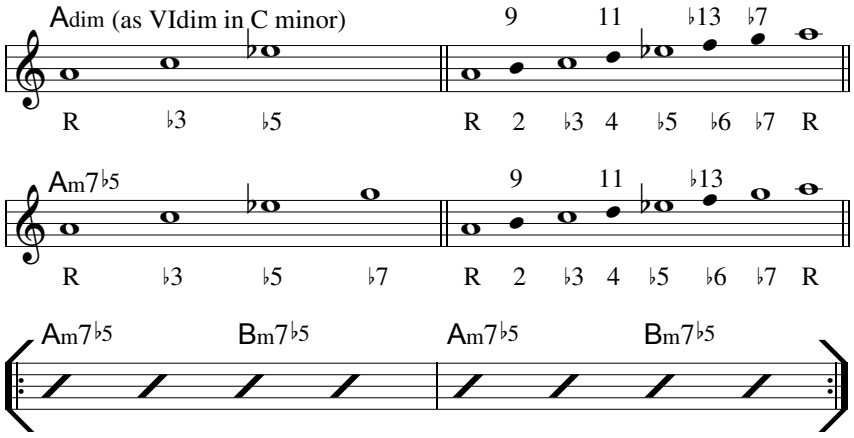
d.) F Lydian ♭7 (aka Lydian Dominant)



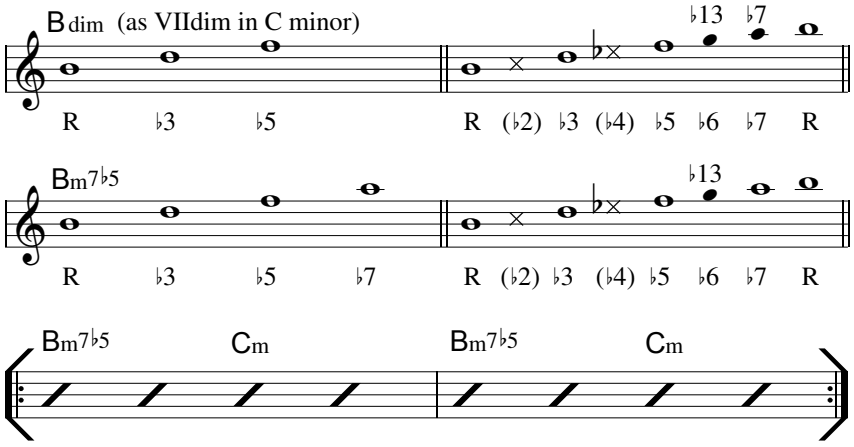
e.) G Mixo-Lydian ♭6



f.) A Locrian ♮2 (aka Locrian ♯2)

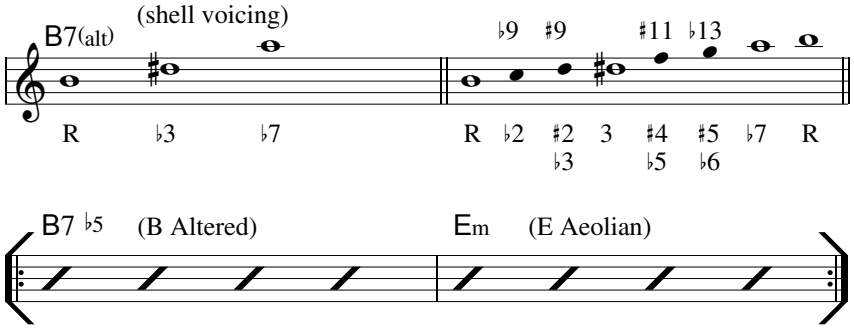


g.) B Super Locrian



Note: The diminished 4th interval in scale is enharmonically equivalent to a major 3rd above. It is therefore unusual to use this scale on min7♭5 chords. This scale is much more often used as the Altered Dominant scale as seen below.

h.) B Altered Dominant



Use the B7 Altered Scale in bar one but switch to E Aeolian (G Major) in bar 2.

3. Tetrachords and Scale Construction

The next scale we will be looking at is called the Harmonic Major Scale. It is like a major scale with a flatted 6th degree. It is called “harmonic major” because of the two tetrachords involved in it’s construction; a Major Tetrachord and an Harmonic Tetrachord.

Don’t know what a tetrachord is? Well then get yourself a good theory book. Here’s a rough summary of the idea though.

A tetrachord is a 4 note scale that spans the interval of a Perfect 4th (some say any 4th will do) usually with no two consecutive minor seconds.

There are therefore 4 possible tetrachords that span a P4th:

1. Major Tetrachord = 1 2 3 4 (Eg. C D E F)
2. Minor Tetrachord = 1 2 ♭3 4 (Eg. C D E♭ F)
2. Phrygian Tetrachord = 1 ♭2 ♭3 4 (Eg. C D♭ E♭ F)
4. Harmonic Tetrachord = 1 ♭2 3 4 (Eg. C D♭ E F)

The Major Scale, the Harmonic Minor Scale, the Melodic Minor Scale and the Harmonic Major Scale can all be seen as being constructed by combining two tetrachords such that the result yields a scale with seven tones

spanning a single perfect octave. This is done by using a tetrachord starting on the first degree of the scale plus another tetrachord starting a 5th above the first degree. Looked at from another way, in order for the resulting scale to span a perfect octave the two tetrachords will always be situated a major second apart from each other.

Examples:

The C Major Scale consists of a C Major Tetrachord (C D E F) plus a G Major Tetrachord (G A B C).
The C Harmonic Minor Scale consists of a C Minor Tetrachord (C D E♭ F) plus a G Harmonic Tetrachord (G A♭ B C).
The C Melodic Minor ascending Scale (aka The Jazz Minor Scale) consists of a C Minor Tetrachord (C D E♭ F) plus a G Major Tetrachord (G A B C).
The C Harmonic Major Scale consists of a C Major Tetrachord (C D E F) plus a G Harmonic Tetrachord (G A♭ B C).

There are a few other scales that can be constructed using two tetrachords a major 2nd apart but they have not found their way yet into the jazz repertoire in any big way because of their consecutive semi-tones.

Examples (Note the consecutive semi-tones between B, C and D♭):
Harmonic + Harmonic (C D♭ E F + G A♭ B C) - sometimes called The Gypsy Snake Charmer's scale.
Harmonic + Major (C D♭ E F + G A B C)
Phrygian + Major (C D♭ E♭ F + G A B C) - somtimes called the Melodic Phrygian scale.
Phrygian + Harmonic (C D♭ E F + G A♭ B C) - sometimes called the Harmonic Phrygian scale.

All the other scales that result from combinations of two tetrachords a major 2nd apart will be seen to already exist as modes of the Major, Harmonic Minor, Jazz Minor and Harmonic Major scales.

Examples:
Minor + Minor (C D E♭ F + G A B♭ C) = Dorian - the 2nd mode of the Major Scale
Minor + Phrygian (C D E♭ F + G A♭ B♭ C) = Aeolian - the 6th mode of the Major Scale
Major + Minor (C D E F + G A B♭ C) = Mixo-Lydian - the 5th mode of the Major Scale
Major + Phrygian (C D E F + G A♭ B♭ C) = Mixo-Lydian ♭6 - the 5th mode of the Jazz Minor Scale
Harmonic + Phrygian (C D♭ E F + G A♭ B♭ C) = Mixo-Lydian ♭2♭6 - the 5th mode of the Harmonic Minor Scale.
etc.

Also:
There are two meanings to the term "tritone".
The term tritone refers to the interval of an augmented 4th (or a diminished 5th) but it also refers to a 4 note scale consisting of 3 whole tones. Eg. C D E F♯ (1 2 3 ♯4) If we allow our definition of tetrachord to be a 4 note scale spanning an augmented 4th then we could call the Tritone scale a "tetrachord" also.

Some of the modes of the scales that are constructed with tetrachords can be seen as consisting of a tetrachord plus a tritone (or visa versa) arranged such that the result yields a seven note scale spanning an octave. The two scales used in the construction will necessarily be a minor second apart from one another.

Examples:
Tritone + Major (C D E F♯ + G A B C) = Lydian - the 4th mode of the Major Scale
Phrygian + Tritone (C D♭ E♭ F + G♭ A♭ B♭ C) = Locrian - the 7th mode of the Major scale

I think you will find that scales that do not have a tetrachord built on I and V have quite different characteristics from scales that do.

Some more exotic scales can use this construction also.

Examples:
Tritone + Phrygian (C D E F♯ + G A♭ B♭ C)
Major + Tritone (C D E F G♭ A♭ B♭ C)
Also:
Although I've never seen them mentioned as such there are three other types of four note scale that must be considered if we are to understand the construction of some of the modes of the previously studied scales.

The first of these has the formula 1 ♭2 ♭3 ♭4. We might call this a Diminished Tetrachord if we allow our definition of tetrachord to include 4 note scales spanning the interval of a diminished 4th. Note: This is my term, as far as I know, and is not in common usage.

The next two 4 note scales all span the interval of a tritone so they might be thought of as altered Tritone Tetrachords of some sort.
The formula 1 2 ♭3 ♯4 we might call the Tritone ♭3 Tetrachord. Again, these are my terms.
The formula 1 ♯2 3 ♯4 we might call the Tritone ♯2 Tetrachord.

Examples:
Diminished + Tritone (C D♭ E♭ F♭ + G♭ A♭ B♭ C) = The Super Locrian (aka The Altered Scale) - the 7th mode of the Jazz Minor Scale.
Major + Diminished (C D E F + G♯ A B C) = Ionian Augmented - the 3rd mode of the Harmonic Minor Scale
Tritone + Diminished (C D E F♯ + G♯ A B C) = Lydian Augmented - the 3rd mode of the Jazz Minor Scale
Diminished + Tritone ♭3 (C D♭ E♭ F♭ + G♭ A♭ B𝄫 C) = the 7th mode of Harmonic Minor Scale
Tritone ♭3 + Minor (C D E♭ F♯ + G A B♭ C) = Dorian ♯4 - the 4th mode of the Harmonic Minor Scale
Tritone ♯2 + Major (C D♯ E F♯ + G A B C) = Lydian ♯2 - the 6th mode of the Harmonic Minor Scale
etc.

There are 4 other variations of the Tritone Tetrachord that you might play around with. They don't occur within any of the scales we've studied so far although you might notice them within some of the other scales I will be suggesting later. (I.e. Jazz Min ♭5 and the Harmonic Minor ♭5) Feel free to experiment along these lines yourself!
1 ♭2 3 ♯4 (Tritone ♭2)
1 2 ♯3 ♯4 (Tritone ♯3)
1 ♭2 ♭3 ♯4 (Tritone ♭2 ♭3)
1 ♭2 ♯3 ♯4 (Tritone ♭2 ♯3) Note: This scale contains an extremely unusual doubly augmented 2nd interval between it's 2 and 3rd degrees.

If we allow our definition of tetrachord to include consecutive semi-tones within our 4 note scales then the following tetrachords are possible also:

1 ♭2 𝄫3 4
1 ♭2 𝄫3 ♯4
1 ♭2 𝄫3 ♭4
1 ♯2 3 4
1 𝄪2 ♯3 ♯4

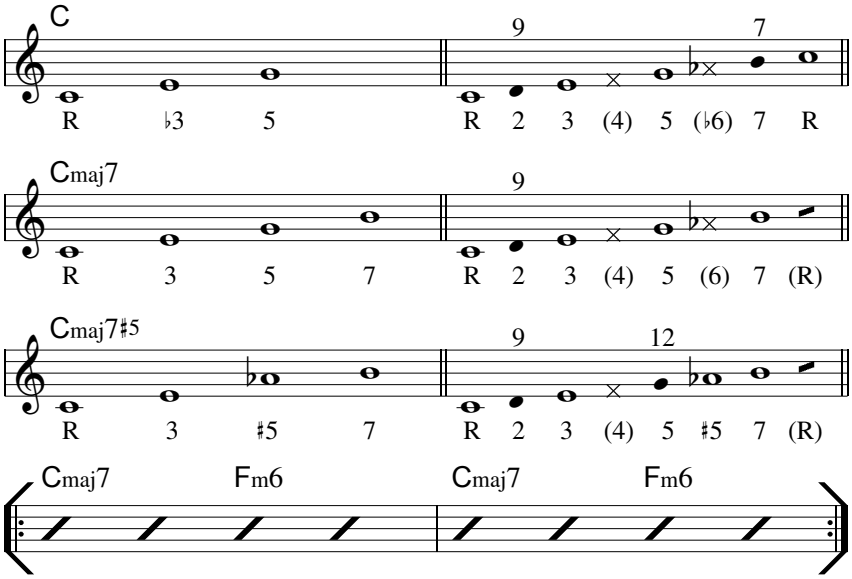
1 2 ♭3 ♭4

The scales produced with these tetrachords will be fairly unusual and they are not very good as raw material for the construction of the typical tertian chord types used in most tonal music.

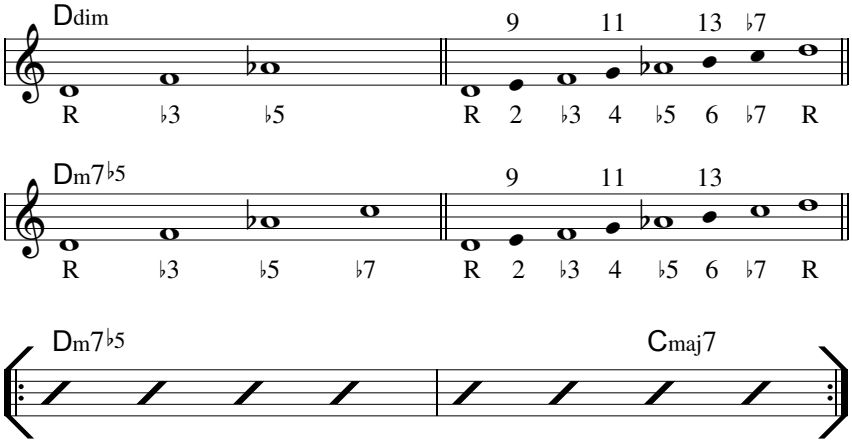
Well that's a lot more than you really needed to know about tetrachords. Let's continue.

4. Modes Of The Harmonic Major Scale

a.) Harmonic Major

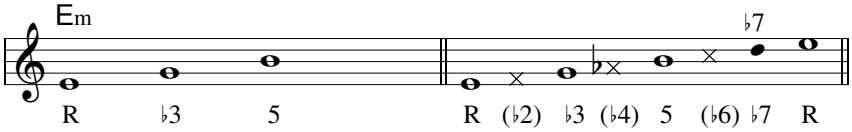


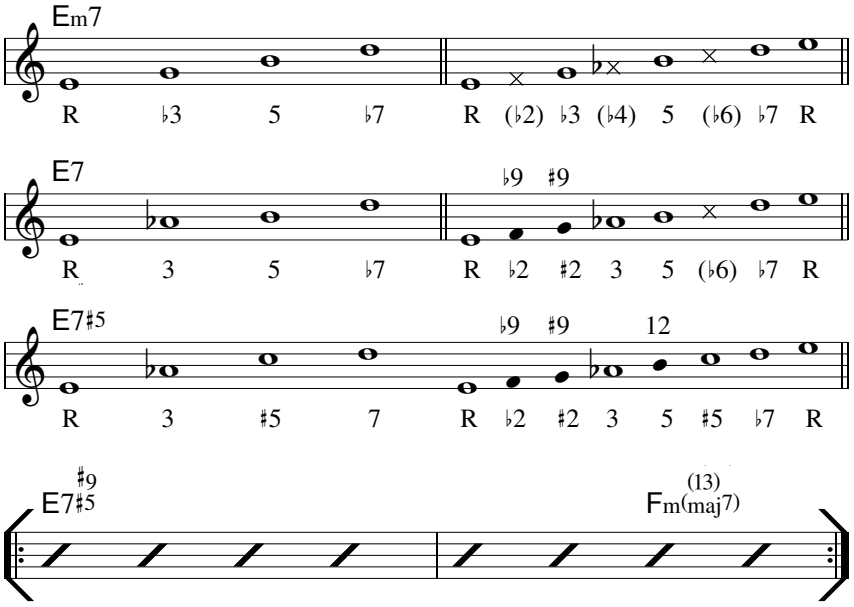
b.) Locrian ♮2♮6 (aka Locrian ♯2 ♯6)



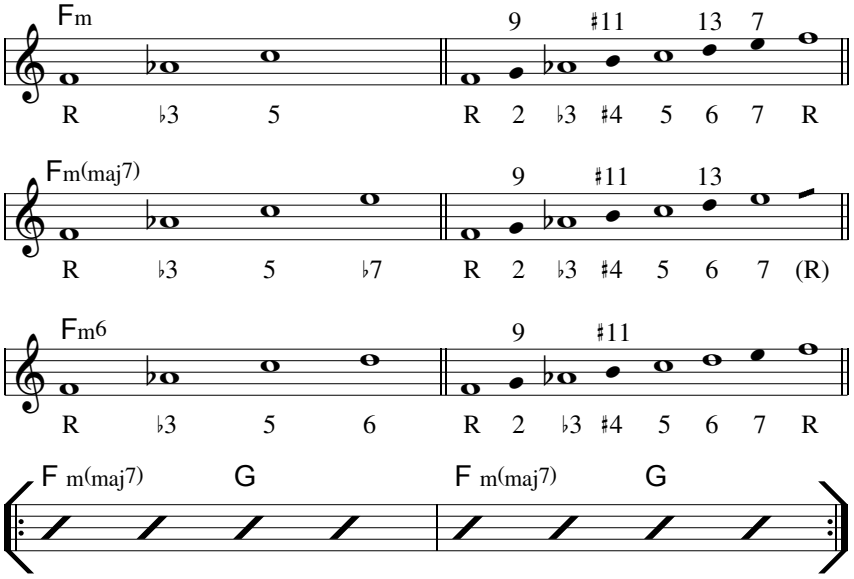
Note: This scale can also be used on Ddim7.

c.) Phrygian ♭4



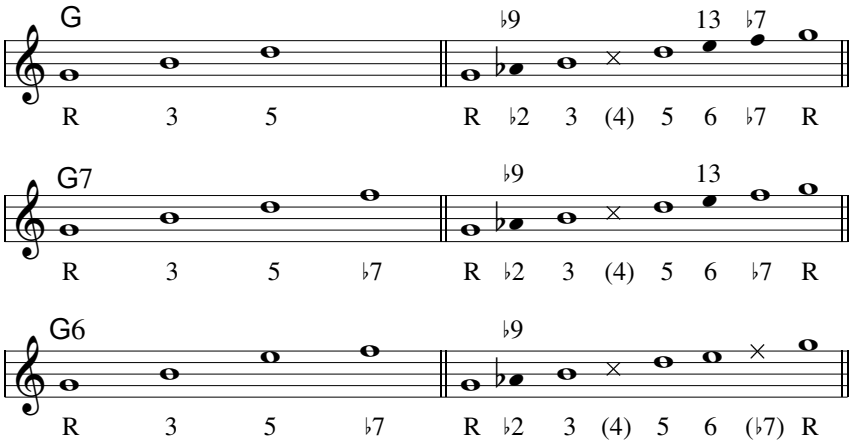


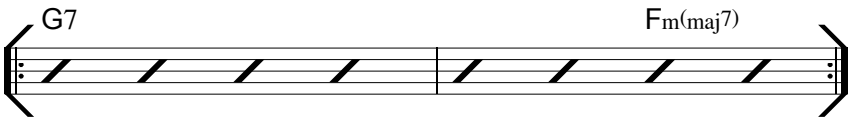
d.) Jazz Minor #4 (aka Lydian Diminished)



Note: This scale can also be used on Fdim7.

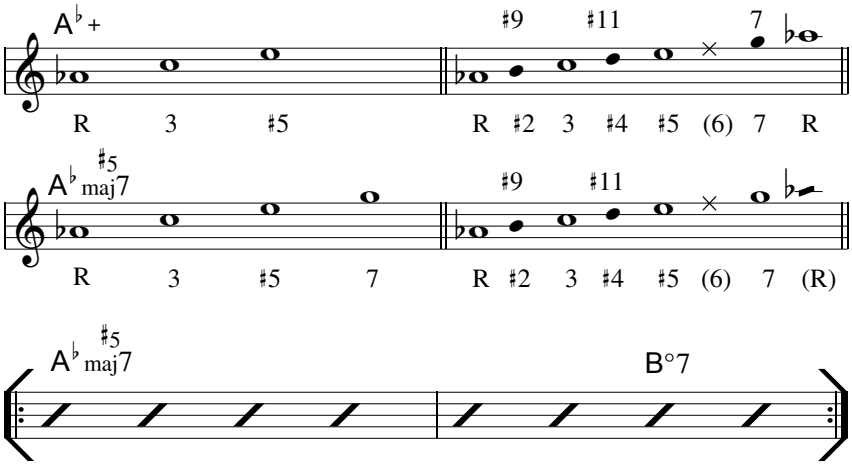
e.) Mixo-Lydian ♭2





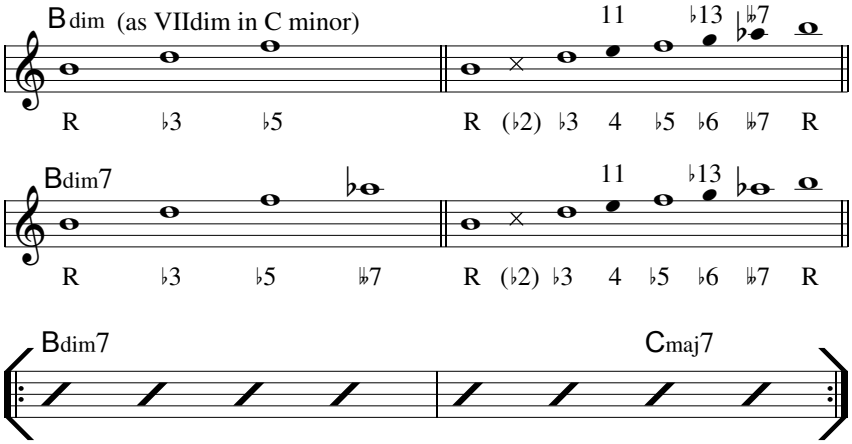
This is the ideal scale to use on G7♭9 in the key of C major because it contains an E♮ (maj 3rd)whereas many other dom7♭9 scales would have a ♭3.

f.) Lydian Augmented #2



Note: This scale can also be used on A♭dim7.

g) 7th Mode Of The Harmonic Major



Note: There is no regularly used name for this scale that I am aware of. I suppose you could call it the Lydian Dominant ♯1 Scale if you had to give it a name. Locrian ♭♭7 might be a better name.

5. Modes Of The Symmetrical Scales

A "symmetrical" scale is a scale whose construction of tones and semi-tones is formed by a repeating intervallic pattern.

a) The Symmetrical Diminished Scales

The two Symmetrical Diminished scales are formed via alternating major second and minor second intervals. They are 8 note, or "octatonic" scales.

Sym. Dim. (Whole, Half) (Maj 2nd, Min 2nd)

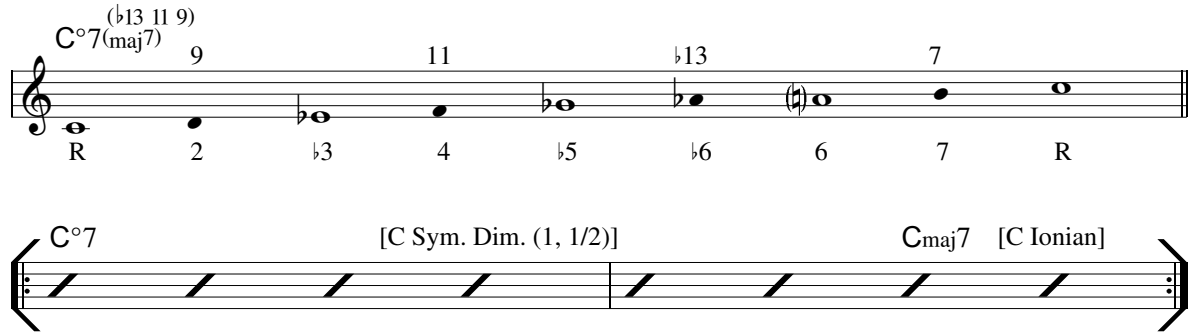
C D E♭ F G♭ A♭ A♮ B C (formula = 1 2 ♭3 4 ♭5 ♭6 6/𝄫7 1)
The C, E♭, G♭ and A Symmetrical Diminished (Whole, Half) scales all have exactly the same 8 tones.

Sym. Dim. (Half, Whole) (Min 2nd, Maj 2nd)
C D♭ E♭ E♮ F♯ G A B♭ C (formula = 1 ♭2 ♭3 ♮3 ♯4/♭5 6 ♭7 1)
The C, E♭, G♭ and A Symmetrical Diminished (Half, Whole) scales all have exactly the same 8 tones.

These are the only two possible "modes" of the Symmetrical Diminished scale.
The Sym. Dim. (1, 1/2) scale has only one modal variation with a different intervallic formula from itself and that is the Sym. Dim (1/2, 1) scale, and visa versa.

The C Sym. Dim. (Whole, Half) Scale is identical to the E♭, G♭ and the A (Whole, Half) scales.
D Sym. Dim. (Half, Whole) is a mode of C Sym. Dim (Whole, Half). The D Sym. Dim. (Half, Whole) scale is identical to the F, A♭ and B (Half, Whole) scales.

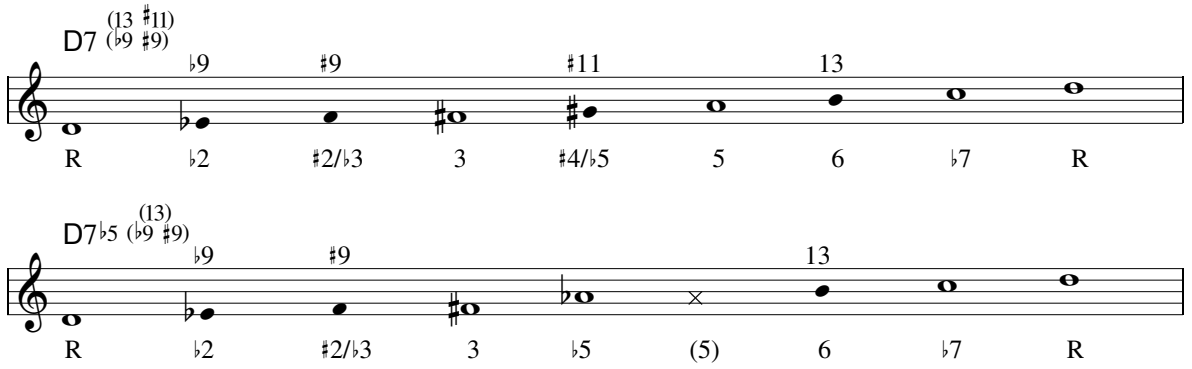
The C Symmetrical Diminished (Whole, Half) Scale

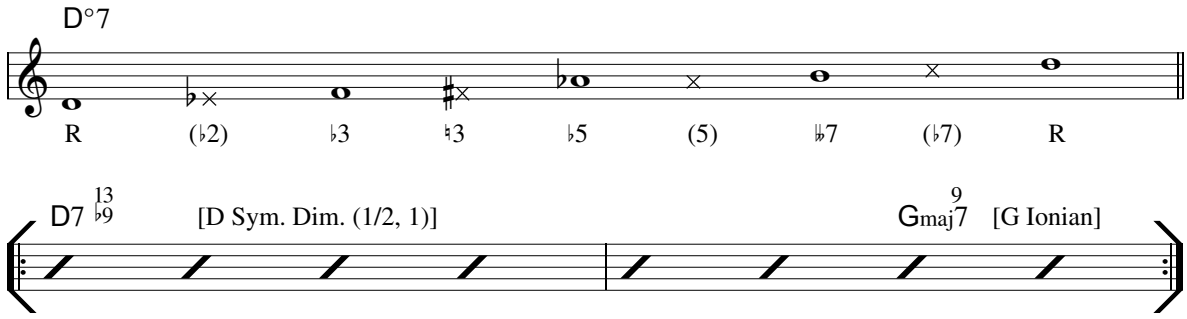


[Note: The 4 available tensions in this chord-scale happen to form a D°7. Each of the 4 tensions is a whole step above the chord tones.

Starting this scale on E♭ will result in the exact same intervallic pattern. I.e. An E♭ Sym. Dim (Whole, Half) Scale. The chord associated with the E♭ scale will be E♭°7(maj7)(9, 11, ♭13).
Starting this scale on F♯/G♭ will result in the exact same intervallic pattern. I.e. An F♯ or G♭ Sym. Dim (Whole, Half) Scale. The chord associated with this scale will be F♯°7(maj7)(♭13, 11, 9) or G♭°7(maj7)(9, 11, ♭13).
Starting this scale on A will result in the exact same intervallic pattern. I.e. An A Sym. Dim (Whole, Half) Scale. The chord associated with this scale will be A°7(maj7)(9, 11, ♭13).

The D Symmetrical Diminished (Half, Whole) Scale.





[Note: The tones of this scale are identical to the tones of the C Sym. Dim. (Whole, Half) Scale.]

Starting this scale on F will result in the exact same intervallic pattern. I.e. An F Sym. Dim (Half, Whole) Scale. The chord associated with the F scale will be F7(♭9, ♯9, ♯11, ♭13) or F7♭5(♭9, ♯9, 13).

Starting this scale on A♭/G♯ will result in the exact same intervallic pattern. I.e. An A♭ or G♯ Sym. Dim (Half, Whole) Scale. The chord associated with the A♭ scale will be A♭7(♭9, ♯9, ♯11, ♭13) or A♭7♭5(♭9, ♯9, 13). etc.

Starting this scale on B will result in the exact same intervallic pattern. I.e. A B Sym. Dim (Half, Whole) Scale. The chord associated with the B scale will be B7(♭9, ♯9, ♯11, ♭13) or B7♭5(♭9, ♯9, 13). etc.

(1) Modes Of The Harmonic Minor ♭5 Scale

If we omit the 7th degree from the 8 note symmetrical diminished (whole, half) scale we will have a 7 note scale with the intervallic formula: 1 2 ♭3 4 ♭5 ♭6 7 1. This scale is sometimes called the Harmonic Minor ♭5 scale.

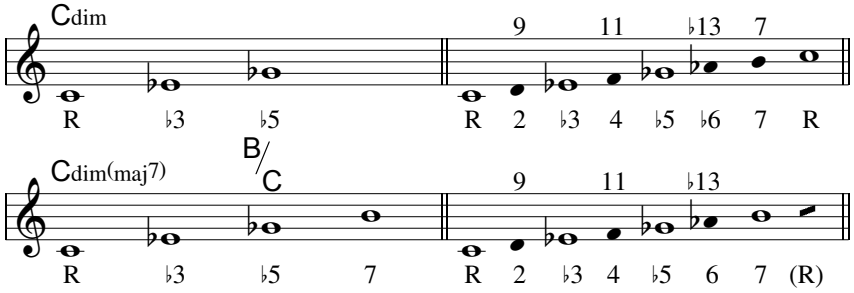
This scale and the one following are not nearly as widely in use as any of the others we have looked at so far. It is a little exotic sounding and unwieldy. This is because building chords in scale-wise thirds from the various scale degrees does not always result in a tertian chord whose root is the bass note.

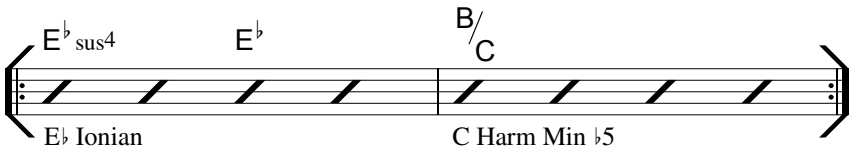
Example:

Building a 4 note chord in thirds (use one, skip one, use one, skip one, etc.) from the 5th degree (G♭) of the C Harm Min ♭5 scale (C D E♭ F G♭ A♭ B C) will yield the following chord tones: G♭ B D F. This is not a common tertian chord. It might best be named Bdim/F♯ or Bm(♯11). Either way the G♭ in the bass is NOT the root of the chord!

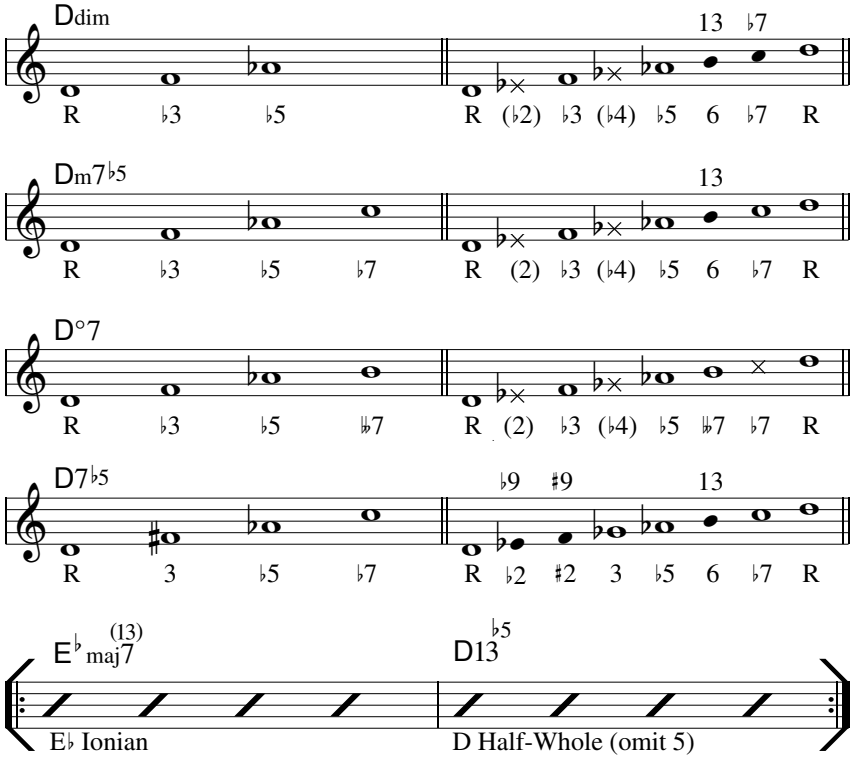
Consequently most of the modes of this scale do not have any standard names associated with them. The names I have chosen are strictly for the sake of memory as a mnemonic. I hesitate to include these scales but they do round out the set so here we go. You might want to skip to the Whole Tone scale.

(a) Harmonic Minor ♭5 Scale

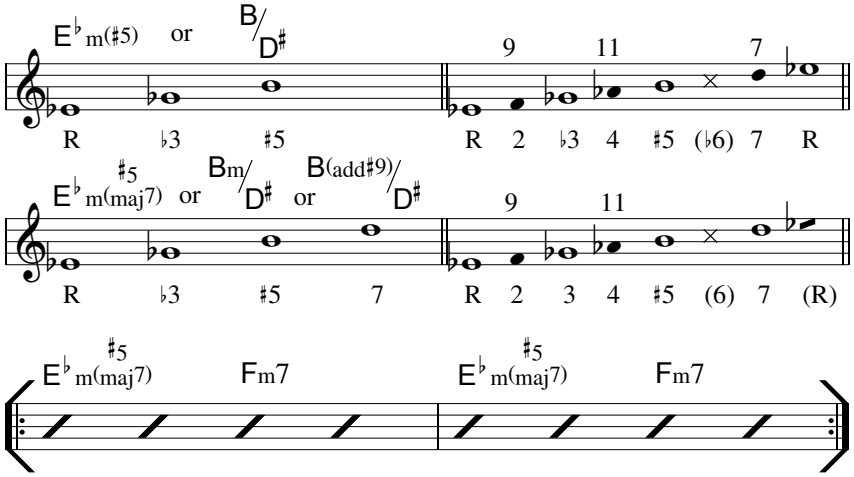




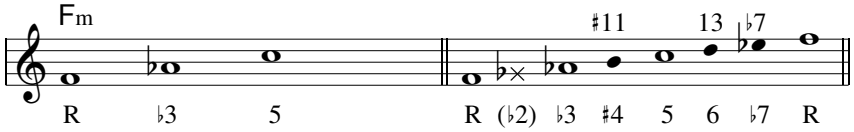
(b) Half-Whole (omit 5)

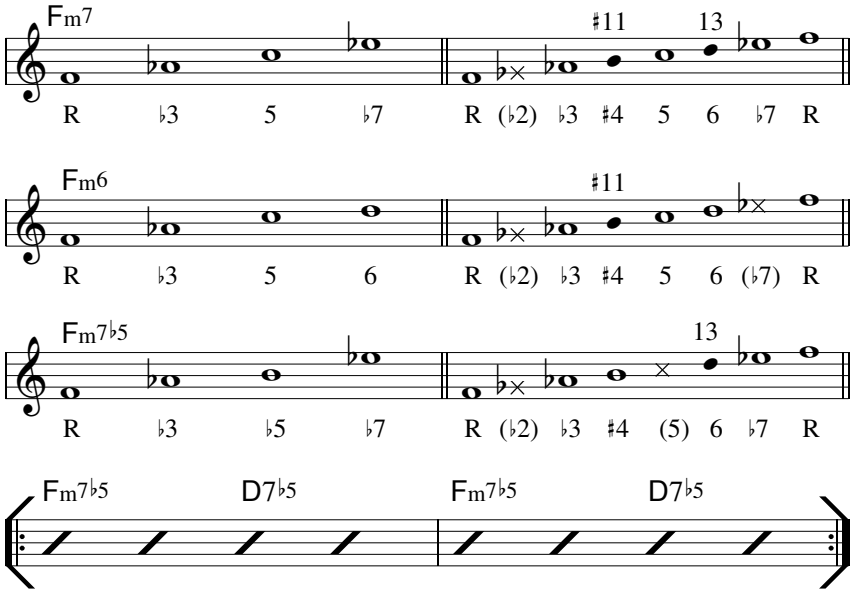


(c) Jazz Minor ♯5



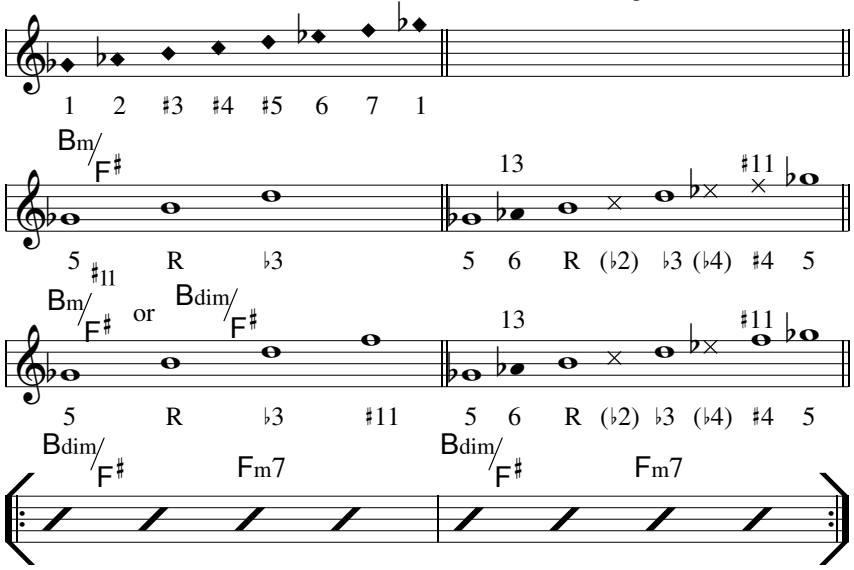
(d) Dorian ♭2♯4





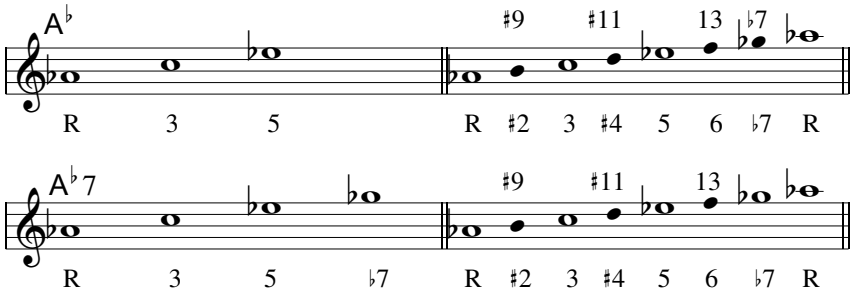
(e) Lydian Augmented ♯3

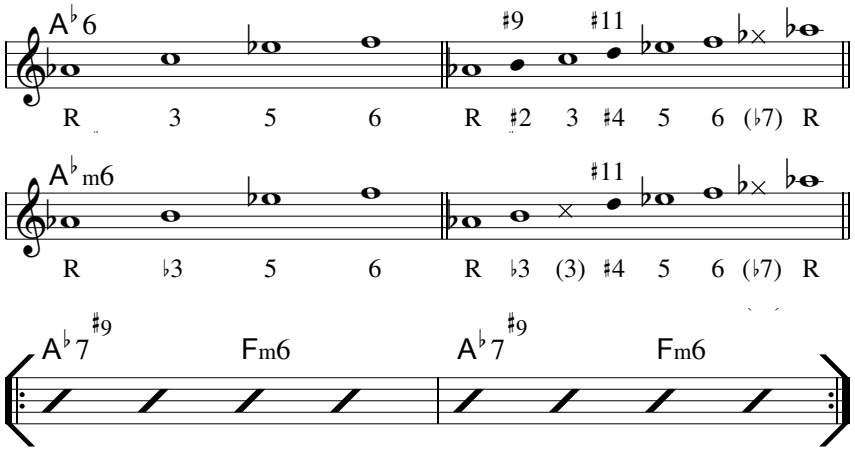
This scale has no namable tertian triad with it's first degree as the root.



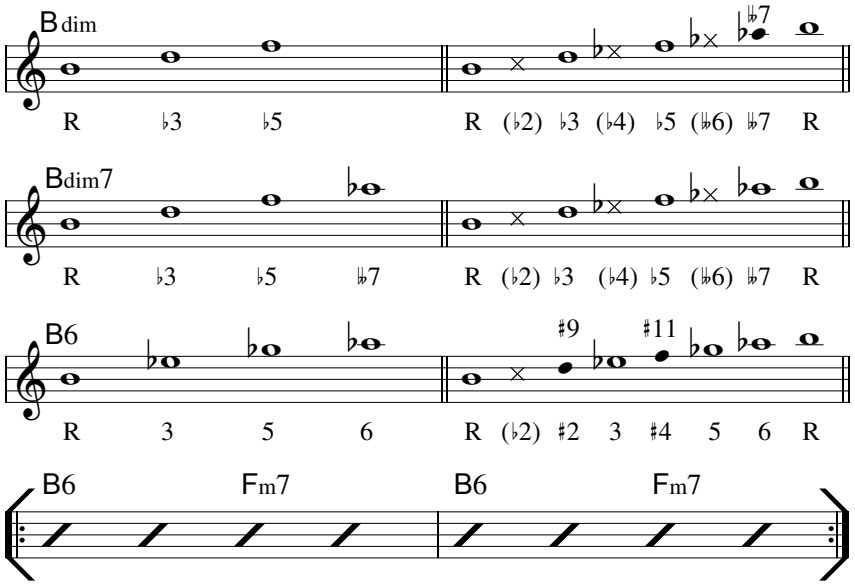
Note: If you admit that there is a chord named G♭maj7♯5(sus4) then this scale might be a viable choice to use on it.

(f) Lydian ♯2♭7





(g) Half-Whole (omit ♭7)



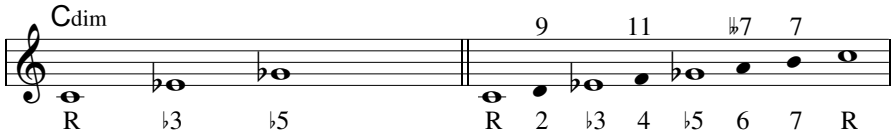
(2) Modes Of The Jazz Minor ♭5 Scale

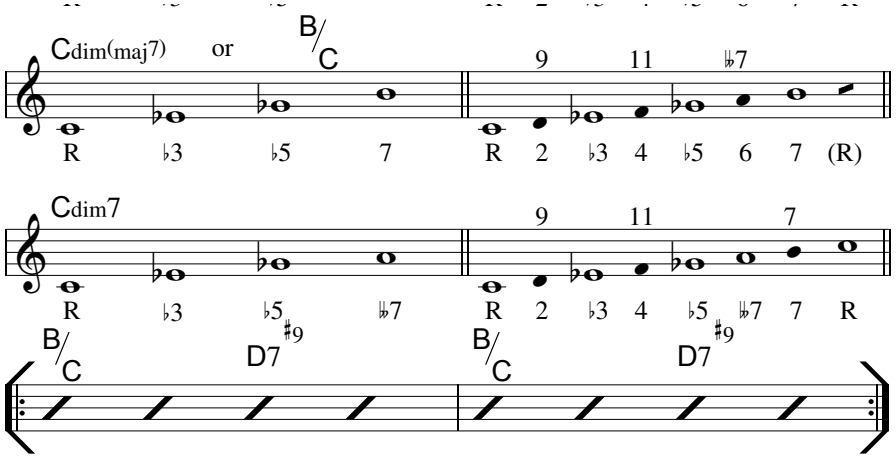
If we omit the 6th degree from the 8 note symmetrical diminished whole-half scale we will have a 7 note scale with the intervallic formula: 1 2 ♭3 4 ♭5 6 7 1. This scale is sometimes called the Jazz Minor ♭5 scale.

Like the Harmonic Minor ♭5 scale this scale is not nearly as widely in use as any of the others we have looked at. It is a little exotic sounding and unwieldy. This is also because building chords in scale-wise thirds from the various scale degrees does not always result in a tertian chord whose root is the bass note.

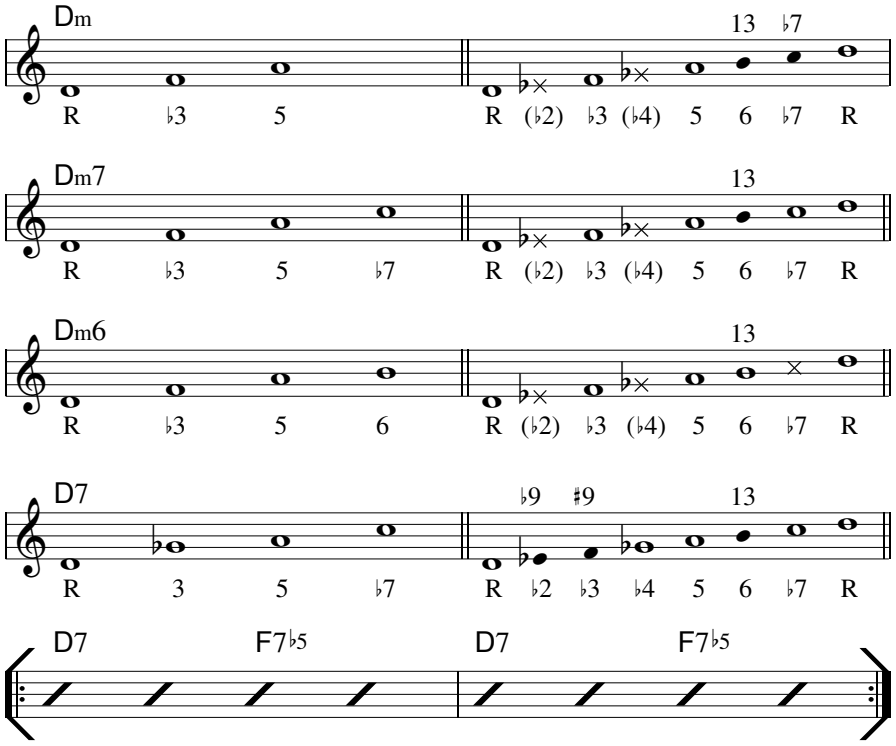
Consequently most of the modes of this scale do not have any standard names associated with them. The names I have chosen are strictly for the sake of memory as a mnemonic.

(a) Jazz Minor ♭5 Scale

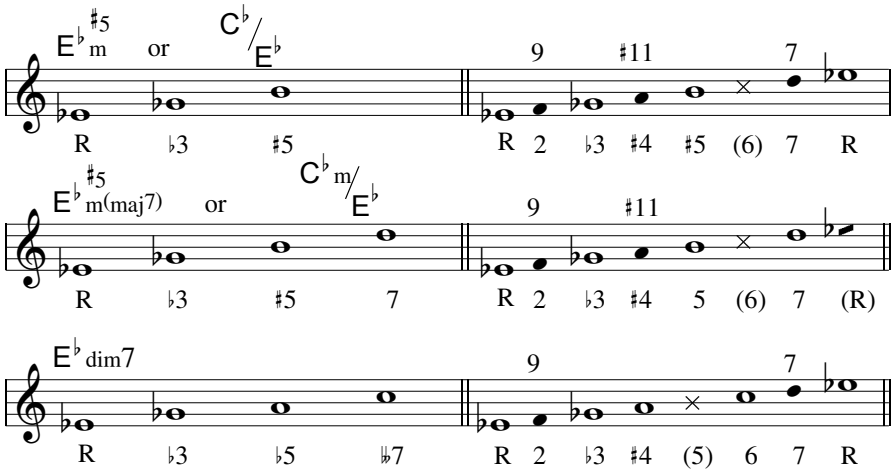


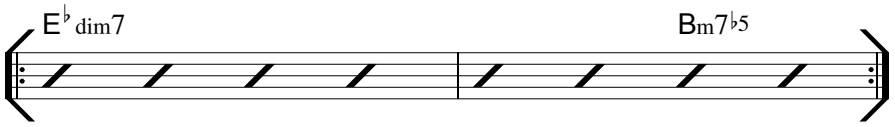


(b) Half-Whole (omit ♭5)

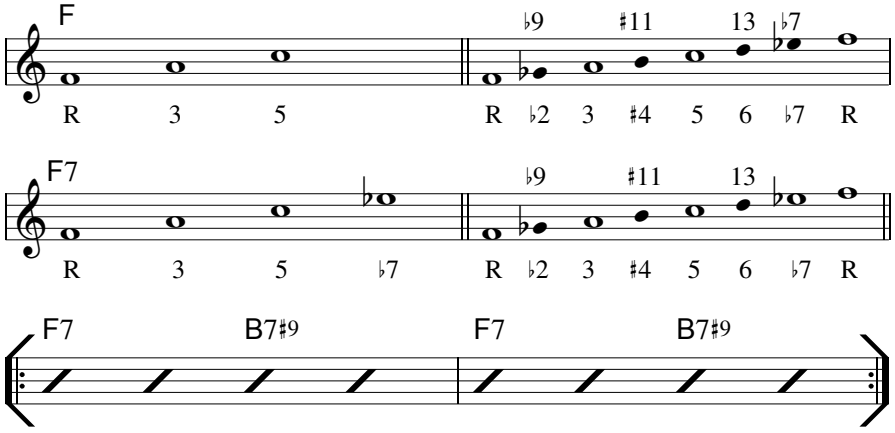


(c) Jazz Minor ♯4♯5

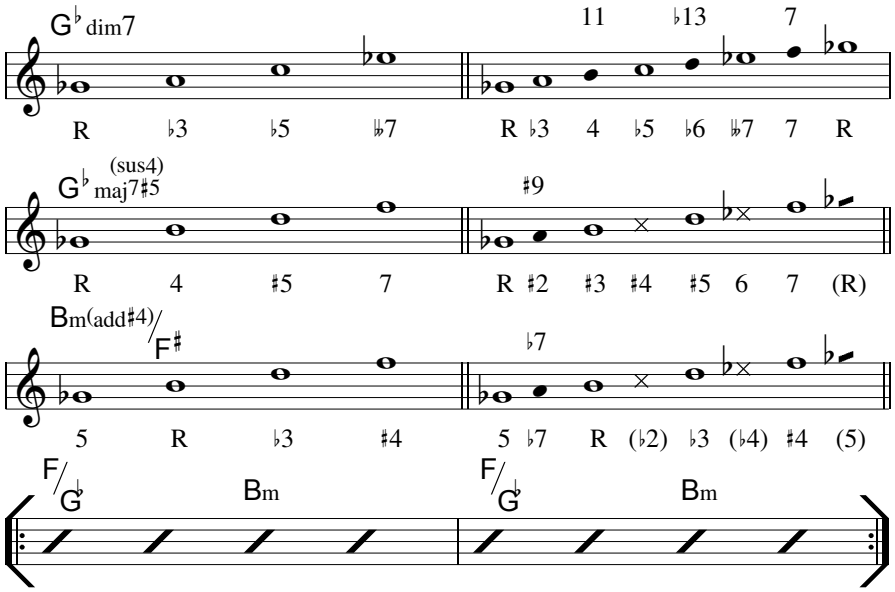




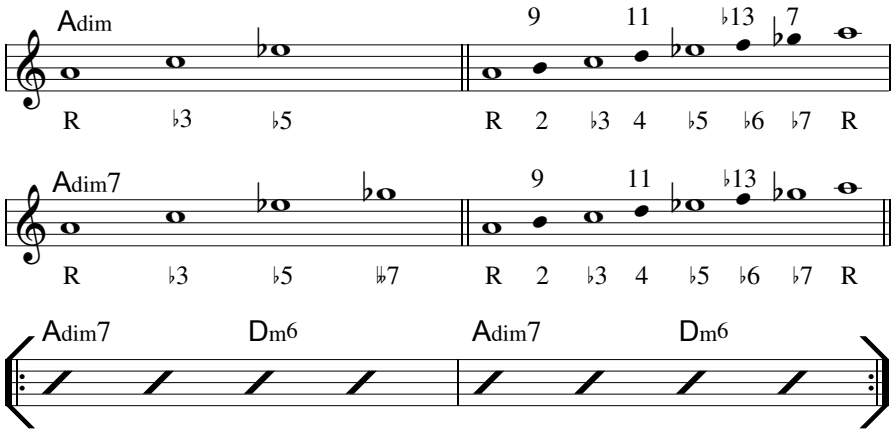
(d) Lydian ♭2♭7



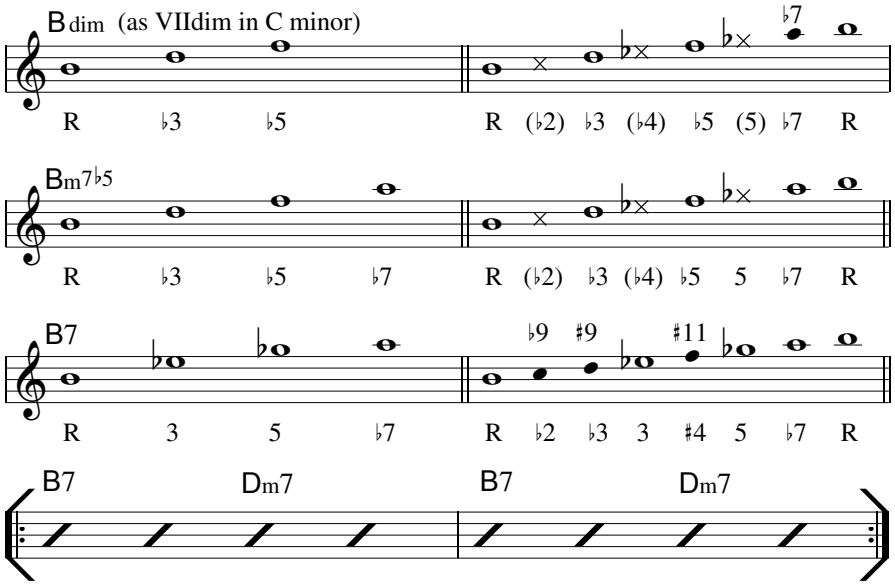
(e) Lydian Augmented ♯2♯3



(f) Locrian ♮2𝄫7

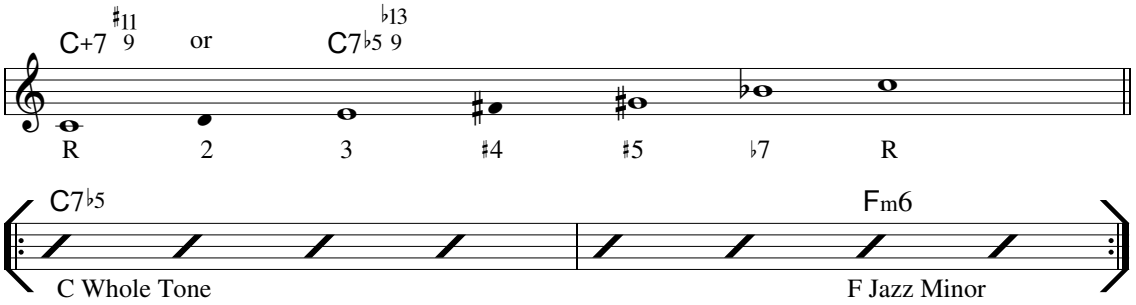


(g) Half-Whole (omit 6)



b) The Whole Tone Scale

The Whole Tone scale is a symmetrical scale comprised of a series whole tones. It is a six note scale with the formula: 1 2 3 ♯4/♭5 ♯5♭6 ♭7. There are no modes of this scale because starting it on any of it's scale degrees results in an identical pattern of whole tones.



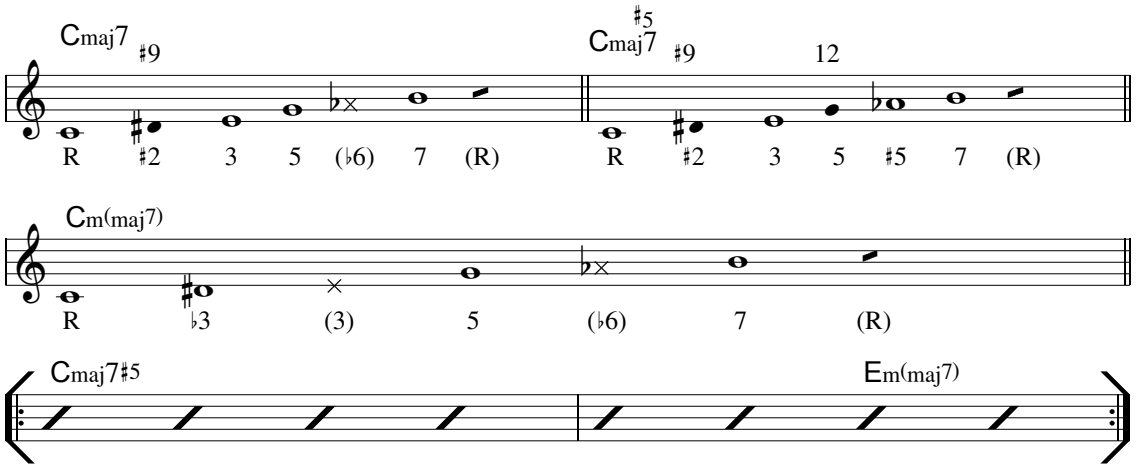
c) The Symmetrical Augmented Scale

Another symmetrical scale being used more and more by jazz musicians is the Symmetrical Augmented Scale. It is formed by a pattern of consecutive alternating minor 3rds and minor 2nds. It is also a six tone scale. It has one mode which results from changing the pattern to consecutive alternating minor 2nds and minor thirds.

This scale can also be seen as being comprised of two augmented triads a half step apart.

Example:
C Symmetrical Augment (minor 3rd, minor 2nd) = C D♯ E G A♭ B C
C+ = C E G♯
B+ = B D♯ F*/G
Place the tones of these two augmented triads side by side within a single octave starting on C and you will have our C Symmetrical Augmented Scale.

(1) The Symmetrical Augmented (minor 3rd, minor 2nd) Scale



Note: Because of this scale's symmetry any chord type that can be constructed on 1 will also be found on 3 and ♭6.

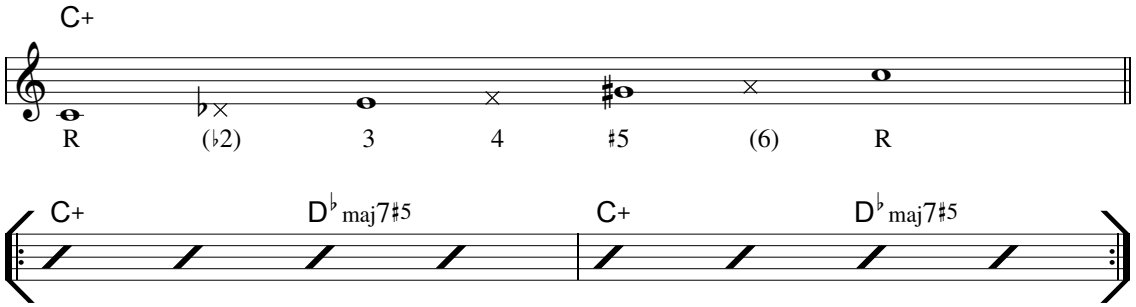
Example:

Within this scale there exist the tones of: C[maj7], E[maj7] and A♭[maj7].

Within this scale there exist the tones of: C+[maj7], E+[maj7] and A♭+[maj7].

Within this scale there exist the tones of: Cm[maj7], Em[maj7] and A♭m[maj7].

(2) The Symmetrical Augmented (m2, m3) Scale



Note: Because of this scale's symmetry any chord type that can be constructed on 1 will also be found on 3 and ♭6.

Example:

Within this scale there exist the tones of: C+, E+ and A♭+.

6. A Summary Of Triad Types And Chord-Scales Encountered So Far

Triad	Chord Scale	Formula	Available Tensions	Avoid Notes	Typical use
Major 1 3 5					
	Ionian	1 2 3 4 5 6 7	7, 9, 13/6	4	Imaj7 (major) ♭IIImaj7 (minor)
	Lydian	1 2 3 ♯4 5 6 7	7, 9, ♯11, 13/6	none	IVmaj7 ♭VImaj7 (minor)
	Harmonic Major	1 2 3 4 5 ♭6 7	7, 9	4, ♭6	
	Lyd ♯2	1 ♯2 3 ♯4 5 6 7	7, ♯9, ♯11, 13/6	none	
	Sym. Aug. (m3, m2)	1 ♯2 3 5 ♭6 7	7, ♯9	♭6	
	Mixo-Lydian	1 2 3 4 5 6 ♭7	♭7, 9, 13/6	4	V7 (in major) V7 of V V7 of IV ♭VII7 (minor)
	Mix ♭2♭6	1 ♭2 3 4 5 ♭6 ♭7	♭7, ♭9, ♭13	4	V7♭9 (minor) V7 of VIm (major) V7 of IIm
	Mix ♭6	1 2 3 4 5 ♭6 ♭7	♭7, 9, ♭13	4	V7(9) (minor)
	Mix ♭2	1 ♭2 3 4 5 6 ♭7	♭7, ♭9, 13/6	4	V7♭9 (major)
	Sym. Dim. (m2, M2)	1 ♭2 ♭3 3 ♯4 5 6 ♭7	♭7, ♭9, ♯9, ♯11, 13/6	none	any Dom7
	Phrygian ♭4	1 ♭2 ♭3 3 5 ♭6 ♭7	♭7, ♭9, ♯9, ♭13	none	
	Half-Whole (omit6)	1 ♭2 ♭3 3 ♯4 5 ♭7	♭7, ♭9, ♯9, ♯11	none	
	Half-Whole (omit ♭7)	1 ♭2 ♭3 3 ♯4 5 6	♭9, ♯9, ♯11, 13/6	none	
Minor 1 ♭3 5					
	Jazz Minor	1 2 ♭3 4 5 6 7	7, 9, 11, 13/6	none	Im6
	Harmonic Minor	1 2 ♭3 4 5 ♭6 7	7, 9, 11	♭6	Im
	Sym. Aug. (m3, m2)	1 ♭3 3 5 ♭6 7	7	3, ♭6	
	Dorian	1 2 ♭3 4 5 6 ♭7	♭7, 9, 11, 13/6	none	IIm7 (major) IVm7 (minor)
	Aeolian Natural Minor	1 2 ♭3 4 5 ♭6 ♭7	♭7, 9, 11	♭6	VIm7 (major) Im7 (minor)
	Phrygian	1 ♭2 ♭3 4 5 ♭6 ♭7	♭7, 11	♭2, ♭6	IIIm7 (major) Vm7 (minor)
	Dorian ♯4	1 2 ♭3 ♯4 5 6 ♭7	♭7, 9, ♯11, 13/6	none	
	Dorian ♭2	1 ♭2 ♭3 4 5 6 ♭7	♭7, 11, 13/6	♭2	
	Jazz Minor ♯4	1 2 ♭3 ♯4 5 6 7	7, 9, ♯11, 13/6	none	
	Sym. Dim. (m2, M2)	1 ♭2 ♭3 3 ♯4 5 6 ♭7	♭7, ♯11, 13/6	♭2, 3	
	Half-Whole (omit ♭5)	1 ♭2 ♭3 ♭4 5 6 ♭7	♭7, 13/6	♭2, ♭4	
	Half-Whole (omit 6)	1 ♭2 ♭3 ♭4 5 ♭7	♭7	♭2, ♭4	
	Half-Whole (omit ♭7)	1 ♭2 ♭3 ♭4 ♯4 5 6	♯9, ♯11, 13/6	♭2	

Augmented 1 3 ♯5

Ionian Augmented	1 2 3 4 ♯5 6 7	7, 9	4, 6	♭III+(maj7)
Lydian Augmented	1 2 3 ♯4 ♯5 6 7	7, 9, ♯11	6	♭III+(maj7)
Lyd. Augmented ♯2	1 ♯2 3 ♯4 ♯5 6 7	7, ♯9, ♯11	6	
Harmonic Major	1 2 3 4 5 ♯5 7	7, 9, 12	none	Imaj7♯5
Sym. Aug. (m3, m2)	1 ♯2 3 5 ♯5 7	7, ♯9, 12	none	I+(maj7)
Whole Tone	1 2 3 ♯4 ♯5 ♭7	♭7, 9, ♯11	none	V+7
Altered	1 ♭2 ♯2 3 ♯4 ♯5 ♭7	♭7, ♭9, ♯9, ♯11	none	V7alt V7 of IIIm
Phrygian ♭4	1 ♭2 ♭3 3 5 ♯5 ♭7	♭7, ♭9, ♯9, 12	none	
Sym. Aug. (m2, m3)	1 ♭2 3 4 ♯5, 6	none	♭2, 4, 6	

Diminished 1 ♭3 ♭5

Harmonic Minor ♭5	1 2 ♭3 4 ♭5 ♭6 7	7, 9, 11, ♭13	none	
Locrian	1 ♭2 ♭3 4 ♭5 ♭6 ♭7	♭7, 11, ♭13	♭2	VIIm7b5 IIm7♭5 (min)
Super Locrian	1 ♭2 ♭3 ♭4 ♭5 ♭6 ♭7	♭7, ♭13	♭2, ♭4	
Hlf-Wh (omit 6)	1 ♭2 ♭3 ♭4 ♭5 5 ♭7	♭7	♭2, ♭4, 5	
Locrian ♮6	1 ♭2 ♭3 4 ♭5 𝄫7 ♭7	𝄫7, ♭7, 11	♭2	IIm7♭5 (maj) VIm7♭5 (min)
Super Locrian. 𝄫7	1 ♭2 ♭3 ♭4 ♭5 ♭6 𝄫7	𝄫7, ♭13	♭2, ♭4	VII°7 (min)
Locrian 𝄫7	1 ♭2 ♭3 4 ♭5 ♭6 𝄫7	𝄫7, 11, ♭13	♭2	VII°7 (maj)
Sym. Dim. (M2, m2)	1 2 ♭3 4 ♭5 ♭6 𝄫7 7	𝄫7, 7, 9, 11, ♭13	none	any Dim7
Sym. Dim. (m2, M2)	1 ♭2 ♭3 ♭4 ♭5 5 𝄫7 ♭7	𝄫7, ♭7	♭2, ♭4, 5	
Jazz Minor ♭5	1 2 ♭3 4 ♭5 𝄫7 7	𝄫7, 7, 9, 11	none	I°7 and inversions
Half-Whole (omit 5)	1 ♭2 ♭3 ♭4 ♭5 𝄫7 ♭7	𝄫7	♭2, ♭4, 7	
Dorian ♭2♯4	1 ♭2 ♭3 ♭5 5 𝄫7 ♭7	𝄫7	♭2, 5, 7	
LydAug ♯2♯3	1 ♭3 4 ♭5 ♭6 𝄫7 7	𝄫7, 7, 11, ♭13	none	
Hlf-Wh (omit ♭7)	1 ♭2 ♭3 ♭4 ♭5 5 𝄫7	𝄫7	♭2, ♭4, 5	
Jazz Minor ♯4♯5	1 2 ♭3 ♭5 ♭6 𝄫7 7	𝄫7, 7, 9, ♭13	none	
Locrian ♮2𝄫7	1 2 ♭3 4 ♭5 ♭6 𝄫7	𝄫7, 9, 11, ♭13	none	

Sus4 1 4 5

Ionian	1 2 3 4 5 6 7	7, 9, 10, 13	none	Imaj7(sus4)
Harmonic Minor	1 2 ♭3 4 5 ♭6 7	7, 9 , 11	♭6	
Jazz Minor	1 2 ♭3 4 5 6 7	7, 9, ♯9/♭3, 13/6	none	
Harmonic Major	1 2 3 4 5 ♭6 7	7, 9, 10, ♭13	none	
Mixolydian	1 2 3 4 5 6♭7	♭7, 9, 10, 13	none	V7sus4
Dorian	1 2 ♭3 4 5 6 ♭7	♭7, 9, ♯9/♭3, 13	none	IIm7(sus4)
Aeolian	1 2 ♭3 4 5 ♭6 ♭7	♭7, 9, ♯9/♭3	none	VIm7(sus4)
Natural minor				Im7(sus4)
Mix ♭2♭6	1 ♭2 ♭3 3 4 5 ♭6 ♭7	♭7, ♭9, ♯9, 10, ♭13	none	V7sus4 (min)

Dorian ♭2	1 ♭2 ♭3 4 5 6 ♭7	♭7, ♯9/♭3, 13/6	♭2	
Mix ♭6	1 2 3 4 5 ♭6 ♭7	♭7, 9, 10, ♭13	none	V7sus4 (min)
Phrygian ♭4	1 ♭2 ♭3 3 5 ♭6 ♭7	♭7, ♭9, ♯9, 10, ♭13	none	

Sus2 1 2 5

Ionian	1 2 3 4 5 6 7	7, 10/3, 11/4, 13/6	none	Isus2 ♭IIIsus2 (min)
Lydian	1 2 3 ♯4 5 6 7	7, 10/3, ♯11/♯4, 13/6	none	IVsus2 ♭VIsus2 (min)
Harmonic Minor	1 2 ♭3 4 5 ♭6 7	7, 11/4	♭3, ♭6	Im(sus2)
Jazz Minor	1 2 ♭3 4 5 6 7	7, 11/4, 13/6	♭3	Im(sus2)
Harmonic Major	1 2 3 4 5 ♭6 7	7, 10/3, 11/4, ♭13	none	
Mixo-Lydian	1 2 3 4 5 6 ♭7	♭7, 10/3, 11/4, 13/6	none	Vsus2 ♭VIIsus2 (min)
Dorian	1 2 ♭3 4 5 ♭6 ♭7	♭7, 11/4, 13/6	♭3	IIm(sus2) IVm(sus2) (min)
Aeolian Natural Minor	1 2 ♭3 4 5 ♭6 ♭7	♭7, 11/4	♭3, ♭6	VIm(sus2) Im(sus2)
Lydian ♭7	1 2 3 ♯4 5 6 ♭7	♭7, 10/3, ♯11/♯4, 13/6	none	
Mix ♭6	1 2 3 4 5 ♭6 ♭7	♭7, 10/3, 11/4, ♭13	none	

Sus♭2 1 ♭2 5

Phrygian	1 ♭2 ♭3 4 5 ♭6 ♭7	♭7, ♯9/♭3, 11/4, ♭13	none	
Mix ♭2♭6	1 ♭2 3 4 5 ♭6 ♭7	♭7, 10/3, 11/4, ♭13	none	
Dorian ♭2	1 ♭2 ♭3 4 5 6 ♭7	♭7, ♯9/♭3, 11/4, 13	none	
Mix ♭2	1 ♭2 3 4 5 6 ♭7	♭7, 10/3, 11/4, 13	none	
Sym. Dim. (m2, M2)	1 ♭2 ♭3 3 ♯4 5 6 ♭7	♭7, ♯9/♭3, 10/3, ♯11, 13	none	
Half-Whole (omit ♭5)	1 ♭2 ♭3 3 5 6 ♭7	♭7, ♯9/♭3, 13	none	
Lydian ♭2♭7	1 ♭2 3 ♯4 5 6 ♭7	♭7, 10/3, ♯11, 13	none	
Half-Whole (omit 6)	1 ♭2 ♭3 3 ♯4 5 ♭7	♭7, ♯9/♭3, 10/3, ♯11	none	
Half-Whole (omit ♭7)	1 ♭2 ♭3 3 ♯4 5 6	♯9/♭3, 10/3, ♯11, 13	none	

Maj♭5 1 3 ♭5

Lydian	1 2 3 ♭5 5 6 7	7, 9, 13/6	5	IVmaj7♭5 (maj) ♭VImaj7♭5 (min)
Lydian ♯2	1 ♯2 3 ♭5 5 6 7	7, ♯9, 13/6	5	
Lydian Augmented	1 2 3 ♭5 ♯5 6 7	7, 9, ♯5	6	
Lyd. Augmented ♯2	1 ♯2 3 ♭5 ♯5 6 7	7, ♯9, ♯5	6	
Lydian ♭7	1 2 3 ♭5 5 6 ♭7	♭7, 9, 13/6	5	II7♭5 ♭VI7♭5 IV7♭5
Sym. Dim. (m2, M2)	1 ♭2 ♭3 3 ♭5 5 6 ♭7	♭7, ♭9, ♯9, 13	5	any Dom7♭5
Altered	1 ♭2 ♯2 3 ♭5 ♭6 ♭7	♭7, ♭9, ♯9, ♭13	none	V7♭5 of IIIm
Half-Whole (omit 5)	1 ♭2 ♭3 3 ♭5 6 ♭7	♭7, ♭9, ♯9, 13	none	

Half-Whole (omit ♭7)	1 ♭2 ♭3 3 ♭5 5 6	♭9, ♯9, 13	5
Lydian ♭2♭7	1 ♭2 3 ♭5 5 6 ♭7	♭7, ♭9, 13	5
Half-Whole (omit 6)	1 ♭2 ♭3 3 ♭5 5 ♭7	♭7, ♭9, ♯9	5

Sus4♯5 1 4 ♯5 (Note: This is really a second inversion minor triad but some chords like Maj7sus4♯5 require us to consider it as well.)

Harmonic Minor	1 2 ♭3 4 5 ♯5 7	7, 9, ♯9, 12	none
Ionian Aug	1 2 3 4 ♯5 6 7	7, 9, 10	6
Harmonic Major	1 2 3 4 5 ♯5 7	7, 9, 10, 12	none
Sym. Dim. (M2, m2)	1 2 ♭3 4 ♭5 ♯5 6 7	7, 9, ♯9, 13	♭5
Harmonic Min ♭5	1 2 ♭3 4 ♭5 ♯5 7	7, 9, ♯9	♭5
Jazz Min ♯5	1 2 ♭3 4 ♯5 6 7	7, 9, ♯9	6
Lyd Aug ♯3	1 2 4 ♭5 ♯5 6 7	7, 9	♭5, 6
Lyd Aug ♯2♯3	1 ♯2 4 ♭5 ♯5 6 7	7, ♯9	♭5, 6
Mix ♭2♭6	1 ♭2 3 4 5 ♯5 ♭7	♭7, ♭9, 10, 12	none
Locrian 𝄫7	1 ♭2 ♭3 4 ♭5 ♯5 𝄫7	♯9	♭2, ♭5, 𝄫7
Locrian ♮2𝄫7	1 2 ♭3 4 ♭5 ♯5 𝄫7	9, ♯9	♭5, 𝄫7

Derive your own summary for the chord-scale types of the various seventh chords from above.

7. Determining A Chord-Scale Via Harmonic Analysis

It is beyond the scope of this book to explain traditional harmonic analysis techniques. If you have already studied some harmony someplace else then what I am about to say should make some sense to you. If you have not studied any formal harmonic analysis yet you might have some trouble with the following. Please review the chapter “Chords: Construction/Execution/Basic Harmony - D. Simple Diatonic Harmony.

Typically, the way chord-scale relationships are taught in a jazz harmony course is that chords with particular harmonic functions take a scale that is associated with the major scale or minor scale (Natural, Harmonic and/or Melodic) degree whose tone is the root of the chord.

In major keys usually:
I, Imaj7 and I6 take the Ionian mode.
IIm, IIm7 and IIm6 take the Dorian mode.
IIIm and IIIm7 take the Phrygian mode.
Etc.

In minor keys usually:
Im takes either the Natural, Harmonic or Melodic minor scale.
Im(maj7) takes either the Harmonic or Melodic minor scale.
Im6 takes the Melodic Minor scale (sometimes Dorian).
IIm7♭5 takes the Locrian mode (2nd mode of Natural Minor).
♭IIImaj7 takes the Ionian mode (3rd mode of nat Min).
♭IIImaj7♯5 takes either the Ionian Augmented scale (3rd mode of Harm Min) or the Lydian Augmented scale (3rd mode of Mel Min).
Etc.

This scheme works well as long as the progression sticks to strictly diatonic chords but as soon as some modal variant (like a ♭IImaj7 chord) pops up some other scheme is required.

However some general guidelines can be drawn:

- Any Maj7 chord preceded by a Dom7 chord a P5th above (or P4th below) will probably sound like a I chord and will take the Ionian mode. A Maj7 chord that is obviously the IV chord will take the Lydian scale unless it is preceeded by a Dom7 coming from a P4th below or P5th above .
- Any Maj7 chord with a non diatonic root (Eg. ♭VImaj7 in major) will take the Lydian scale unless it is preceeded by a Dom7 coming from a P4th below or P5th above .
- Most Dom7 chords can take the Mixo-Lydian mode.
- Most Dom7♭9 chords can take the Mix ♭2♭6 scale.
- V7♭9 in a major key works well with the Mix♭2 scale.
- Most Min7♭5 chords can take the Locrian scale.
- IIm7 9 (IVm7 in minor and when it occurs in major) takes Dorian.
- VIm7 (Im7 in minor) takes Aeolian.
- IIIm7 (Vm7 in minor) takes Phrygian.
- Vm7 when it occurs in major will take the Dorian scale.
- VIIm7 when it occurs in major will take the Phrygian scale.
- Any Min7 chord with a non diatonic root (Eg. ♭IIIm7 in major) will usually sound best with the Dorian mode.
- Any Dim7 chord can use the Symmetrical Diminished (M2, m2) scale.
- Any secondary dominant whose target normally has a major triad (Eg. V7 of V) will take the Mixolydian scale (5th mode of Major).
- Any secondary dominant whose target normally has a minor triad (Eg. V7 of VIm) will take the Mixolydian ♭2♭6 scale (5th mode of Harm Min).
- Any tritone substitute dominant will usually use the Lydian ♭7 scale.

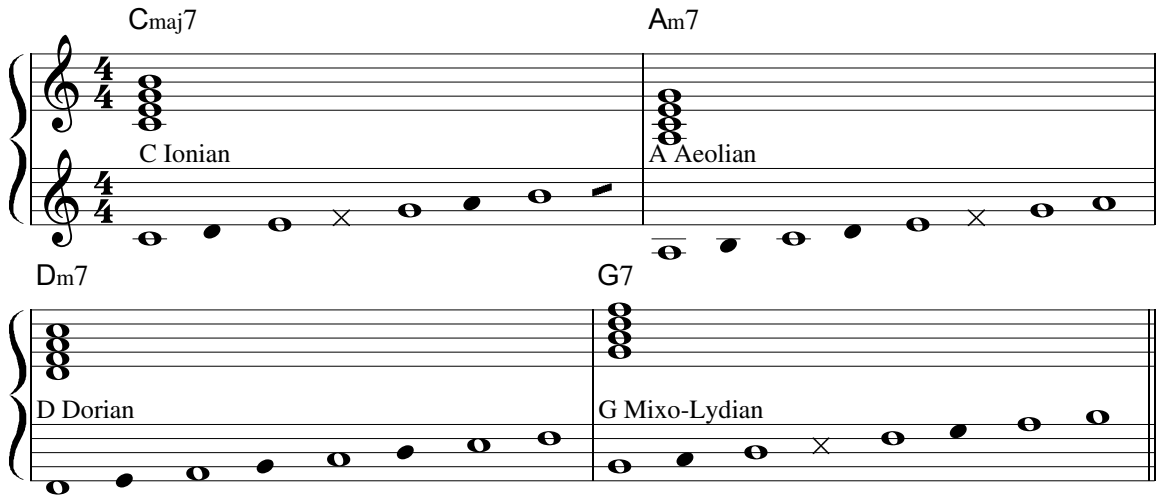
Of course, in order to use this scheme you have to already know how to analyse a chord progression along these lines.

8. Determining A Chord-Scale Via Horizontal Considerations

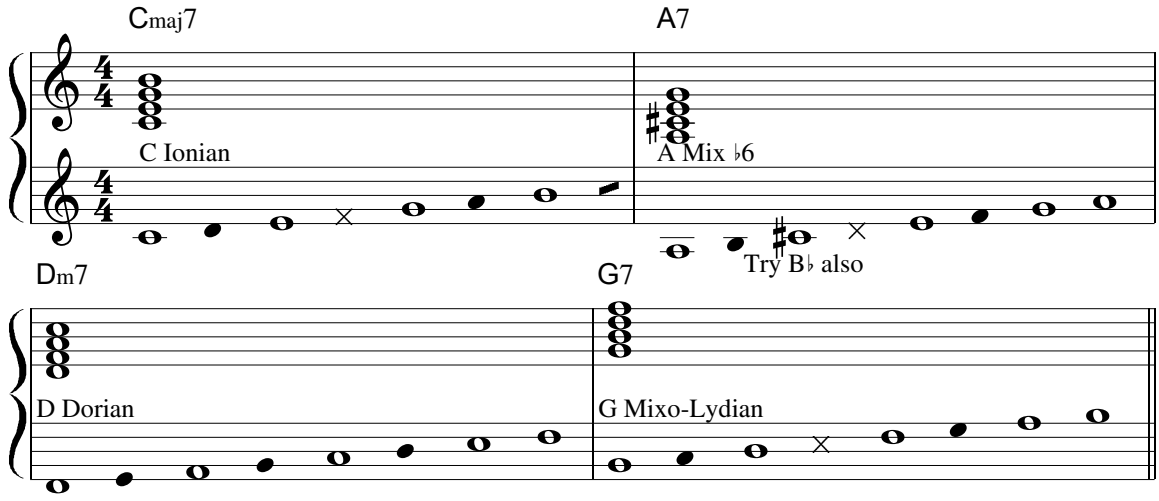
The concept I am about to go into involves retaining as much key feeling as possible within the chosen chord-scales. I call it “taking the path of least resistance” which is a phrase that many other people use to describe similar concepts in various other disciplines besides music. In a nutshell, once we determine the scale or group of pitches we are going to start with we will not change any of those pitches unless some external event, a new chord perhaps, forces us to.

If we encounter a progression that uses chords where every single chord tone is found within some major scale then that major scale and/or it’s modes will be used exactly as is. But as soon as a chord comes along that contains some non diatonic chord tone(s) we will adjust our group of notes to accommodate the chromatic newcomer(s). The non chord tones in our new chord-scale will almost always be derived from the preceding chord and chord-scale although sometimes we may introduce some notes that foreshadow an upcoming chord.

The following progression uses chords whose chord tones are all members of the C major scale. Consequently the C major scale and it’s modes are all that is needed for simple chord-scale type melodies.



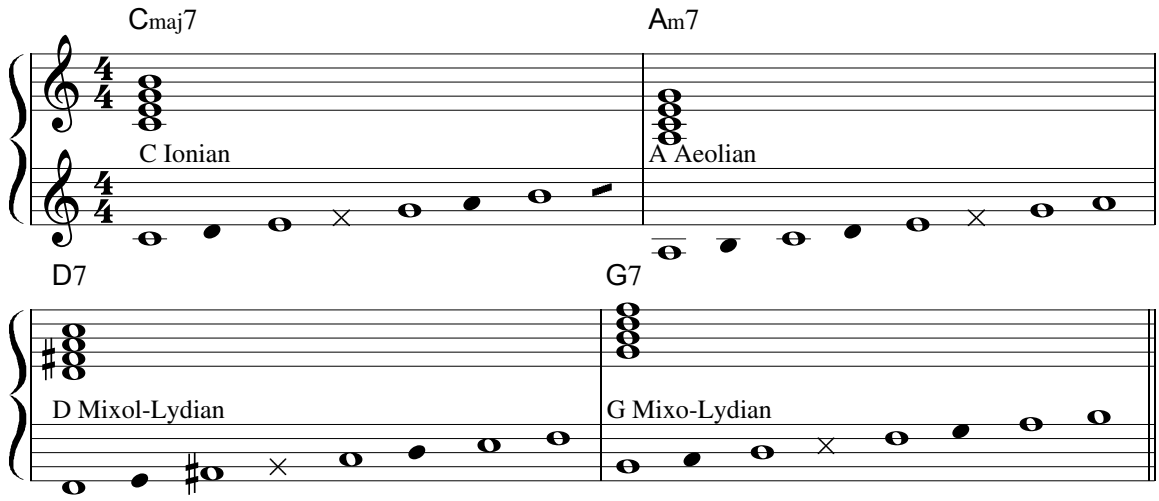
The A7 in the following progression contains the note C♯ which is not a member of the C major scale. Therefore the chord scale for A7 must accommodate this chromatic alteration. Note that the other non chord tones in this scale all still come from the C major scale. We have only adjusted the non diatonic chord tones and included them in the scale. The next chord Dm7 contains a C♮ which wipes out the C♯ from the previous chord-scale and we are back to a mode of C major.



Note: The resulting chord-scale for A7 (V7 of IIm) happens to be the 5th mode of D Jazz Minor (A Mix ♭6) and the target of the A7 is Dm. I said earlier that most secondary dominants that target a tone that normally has a minor chord built on it would take the Mix ♭2♭6 scale and this would seem to be the exception to that rule. However most players will use the Mix ♭2♭6 scale on this chord anyways. The ♭2 has a blusier feel to it because it is the blue note ♭7 in the key. Personally, I think of this B♭ as being "forced" into the texture rather than as occurring naturally.

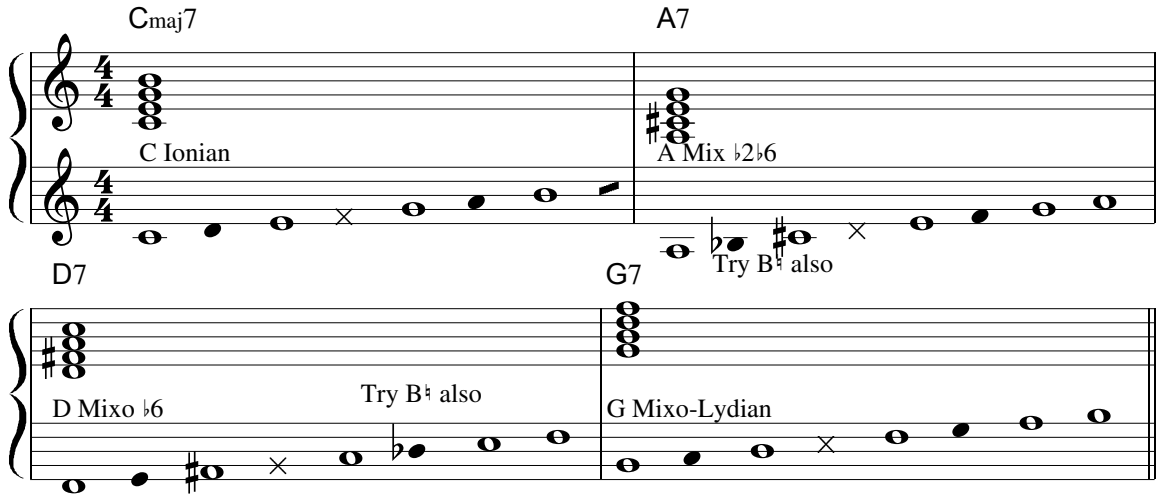
You might consider that in the example above the A Mix ♭6 scale is idendical to a C major scale but with C♯ being used instead of C♮.

The next example has a D7 in bar 3. D7 contains F♯ which is not a member of the C major scale. We will therefore adjust it's chord-scale to accommodate the chromatic note. The non chord tones still come from C major.



Note that the resulting chord-scale is the 5th mode of G major. Note also that the F♯ is cancelled out by the F♮ in the G7 chord. You might consider the D Mix scale above as being identical to a Cmajor scale but using F♯ instead of F♮.

This next variation uses both A7 in bar 2 and D7 in bar 3. The chosen chord-scales and suggestions for variation are results of the above type of logic.



As simple as this concept is it can get a lot more complicated when the chromaticism of the progression increases. In all cases though you can pretty much bank on that the chord tones will be in the chord-scale. They are more or less etched in stone so to speak. All the real choices are made with regards to the non chord tones.

I ask myself a series of questions when I am using this concept (see also the chapter: Improvising With Chord Tones - Passing Tone Exercise #1):

1. This chord has a root and a 3rd (sometimes a maj 3rd, sometimes a min 3rd or sometimes a P4th in a sus4 chord). What type of 2nd degree (and 3rd degree in the case of a Sus4 chord) makes sense in this particular situation?

2. This chord has a 3rd and a 5th (sometimes a P5th and sometimes a ♭5). What type of 4th degree makes sense in this particular situation?

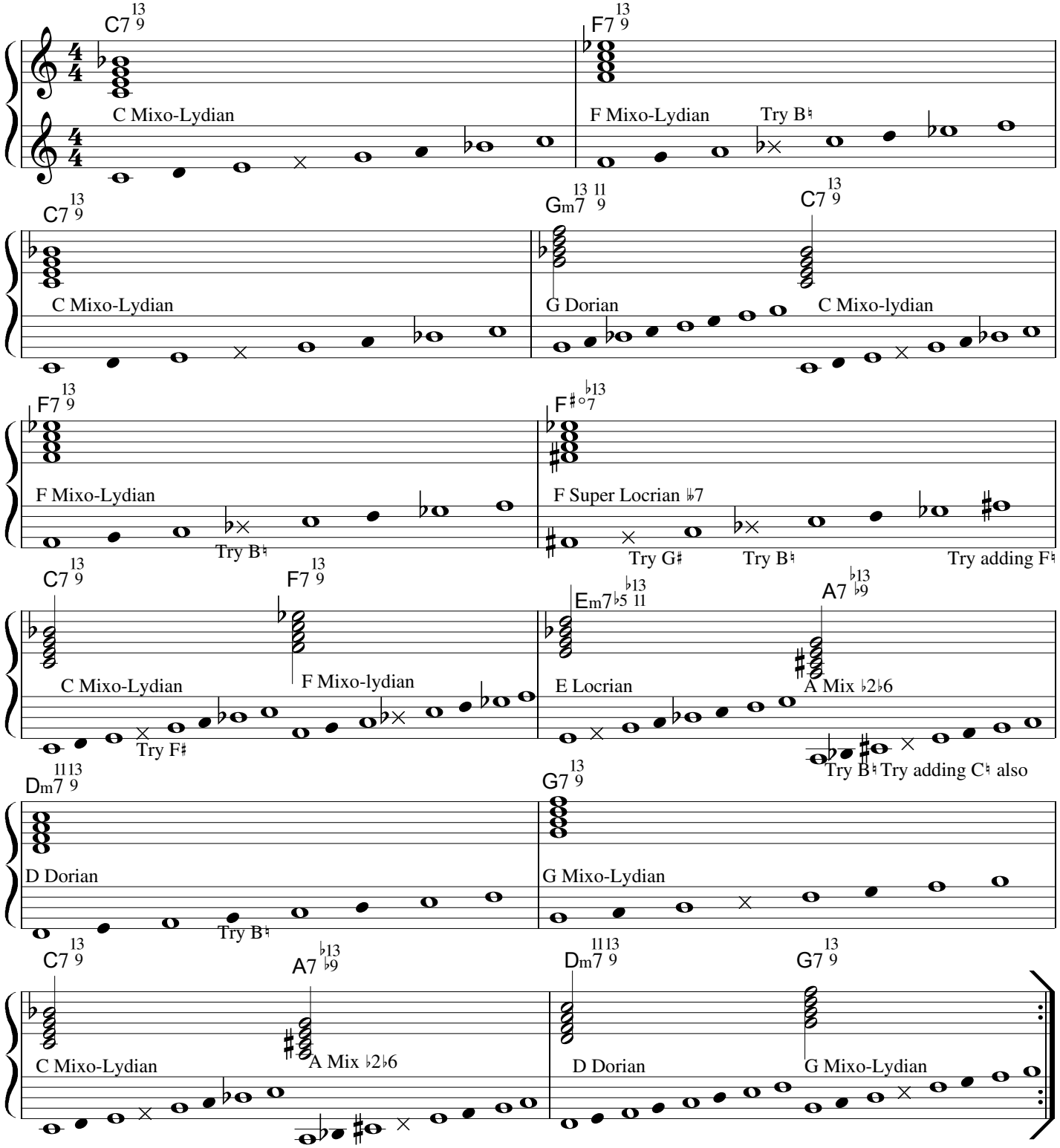
3. This chord has a 5th and a 7th (sometimes a maj 7th, sometimes a ♭7 and sometimes a 𝄫7). What type of 6th degree makes sense in this particular situation?

4. On chords that have a diminished 7th (enharmonically equivalent to the maj 6th) does a maj 7 or a min 7

make sense too?

The answers to these questions always depend on what has occurred before the chord of the moment, on what is about to occur after the chord of the moment, on how ambiguous or unclear the possibilities are, on personal taste and to a certain degree on the melodic choices made by the composer in the tune's melody. In general, the non chord tones should come from the scale associated with the key that the music is in.

I will use this system to determine a set of chord-scales for the following blues progression in C major.



• We start with C Mixo-Lydian (5th mode of F major) because that is scale most often associated with a C7 chord when it is heard out of the blue without any reference to any other chord. As we have seen before it is possible to use the C blues scale throughout the entire form also.

• Bar 2 introduces an F7 chord. F7 has the note E♭ which was not in our original scale so we must accommodate it in our new chord-scale. The result is F Mixo-Lydian (5th mode of B♭ major). If you use the note B♮ instead of the suggested B♭ you will have a note that fits the chord better vertically (as T♯11). It is also inside the key in the sense that B♮ functions as the leading tone in the key of C major. If you use a scale with B♮ you will have F Lydian ♭7 (4th mode of C Jazz Minor).

• Bar 3 brings us back to C7 wiping out both the the previous bar's E♭ and any B♮'s that was being used. The result is C Mix again (F major).

• Bar 4's Gm7 contains no new tones so our group of notes need not change. The resulting scale, with G as it's root, is G Dorian (2nd mode of F major). Ditto for the following C7. C Mix (F major).

• Bar 5 brings us back to F7 and F Mix (B♭ major).

• Bar 6 has an F♯°7 chord. It's root, F♯ must be accommodated in our chord-scale. It's diminished 7th degree, E♭, was also a chord tone in the preceding chord. the resulting scale is the 7th mode of G Harmonic Minor (aka F♯ Super Locrian 𝄫7). If you use G♯ rather than G♮ it will fit the chord better vertically (as T9) but is outside of the key and may sound out of place. If you use B♮ rather than B♭ it will fit the chord better vertically (as T11) plus it is an important note in the key, the leading tone. If you use my original scale but substitute B♮ for B♭ you will have the 7th mode of the G Harmonic Major scale (aka Locrian 𝄫7). The note F♮ also works well on this chord because it fits vertically (as T7) and is an important note in the key. If use a scale with G♯, B♮, D and F♮ you will have the complete octatonic Symmetrical Diminished (M2, m2) scale. It contains no avoid notes and is often easier to handle than most other chord-scales for Dim7 chords.

• Bar 7 brings us back to C7 which wipes out the preceding bar's E♭'s and B♮'s. The result is C Mixo-Lydian again (F major). However you might still hear F♯ as being useful. This is minimised by the fact the the next chord, occurring quickly, on beat 3 of this bar has F♮ as it's root. The F7 re-introduces the note E♭ with the resulting scale being F Mix (B♭ major).

• Bar 8's Em7♭5 chord wipes out the previous chord's E♭. The resulting scale is E Locrian (7th mode of F major). The following A7 chord has a C♯ in it. This must be accommodated in the chord-scale. The result is the A Mix ♭2♭6 scale (5th mode of D Harm Min). If you use B♮'s instead of B♭'s you will have A Mix ♭6 (5th mode of D Jazz Min). You also might try using C♮'s in addition to the C♯. It fits the chord nicely as T♯9 and is the tonic of the key. A good general rule of thumb is that whenever ♭9's are appropriate on a Dom7 chord ♯9's will work as well.

• Bar 9's Dm7 uses C♮ as opposed to the previous chord's C♯. The result is D Dorian (2nd mode of C major) or if you use B♭'s instead of B♮'s you will have D Aeolian (6th mode of F major). Most people use B˜because it is the leading tone in the key an a chord tone on the next chord, G7.

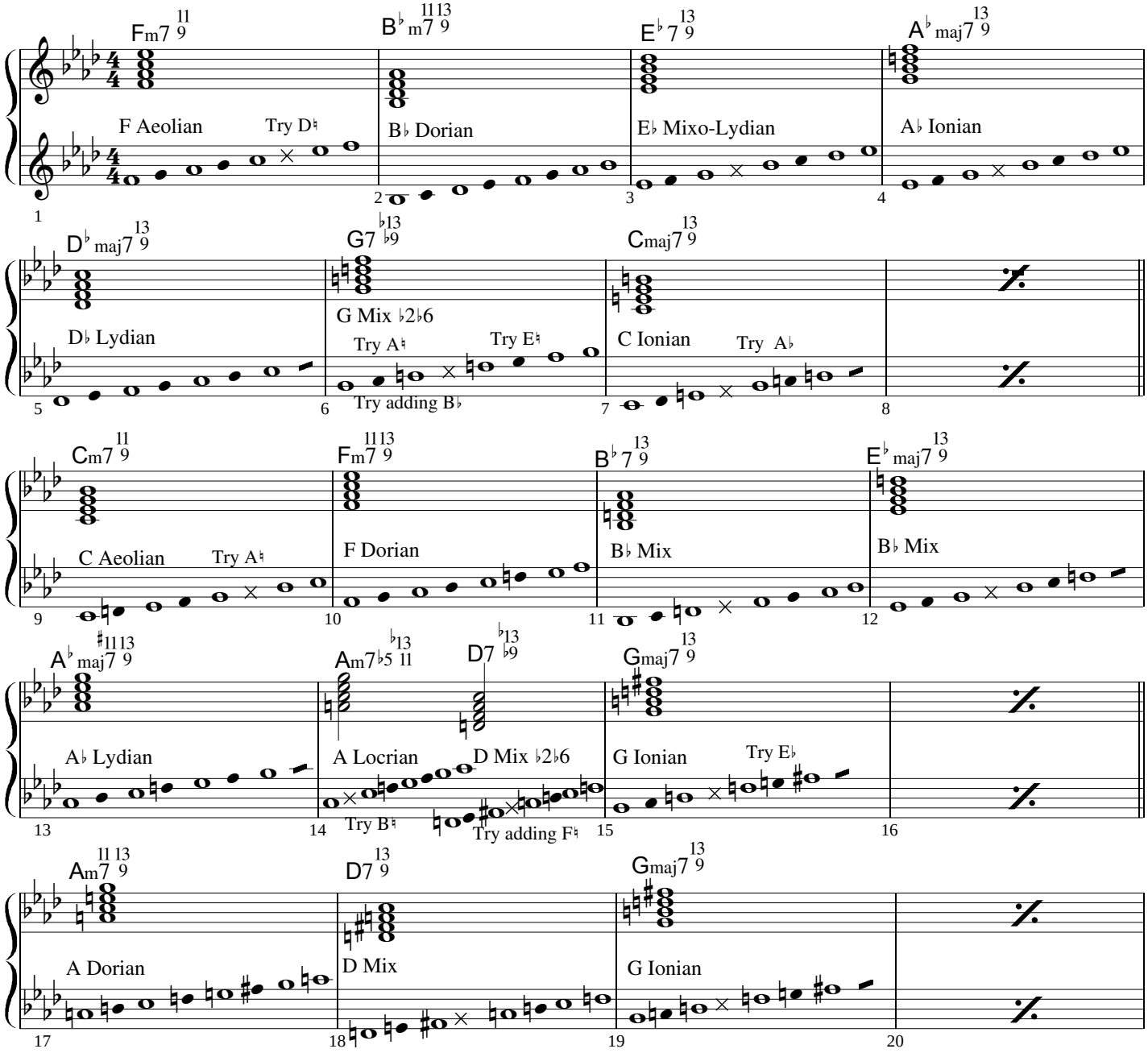
• The G7 in bar 10 confirms the supremacy of the B♮ over the B♭. The resulting scale is G Mix (5th mode of C major).

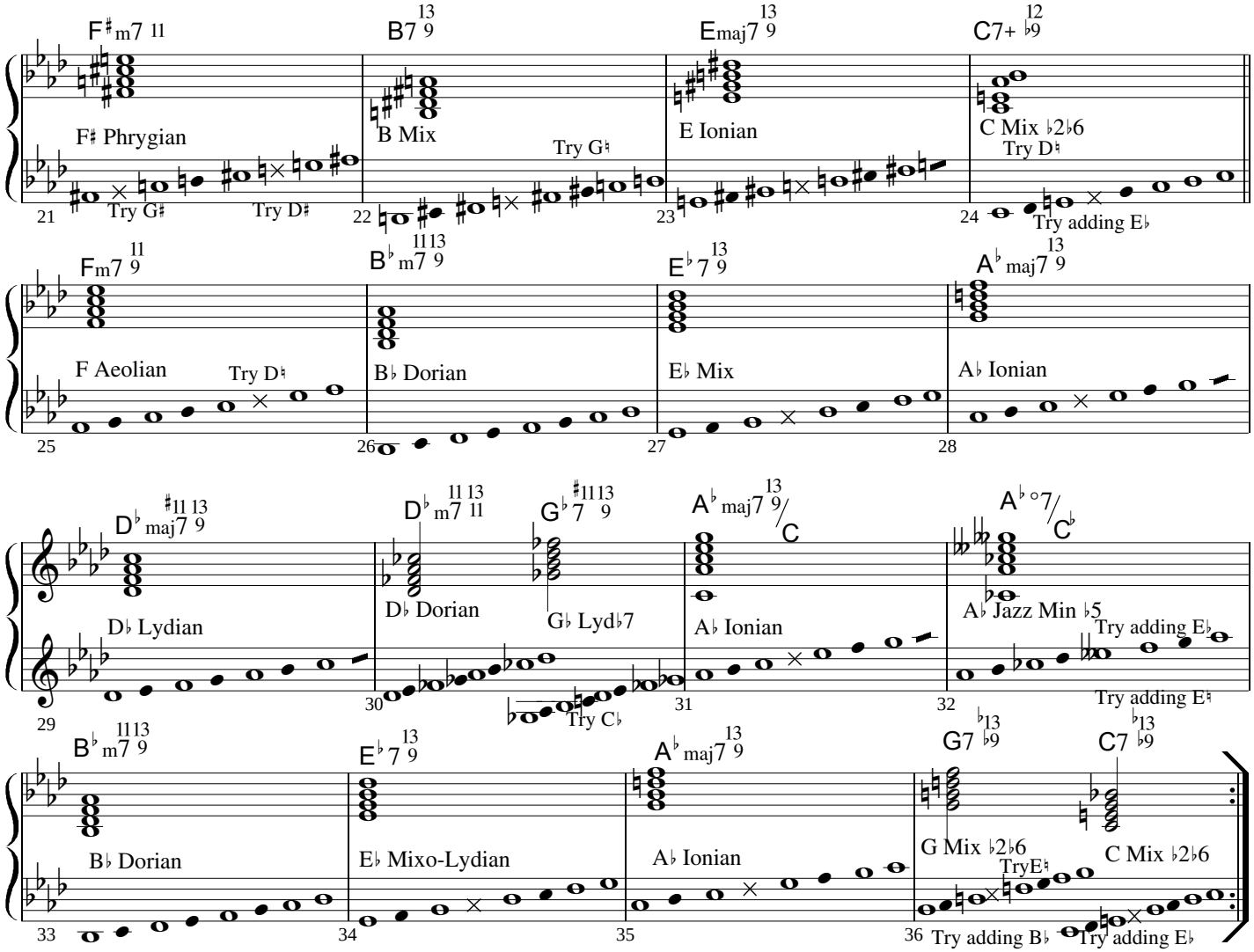
• Bar 11's C7 brings us back to C Mix and the following chords and chord-scales of the turnaround should be well understood at this point.

Notice how I have included the available tensions in my chord symbols. I use this a mnemonic to help me remember the formulas for the various chord scales. Most scales have at least two available tensions so a

chord symbol for a seventh chord plus two tensions covers 6 notes of a usually 7 note scale.
To me, to a great extent:
Ionian = Maj7(9 13). Lydian = Maj7(9 ♯11 13). Lydian ♯2 = Maj7(♯9 11 13) Etc.
Dorian = Min7(9 11 13). Aeolian = Min7(9 11). Phrygian = Min7(11). Etc.
Mixo-Lydian = Dom7(9 13). Lydian ♭7 = Dom7(9 ♯11 13). Mix ♭2♭6 = Dom7(♭9 ♭13). Sym Dim (m2, M2) = Dom7(♭9 ♯9 ♯11 13). Etc.
Locrian = Min7♭5(11 ♭13). Locrian ♮2 = Min7♭5(9 11 ♭13). Etc.
Sym Dim (M2, m2) = Dim7(♮7 9 11 ♭13). Sym Dim (m2, M2) = Dom7(♭9 ♯9 ♯11 13). Etc.
Etc.

Below I will go through this same process for the changes to All The Things You Are:





• Bar 1 starts off with F Aeolian (6th mode of A♭ major) mostly because of the key signature. When most people hear a Min7 chord out of the blue with no previous harmonic reference the regular scale is Dorian probably because there are no avoid notes.

The 2nd time through this progression however the chord-scale is clearly an Aeolian sound. The notes in question are D♭ or D♮. Chord can be analysed as Im7 in the key of F minor or as VIm7 in the key of A♭ major.

• Bar 2 has a B♭m7. There are no notes in B♭m7 that are not also in the A♭ major scale so our original group of notes need not change, unless you've been using D♮'s in the preceding chord-scale in which case there is no doubt now whether or not to use D♭'s. The resulting scale is B♭ Dorian (2nd mode of A♭ major). This chord can be analysed as IVm7 in F minor or as IIm7 in A♭ major.

• Bar 3's E♭7 also consists of notes that are diatonic to A♭ major so there is still no need to alter our original group of notes. The resulting scale with E♭ as root is E♭ Mix (5th mode of A♭ major). This is where we definitely leave the key feeling of F minor on our way to A♭ major in the next bar. This chord is certainly the V7 chord in A♭ major.

• Bar 4's A♭maj7 chord is our I chord. The A♭ major scale is still appropriate.

• Bar 5's D♭maj7 chord still uses notes that are within the A♭ major scale so we don't need to change anything

yet. The resulting scale is D♭ Lydian (4th mode of A♭ major).

• Bar 6, however, has a G7 chord. G7 contains the notes B♮ and D♮ which are foreigners in the key of A♭ major. We need to adjust our set of pitches to accommodate this new sound. The resulting scale is G Mix ♭2♭6 (the 5th mode of C Harm Min). Try using B♭'s as well as the B♮'s.

Often in this key the chord G7 would be used as a secondary dominant targeting the IIIm7 chord, Cm7. The fact that the next chord is actually Cmaj7 instead will make us feel as if a modulation or key change into C major has occurred. By using more notes from the key of C major on the G7 chord (Eg. A♮ and E♮) we can strengthen this C major feeling by foreshadowing what is about to happen. By retaining the A♭ and E♭ from the A♭ major scale we are more surprised when the C major chord arrives.

• In Bar 7 the Cmaj7 chord occurs. Most people will be using the C major scale here because of the strong V7 > I cadence that has just happened. The major scale is simply the most normal thing to hear on a I chord. Anything else sounds exotic. There is a case to be made for continuing to use the note A♭ on the chord-scale here though, partly due to where we have just come from but also due to where we are going. The next few bars will be seen to be based on the key of E♭ major. A♭ is an important note in E♭ major.

• Bars 9 though 13 contain a sequence of chords that is identical to those in bars 1 through 5. When you first hear the Cm7 chord you don't know yet what will happen afterwards though. If you treat it as VIm7 in the key of E♭ you will be using the C Aeolian scale (6th mode of E♭ major) which has an A♭ in it. A♭ is an avoid note on the chord. A♮ fits the chord better vertically (as T13). If you've been using A♮ on the preceding chord as most people do then using A♭'s on this chord may sound a little out of place. But not for long because A♭ is a chord tone on the next chord. Most people use Aeolian on this Cm7 by the way.

• At bar 10 there is no question anymore as to whether A♮'s or A♭'s are appropriate because A♭ is in the Fm7 chord that is happening. Fm7 will be heard as the IVm7 chord in the key of C minor or as the IIm7 chord in the key of E♭ major. The analysis here is a little ambiguous. The chord-scale however, is not. Clearly F Dorian (2nd mode of E♭ major) is the strongest choice.

• Bar 11's B♭7 chord is comprised of tones that are found within the preceding set of tones. There is no need to change anything. The resulting chord-scale is B♭ Mixo-Lydian (5th mode of E♭ major).

• Bar 12 brings us to the I chord in our new yet temporary key, E♭ major. E♭ Ionian is the most regular scale to use here.

• Bar 13's A♭maj7 chord is the IV chord in E♭ major. No need to change anything here either. The resulting chord-scale is A♭ Lydian (4th mode of E♭ major).

• Bar 14 starts with an Am7♭5 chord. The chord's root A♮ must be accommodated for in our chord-scale for this chord. The other notes are fine. The result is A Locrian (7th mode of B♭ major).

The chord immediately following is D7. It has an F♯ which is new and it continues to use the note A♮. The other notes in the scale don't really need to change yet. Our new chord-scale for this chord is D Mix ♭2♭6. Try using F♮'s as well as the F♯'s.

The next chord is Gmaj7 and we can see that these two preceding chords have formed a classic IIm V I progression which serves to make the G chord feel like a tonic when we get there. In order to strengthen this feeling of the key of G major you might start using some more notes from that key before you actually arrive. Again this is a foreshadowing technique. So on the D7 chord you might use E♮ and/or B♮ in your scale instead of the E♭ and B♭ that I am suggesting. However, the chords being used in this IIm7♭5 V7 are usually associated with a cadence in a minor key. We think we are going to G minor but when we arrive we find that we have been tricked and G major is where we land. You have some choices then in this transition to the Gmaj7 chord. You can choose to let your listener know that it is coming up or sustain the ruse as long as possible.

• At bar 15 we have arrived at a Gmaj7 chord after a progression that looked like it was going to target a Gm

chord. Most people will simply use the G major scale but there is a case to be made for continuing to use the note E♭ in your chord scale, sort of like a hangover from the past. It could sound pretty out of place if you continue with it for too long though.

• Bars 17 though 20 are completely diatonic to the G major scale and there is no need to use any other group of notes. The chord-scales are A Dorian (2nd mode of G major), D mix (5th mode of G major) and G Ionian (1st mode of G major).

• At bar 21 an F♯m7 chord occurs. It contains a C♯ which must be accommodated in the scale. The result is F♯ Phrygian (3rd mode of D♯/E♭ major).

Some charts for this tune will either have an F♯m7♭5 chord here or an F♯m7(omit 5th) chord in which case you would continue to use C♮'s via the F♯ Locrian scale (7th mode of G major).

But looking ahead again we see the classic II V I progression going into the key of E major. if you want to let your listener know what is coming up you might start using more sounds from E major (Eg. G♯ and D♯) at this point, on the IIm chord. Lots of people use F♯ Dorian at this point in the tune.

• Bar 22 has B7 occurring. It contains the note D♯ which is new for us (unless you used F♯ Dorian on the last chord). The resulting chord scale if you are coming from F♯ Phrygian would be B Mix ♭6 (5th mode of E Jazz Minor) which continues to use the note G♮.

Most people will use B Mixo-Lydian here though. It has the G♯ in it that is so important on the next Emaj7 chord and the C+7 chord following it.

Alternatively, you could use a Mix ♭2♭6 scale here. This will make it feel as if you are still in the key of E minor / G major till the last minute. If you use this sound try using D♮ as well as D♯.

• Bar 23. Most folks would use E Ionian but I like to mess around with scales that use C♮ because of the next chord.

• Bar 24 has the pivot chord that gets us back to our original key. There are lots of ways to colour this chord. I have chosen C Mix ♭2♭6 (5th mode of F Harmonic minor) as a starting point only. Try using E♭ as well as E♮ here. Almost any scale that contains the chord tones of C7 (and some that don't) will do here.

• Bars 25 through 29 are identical to bars 1 through 5. The chords are completely diatonic to A♭ major.

• Bar 30 uses a D♭m7 which has the notes F♭ and C♭. The scale I have picked here, D♭ Dorian (2nd mode of C♭ major), also uses the note G♭. This is partly to foreshadow the next chord but also it is just common practice. One of the most normal and pretty sounding things you can add to pretty much any minor chord is the Perfect 11th. A ♯11 works too but is not nearly as pretty. All three of the modal scales from the major scale that fit Min7 chords have the P11th available as a tension. It is uncommon to hear a ♯11 instead.

The next chord G♭7 uses notes that are all found in the preceding chord scale but I have suggested using C♮ instead of C♭. This is to help set up the next chord A♭maj7/C. If you use the scale with C♭ you will be playing G♭ Mix (5th mode of C♭ major). If you use the scale with C♮ you will be playing G♭ Lydian ♭7 (4th mode of D♭ Jazz Minor).

• Bar 31 takes us back to our I chord even though it is in 1st inversion. A♭ Ionian is the appropriate scale. you might want to think of this as being C Phrygian though because of the C in the bass. Lots of times you'll see this sound notated as Cm7 too.

• Bar 32 has a Dim7 chord with C♭ as it's bass note. This is usually written as either C♭dim7 or Bdim7. I have written it as A♭dim7/C♭ because it makes it easier to see and to spell the notes in the scale.

If we calculated the scale from C♭ we might get something like C♭ D♭ E𝄫 F𝄫 G𝄫 A𝄫 and B triple flat which is just too damn weird.

If we calculated from B we might get B C D E♭ F G A♭ which is OK but has too many avoid notes.

The chord in question really only has two notes in it that are not in the A♭ major scale, namely C♭ or B and E♭♭ or D. The scale that I have picked has all the available tensions that are possible for this chord that are also found within the key. My scale is A♭ (R) B♭ (T9) C♭ (♭3) D♭ (T11) E𝄫 (♭5) F (𝄫7) G (T 7). This is the A♭ Jazz Minor ♭5 scale.

Had I constructed a scale for Bdim7 with B♮ and C♮ it may have been inside the key but C♭ and D♭ have the advantage that D♭ while also being within the key is an available tension too whereas C♮ is an avoid note.

Had I constructed a scale for Bdim7 using D and E♭ I would also have gotten an avoid note, the E♭. I could use E♮ instead because it fits the chord vertically but it is a little bit outside of the key. My scale avoids the confusion here with E♭ and E♮ completely.

Most chord-scales for Dim7 chords are not as cut and dried as they are for the other chord types. This is why many players just opt for always using the Symmetrical Diminished (M2, m2) scale on all Dim7 chords. There are no avoid notes just some notes that are a little bit outside of the key and many interesting intervallic patterns can be derived from the scale.

• Bar 33 has a B♭m7 chord that is clearly being used as IIm in a IIm7 V7 Imaj7 progression in A♭ major. It normally takes the B♭ Dorian scale (2nd mode of A♭ major). A case could be made for using a scale with C♭'s being held over from the last chord but it would be a pretty weak case.

• Bar 34 is E♭ Mixo-Lydian.

• Bar 35 is home base, A♭ major.

• Bar 36 has the turnaround chords to get us back to the F minor chord at the top of the tune. The G7 chord contains B♮ and D♮ so our scale will also. The result is G Mix ♭2♭6 (5th mode of C Harmonic minor). Try using B♭'s as well as the B♮'s.

The C7 chord has an E♮ so it's chord-scale should too. What kind of D makes sense on this chord? D natural retains the sound of the chord just played while D♭ helps set up the key feeling for F minor that is coming up. Most people use D♭'s here. The resulting scale is C Mix ♭2♭6 (5th mode of F Harmonic Minor). Try using E♭'s as well as the E♮'s.

XIV. Some Simple Techniques For Harmonising Melodies

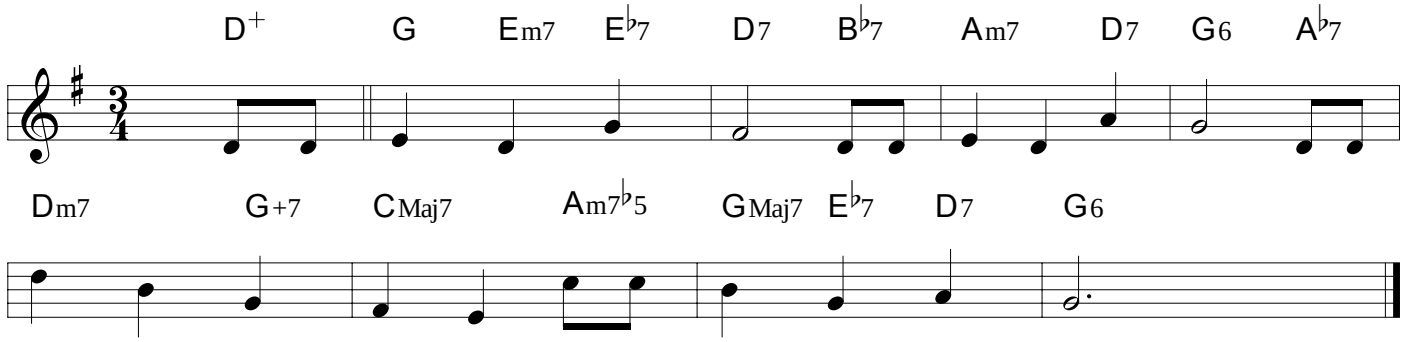
Note: Some fingerstyle technique or pick + fingers will be required for many of the following examples.

A. Melody + Bass Note

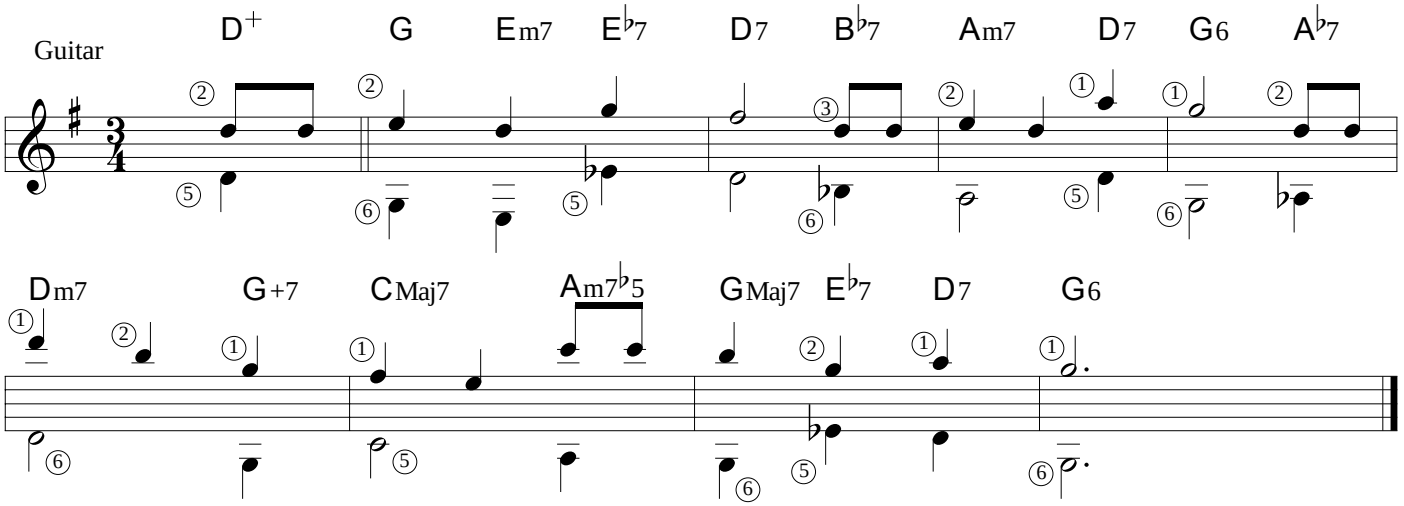
This is perhaps the most intuitive and also the most useful way to get started with chord melody arranging on the guitar. It's a simple idea really. Find a fingering to play the melody and the Root of the chord at the same time and see if there are any chord forms for the chord that you are already familiar with within the reach of your fretting hand.

1. If you are working from a Concert lead sheet play the melody in the octave it actually sounds. Remember that Concert Middle C equals the 3rd spaced C on a part written specifically for guitar. If you see Middle C on a Concert lead sheet it is the C that is fingered on the 2nd string - 1st fret or the 3rd string - 5th fret, etc.
2. Play the Root in the lowest possible location that your hand will allow so that the chord sounds as full as possible. We are trying here to develop the ability to perform solo so in general the fuller it sounds the better.
3. If there is a series of melody notes all on the same chord then try to find a fingering that will allow you to sustain the Root in the bass while you execute the melody notes, at first. There will, however, be many situations where you will want to re-strike the Root, perhaps even on a different string and/or in a different octave.
4. See if there are any chord forms (aka "grips") that are already familiar to you that lie within your fretting hand's reach.

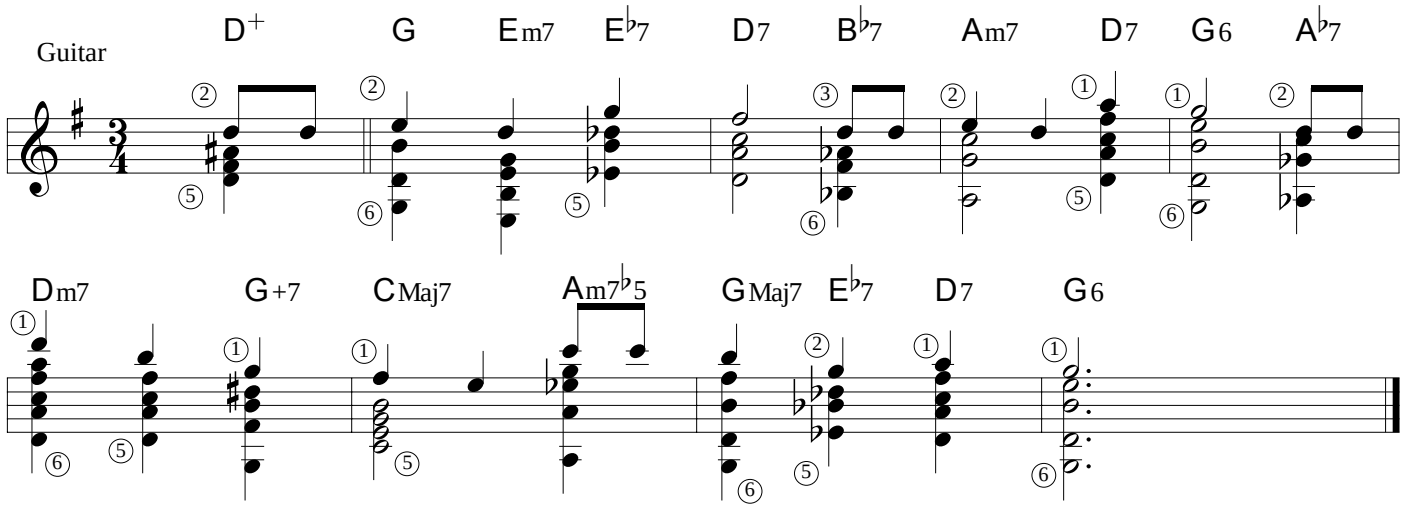
If you were presented with the following lead sheet:



You might start out like this:



Which could become this:



or something similar.

Try this with many tunes. Try this with EVERY tune you are working on!

B. Harmonising A Melody With Shell Voicings

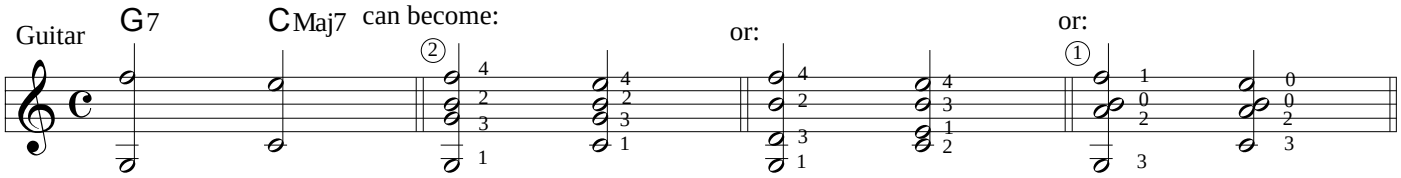
1. Four Note Voicings

Goal: To harmonise a simple melody (consisting mostly of notes with a long duration) with a 4 note voicing.
Note: Use voicings with the Root on the bottom for now. Also, for this to work the melody must be fingered on either the 1st, 2nd or 3rd strings.

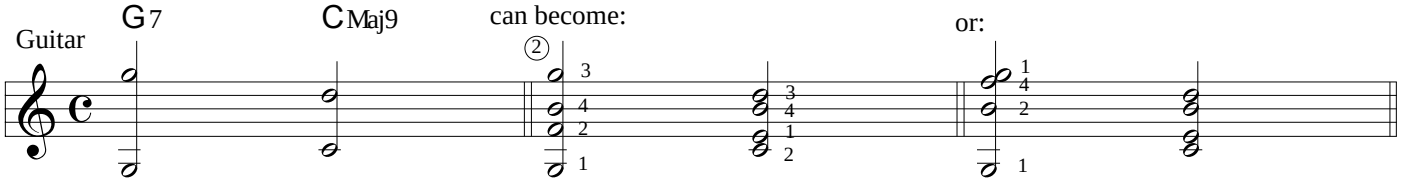
1. If the melody note is either the 3rd or the 7th of the chord then first figure out the lowest possible spot on the fretboard where you can finger the Root along with the melody note.

If the melody is the 3rd of the chord then between the melody and the Root add the 7th and either:
• the 5th
• or an available tension (be careful not to create any bad sounding ♭2's/♭9's)
• or double the Root (in addition to the bass note - in a higher octave of course)
• or double the 3rd (in a lower octave than the melody).

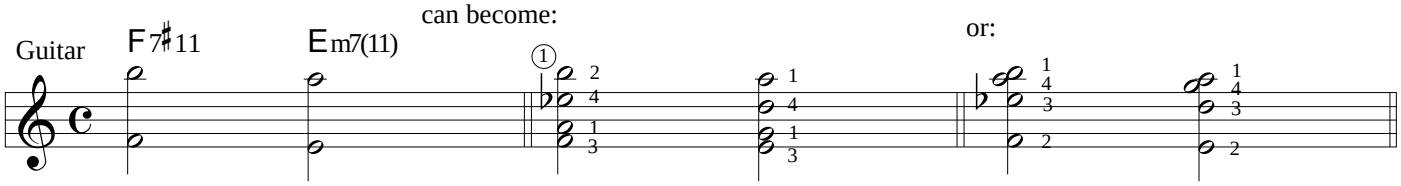
If the melody is the 7th of the chord then between the melody and the Root add the 3rd and either
• the 5th
• or the Root (in a higher octave than the bass note) or
• or a colour tone.
Doubling the 3rd in a voicing with the 7th in the lead (i.e. the top note) would result in an awkward voicing. It is usually not best not to double the 7th but sometimes it can work very nicely.



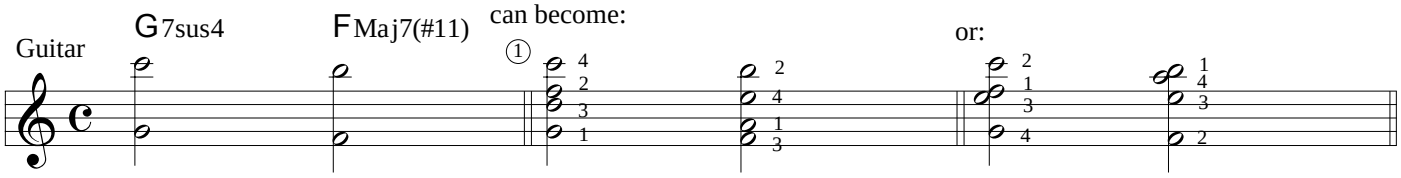
2. If the melody is the Root (or the 9th), figure out the lowest possible spot on the fretboard where you can finger the Root in the bass at the same time as the melody note. Add the 3rd and the 7th wherever comfortable.



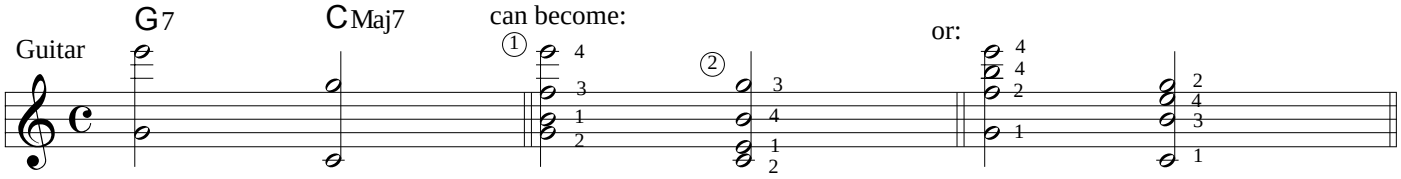
3. If the melody is the 11th and the 11th is an available tension then simply place a typical shell (R 3 7 or R 7 3) below it with the Root as low as possible.



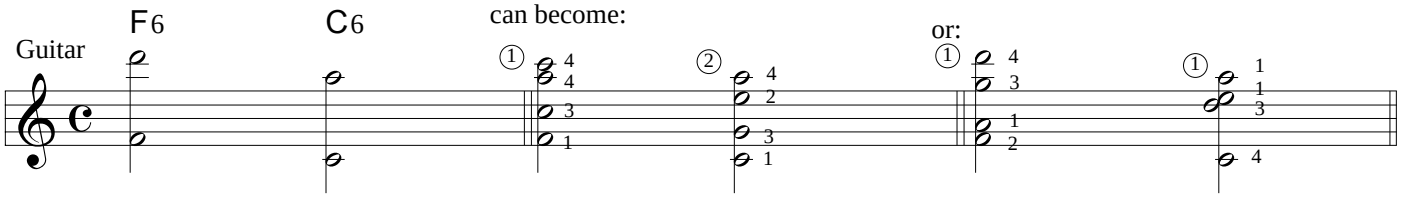
4. If the melody is a 4th above the Root but it is an avoid note then use it INSTEAD of the 3rd. (Ie. sus4) Voice this chord according to step 1 above.



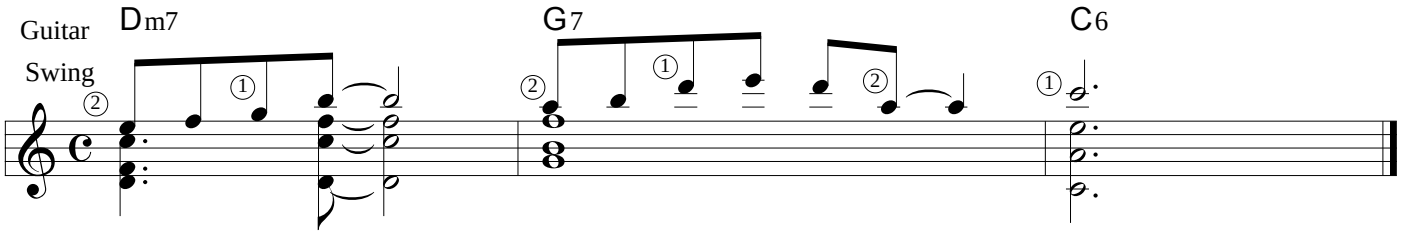
5. If the melody is the 5th or the 13th then simply place a typical shell below it with the Root as low as possible.



6. If the melody is the 6th on a 6th chord then treat the 6th as if it were a 7th and voice the chord according to step 1 above. The 6th can be doubled occasionally if needed.



7. If the melody is moving too quickly, try to find a typical shell that you can sustain underneath it.



8. When playing with a bass player any one of the above suggestions should work fine without the Root. in the bass. (I.e. a three note voicing instead of a 4 note voicing.)

2. Three Note Voicings

Goal: To harmonise a simple melody consisting mostly of notes with a long duration with a 3 note voicing.

1. If the melody note is the 3rd (or the 4th on a sus4 chord) the strongest voicing when playing without a bass player is:

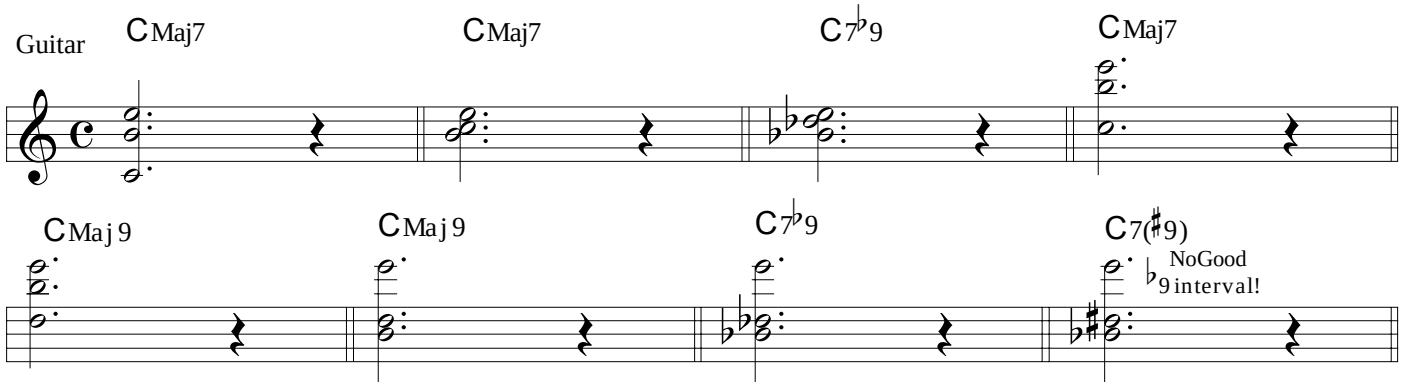
3 or 4
7
R

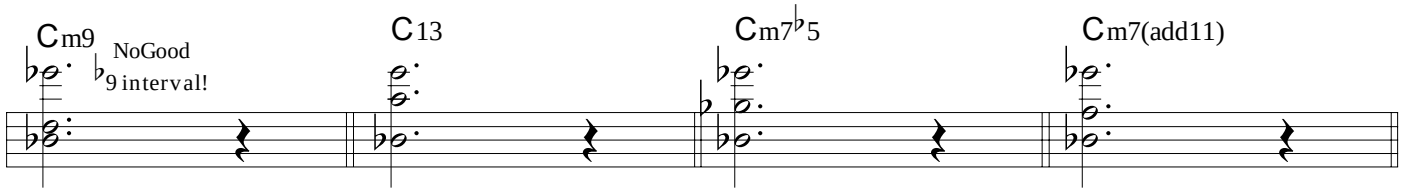
Other possibilities when playing with a bass player are are:

3 or 4
7
R or 9 or 5 or 13 or 11

and:

3 or 4
R or 9 or 5 or 13 or 11
7





2. If the melody note is the 7th or 6th on a 6th chord the strongest voicing when playing without a bass player is:

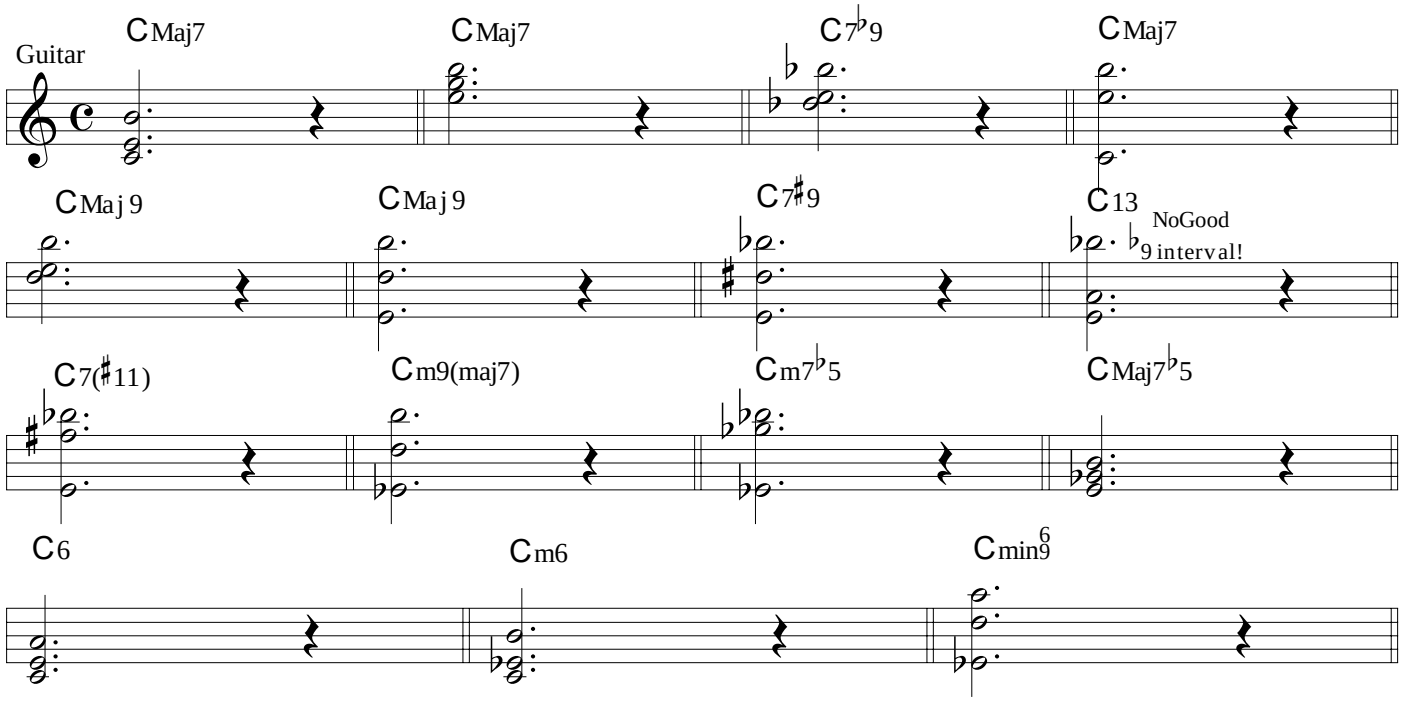
7
3 or 4
R

Other possibilities when playing with a bass player are are:

7
3 or 4
R or 9 or 5 or 13 or 11

and:

7
R or 9 or 5 or 13 or 11
3 or 4



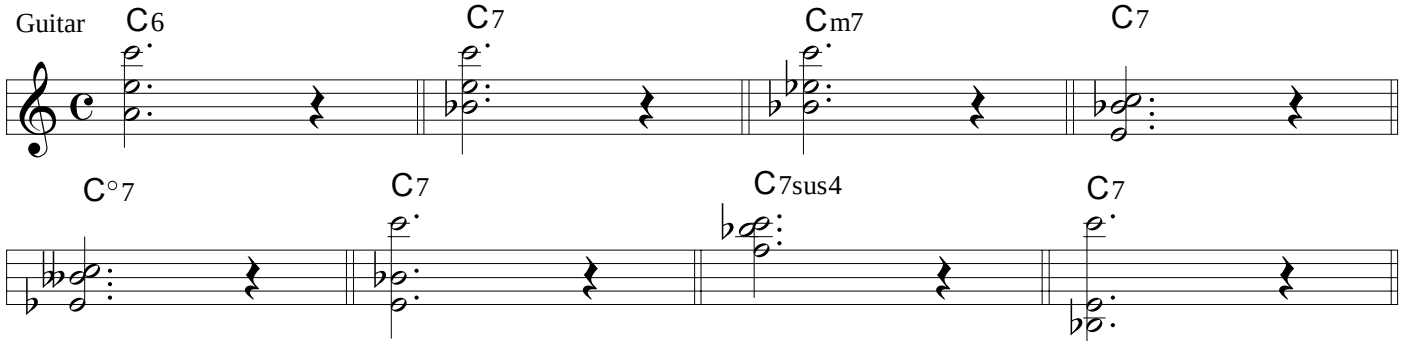
3. If the melody note is the Root or 9th the strongest voicings are:

R or 9

7
3 or 4

and:

R or 9
3 or 4
7



4. If the melody note is the 5th, 11th or 13 the strongest voicings are:

11 or 5 or 13
7
3 or 4

and:

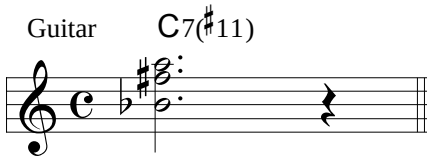
11 or 5 or 13
3 or 4
7

5. It is rare to omit the 3rd or 7th from a 3 note voicing for a seventh chord but sometimes it can work nicely.

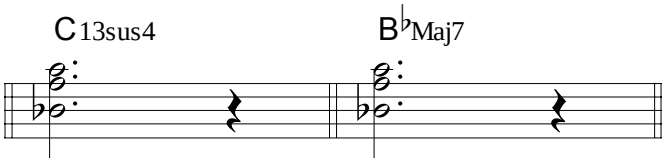
To do this well one should understand the idea of an acoustical root as explained by Gordon Delamont in Modern Harmonic Technique.

In a nutshell, the idea is that chords are heard as a composite of the overtones of an acoustical root which may or may not be present in the actual voicing. The acoustical root is a function of the difference tones that exist when the various intervals within a chord voicing are sounded. Each interval in the chord is heard as if it were a partial in the overtone series of the acoustical root. We tend to hear the intervals of a chord voicing as partials of a fundamental tone, the fundamental tone that has the partials in the lowest frequency ratios to one another.

Again this is a topic that requires a separate text to go into it fully but here are some examples of a few voicings with some fairly exotic omissions and my rational for what is going on.



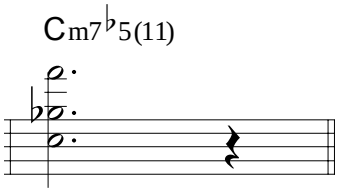
The acoustical root of these intervals is C. These tones will be heard as partials 13, 11 and 7. The ear fills in the missing partials.



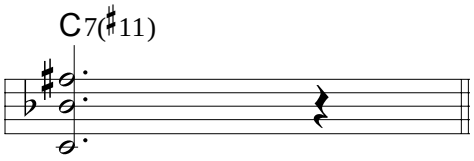
The acoustical root of these intervals is B♭. When this voicing is played as written the partial numbers are 7 , 6 and 4. Note: The major 7th interval is considered an altered 7th partial (7).

When playing this voicing with a bass player and he plays a low C, these tones will be heard as if C were the root with the partial numbers 13, 11 and 7.

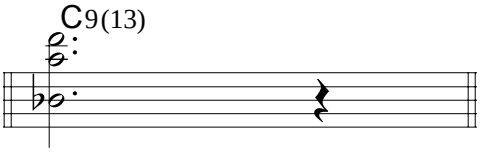
The perfect 11th, when used as a tension is also considered to be an altered 11th partial (11).



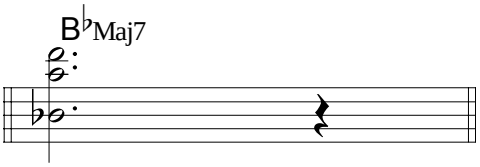
Min7♭5 chords are chords that do not contain their own acoustical root. The acoustical root of Cm7♭5 is A♭. The intervals in the above chord will be heard as having the following partial numbers: 13, 7 and 5 with A♭ as the acoustical root.



Partial numbers 11, 7 and 3.



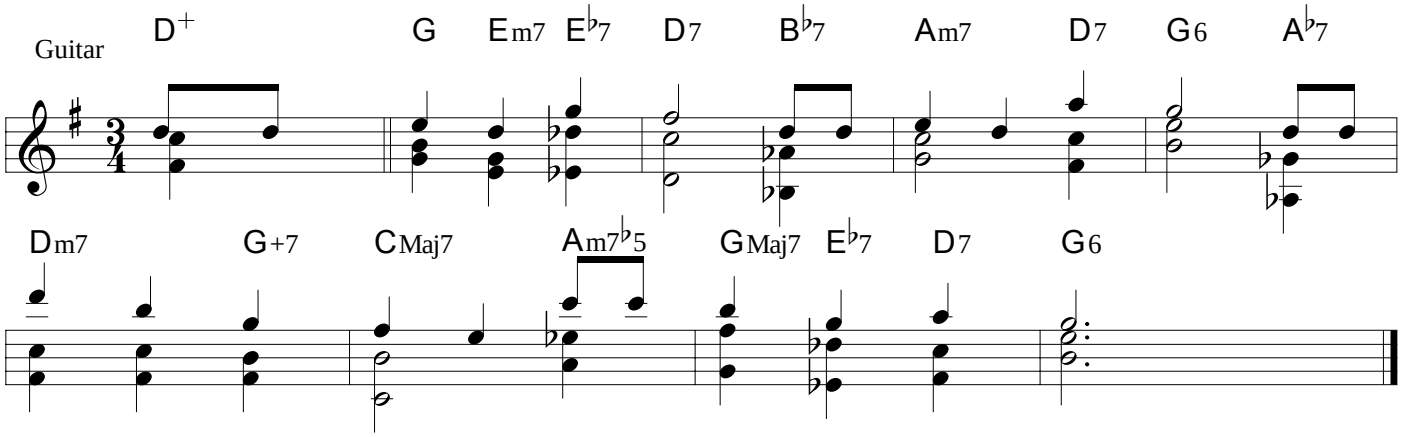
These tones will be heard as partial numbers 18, 13 and 7 when the bass player plays a low C. Otherwise their acoustical root is B♭ as below:



Partial numbers 10, 7 and 4.

I'm sorry to keep referring you elsewhere but this is a tricky topic and I have yet to see anybody explain it as well as Gordon Delamont has. If you don't already know about acoustical roots then my little attempt at an explanation is not likely to help. On the contrary, it has probably confused the hell out of you. Check out the Delamont books. You won't be sorry.

Here's our old favourite with 3 note voicings:



Attempt to harmonise many, many tunes from your fake book using all of these techniques.

XV. Block Chords

A. Construction

The term “block chords” is used by classical musicians to describe chords where all the notes are sounded simultaneously as opposed to those that are arpeggiated or those that occur as a result of contrapuntal techniques where all the chord tones are not sounded on the same beat.

In the jazz community the term “block chords” has come to mean an arranging technique from the Big Band era whereby a melody is harmonised with the other voices moving in strict parallel motion (for the most part) and in locked rhythm with the melody. The technique was widely used by all the arrangers of the Big Band era and it continues to have it’s uses today. It differs from classical techniques of harmonisation in the way that the voice leading is handled. Parallel 5ths and 4ths abound and 7ths resolving in other voices is a matter of little concern. It is not contrapuntal in nature as the 4 part chorale texture voice leading techniques taught at every conservatory are. It is really just a thickening of the melody. Whether or not the other parts have any strong melodic logic is a secondary consideration.

In many ways block chords are like painting by numbers. We simply fill in the remaining chord tones underneath our melody note. It is a technique that applies mostly to seventh chords. It is less effective with music that is primarily triadic in nature.

We start with “Close Voice” chords where the 4 chord tones are as closely packed together as possible under the melody note (aka the “Lead”). We then create voicings where the 2nd voice from the top is dropped down an octave (“Drop 2 Voicings”), where the 3rd voice from the top is dropped down an octave (“Drop 3 Voicings”), where the 4th voice from the top is dropped down an octave (“Drop 4 Voicings”), where the 2nd and 3rd voices from the top are dropped down an octave (“Drop 2 & 3 Voicings”) and where the 2nd and 4th voices from the top are dropped down an octave (“Drop 2 & 4 Voicings”).

In a Close voicing if the chord’s Root is in the lead (i.e. the melody):

- the tone directly beneath it will be the chord’s 7th (or the 6th degree in the case of a 6th chord).
- the next note from the top will be the the chord’s 5th degree.
- the note on the bottom will be the chord’s 3rd degree (or 4th degree in the case of a Sus4 chord).

In a Close voicing if the chord’s 7th (or 6th) is in the lead (i.e. the melody):

- the tone directly beneath it will be the chord’s 5th degree.
- the next note from the top will be the the chord’s 3rd degree (or 4th degree in the case of a Sus4 chord).
- the note on the bottom will be the chord’s Root.

Pay special attention to the voicings that place the Root on the bottom. They are by far the most commonly used voicings.

In a Drop 2 voicing if the chord’s 3rd (or 4th degree in the case of a Sus4 chord) is in the lead (i.e. the melody):

- the tone directly beneath it will be the chord’s 7th (or 6th) degree.
- the next note from the top will be the the chord’s 5th degree.
- the note on the bottom will be the chord’s Root. It has been dropped an octave from where it would have been situated in a Close voicing.

In a Drop 3 voicing if the chord’s 5th is in the lead (i.e. the melody):

- the tone directly beneath it will be the chord’s 3rd degree (or 4th degree in the case of a Sus4 chord).
- the next note from the top will be the the chord’s 7th (or 6th) degree.
- the note on the bottom will be the chord’s Root. It has been dropped an octave from where it would have been situated in a Close voicing.

Etc.

When the melody is a 9th in relation to the chord's Root it will be used as if it were the Root. The terminology is:

"9 subs for 1".

When the melody is a 4th (or 11th) in relation to the chord's Root and a Sus4 chord is desirable it will be used as if it were the 3rd. The terminology is:

"4 subs for 3".

Note: Often times on a chord where the 11th IS an available tension it will be used as a Sus4 anyways (i.e. no 3rd present).

When the melody is an 11th (or 4th) in relation to the chord's Root and 11 is an available tension on the chord it will be used as if it were the 5th. The terminology is:

"11 subs for 5".

When the melody is a 6th (or 13th) in relation to the chord's Root and a 6th chord is desirable (i.e. no 7th) it will used as if it were the 7th. The terminology is:

"6 subs for 7".

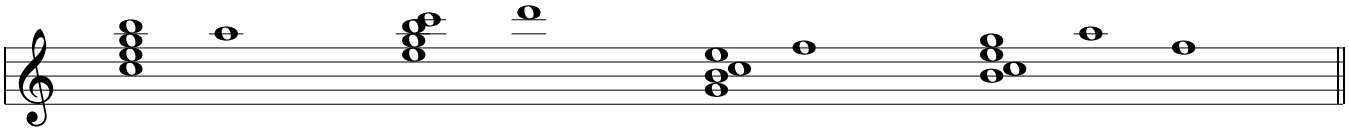
Note: Dominant 7 chords will not sound like dominant seventh chords if the ♭7 is omitted.

When the melody is a 13th (or 6th) in relation to the chord's Root and 13 is an available tension on the chord it will used as if it were the 5th. The terminology is:

"13 subs for 5".

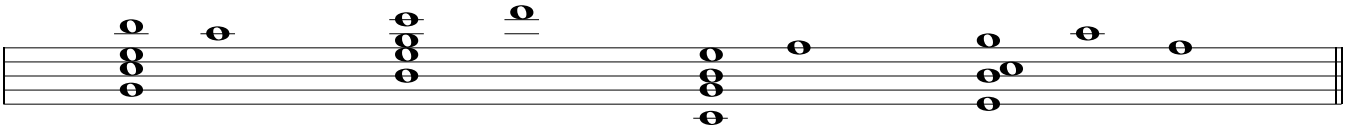
<u>Close Voice</u>

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



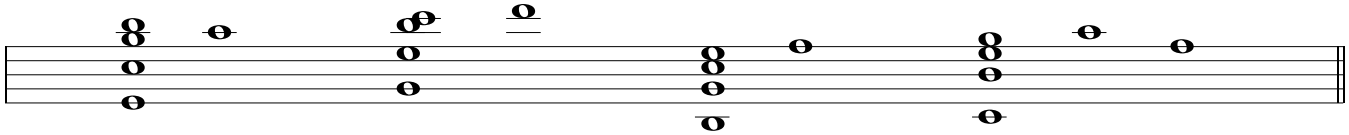
<u>Drop 2</u>

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



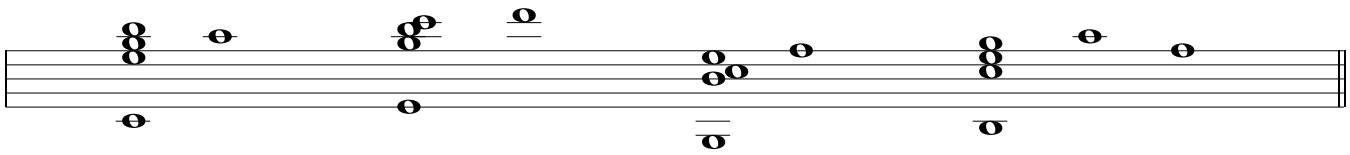
<u>Drop 3</u>

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



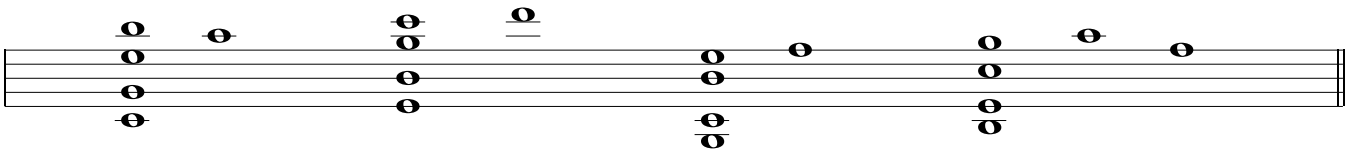
<u>Drop 4</u>

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



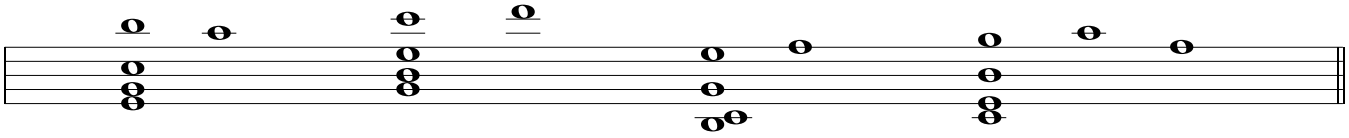
Drop 2 & 4

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



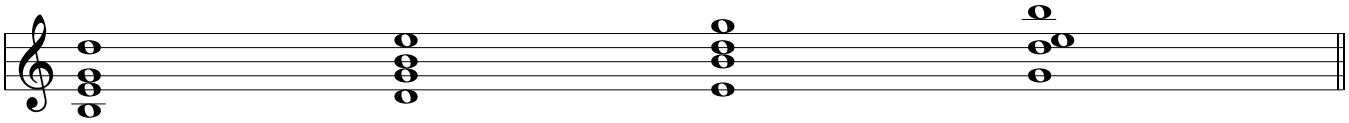
Drop 2 & 3

7 or 6 in the Lead Root or 9th in the Lead 3rd or 4th in the Lead 5th, 13th or 11th in the Lead



Available tensions can be used in the other voices too, not just in the lead!

Cmaj9 - Drop 2

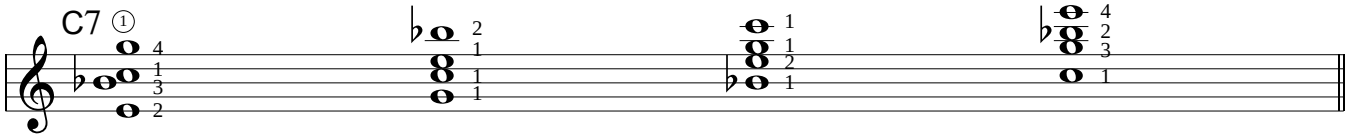


9 subs for 1

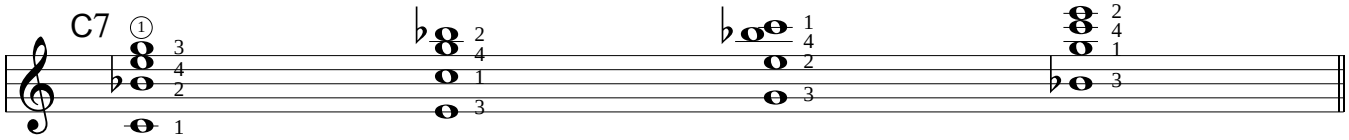
On guitar the most common voicings, most of the chords you play everyday, are either Drop 2 voicings or Drop 3 voicings.

Most Close voice chords are impossible on guitar by normal means because they would require super human abilities to stretch the fingers. Close voicings are the most common things you hear piano players doing and you hear them in arrangements for several instruments all the time. It is important that you study and attempt to play Close voice chords on the guitar anyways.

The vast majority of Drop 2 voicings can be fingered on 4 consecutive strings.



Most fingerings for Drop 3 voicings will use 3 consecutive strings for the 3 highest notes and skip a string for the bass note.



The other types of voicings do not yield such regular string groupings.

1. Learn all inversions of Cmaj7, Fmaj7, B♭maj7, thru G maj7 with Drop 2 voicings using string groups:
[1, 2, 3 & 4], [2, 3, 4 & 5], and [3, 4, 5 & 6].

Once you have worked out these fingerings treat the playing of them as a technical exercise. Start at a slow tempo and go up and down fretboard playing the Drop 2 inversions smoothly, cleanly and accurately. Most

Drop 2 chords can be strummed with a pick. Wes Montgomery used to strum with his thumb. The vast majority of voicings Wes used in his chord melody playing style were Drop 2 voicings.

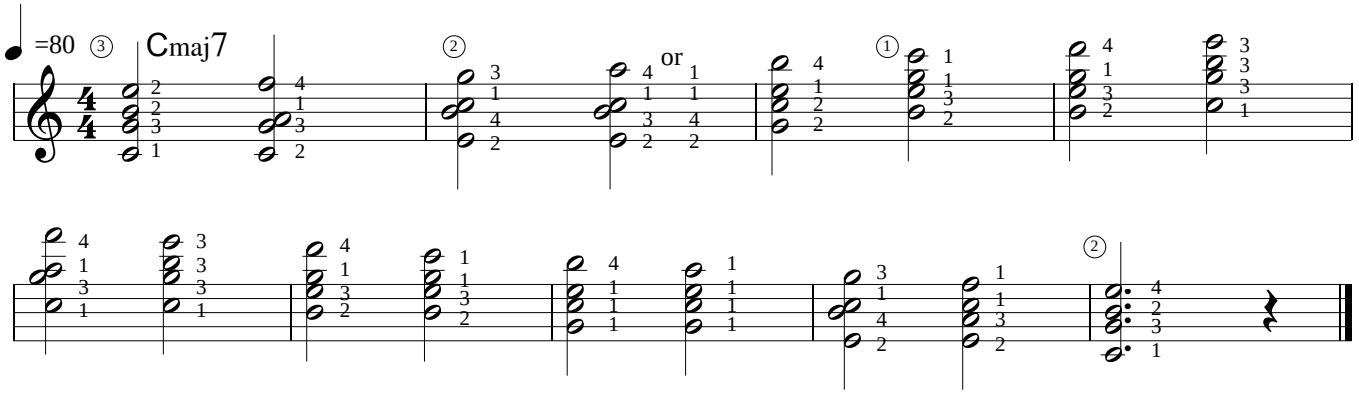
2. Repeat the above for Dom7, Min7, Min7♭5, Dim7, Maj6, Min6, Dom7sus4, Maj7♭5, Dom7♭5, Maj7♯5, Dom7♯5, Min(maj7) etc.

3. Using string groups [1, 2, 3 & 5] and [2, 3, 4 & 6] repeat Exercises 1 and 2 above with Drop 3 voicings.

4. Experiment with Drop 4, Drop 2 & 4 and Drop 2 & 4 voicings.

5. Write out and play a Drop 2 voicing for every melody note of All The Things You Are, But Beautiful, Giant Steps and many many other tunes.

Here is an example of the C major scale harmonised with Drop 2 voicings for Cmaj7:



Notes:

• The 2nd chord in bar 1 has F in the Lead. I am treating it as a Sus4 chord (4 subs for 3) because the regular chord's maj 3rd interval does not sound well with the 4th in the Lead. I have also replaced the Cmaj7's B♮ with an A♮, effectively making the chord temporarily a C6sus4 chord. This is because the B♮ would form a tritone with the F and I find the A♮ more pleasant.

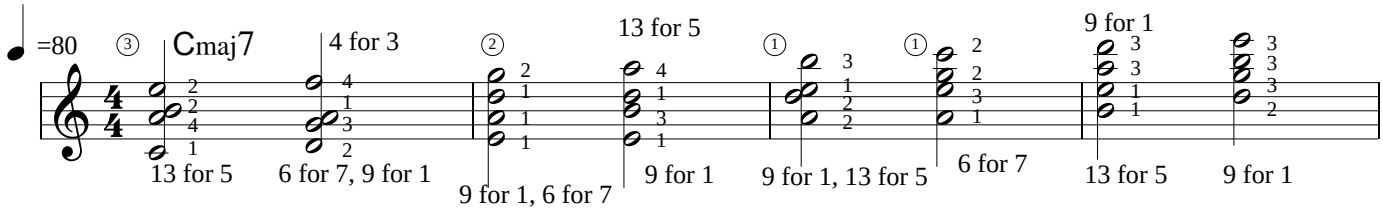
• The 2nd chord in bar 2 has A in the Lead and I am treating it as T13. The alternate fingering suggested would have the high A on the 1st string and needs to be played with some sort of a fingerstyle technique.

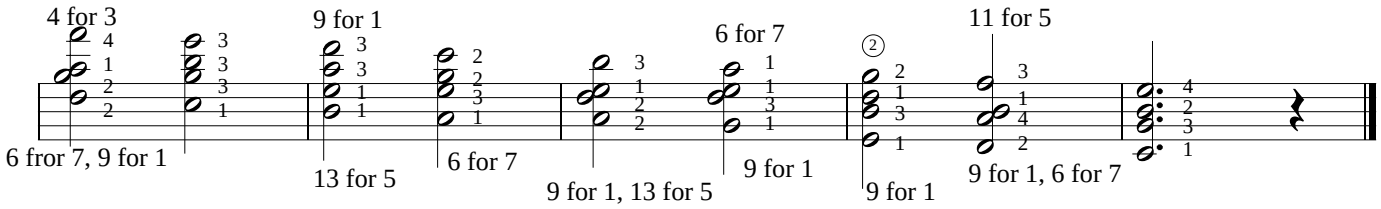
• The 2nd chord in bar 3 has the Root, C in the Lead. The ♭9 interval that is formed when the major 7th is placed beneath the Root is usually found to be objectionable and most players will use the maj 6th rather than the maj 7th. I have left it in because I find that this sound is becoming more and more acceptable and in this instance the dissonance does not last very long and the chord's metric position is not really being accented.

• The 2nd chord in bar 5 has A in the Lead. I am treating it as if it were a C6 chord this time, just for variety's sake.

• The 2nd chord in bar 8 has F in the lead. I am treating it this time as a T11. T11 is not usually considered to be available on a chord that has a maj 3rd but again this is a sound that is becoming more and more acceptable and in this case it is not being unduly accented.

Here is a similar harmonisation of the C major scale with Drop 2 Cmaj7 voicings but I've included some Available Tensions in the lower voices. These chords will sound better with a bass player playing a low C.





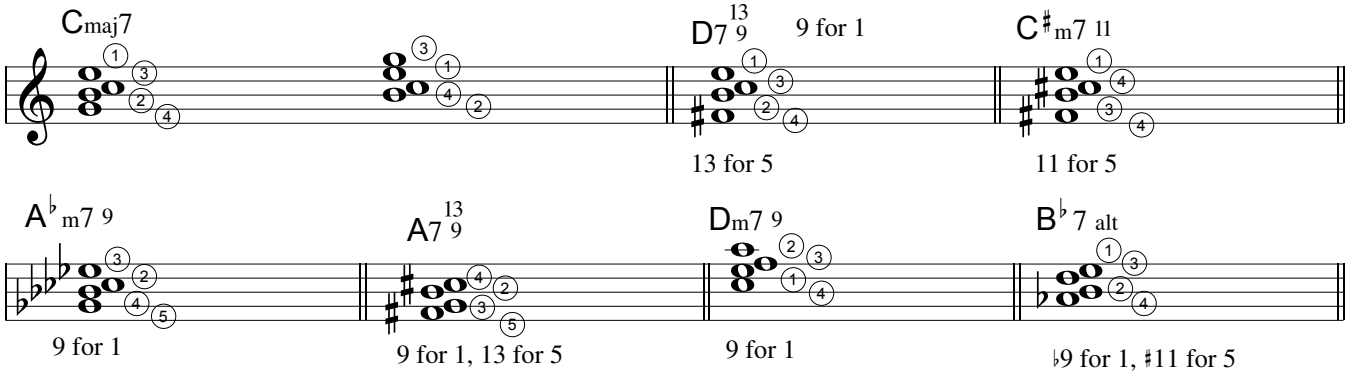
Attempt to improvise harmonised melodies with Drop 2 voicings using the correct chord-scales on many tunes from your fake book.

Repeat with Drop 3, Drop 4, Drop 2 & 4 and Drop 2 & 3.

Try to work out some stuff with Close voicings too. Learn which Close voice chords are possible on the guitar and which are not.

There are some tricks that can be used to make certain Close voicings possible on the guitar:

1. Open strings.



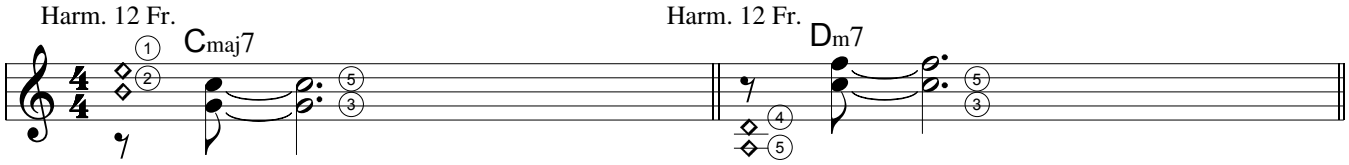
2. Harmonics.

Natural or artificial harmonics can be used to move a note or two within a spread voicing up an octave thereby yielding a Close voicing. Lenny Breau was a master of this technique.

A natural harmonic is achieved by lightly touching an open string at a node and striking it. A node is a spot along the string that evenly divides the length of the string by a whole number. (i.e. 1/2, 1/3, 1/4, etc.). On the guitar the most audible and therefore useful harmonics are found at the 12th fret (1/2) and the 7th fret (1/3).

The natural harmonic at the 12th fret is 1 octave higher than the note produced by the open string.

The natural harmonic at the 7th fret is a perfect 12th higher than the note produced by the open string.



Artificial harmonics are achieved by using the 1st finger on the picking hand to lightly touch a string 12 frets above a note that is being fretted by the fretting hand and plucking the string with the picking hand's thumb.

Any fingering for a Drop 2 voicing can be played as a Close voicing if the bottom note is played up an octave via an artificial harmonic. The remaining notes in the chord are struck with the remaining fingers on the picking hand.

Of course, both of these technical tricks discussed for enabling Close voicings (open strings, and harmonics) can also be used with any other type of voicing if desired.

B. Voice Leading

When harmonising a melody with block chords the voice leading is not really a consideration because all 4 voices simply move primarily in parallel motion. Any dissonant intervals that are resolved are done so more or less as a function of the progression itself rather than any conscious voice leading techniques.

However, much can be learned about voice leading and about smooth line writing by observing how one block chord voice leads into another block chord when there is no melody to consider. The tones of the first chord will simply join into the next with the least amount of movement in all 4 voices overall.

Between any two chords there are likely to be some common tones and if so, we will attempt to retain them. The remaining tones should move by step as opposed to leaping if possible.

There are 6 possible types of root motion in a progression of chords:

1. Root moves up a 4th or down a 5th.
2. Root moves up a 5th or down a 4th.
3. Root moves up a 2nd. Down a 7th will not be considered here as it is rather clumsy.
4. Root moves down a 2nd. Up a 7th will not be considered here.
5. Root moves down a 3rd. Up a 6th will not be considered here.
6. Root moves up a 3rd. Down a 6th will not be considered here.

When the root motion is up a 4th:

• The first chord's Root will either be a common tone with the next chord's 5th or it will move by step to the 5th.

• The first chord's 3rd will either be a common tone with the next chord's 7th or it will move by step to the 7th.

• The first chord's 5th will move by step to the next chord's Root.

• The first chord's 7th will move by step to the the next chord's 3rd.

The following examples use the diatonic 7th chords in C major going through cycles of the 6 possible root motions. They are all Drop 2 voicings and have been voice lead as smoothly as possible from one chord to the next.

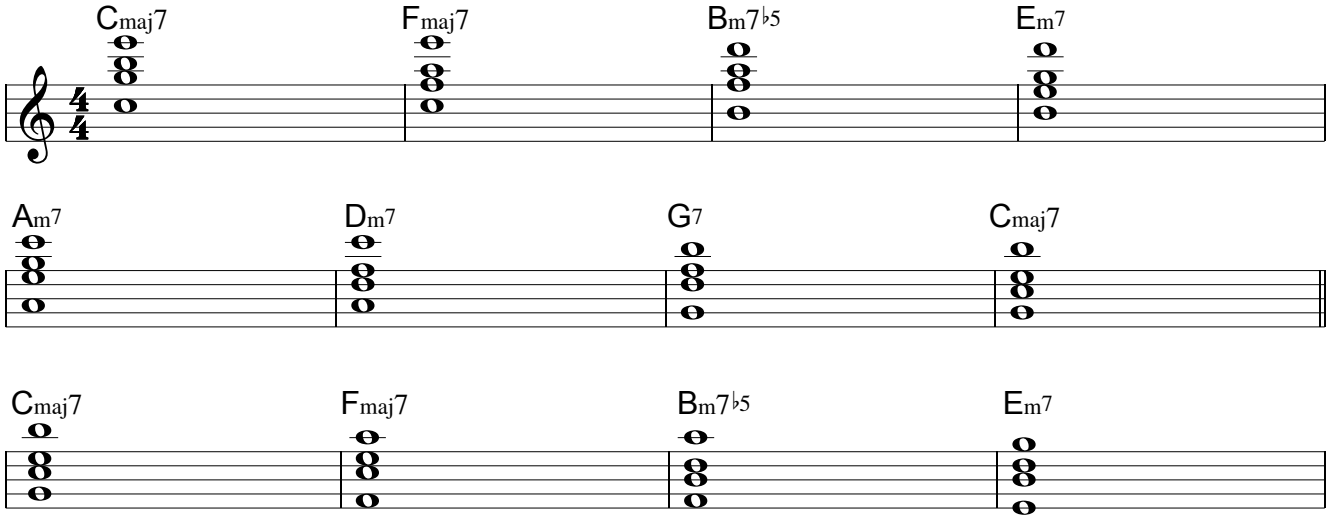
<u>Up4 - Down5</u>

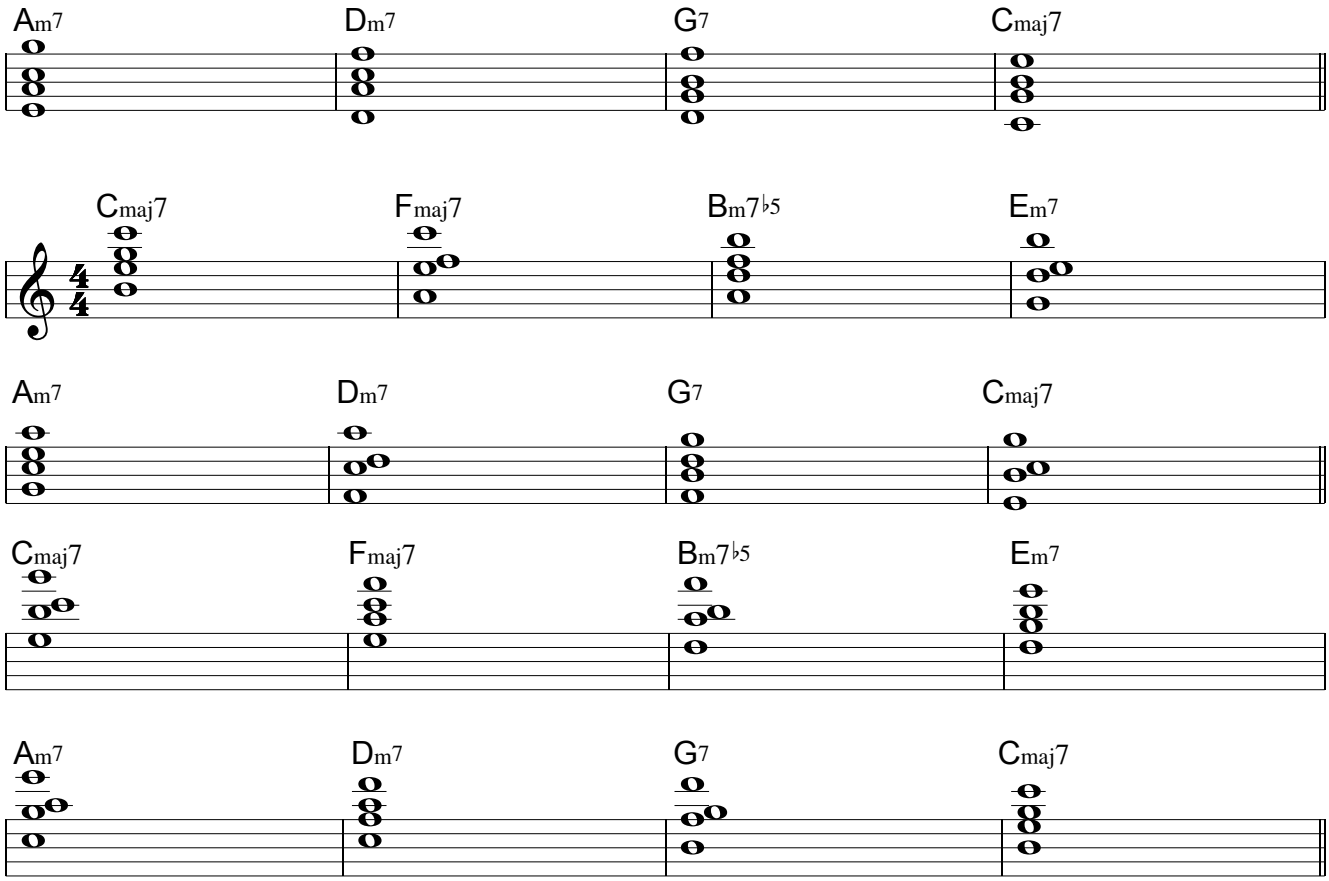
R moves to 5th

3rd moves to 7th

5th moves to Root

7th moves to 3rd

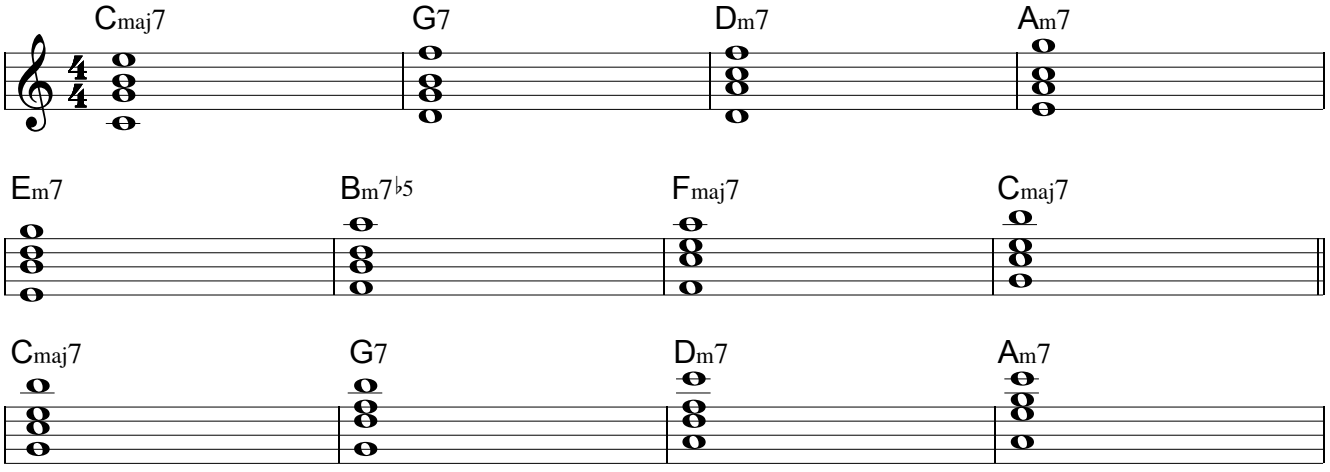


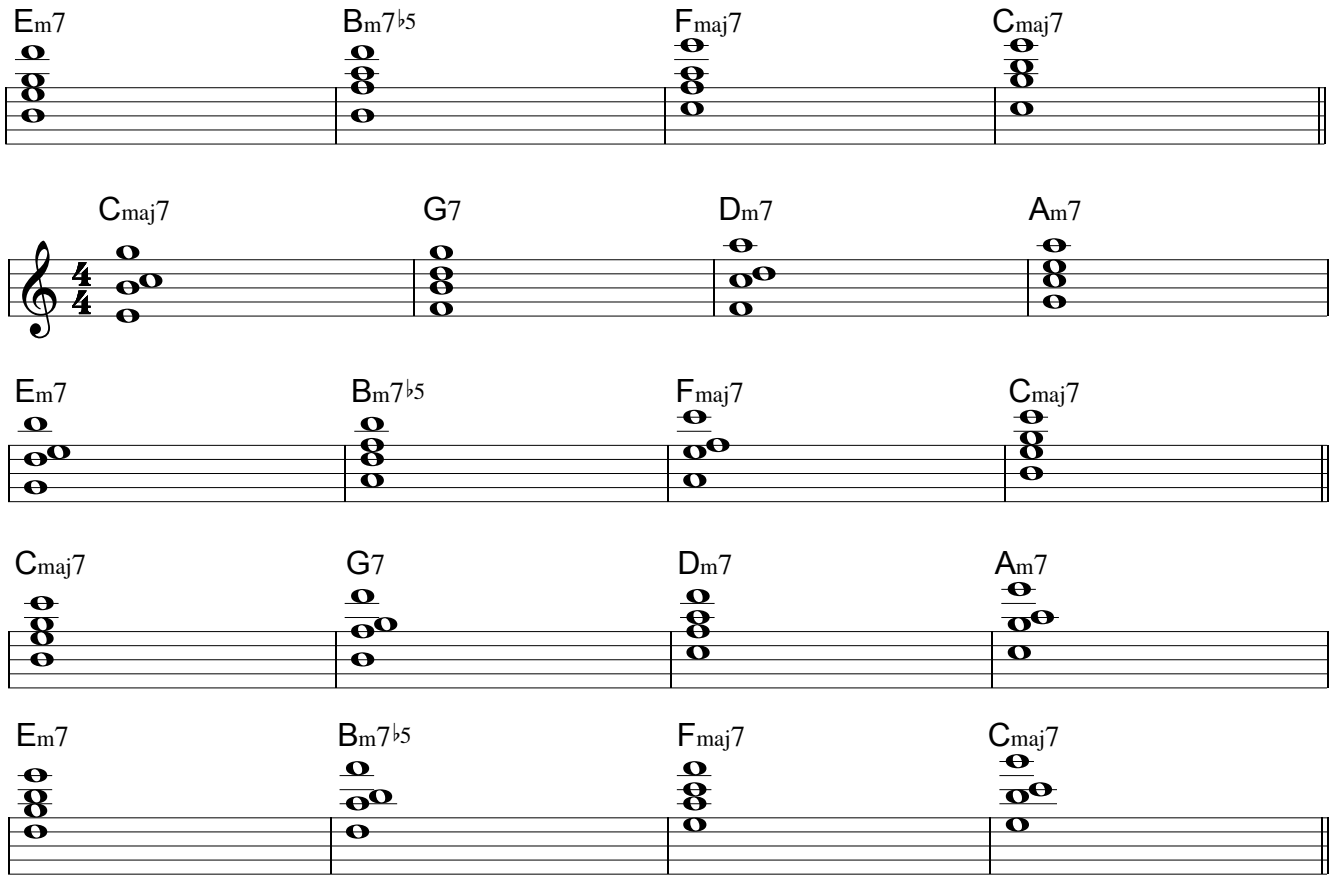


Up4 - Down 5 is by far the most common root motion. It has the most forward moving momentum.

The next type of root motion (Up 5 - Down 4) has the exact opposite feeling to it. It feels like things are moving backwards rather than forwards.

Up5 - Down4
R moves to 5th
3rd moves to 7th
5th moves to Root
7th moves to 3rd





Up 2

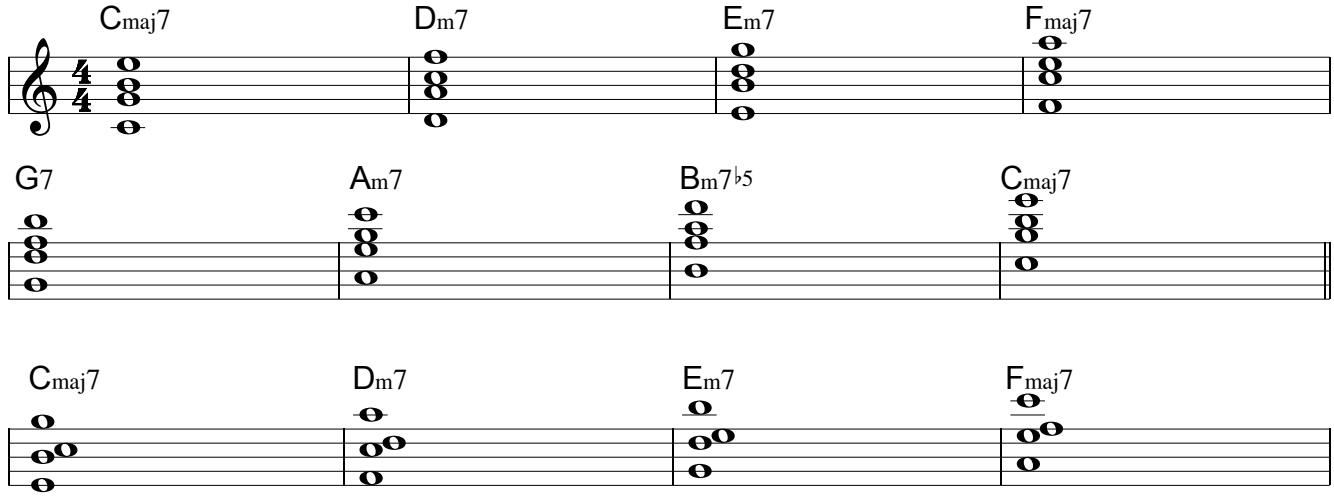
R moves to R

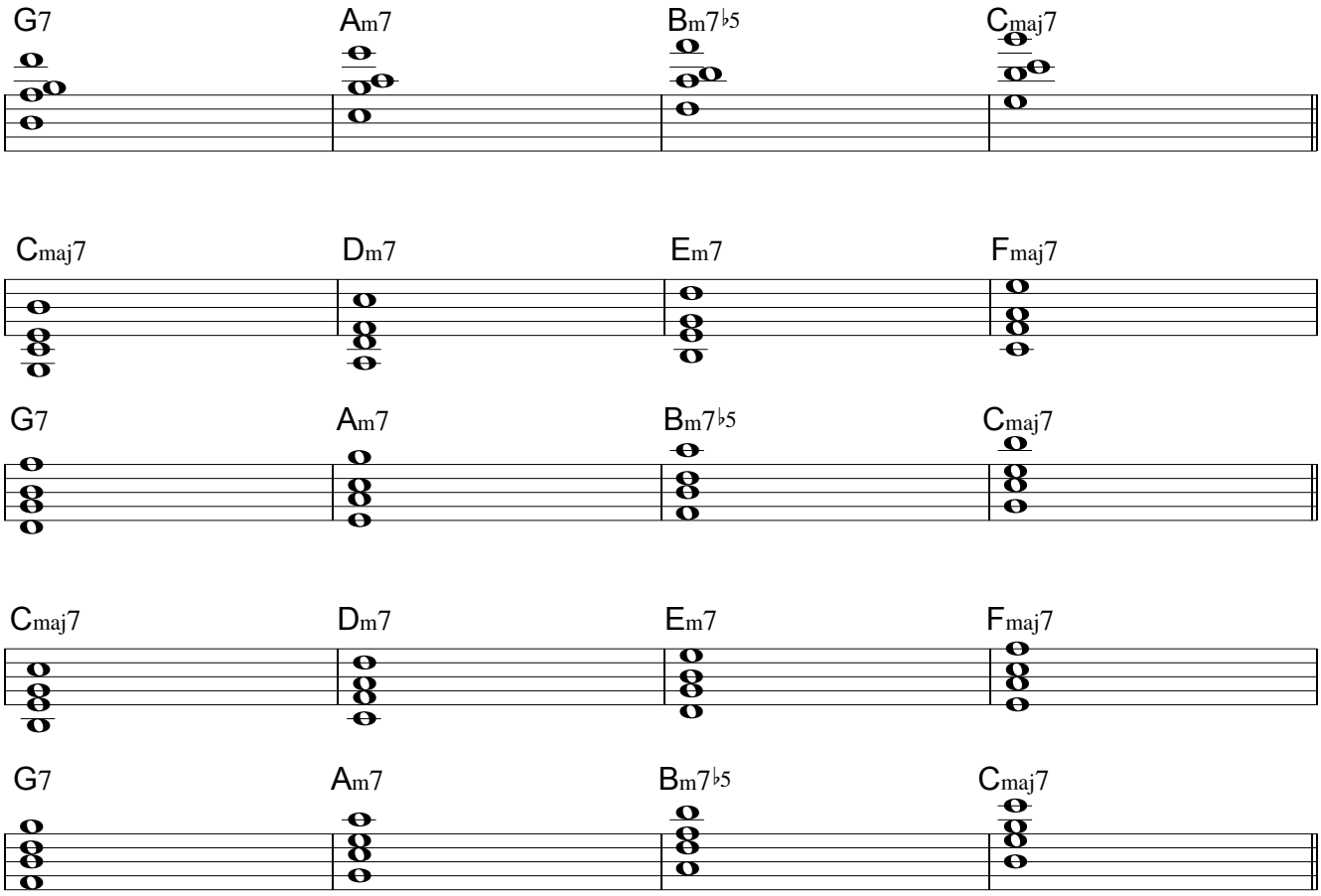
3rd moves to 3rd

5th moves to 5th

7th moves to 7th

I.e. All voices in parallel motion.





<u>Down 2</u>

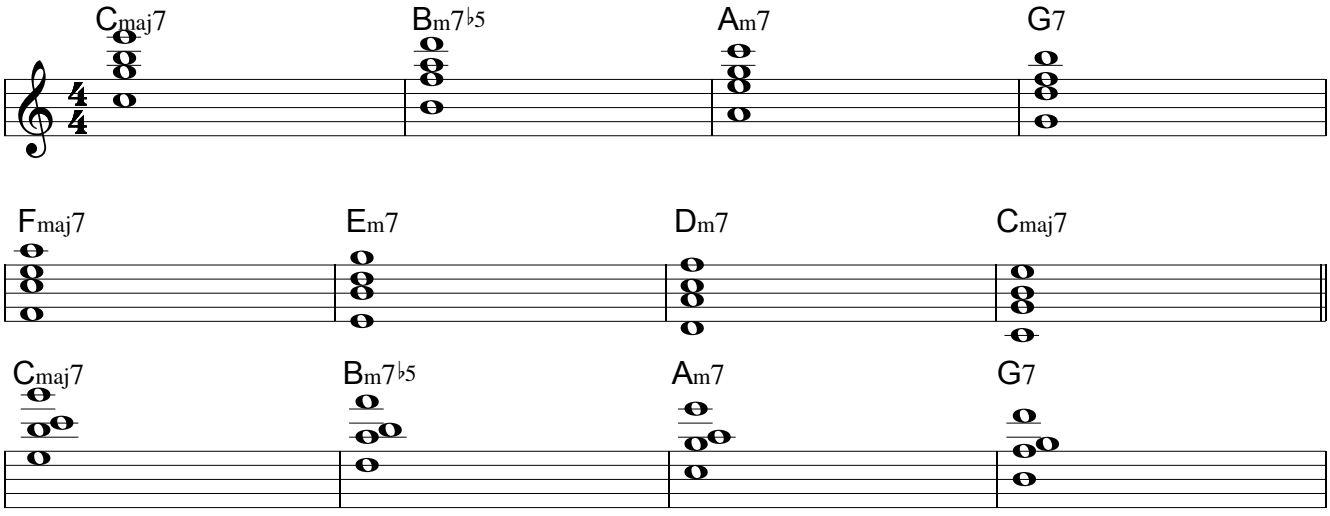
R moves to R

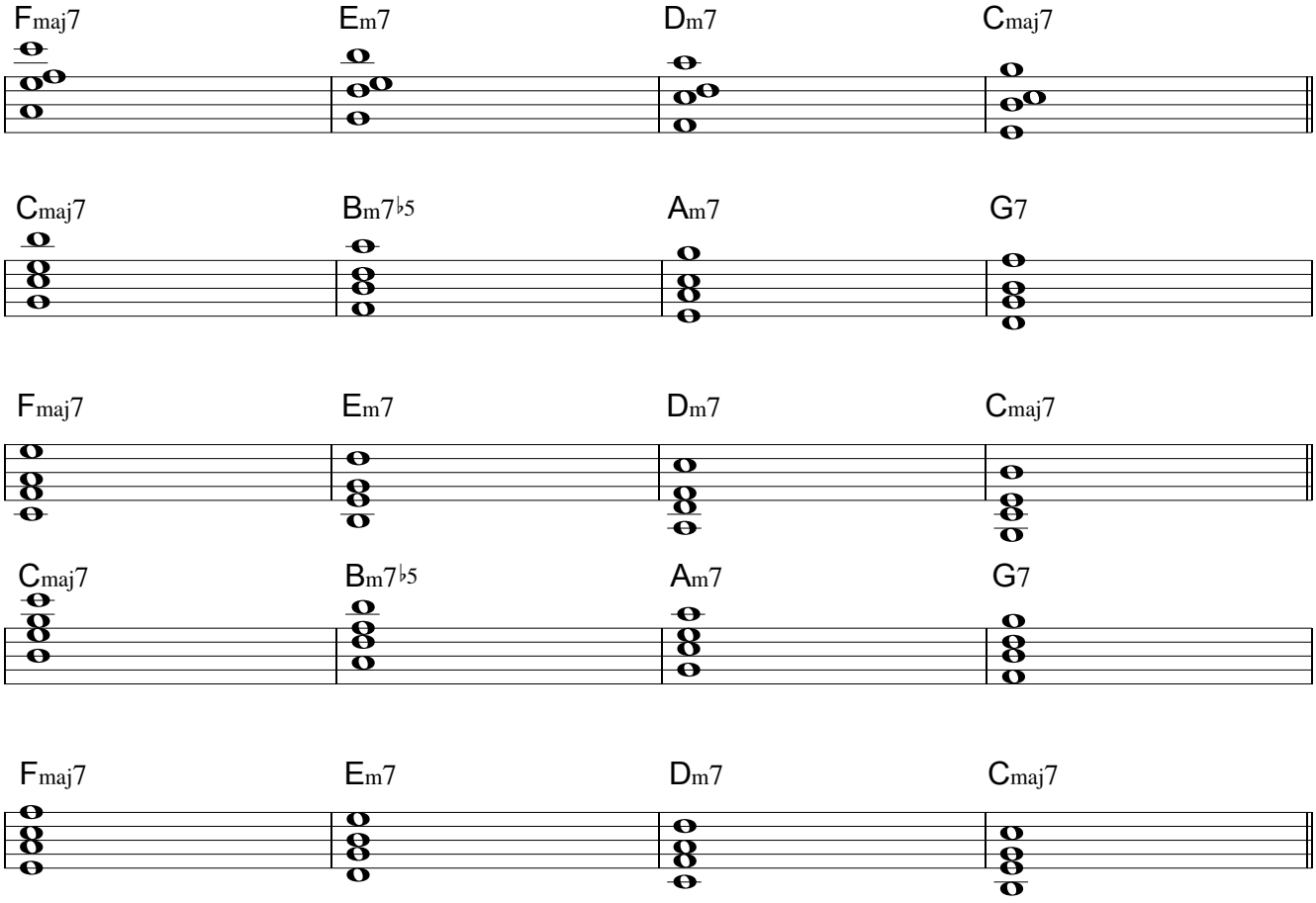
3rd moves to 3rd

5th moves to 5th

7th moves to 7th

I.e. All voices in parallel motion.





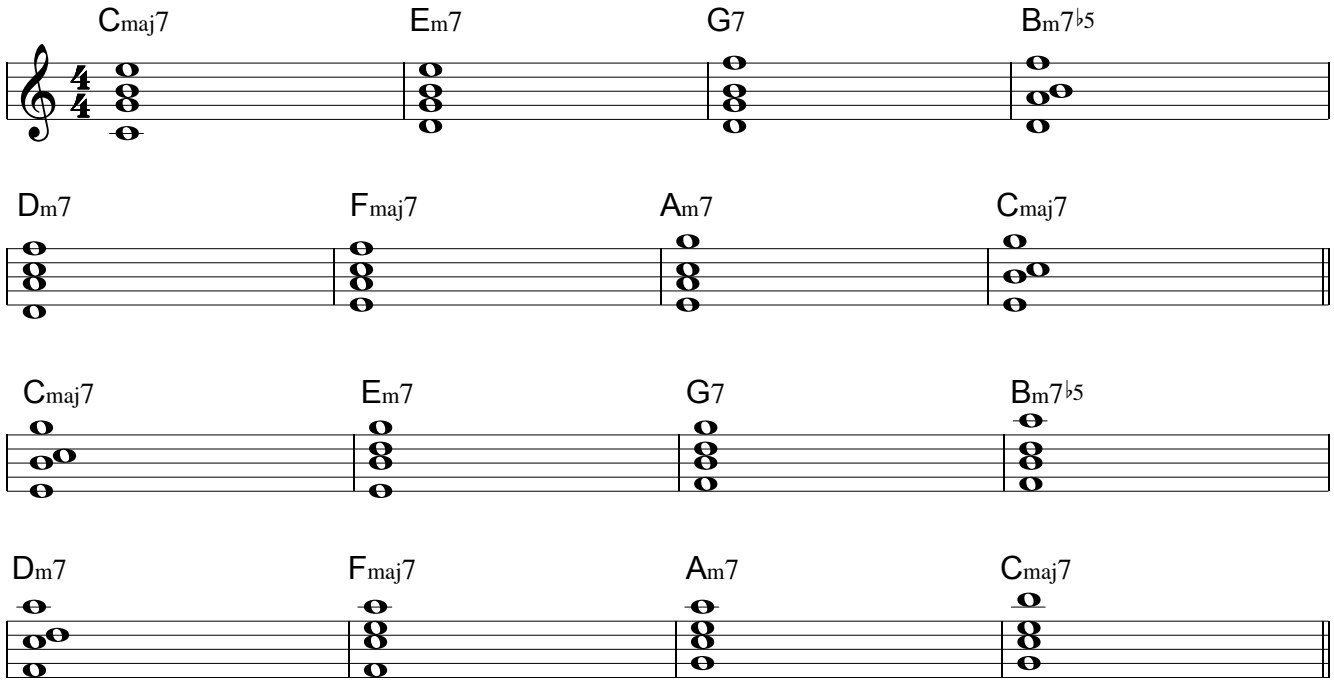
Up 3

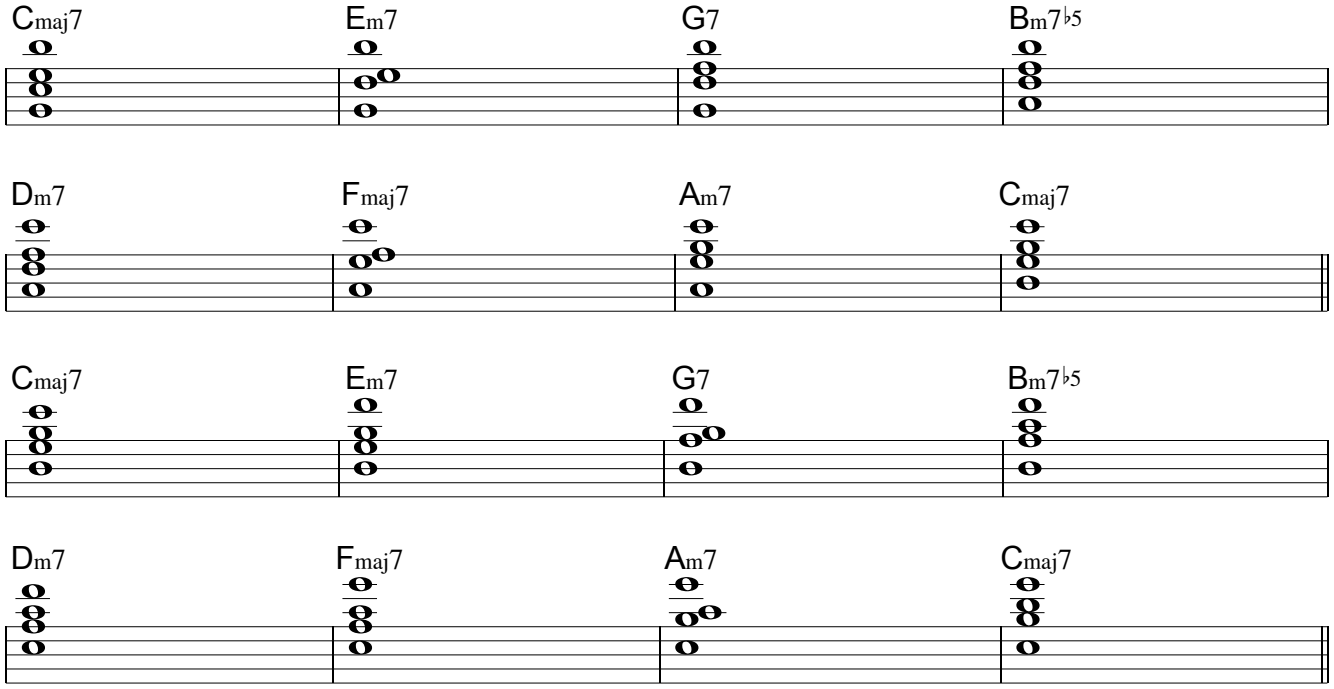
R moves to 5th

3rd moves to Root

5th moves to 3rd

7th moves to 5th





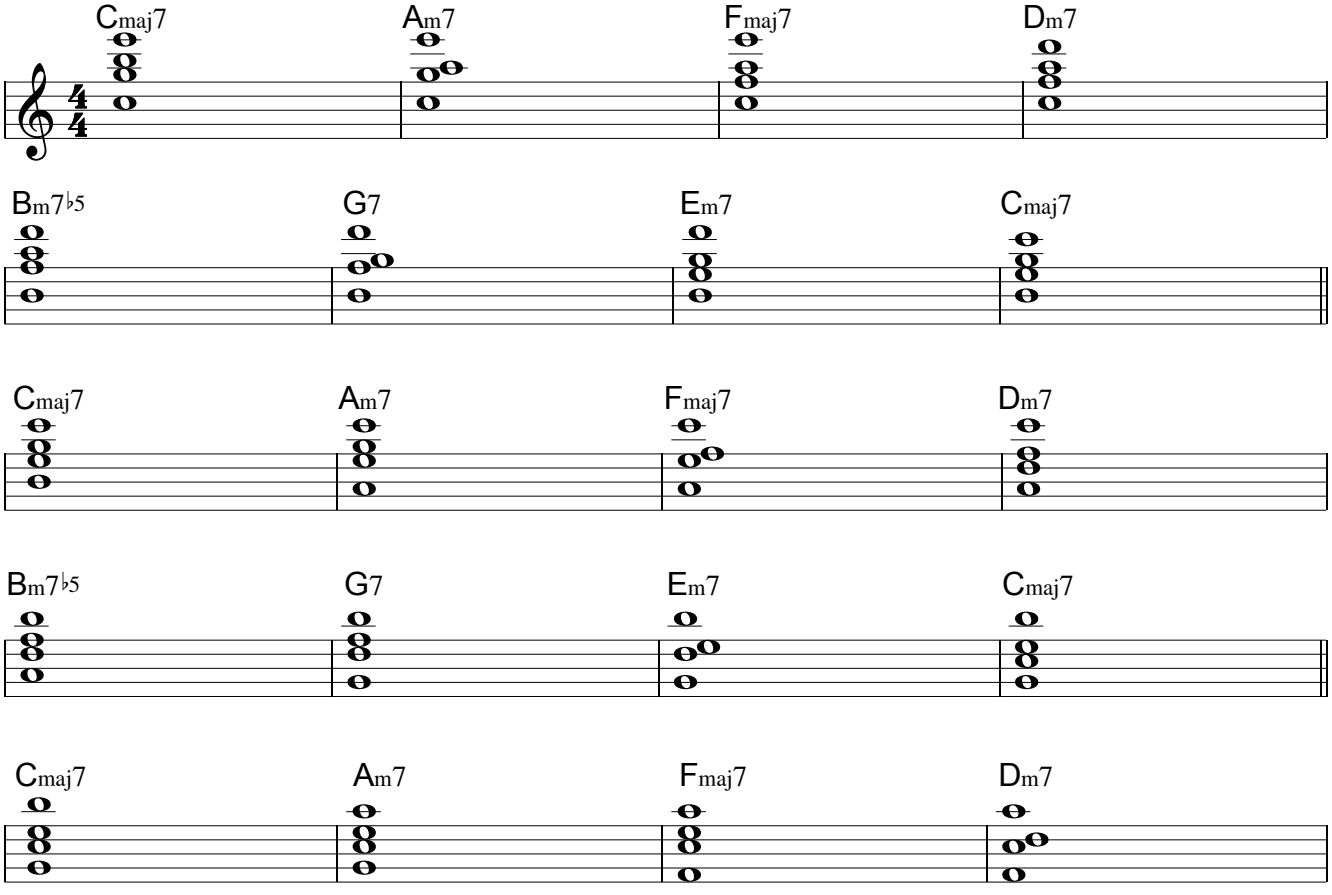
Down 3

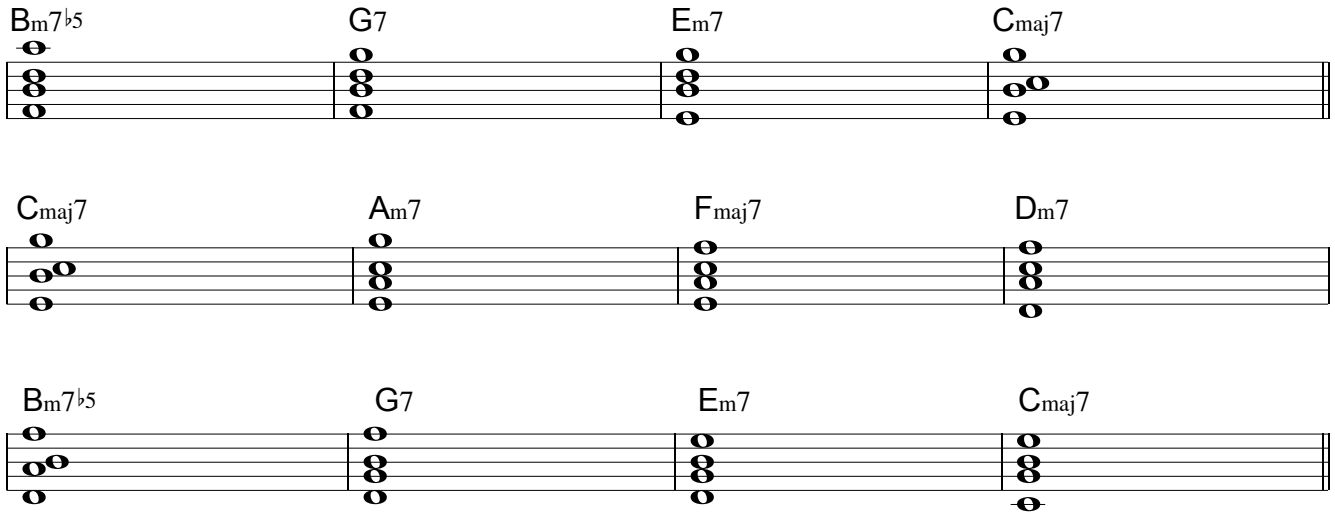
R moves to 3rd

3rd moves to 5th

5th moves to 7th

7th moves to Root

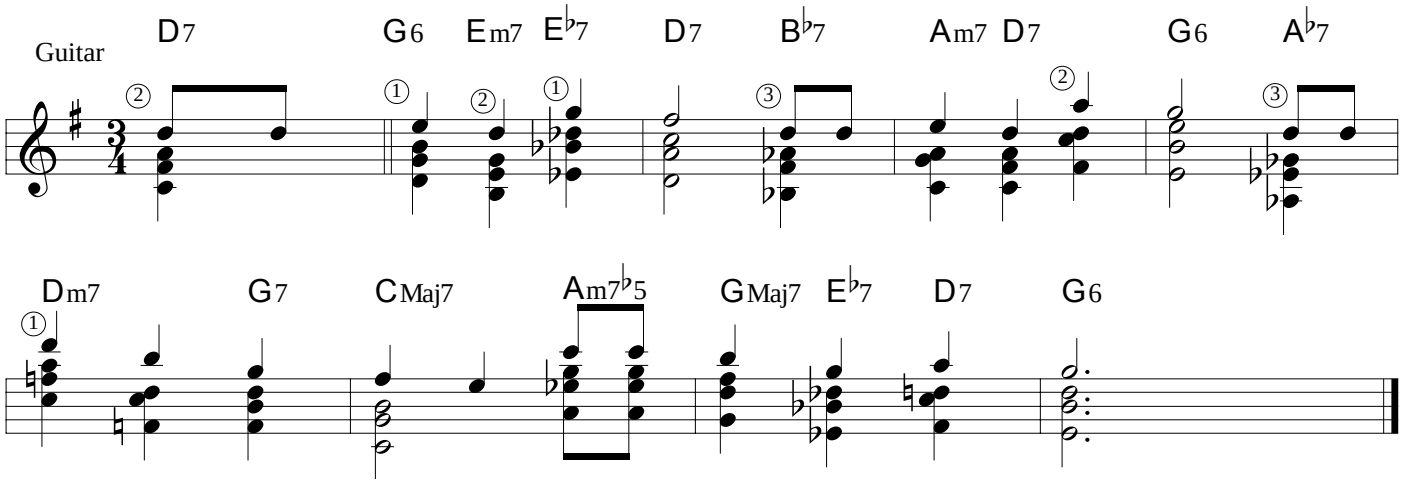




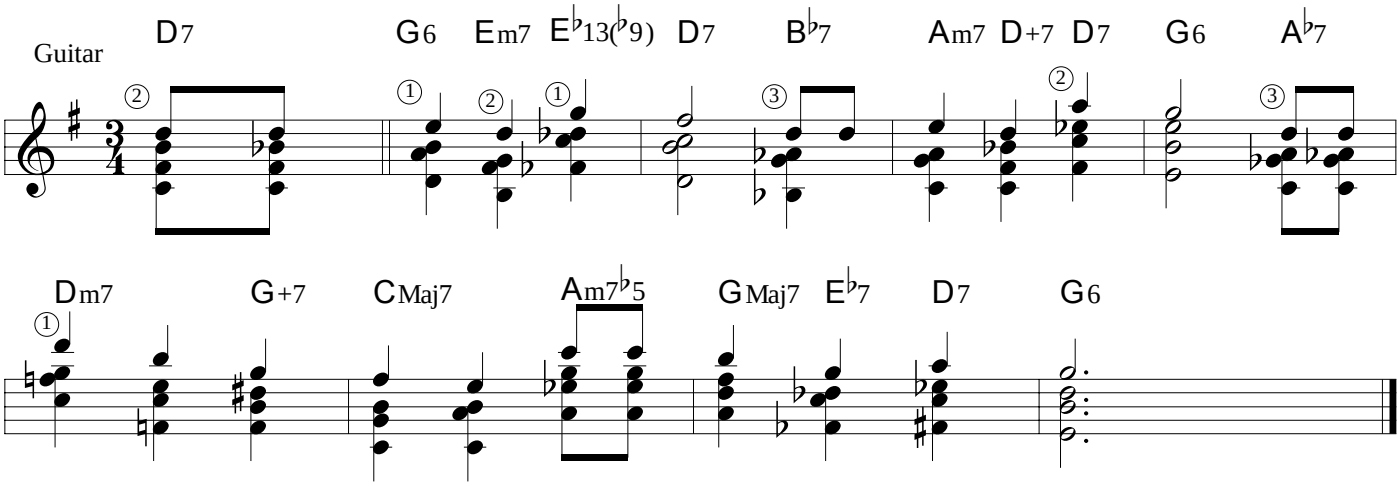
1. Memorise the above sequences as written.
2. Figure out the same voicings and progressions in all possible octaves everywhere on the fretboard.
3. Transpose the progressions to all 12 keys.
4. Figure out the same progressions using the diatonic 7th chords from C Harmonic Minor, C Jazz Minor and C Harmonic Major. Transpose these sequences into all 12 keys.
5. Repeat for Drop 3, Drop 4, Drop 2 & 4 and Drop 2 & 3.
6. Figure out the same sequences with Close voicings. When you play these with a bass player you can let him play the Root, therefore you only have to finger a 3 note chord which is quite possible to do.
7. Go through the changes of many standard tunes and observe where this type of voice leading takes you.
8. Learn to use these smooth junctures between chords in you single note line improvisations. Try, for the most part, to have your lines join the chords together by common tone or by step at the point of the chord change.
9. Try adding some tensions in the lower voices of these chords and see if you can smoothly voice lead them into chord tones or other tensions on the next chord.

There is a lifetime's amount of work suggested on this page. Don't be too hard on yourself if you don't get this together in a week or too! Believe it or not this stuff does get easier with practice. You should start noticing some common grips pretty early on in this, like how all Drop 2 chords with the 3rd in the Lead have the root in the bass, etc.

Happy Birthday with all Drop 2 voicings. No extra tensions added.



Happy Birthday with all Drop 2 voicings. Some extra tensions added also.



The full effect of these voicings will only be felt with a bass player playing the roots.

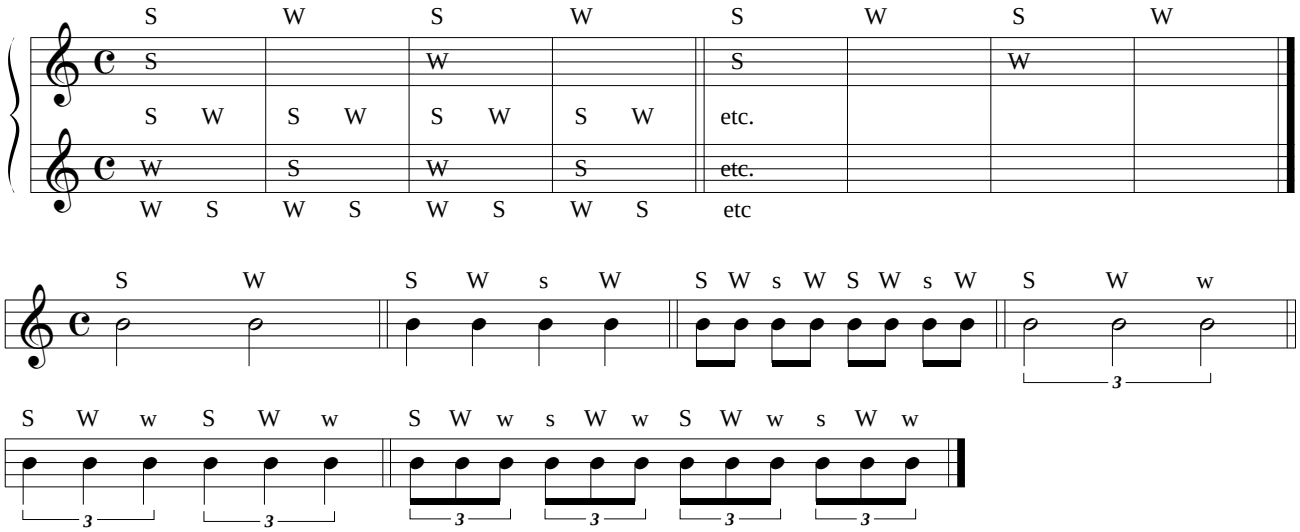
XVI. Melodic Uses Of The Non Chord Tones

Music is an art form that is presented in real time. It is usually reasoned that the listener of a piece of music perceives a series of musical events, some of which are accented (i.e. emphasised), and some of which, are not. Harmonically speaking, it is usually consonance that is emphasised and dissonance that is not. Of course, the above scheme can be reversed as well. A piece of music that had no dissonance would sound motionless and boring. A piece of music that only used dissonance would be extremely unsettled. It is these types of contrasts that create the ebb and flow or the motive force in a piece of music.

Here are some other pairs of opposites that can be useful in music:

Tension - Resolution -Tension etc.
Call - Response - Call etc.
Excitement - Calm -Excitement etc.
Question - Answer - Question etc.
Activity - Inactivity - Activity etc.
Chord Tones - Non Chord Tones - Chord Tones etc.
Slow - Fast - Slow etc.
Soft - Loud - Soft etc.

Any length of musical time can be thought to contain a series of Stronger and Weaker musical events, at the discretion of the composer. Usually we think of Strong moving to Weak and back to Strong etc., but this scheme can also be inverted for effect.



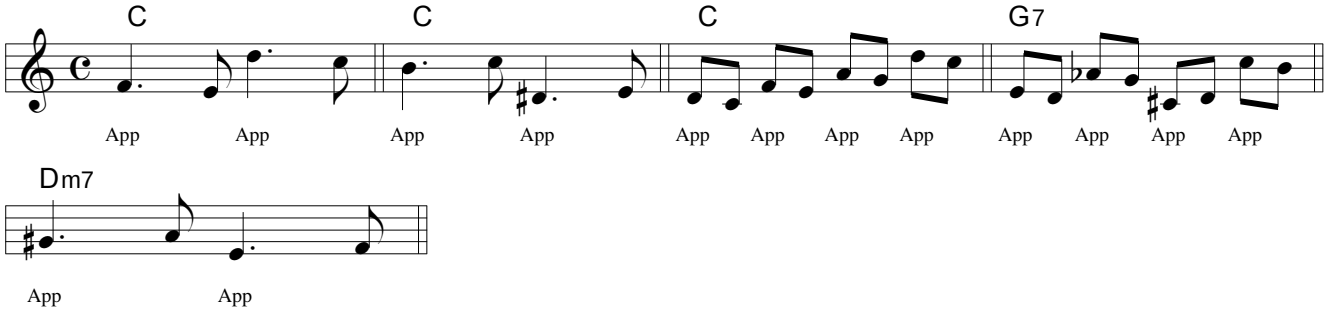
Jazz music, more often than not, utilises a pre-determined harmonic progression as a framework for melodic improvisation. When analysing a melody over a pre-composed progression the Chord Tones (CT) are deemed to be more or less “free”, i.e. they are generally safe to accent and will not result in many harsh dissonances that need to be reckoned with or resolved internally. This is not ALWAYS true but it is mostly true.

There are generally thought to be two distinct usages of Non Chord Tones (NCT) (aka “Inharmonics”) in melodic composition, namely the Accented and the Un-Accented.

A. The Accented Non Chord Tones

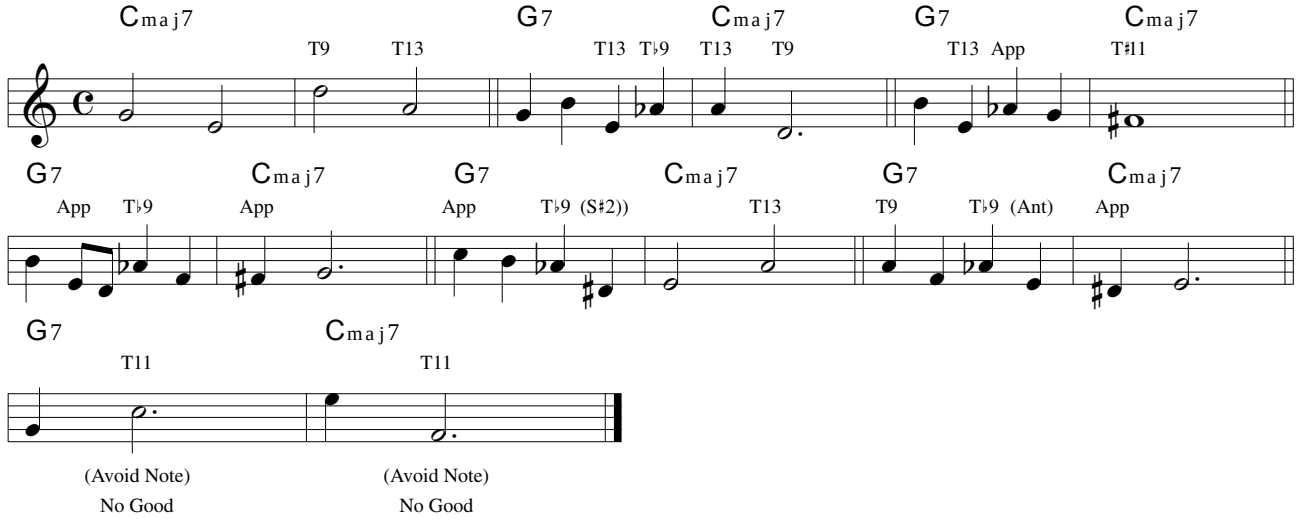
1. The Appoggiatura (APP):

A Non Chord Tone struck on a strong beat that resolves by step at a weaker metrical position. (Means "to lean" in Italian.)



2. Available Tensions (T)

Any NCT that blends vertically into a chord when held for a long duration or accented via rhythmic placement. Leaping to or from a note can also cause it to be accented more than it would be within a step-wise passage. Any App that does not resolve is a T and hopefully it also blends vertically into the chord.



Note: Most NCTs found a 1/2 step above a CT will not blend into the chord as an Available Tension. These notes are usually referred to as "Avoid Notes". The 2 main exceptions from this 1/2 step "norm" are ♭9 and ♭13 on Dom7 chords. (Please see my "Chord Scales Via Modal Theory (Part 1)" chapter for a more detailed explanation.)

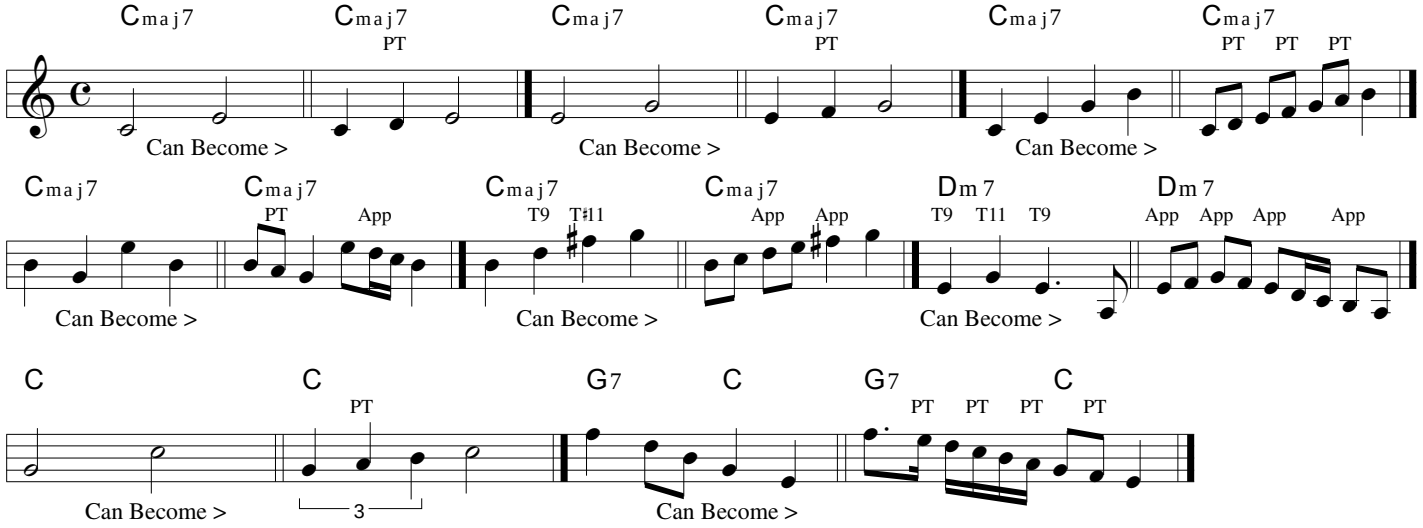
B. The Un-Accented Non Chord Tones

1. Passing Tones (PT) (2 types - Diatonic and Chromatic):

a) Diatonic Passing Tones:

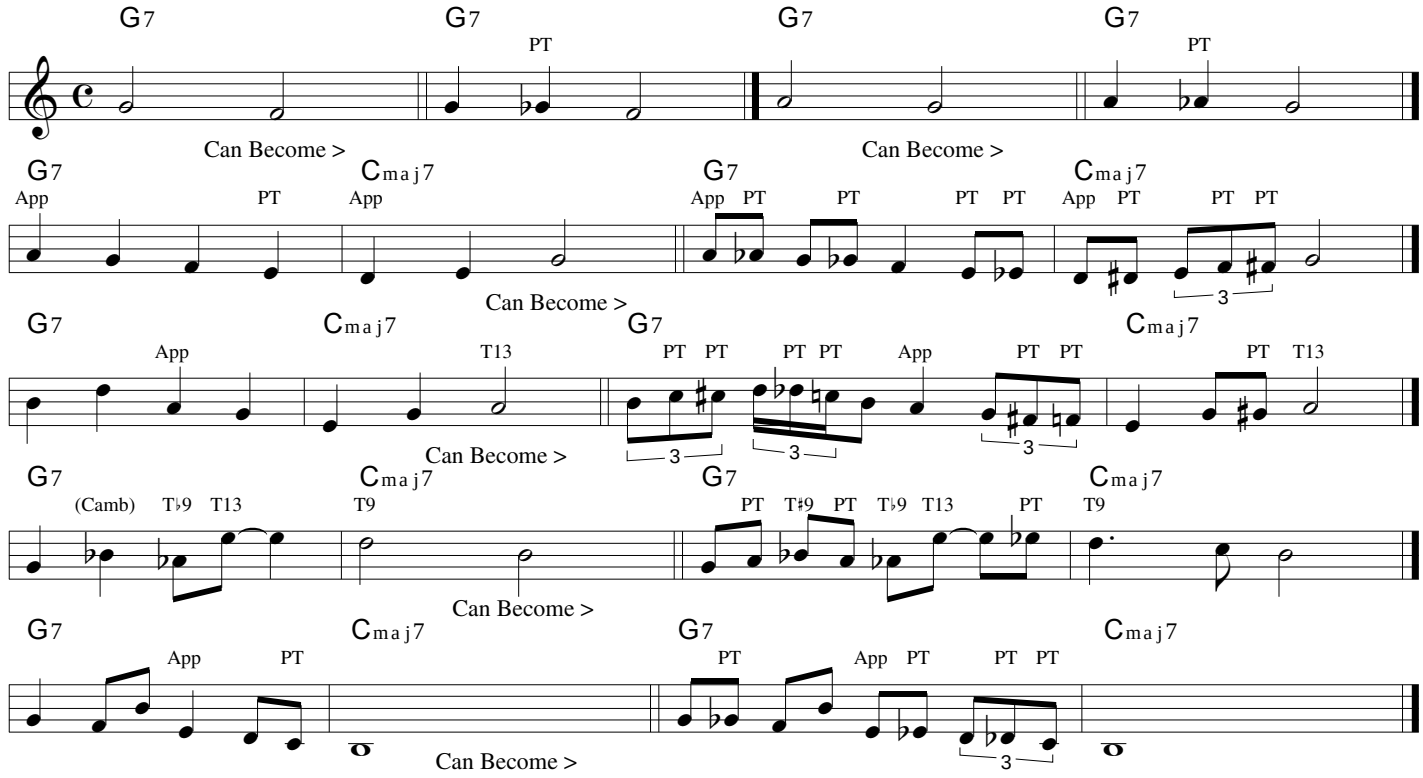
A diatonic note that bridges a leap of a 3rd (or sometimes a 4th) between two notes (usually CTs). PTs are always on weak beats otherwise they would be APPs.

Note: PTs are not always NCTs, however, any NCT can be used as a PT. When a CT is functioning as a PT there is no need to label it in the melodic analysis.



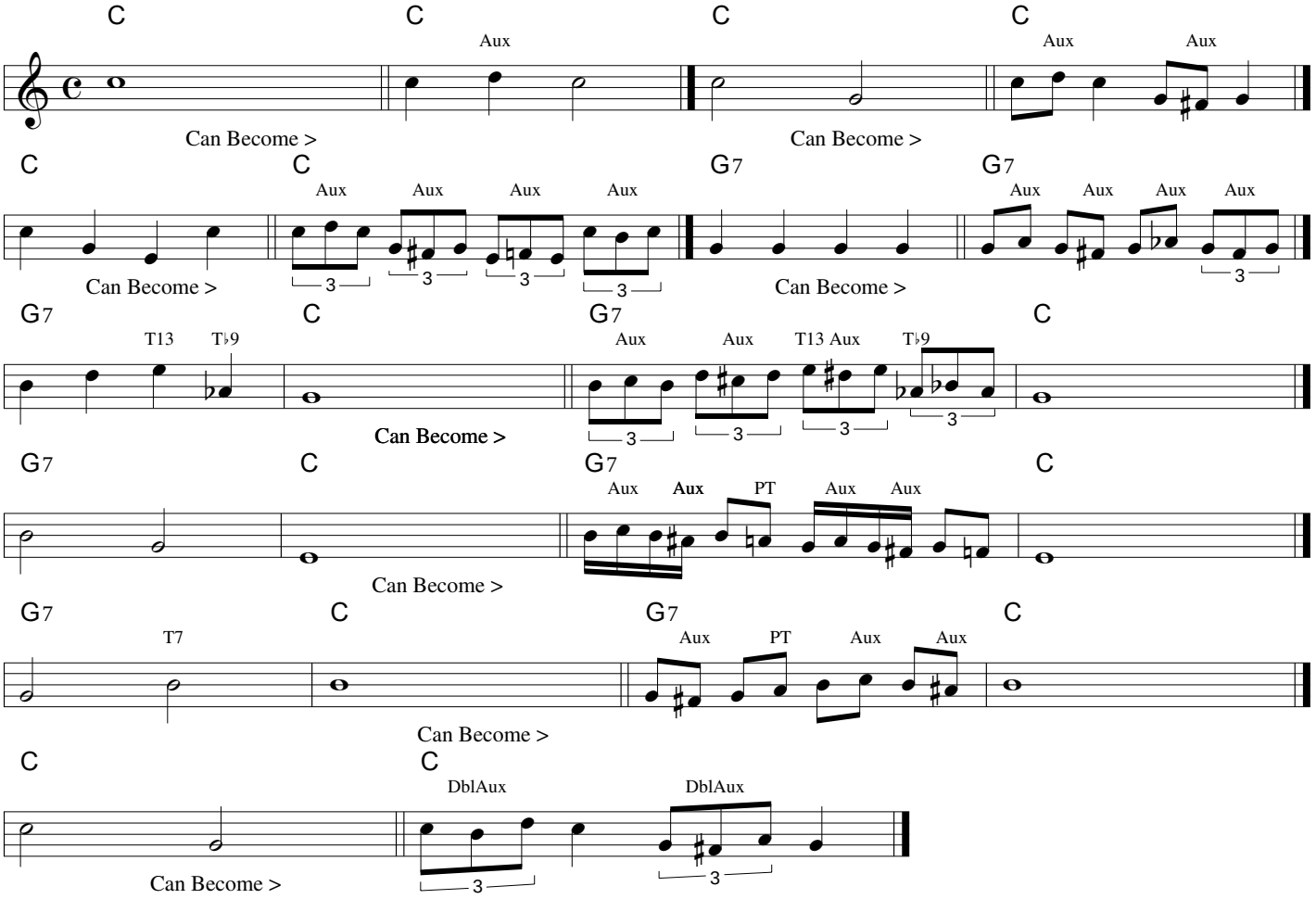
b) Chromatic PTs:

Chromatic notes used to bridge the gap of a Major 2nd or Augmented 2nd.



2. Auxiliary Tones (Aux):

The Auxiliary is a decoration of a stationary note. It is used at a weak beat, one step above or below the principal note. It returns to the principal note.

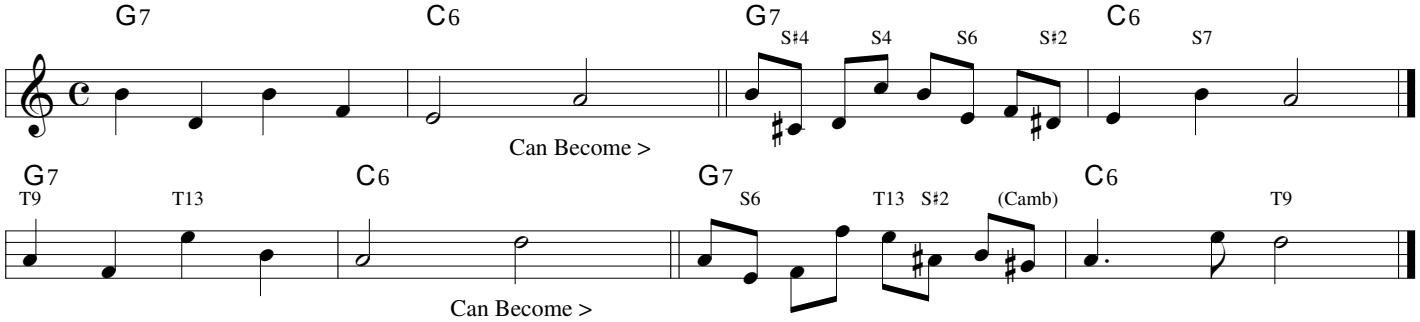


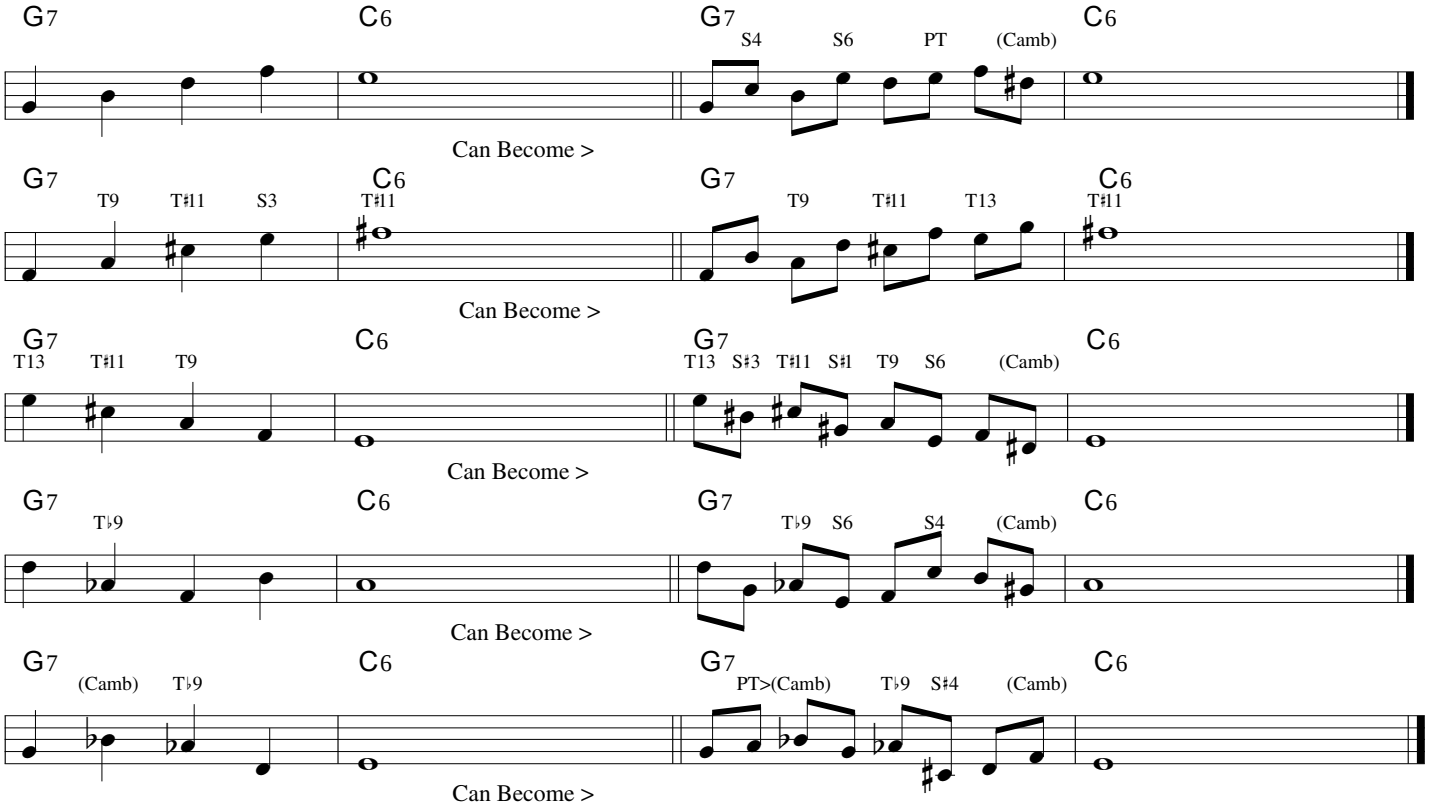
Note: The "Double Auxiliary" (DblAux) uses both the Upper and the Lower Aux before returning to the principal note.

Note: AUXs are not always NCTs, however, any NCT a step above/below a CT can function as an Aux. When a CT is functioning as an Aux there is no need to label it in the melodic analysis.

3. Approach Notes (S):

A note taken by a leap, a step above or below a target note (usually a CT). Always on a weak beat or else it would be an App. (Aka "Unprepared Approach") Labelled as Scale Degree 2 (S2), Scale Degree ♯4 (S♯4) etc. in relation to the chord-scale of the moment for the target note.

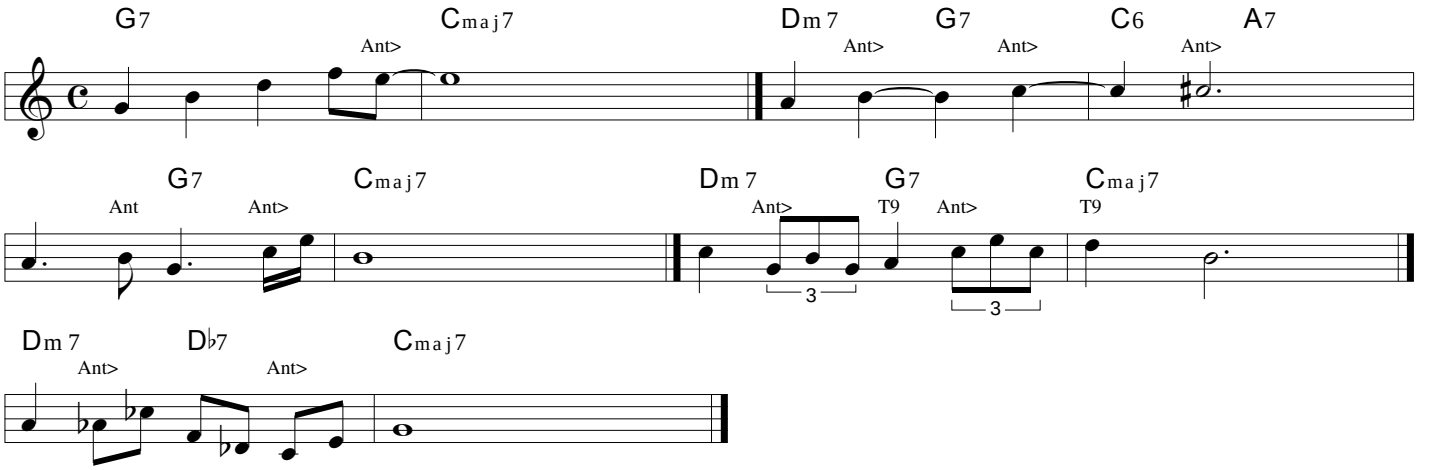




Note: Not all unprepared approach notes are NCTs, however, any NCT, a step above or below, a CT can function as an unprepared approach. When a CT is functioning as an unprepared approach note there is no need to label it in the melodic analysis. The above examples also contained a few Cambiatas (see below).

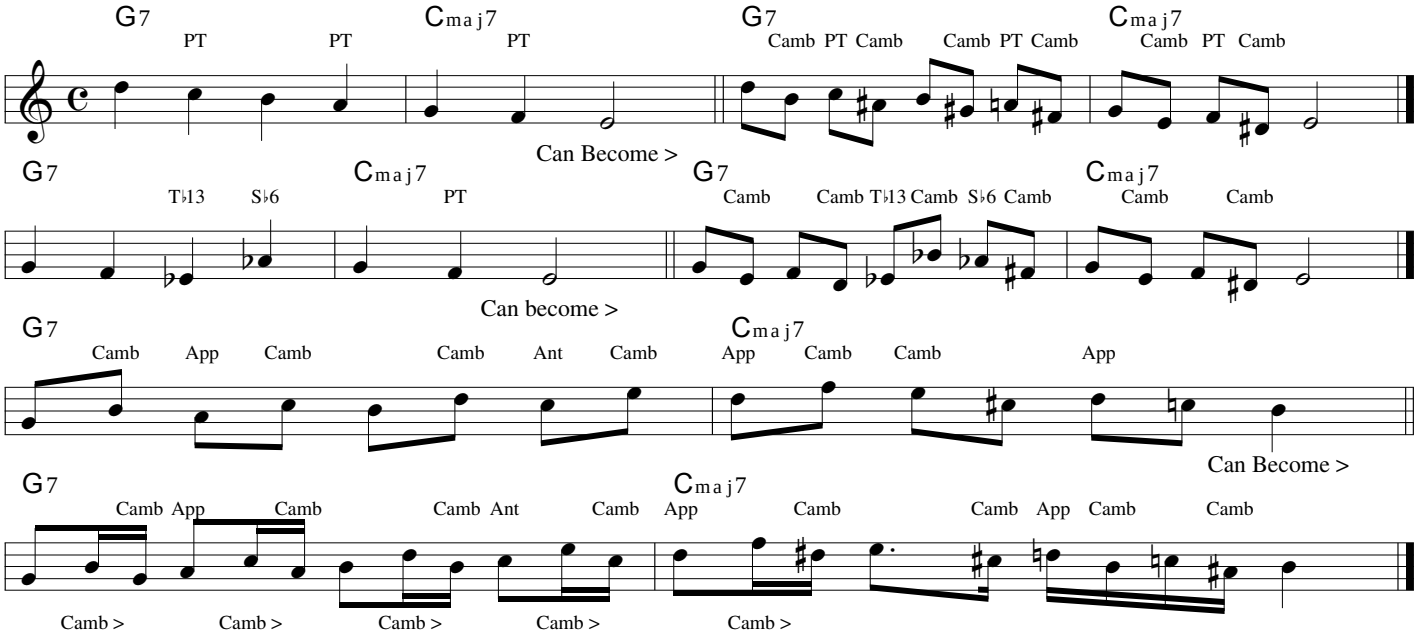
4. Anticipations (Ant):

At the point of a chord change some notes relating to the new chord are sounded before the new chord actually arrives.



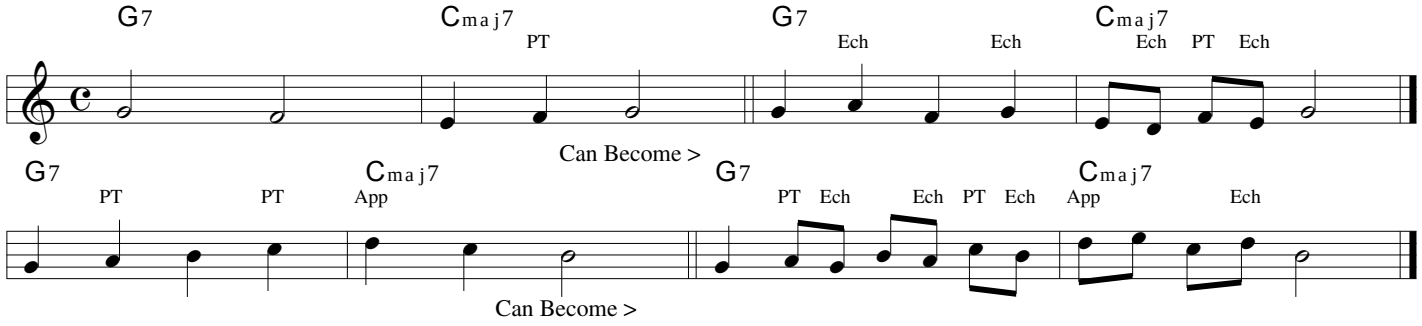
5. Cambiatas (Camb):

The Cambiata is a decoration of any movement (up or down) of a 2nd. The target note is leaped past and then returned to by step.



6. Echappée (Ech) (aka Escape Notes):

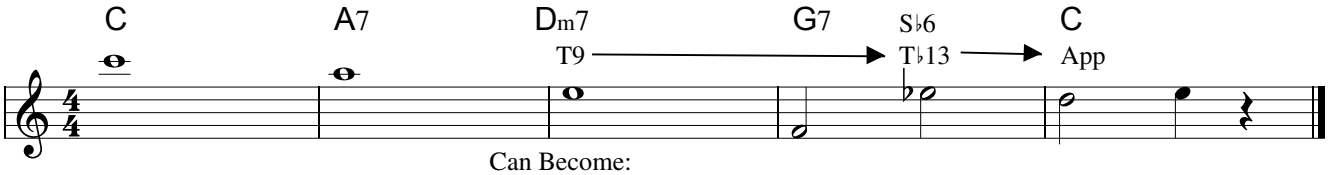
Also a decoration of a 2nd (up or down) but an Echappée moves in the opposite direction and then returns to the destination note by a leap of a 3rd.

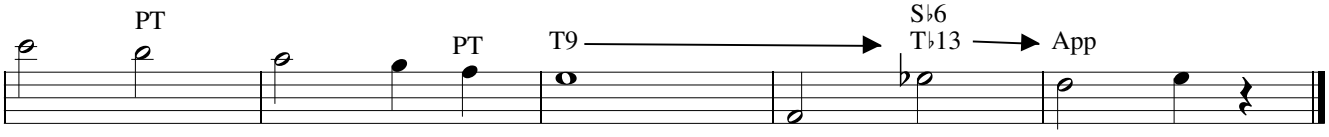


For a more detailed explanation of these techniques please see “Modern Harmonic Technique” by Gordon Delamont (Kendor Music Inc.) or “Modern Harmonic Progression” by Allan Michalek (Humber College Press).

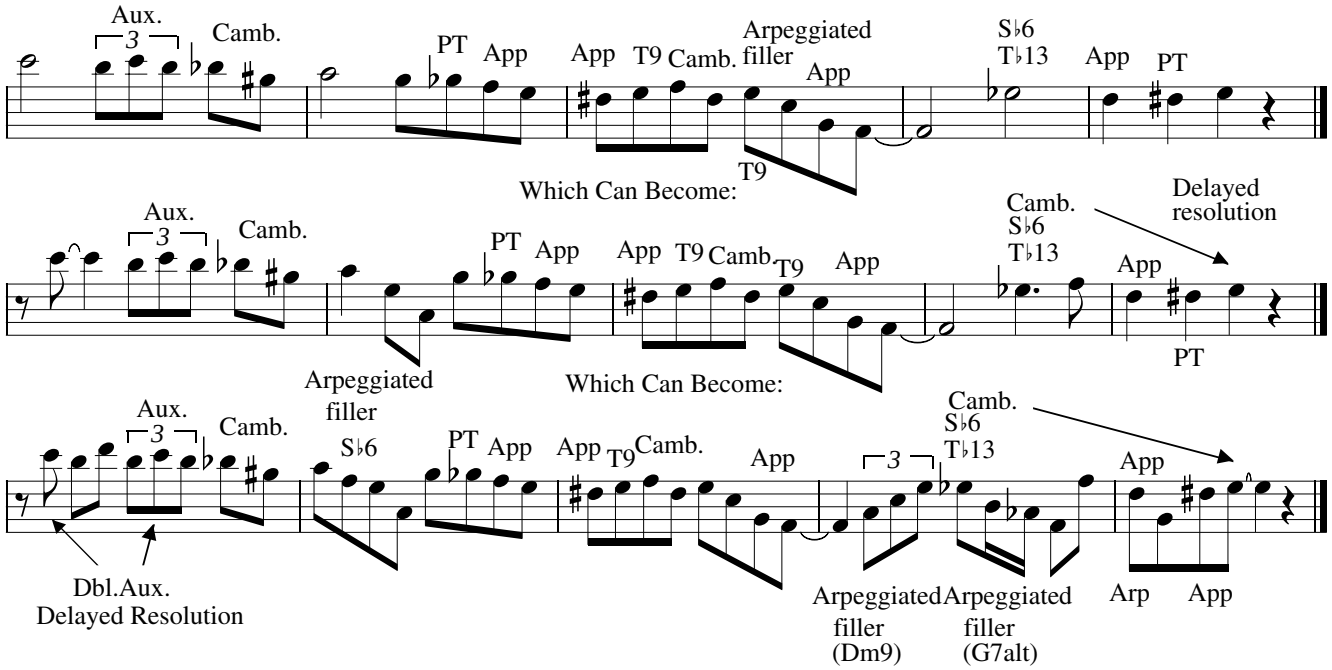
C. Melodic Analysis Examples

Consider this:



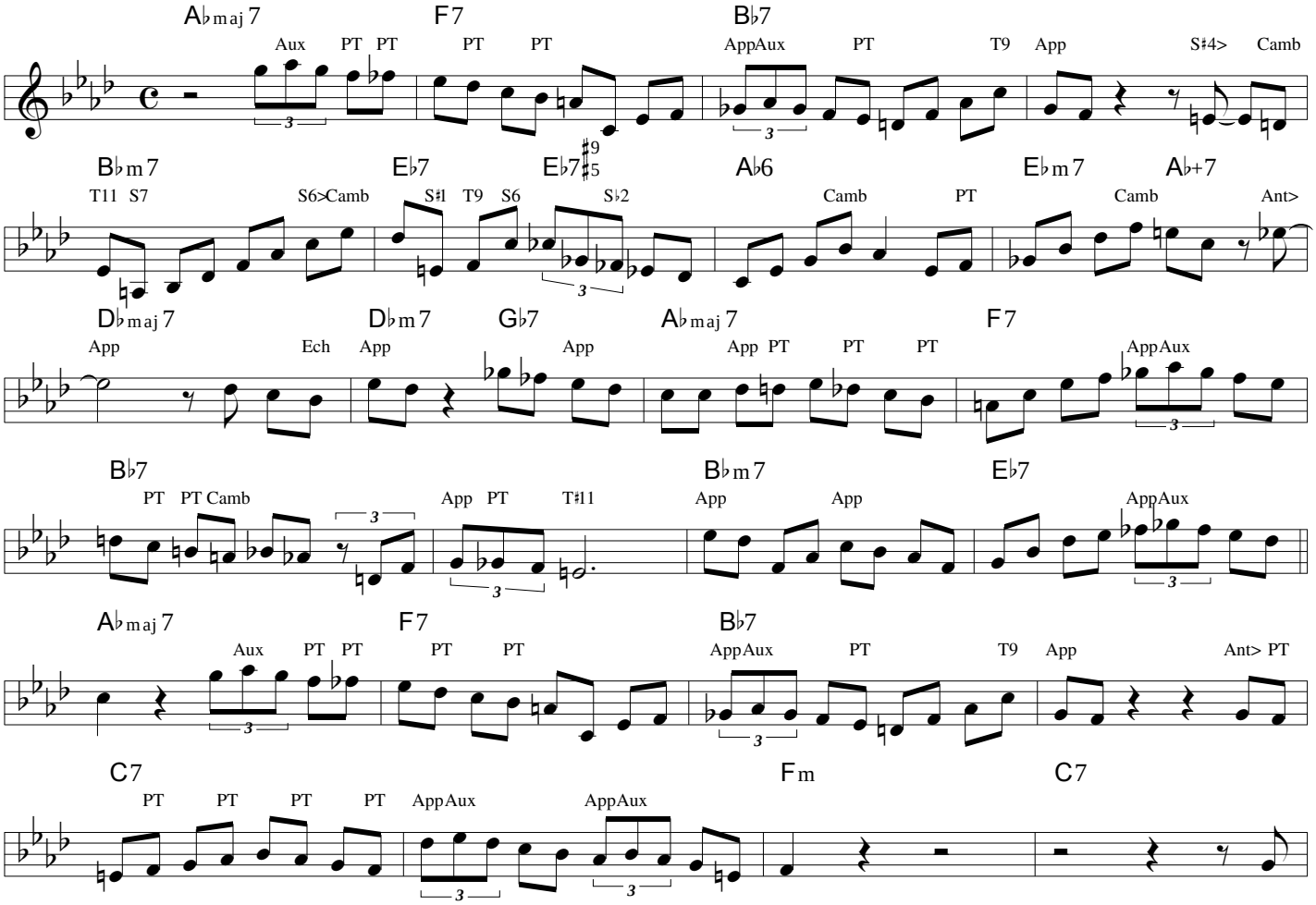


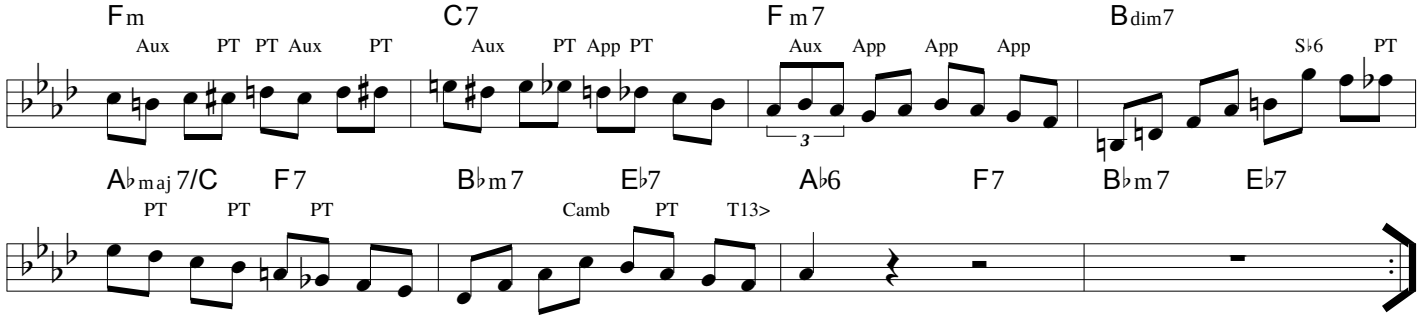
Which Can Become:



1. A Melodic Analysis Of Donna Lee.

Note: Donna Lee was written over the chord changes of an even older standard called Back Home In Indiana. It is worthwhile to learn Indiana if you are studying Donna Lee.





Try to improvise over several familiar progressions using mostly passing tones.
Try to improvise over several familiar progressions using mostly appoggiaturas.
Try to improvise over several familiar progressions using mostly cambiatas.
Try to improvise over several familiar progressions using mostly echappée.
Try to improvise over several familiar progressions using mostly auxiliaries.
etc.

Develop the habit when learning a new tune to analyse it's melody for these devices.
Write out many simple chord tone lines and develop them using these devices on the chord progressions of several tunes. Then learn to play them.

D. Target Notes

1. The "Be-Bop" Scales

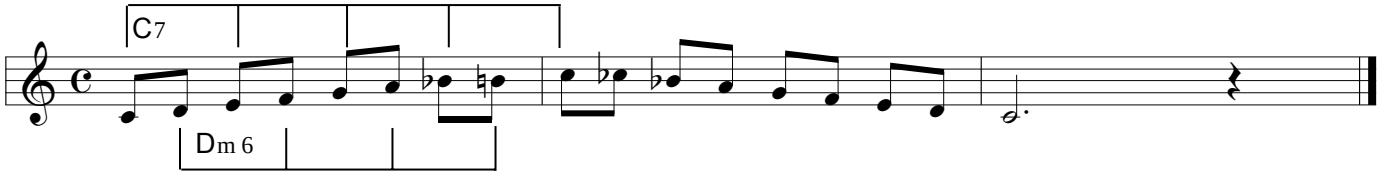
One technique that jazz players use to ensure that strong notes are placed on strong beats is the so-called "Be-Bop" scale. A Be-Bop scale is simply a regular 7 note chord-scale with a chromatic passing tone added in a strategic location so that when the scale is run using a duple rhythm the chord tones will always be placed on strong beats. This ensures that the melodic line will strongly suggest the chord.

The Mixo-Lydian scale is often modified with a chromatic passing tone between ♭7 and 1. This 8 note scale is sometimes referred to as the Dom7 Be-Bop Scale. Its formula is (ascending and descending):

1 2 3 4 5 6 ♭7 ♮7 1 7 ♭7 6 5 4 3 2 1

By starting on 1, 3, 5 or ♭7 and running up or down the scale using a duple rhythm (1/8 notes, 1/16 notes etc.) you will always have a chord tone of the Dom7 chord on the strong beats. The non chord tones (2, 4, 6 and ♮7) are all relegated to the weaker beats and serve primarily as passing tones.

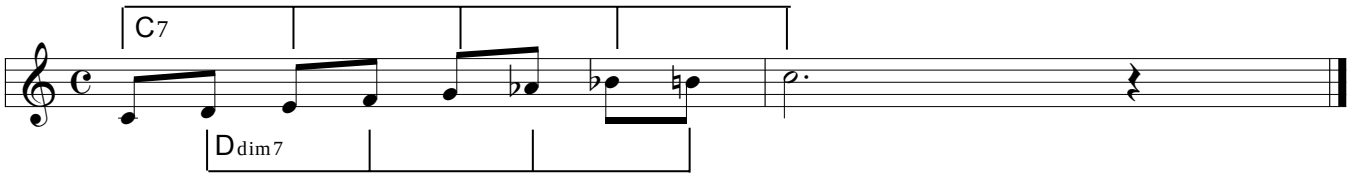
On C7 this Be-Bop scale would be: C D E F G A B♭ B C
Notice that the non chord tones form a Dm6 (Bm7♭5) chord. Melodies can be harmonised with this scale using alternating C7 chords with Dm6 passing chords.



Another variation of the Dom7 Be-Bop scale has a ♭6 degree. (1 2 3 4 5 ♭6 ♭7 ♮7 1)

On C7 this Be-Bop scale would be: C D E F G A♭ B♭ B♮ C

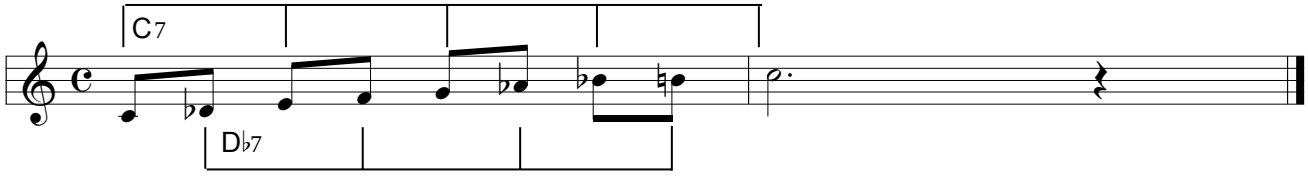
Notice that the non chord tones form a D°7 chord. Melodies are often harmonised with this scale by using alternating C7 chords with D°7 passing chords.



Another possibility for the Dom7 Be-Bop scale has a ♭2 degree as well as ♭6. (1 ♭2 3 4 5 ♭6 ♭7 ♮7 1)

On C7 this Be-Bop scale would be: C D♭ E F G A♭ B♭ B♮ C

Notice that the non chord tones form a D♭7 chord. Melodies can be harmonised with this scale by using alternating C7 chords with D♭7 passing chords.



Another less common possibility for the Dom7 Be-Bop scale has a ♭2 degree but a ♮6 degree. (1 ♭2 3 4 5 6 ♭7 ♮7 1)

On C7 this Be-Bop scale would be: C D♭ E F G A B♭ B♮ C

Notice that the non chord tones form a D♭+7 chord. Melodies can be harmonised with this scale by using alternating C7 chords with D♭+7 passing chords. Unusual.

It is also possible although unusual to have Dom7 Be-Bop scales scales using ♯4:

1 2 3 ♯4 5 6 ♭7 ♮7 1

1 2 3 ♯4 5 ♭6 ♭7 ♮7 1

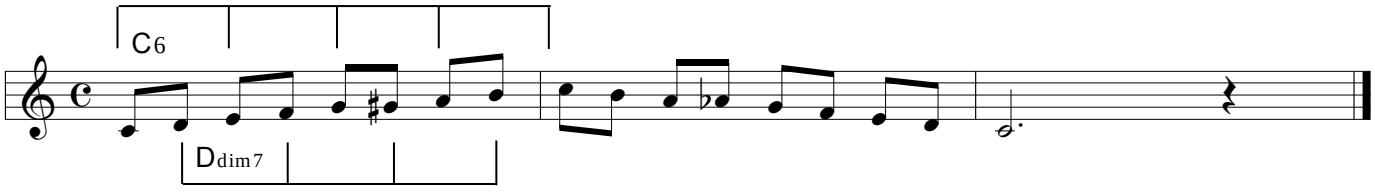
Etc.

For Maj6 chords the Be-Bop scale usually has a chromatic passing tone between 5 and 6:

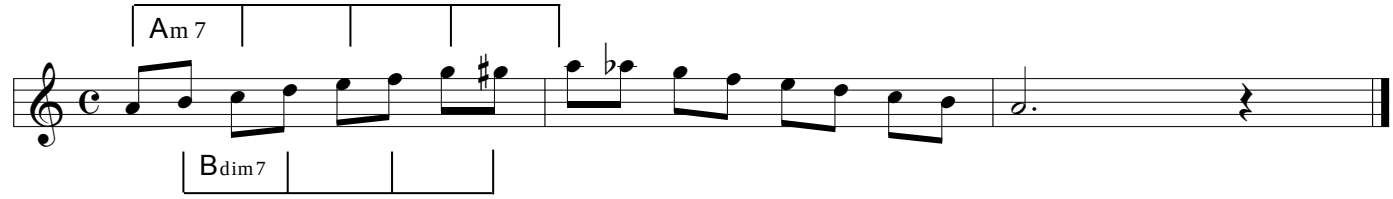
1 2 3 4 5 ♯5 6 7 1 7 6 ♭6 5 4 3 2 1

The C6 Be-Bop scale is: C D E F G G♯/A♭ A B C

Notice that the non chord tones form a D°7 chord. Melodies are often harmonised with this scale by using alternating C6 chords with D°7 passing chords.

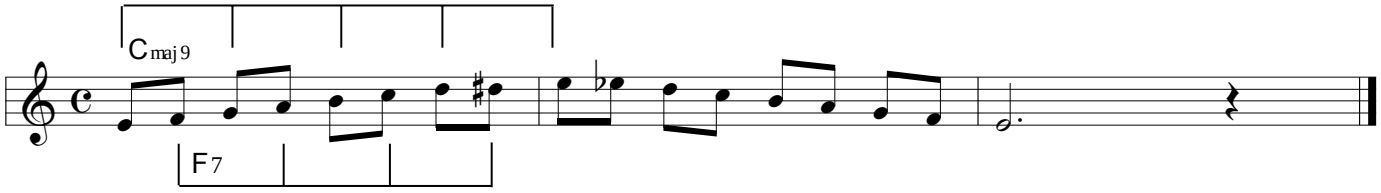


This same scale is used on Am7: A B C D E F G G♯/A♭ A (1 2 ♭3 4 5 ♭6 ♭7 ♮7 1)
This is like the A Aeolian scale with a chromatic passing tone between ♭7 and 1.
Am7 alternates with B°7 as the passing chord.



Another variation for Min7 chords has ♮6. (1 2 ♭3 4 5 6 ♭7 ♮7 1)
It is also possible, although unusual, to have Min7 Be-Bop type scales using ♭2 and/or ♯4.
1 ♭2 ♭3 4 5 6 ♭7 ♮7 1
1 ♭2 ♭3 4 5 ♭6 ♭7 ♮7 1
1 2 ♭3 ♯4 5 6 ♭7 ♮7 1

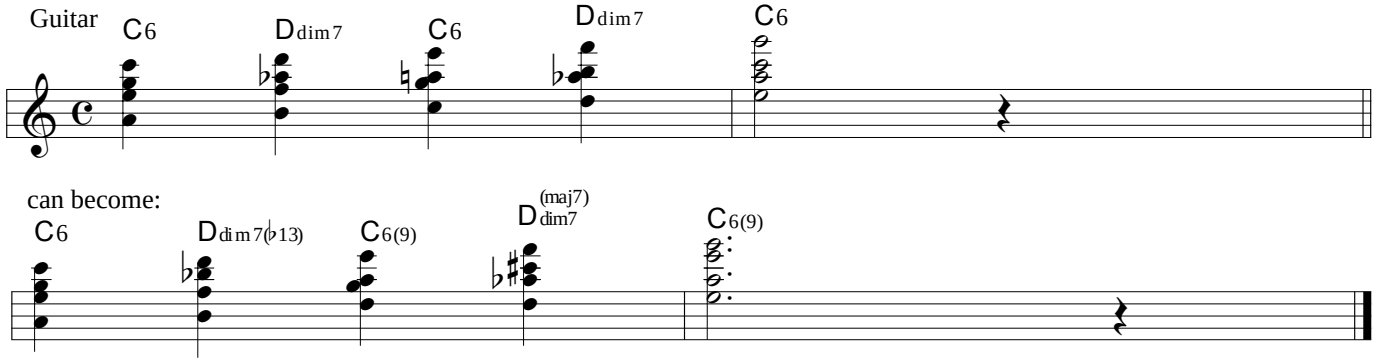
Outlining a chord with a Maj7 interval does not work with this technique. The chromatic passing tone must come between two chord tones that are a major 2nd apart. Sometimes on a Maj7 chord 9 is substituted for the root and a Be-Bop type scale will use a chromatic passing tone between 2 and 3.
On Cmaj7 the Be-bop scale outlines Cmaj9. I will start the scale on the 3rd of the chord.:
E F G A B C D D♯/E♭ E
This is identical to an Em7 Be-Bop scale (with a ♭2).



The same techniques can be applied to most 7 note chord-scales to better outline the chord.

It is also possible to extend the technique to emphasise chord tones and available tensions by using several chromatic passing tones. In order for this to work the scale must have an even number of tones.
C6(9) is outlined with the following scale: C C♯/D♭ D D♯/E♭ E F G G♯/A♭ B C (10 tones)
C7(9) is outlined with the following scale: C C♯/D♭ D D♯/E♭ E F G A B♭ B♮ C (10 tones)

Some interesting harmonisations can be achieved by adding available tensions to the passing chords even if those tensions are not members of the Be-Bop scale being outlined. Of course tensions can be added to the principle chord as well.



2. Chromatic Approach Notes

What follows is a much looser, less regimented way to use non chord tones and escpecially chromatics as approach notes into the chord tones.

With any chord type there will be a little chromatic universe above and below each chord tone. These notes can be used as approach notes into the chord tones by using some pre-determined formulas that always resolve into the chord tone.

On chords containing Major 3rds there is a ♭2, ♮2 and ♯2 available between the Root and the Major 3rd.

On chords containing Minor 3rds there is only a ♭2 and ♮2 available between the Root and the Minor 3rd.

On chords containing Major 3rds and Perfect 5ths there is a Perfect 4th and a ♯4 available.

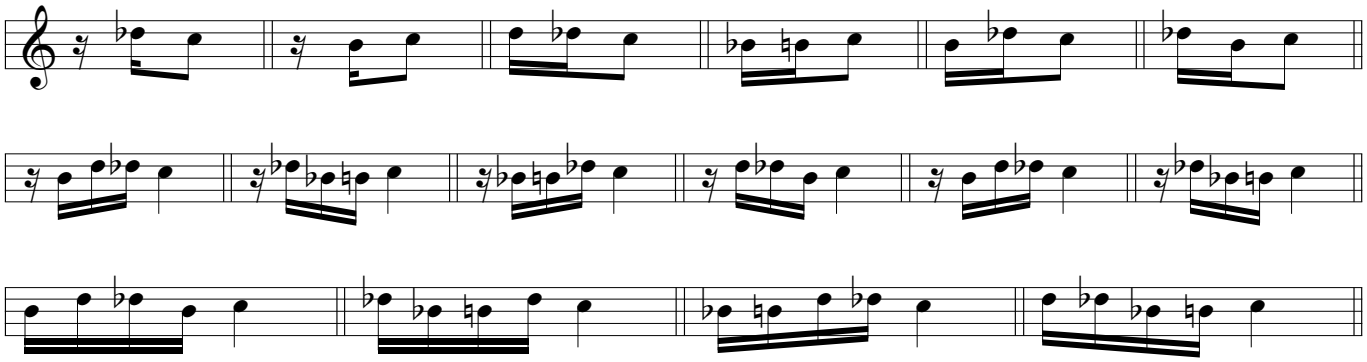
On chords containing Minor 3rds and Perfect 5ths there is a ♭4, a Perfect 4th and a ♯4 available.

On chords containing Major 3rds and ♭5's there is only a Perfect 4th available.

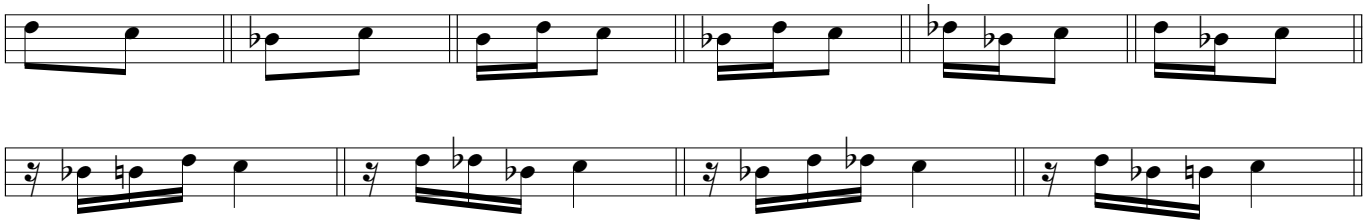
Etc.

On triads there are several chromatic notes available between the 5th and the Root.

The following patterns use up to 2 chromatic tones on either side of a target note. These patterns can be imposed upon a chord by treating the chord tones as target notes. C is the target note in all of the following. The patterns in this first group all resolve into the target note by a half step.

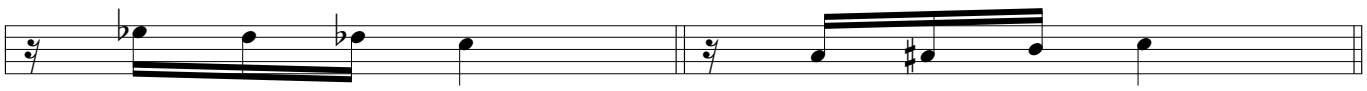


Notice how the next patterns resolve into the target note via a full step.



There are certain harmonic situations where this seeminly simple resolution can sound rather "outside". Eg. In the key of A♭ major Cm7 functions as a IIIm7 chord. In this key using any of the resolutions that approach C from a full step above (D♮) will sound sort of outside the key because the A♭ scale normally has a D♭. In situations like this the movement of a whole step can actually feel and sound much more like a leap rather than a step-wise resolution

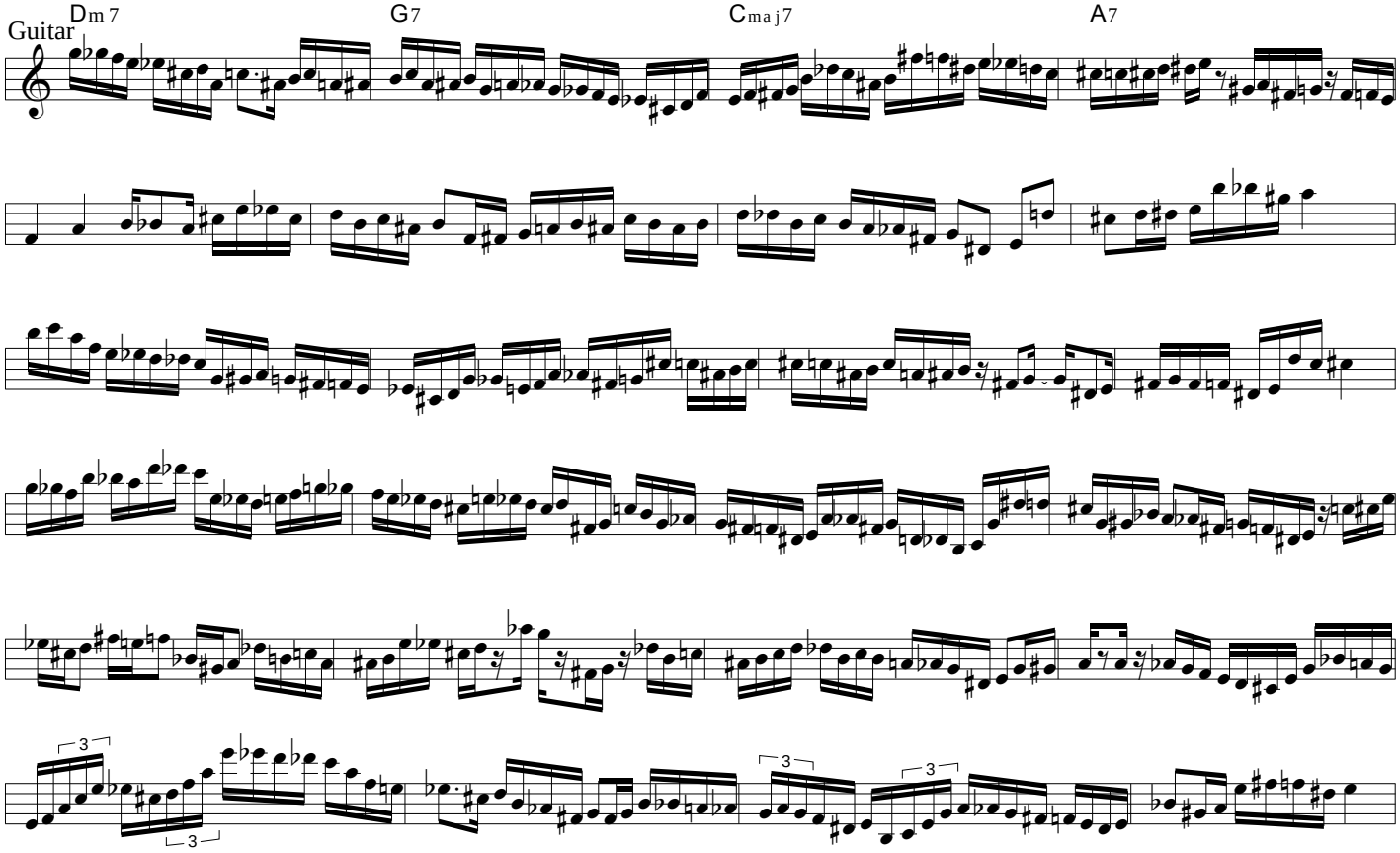
The following examples use chromatics starting a full minor 3rd on either side of the approach note.



Of course the rhythms can be shifted such that the target note occurs on a weaker metrical position too. The main thing to consider here is that all non chords eventually DO resolve into a chord tone by step.

Here are some examples of lines utilising this technique on a IIm7 V7 Imaj7 V7 of II progression in the key of C major. In all cases the target notes are simply the Root, 3rd, 5th and 7th of the chord of the moment. Any

other notes are being used merely as chromatic or diatonic approach notes.



3. Target Notes From Other Chords

Consider this:

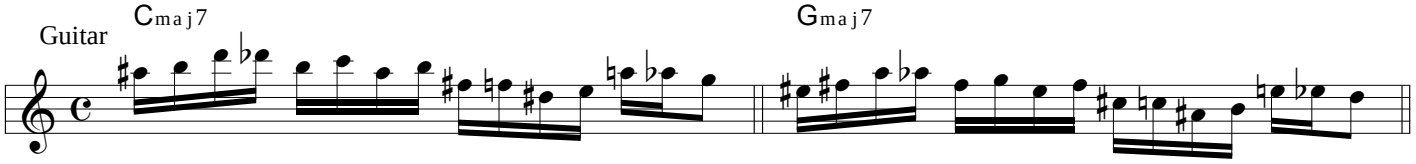
From a strictly vertical stand point every chord type (i.e. Major, Minor, etc., Maj7, Dom7, Min7, etc.) has a finite number of available tensions. For example on Maj7 chords the accepted tensions are usually 9, ♯11 and 13. Therefore there are 7 viable target notes on a Maj7 chord (R, 2, 3, ♯4, 5, 6 and 7). From these 7 available target notes several other types of 7th chords (or triads) can be constructed. By targeting the chord tones of these other chords while the original chord is sounding a quasi polytonal feeling is achieved. These target notes can also be approached chromatically. This can result in a very “inside” sounding types of “outside” playing.

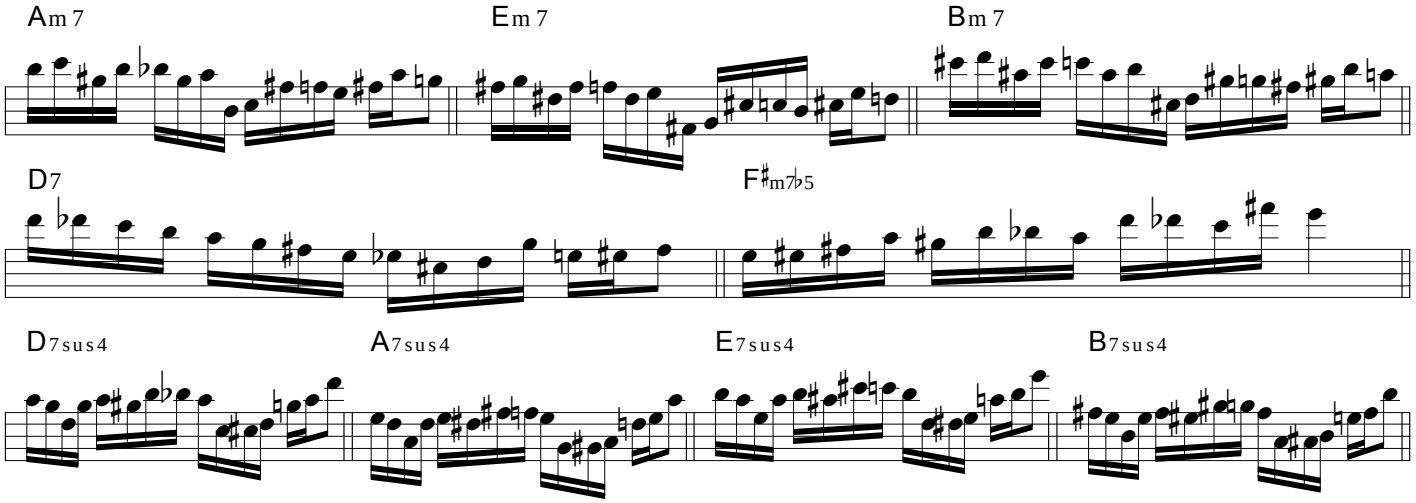
Example:

On Cmaj7 the available target notes (i.e. all 4 chord tones and all available tensions) are: C, D, E, F♯, G, A and B.

From this group of notes the following 7th chords can be constructed: Cmaj7, Gmaj7, Am7, Em7, Bm7, D7, F♯m7♭5, D7sus4, A7sus4, E7sus4, B7sus4, etc. All of the chord tones of these chords can be used as target notes with or without chromatic approaches when Cmaj7 is sounding.

The following examples can all be played over Cmaj7:





The same group of notes (C, D, E, F♯, G, A and B) will yeild several 5 note chords (eg. B7sus4♭9, F♯m7♭5(add11), etc.) as well as many other structures.
Some of these superimpositions are better suited for a Cmaj7 chord that would normally take the Ionian scale (eg. Imaj7) and some are better suited to a Lydian situation (eg. IVmaj7).

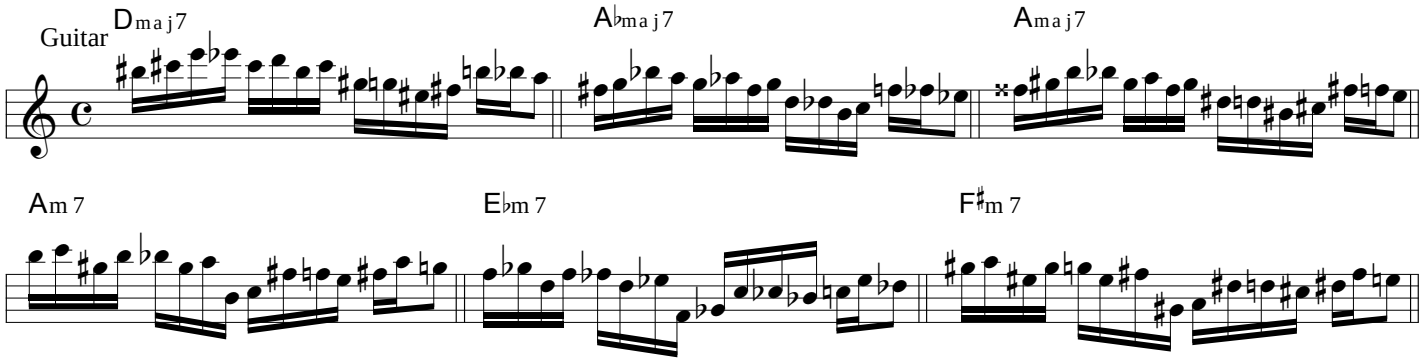
Example:
On C7 the available target notes (i.e. all 4 chord tones and all available tensions) are: C, D♭, D, D♯, E, F♯, G, A♭, A and B♭.

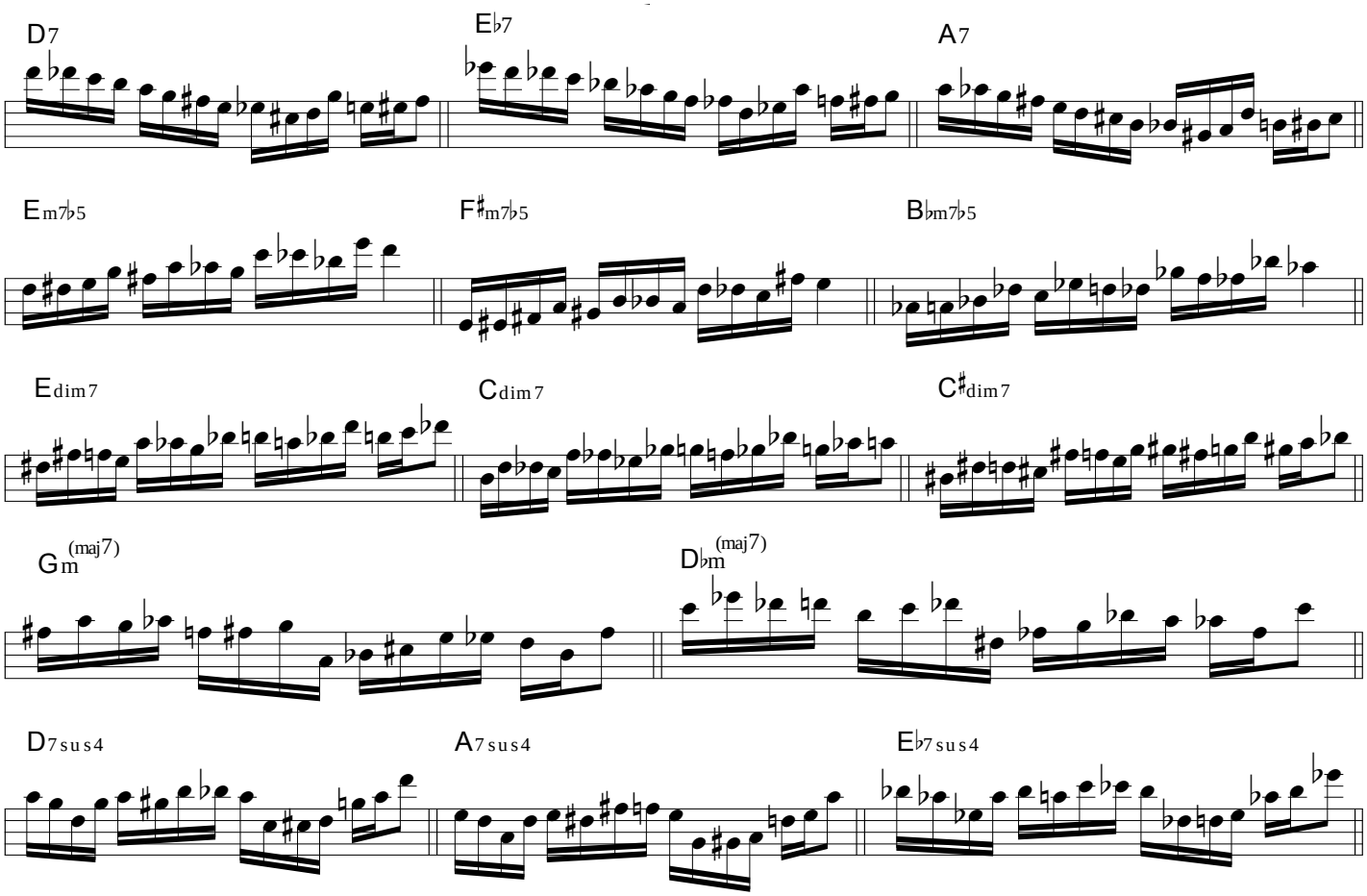
From this group of notes the following 7th chords can be constructed: E♭maj7, Dmaj7, A♭maj7, Amaj7, C7, D7, E♭7, F♯7, A♭7, A7, Am7, Cm7, E♭m7, F♯m7, Em7♭5, F♯m7♭5, Am7♭5, B♭m7♭5, Cm7♭5, E♭m7♭5, E°7, G°7, B♭°7, D♭°7, C°7, E♭°7, G♭°7, A°7, Gm(maj7), D♭m(maj7), Am(maj7), D7sus4, A7sus4, A♭7sus4, E♭7sus4, etc. All of the chord tones of these chords can be used as target notes with or without chromatic approaches when C7 is sounding.
The same group of notes (C, D♭, D, D♯, E, F♯, G, A♭, A and B) will yeild several 5 note chords (eg. E°7(9), B♭m7♭5(♭13), etc.) as well as many other structures.

The chords that contain two versions of the same tension (eg. Amaj7 over C7 contains both T♭13 as well as T13) are a little harder to deal with than the others.

Some of these superimpositions are better suited to a regular Dom7 chord (eg. V7, V7 of V, etc.) while some are better suited to an altered dominant (eg. V7 of Im, V7 of IIm, etc.).

The following lines can all be played over C7. Shell voicings, with the 5th omitted will be most effective.:





See what other relationships like these you can find for the other chord types:

Examples:
On Cm7 the available target notes are C (Root), D (9), E♭ (♭3), F (11), G (5), A (13) and B♭ (♭7). Some folks like F♯ (♯11) too. What other 7th chords can be constructed with these notes?
On Cm7♭5 the available target notes are C (Root), D (9), E♭ (♭3), F (11), G♭ (♭5), A♭ (♭13) and B (♭7)♭. Some folks like A♮ (♮13) too. What other 7th chords can be constructed with these notes?
On C°7 the available target notes are C (Root), D (9), E♭ (♭3), F (11) , G♭ (♭5), A♭ (♭13), A (𝄫7) and B (maj7). What other 7th chords can be constructed with these notes?
On C7sus4 the available target notes are C (Root), D♭ (♭9), D (9), E♭ (♯9), E (10), F (4), G (5), A♭ (♭13), A (13) and B♭ (♭7). What other 7th chords can be constructed with these notes?
Etc.
This is a potentially VERY POWERFUL technique but you must be careful with it. Try, as always, to be learn to HEAR these sounds. Don't just play them because you *think* they will work.

4. A Summarry Of The Available Tensions On 7th Chords

Here is a summary of the tensions available on the basic 7th chord types from a strictly vertical perspective:

- Maj7 - 9, ♯11, 13 (try ♯9 and ♯13 as well)
- Dom7 - ♭9, 9, ♯9, ♯11, ♭13, 13
- Min7 - 9, 11, 13 (try ♯11 as well)
- Min7♭5 - 9, 11, ♭13 (try ♮13 as well, some folks are comfortable with ♭9's on min7♭5 chords too)•
- Dim7 - 9, 11, ♭13, maj7
- Maj6 - 9, ♯11, maj7
- Min6 - 9, 11, maj7 (try ♯11 as well)
- Dom7sus4 - ♭9, 9, ♯9, 10, ♭13, 13
- Min(maj7) - 9, 11, 13 (try ♯11 and ♯13 as well)

• Maj7♯5 - 9, ♯11 (try ♯9 and ♯13 as well)
• Maj7♭5 - 9, ♭13, 13 (try ♯9 and ♯13 as well)
• Min7♯5 - 9, 11, 12 (try ♯11 as well)
• Dom7♯5 - ♭9, 9, ♯9, ♯11, 12
• Dom7♭5 - ♭9, 9, ♯9, ♭13
• Min(maj7)♯5 - 9, 11, ♯11, (try ♯13 as well)
• Maj7sus4 - 9, 10, 13 (try 313 as well)

In all cases above the ♭9 interval is avoided except in the following situations:
• ♭9 on Dom7 chords (the ♭9 interval formed between the Root and T♭9 is perfectly acceptable.
• ♭13 on Dom7 chords (the ♭9 interval formed between the P5th and T♭13 is acceptable however, most players will omit the P5th from their voicings of a Dom7♭13 chord so as to avoid the harshness of this ♭9 interval).
• ♭9 on Min7♭5 chords (the ♭9 interval formed between the Root and T♭9 is acceptable in some instances).

XVIII. Rhythms Used In Comping

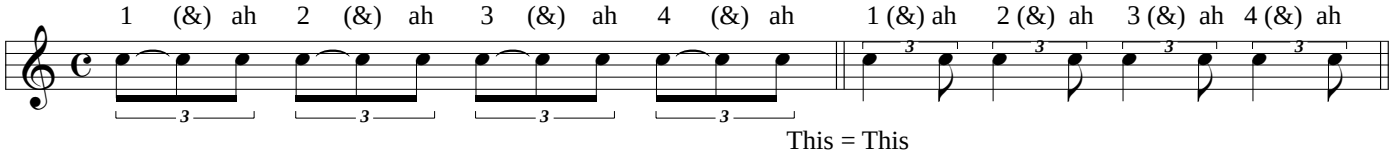
There are certain styles and associated rhythmic figures that appear time and again in the jazz repertoire. By far the most prevalent of these are the medium and up tempo swing tune, the jazz waltz, the ballad and the Bossa Nova. While it would be silly to say that you should play the same thing on every swing tune or on every Bossa Nova there is a range of things that are done pretty much all the time that work well and help to delineate the style.

I sometimes liken the central rhythmic figure that makes a groove tick to the idea of the "mantra" in Eastern meditation practices. A mantra is something to come back to if the mind wanders while meditating. It is the central idea contemplated during the meditation. All other thoughts flow out from the repetition of the mantra. The rhythmic figures used to thresh out a groove serve a similar purpose. All the rhythms played by everyone in the ensemble should mesh with and not clash with the main rhythmic figure.

A rhythmic counterpoint is often set up where all the rhythmic attacks of one part that somebody is playing (say the bass player) occur in the cracks of another part (say the guitar player). There are places where their rhythms have identical attacks and there are places where they are in rhythmic counterpoint. The overall effect is a composite rhythm consisting of all the attacks in all of the parts and the whole thing must fit the groove.

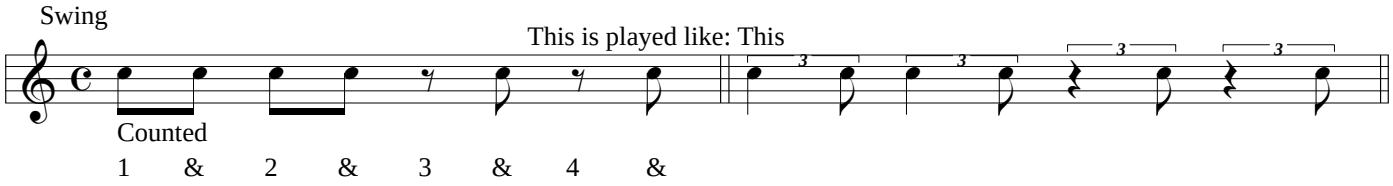
A. Swing:

Swing music is based, for the most part, on a type of triplet rhythm. The basic pulse is achieved via a figure consisting of two 1/8 note triplets tied (i.e. one 1/4 note triplet) alternating with an 1/8 note triplet. This is usually counted with the syllables "1 and, 2 and, 3 and, 4 and", etc. rather than "1 (&) ah, 2 (&) ah, 3 (&) ah, 4 (&) ah", etc. (which is the way that 1/8 note triplets are usually counted).

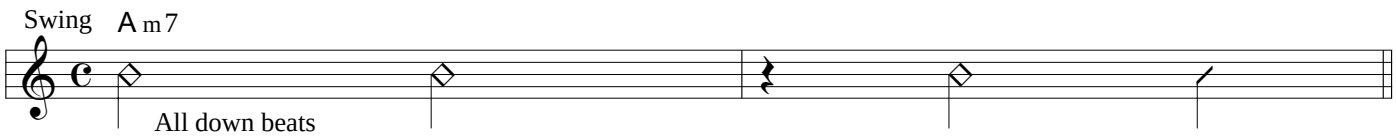


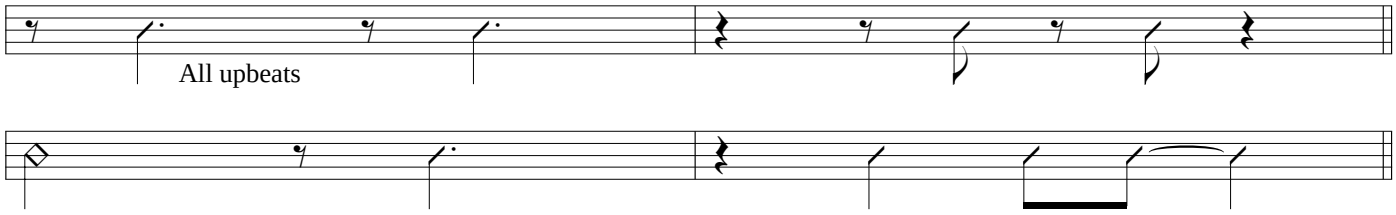
The exact same Common Time figure could have be written in 12/8 without all the 3's and brackets but usually is written in Common Time as described below.

The figure usually written in a type of shorthand notation whereby the "swing 1/8 notes", as they are called, are notated like regular or "legit" 1/8 notes. This saves the copyist lots of time and trouble because he does not have to write out all of those 3's and brackets for all the triplets (or write the chart with a 12/8 or 9/8 time signature). The text "Swing" is written at the beginning of the music to let the players know that the swing shorthand is being used. If a series of legit 1/8 notes needs to be played the text "Straight Eighths" is written above the section and then the text "Swing" is written to resume the swing eighths.



When comping in a swing feel, for the most part, you will merely be tastefully alternating the attacks of your chord voicings between down beats and upbeats (swing upbeats that is). When an accompanist gets much more busy than this he usually begins to get in the way of the musician he is supposed to be accompanying.



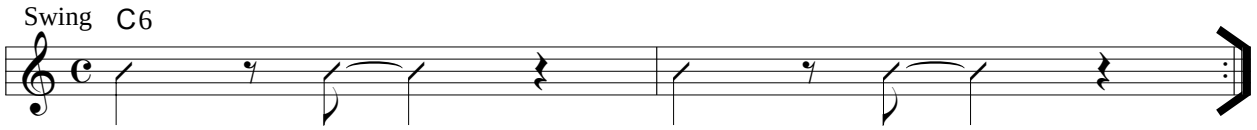


Note: The faster the tempo gets the less the upbeats will feel like triplet figures. At a fast tempo swing 1/8 notes begin are played much more like legit 1/8 notes.

1. 4/4: The Charleston Figure

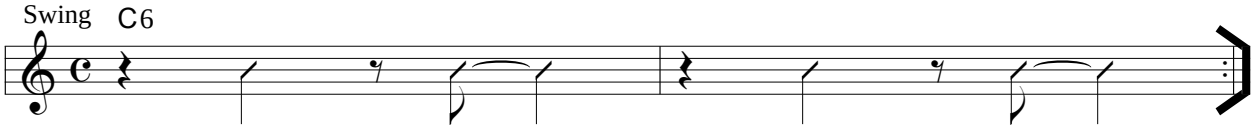
One figure that is extremely popular in swing music is what is often known as the “Charleston figure”. It gets its name from a popular dance of the 1920’s. It consists of an attack on 1 and an attack on the “and of 2” (i.e the upbeat of beat 2).

Here is the basic figure:



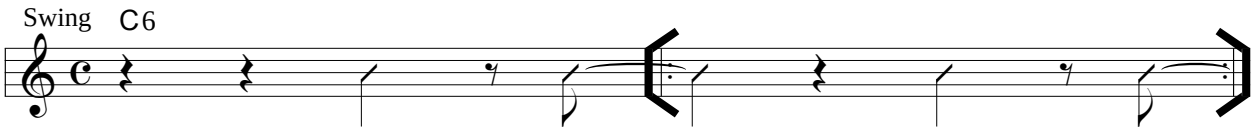
I’m sure you’ve heard this a million times on lots of tunes. I always associate this rhythm with the opening vamp of Sweet Georgia Brown. Try comping through several tunes like All Of Me using this figure all the way through. In the situations where the chord changes on beat 3 you will have to anticipate the chord by playing it on the and of 2 instead.

A trick that jazz players like to do is to time-shift this rhythm so that the distance between the two attacks remains the same but the first attack happens a beat later, like this:



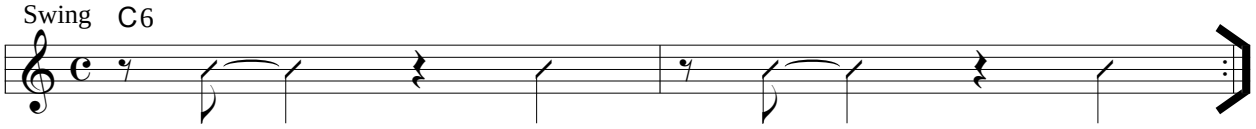
Try comping through several tunes using this figure all the way through. In the situations where the chord changes on beat 3 you will have to delay the chord by playing it on the and of 3 instead.

Shifting it one more beat to the right we get:



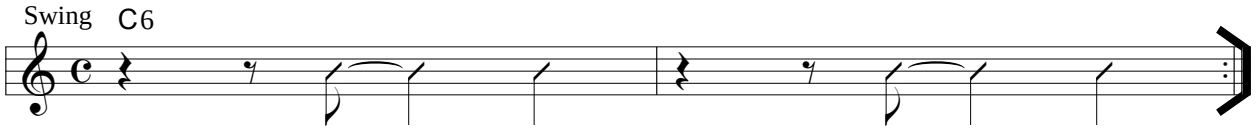
Try comping through a tune using this figure (i.e. the 2nd bar) all the way through. In the situations where the chord changes on beat 1 you will have to anticipate the chord by playing it on the and of 4 instead.

Shifting it one more beat to the right we get:



Try comping through several tunes using this figure all the way through. When the chord changes on beat 3 you will also need to delay its attack until beat 4 instead.

Shifting it one more beat to the right we get:



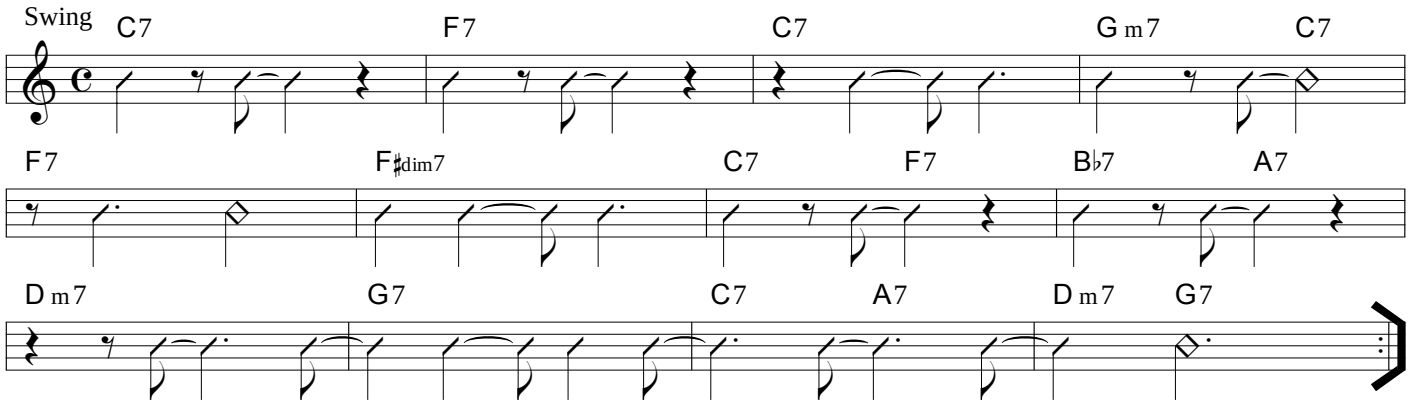
Try comping through several tunes using this figure all the way through. When the chord changes on beat 3 you will also need to anticipate its attack on the and of 2 instead. Some chords occurring on beat 1 can be anticipated a full beat, i.e. on beat 4 instead.

If we time shift the figure one more beat to the right we will be back where we started.

Tip: Experiment with time shifting of some melodies too using this same technique. Try time shifting rhythms by increments smaller than a 1/4 note as well (i.e. 1/8 notes, 1/16 notes etc.)

Now try comping through several tunes and switch these patterns around wherever you feel like it.

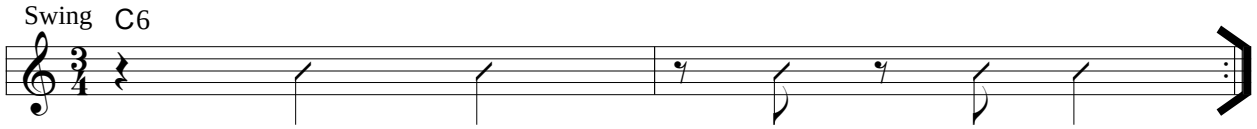
Now that you are comfortable and in control of playing all the possible downbeats and all the possible upbeats try comping using just the general idea of some downbeats here and there peppered with some upbeats now and then, like this:



2. 3/4 Jazz Waltz

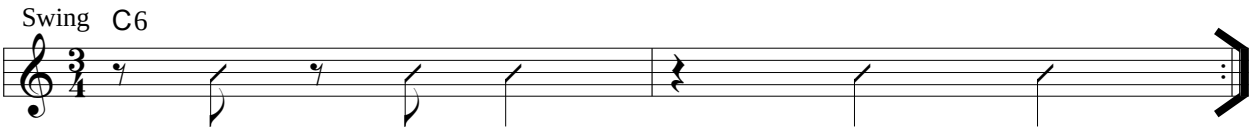
The Jazz Waltz is really much like a bright 9/8 feel but it is written as medium tempo 3/4. The same type of swing shorthand notation is used.

The most common comping figure that I am aware of for a Jazz Waltz is the following 2 bar figure:

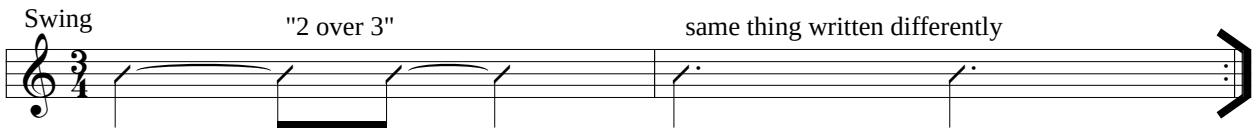


There is a nice rhythmic counterpoint that happens with a bass player when he plays on the downbeats of each bar while the guitar rests ... or the guitar player can add his own bass notes in the cracks.

This figure is also often inverted so that the second bar happens first:



This next figure is often thrown in to spice things up. It is actually a poly-rhythm. It outlines 2 equal pulses within the 3 pulses of the time signature:



Practice comping through several Jazz Waltzes using these figures.

B. Latin:

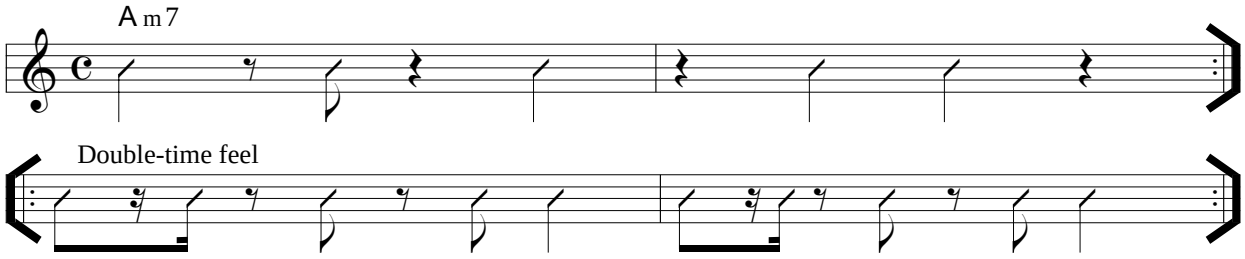
Most Latin music does not use the Swing 1/8 note as its basic pulse. It is played and notated with legit 1/8's and 1/16's usually.

Note: I am by no stretch of the imagination an expert on Latin music and Brazilian rhythms. The people who play this stuff all the time have some very strict do's and don'ts. What I am presenting here are really just my own personal approaches to these styles in a jazz context.

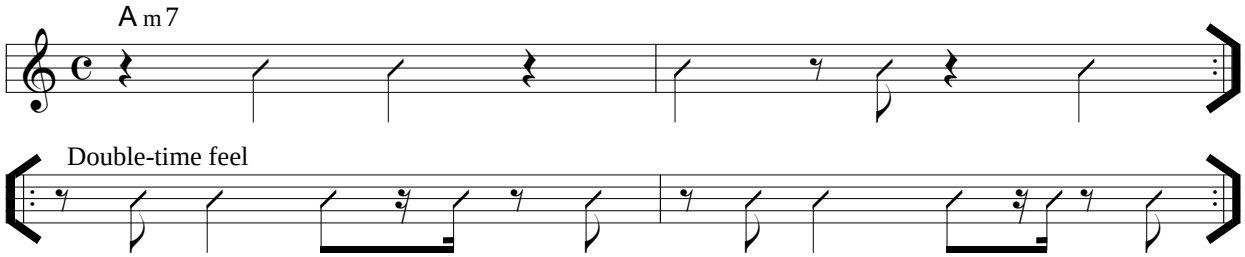
1. The Clavé Rhythms

The mantra of any piece of Latin music is the "clavé" rhythm or one of its several variations. These figures can be written at a medium tempo as a 2 bar figure or in a double time feel as a single bar figure. (See below)

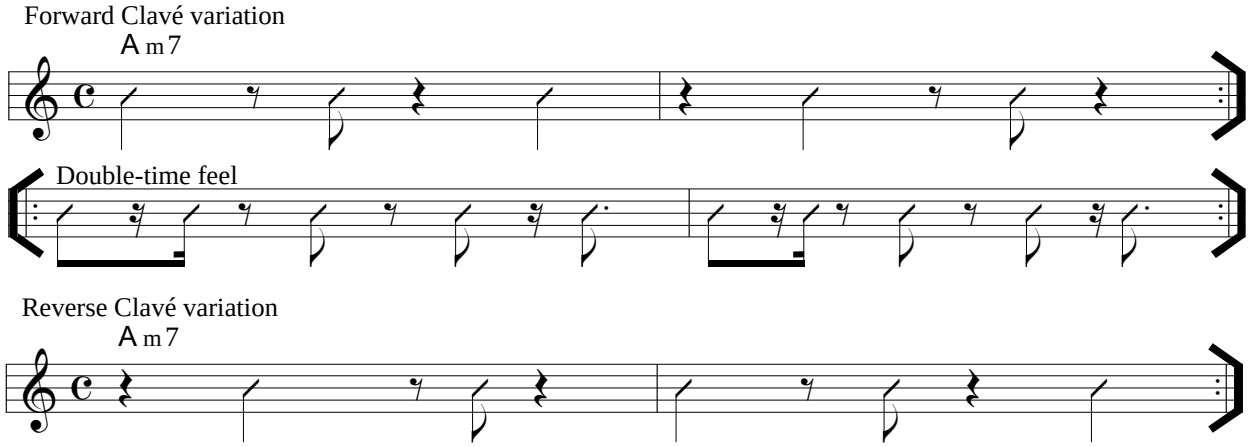
The "forward" clavé is probably familiar to you rockers already as the "Bo Didley Rhythm":

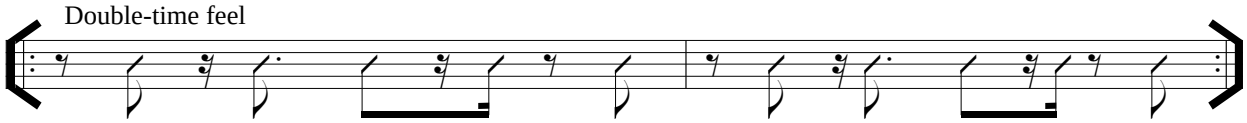


"Reverse" clavé simply switches the position of each bar:

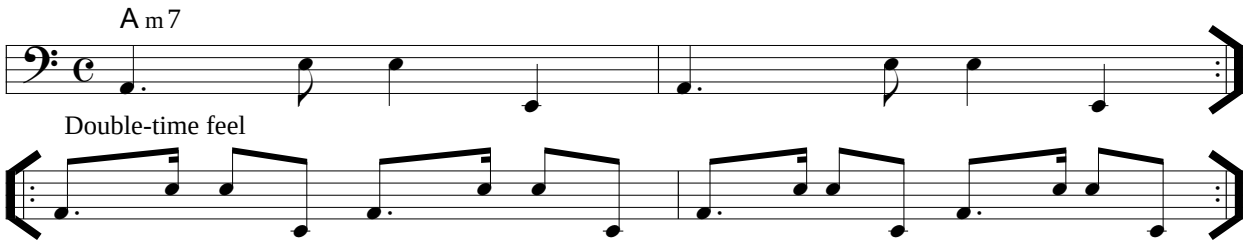


Two variations of forward and reverse clavé are achieved by slightly time shifting on or more of the attacks from a downbeat to an upbeat or visa versa:





The bass line is usually something like this:



So you can see there there are some interesting composite rhythms that are formed between the attacks of the clavé and the bass line. A good Bossa Nova guitar player will usually be able to play a bass line like this with his thumb as well as the clavé based counter-rhythms with his fingers.

I've always thought of Bossa Novas as being based on the regular time feel clavés and the Samba as being based on the double-time feel clavés. I.e. A Samba is like a fast Bossa.

C. Ballads:

Ballads can be based on a swing 1/8 pulse or a straight 1/8 pulse or a combination of both. Because the tempo is slower a 12/8 type of a feel can often help to fill things out a little. On a ballad the types of rhythmical jabs we have been using till now may seem a little out of place. Chords are allowed a longer duration and may also be arpeggiated somewhat.

D. Broken Time:

There is a type of small band playing that I attribute to the Bill Evans Trio where many of the repetitive types of devices that I have been espousing are purposely shunned in favour of a looser, anything goes, type of attitude.

In this style it's almost like everyone in the band is soloing at once. The bass player does not have to play a steady stream of walking 1/4 notes. He can play fills and broken rhythms with phrasing across the bar line too. Ditto for the piano (or guitar) and the drums. The idea is that if everybody in the band possesses a good time feel then no band member really needs to be responsible for stating the time. Everybody should be able to feel it on their own and should be able to weave in and out of it in interesting ways.

I don't think I can really describe this way of playing any better than that. You'll have to buy some Bill Evans Trio recordings, the ones with Scott LaFaro on bass.

E. Suggested Listening

Here is a short list of some guitar players and piano players who are masters of the comping styles being considered here. I have also included the names of a few band leaders who always have great players of these styles with them. The only way to understand how to play in these styles is to listen closely to the people who can already do it and to imitate them:

Medium and Up Tempo Swing and Ballads:

Lenny Breau, Ed Bickert, Jim Hall, Herb Ellis, Oscar Peterson, Wynton Kelly, Bud Powell, Red Garland, etc.

Latin Jazz:

Antonio Carlos Jobim, Laurindo Alemeda, Charlie Byrd, Chick Corea, Tania Maria, Ray Barretto, Tito Puente, etc.

Ballads:
Bill Evans, Jim Hall, Herbie Hancock, Pat Metheny, Lenny Breau, Keith Jarrett, etc.
Broken Time and Modern Jazz:
Mick Goodrick, Joe Diorio, Lorne Lofsky, Bill Evans, McCoy Tyner, Paul Bley, etc.

X.X. Playing What You Hear

Up until now (except for the "Happy Birthday by ear" exercise in the Single Strings chapter) unless you have been lazy or have misunderstood all those times I said "Sing this exercise out loud" we have been doing things sort of ass backwards from the way it really works when a good improviser plays.

When you sing the stuff you practice you learn it on a much deeper, more musical level. There is a world of difference between the act of consciously playing a note somewhere on the fretboard for some logical reason and the act of singing that same note. When you sing something, whether or not you possess a good singing voice, you are forced to really HEAR it. It is something inside of you, not some contivance you manipulate outside of yourself. You don't need to have a good singing voice but I have NEVER run across a musician who could play jazz who was not capable of singing a melody and doing so more or less in tune.

When you sing out loud that which you are practicing you enable yourself to learn to HEAR what you are practicing, not merely to play it. Once this ability is developed it is not something that needs to be done, out loud that is, forever and ever. A good player always has an internal voice going on inside his head. You will be singing internally even if you are not singing out loud.

When you sing out loud while you are practicing improvising you will force yourself to play more melodically. Most of the fingering pyrotechnics that young guitar players are so drawn to yeilds music that is impossible to sing. As soon as you take the attitude that, for the most part, you will not play anything that you can not sing, your playing will begin to take on that vocal quality that is the hallmark of a really good player.

Singing while practicing new material (scales, arpeggios, melodies, etc) will help you to hear new things. Things that you can't hear now. You should develop the ability to sing any scale or arpeggio whether you have the guitar in your hands or not. Eg. After praticing a C7♭5 arpeggio in Pos VII. for 20 minutes - if you can not sing a C7♭5 arpeggio YOU ARE MISSING THE POINT COMPLETELY!!!!!!!!!!

Singing while improvising will force you to play leass leaps and more step-wise motion.

You will be more likely to play long notes as well as short notes. The voice is capable of sustaining a note and varying it dynamically, whereas a struck guitar string begins to die away immediately. Most guitar players try to fill up all that dead air way to much and play way too many notes.

You will probably play more repeated notes as opposed to a different note on each attack.

You will probably play more in time, with succint, recognizable rhythms.

You will probably begin to subconsciously develop both rhythmic and intervallic themes as well as developments of those themes.

It is a lot harder to sing a bad note than it is to play one so you will probably start hitting more good notes.

There is a fraction of a second just before you attack a note where you will know if you can sing it (and therefore whether you are really hearing it). You should be able to train yourself to stop if you know beforehand that it will sound bad.

Learning to lay out when you don't hear anything is extremely important. Only a fool keeps playing when every single note sucks. Don't be afraid to let time go by while you find your bearings and get ready to lay into that 1 note that you KNOW will sound great.

In summary, you will begin to play much more compositionally and less like a typical, wanking, novice, rock guitar player whose guitar is playing him when it is he who should be playing the guitar.

Note: In order to sing a line that extends above or below your vocal range you must develop the ability to vocally switch octaves. You should learn what your practical vocal range is. What is the highest note you can sing? What is the lowest? What notes can you sing in falsetto?

As good as learning to hear what you are playing (i.e. via signing) is for you it is nowhere near as important a skill as being able to play what you hear. There is a difference. A big difference. When you sing what you play you are trying to hear something that you conceive on the guitar. When you play what you hear you are hearing it first. The guitar is merely the medium by which you "vocalise" that which you already hear.

When I first started playing, after I had learned the chords to some Beatles tunes I began to lift bass lines, chord progressions and eventually some lead lines, by ear. I had a crude technique but it worked. I would lis-

ten to sections of the recording over and over again until I could sing the part that I was trying to work out. Once I could sing it it was just a matter of finding out where on the guitar those notes happened to be. If I had a hard time with a particular note I would simply go up and down a single string, 1 fret at a time until I found the note i was looking for. Once I knew where the notes were I could then try to work out a decent fingering and maybe even a fingering that sounded just like the record.

To me, doing this seemed obvious. I am always amazed when I encounter a student who has been studying the guitar seriously for many years who has never learned how to lift a part off of a record. In my mind and in my experience this is the most important ability an improvising musician can have. Without it nothing else is of much use.

Now, I learned to sing when I was quite young. My father was a very good singer and he loved to sing. My elementary school had a great teacher named John Bradshaw who used the Orff music training program. I sang in choirs, played glockenspiel as well as other percussion instruments and a little piano. My Dad played ukelele and he taught me my first few chords when I was around 10. I have no idea what to tell you folks who have had disimilar musically deficient childhoods. If all of this stuff is WAY beyond you you should seek out a professional ear training coach. It wouldn't hurt to go to an ear training coach anyway no matter what your musical level.

The following series of exercises are designed to get you to listen closely to what you are presently capable of hearing and to get you to be able to play that which you can hear on the guitar. Hopefully, with practice, you will develop the ability to hear more things and to hear better more interesting things.

We'll start with a blues in C major but any tune should do. Pick simple tunes for now with no more than 2 chords per bar and on average only 1 chord per bar.

1. With your metronome on at a slow tempo - play the chord in the 1st bar of the tune and also play the first chord of the 1st beat of the 2nd bar, and then stop. Strum each chord only once and listen very closely to it. Do this a few times. Let the sound of the chords sink in.

2. With the 1st chord sounding sing (DON'T PLAY IT .... SING IT!!!) a note that sounds good to you on that chord. We'll use that note as the starting note of the melody we are about to compose.

3. Repeat Step 1 but this time sing a melody that sounds good all the way through bar 1 and into the downbeat of bar 2.

DON'T PLAY IT .... SING IT!!!! Try to find a simple melody with very distinct pitches that you can repeat. You'll need to sing this melody quite a few times before we decide that it is your keeper. Try this several times until you have clearly sung a melody that you like, 3 or 4 times in a row. If the first melody you come up with is not so hot then just keep trying until you get one that you like. It does not have to be brilliant and flashy. It just has to work and sound musical. Make sure the notes you are singing sound good while the chords are sounding.

(If you have trouble finding any other notes beyond the 1st one that sound good to you then try singing some scales up and/or down (by step) beginning on your 1st note. Eventually you will find 2 or 3 notes that you like.)

4. Find those notes on the guitar. Use the crude technique I talked about earlier if you must. (Up and down 1 string, 1 fret at a time until you find the note you are looking for.)

5. Tape record yorself playing the chords from these 2 bars as above. Play your line while the tape plays back. Make sure you are playing EXACTLY what you sang! Nothing more, nothing less. Keep singing if you must.

5. You'll need some way of either memorizing this melody or of storing it. If you have a good memory for melody you'll be fine. If not, you can either tape record what you have so far (on a separate tape, I guess) or if your reading/writing skills are up to snuff you could write it down in musical notation.

6. Play the chords again for the 1st two bars and sing your line but continue all the way into the 1st beat of bar 3. The first time you do this just listen to the sound of the chord in bar 2. You should already know what your 1st note for bar 2 will be.

7. Repeat Step 6 but this time keep singing through all of bar 2 and the 1st beat of bar 3. DON'T PLAY IT .... SING IT!!!! Try this several times until you have clearly sung a melody that you like 3 or 4 times in a row.

8. Repeat Step 4.

9. Tape record yorself playing the chords from these 3 bars as above. Play your complete 3 bar line while the

tape plays back. Make sure you are playing EXACTLY what you sang! Nothing more, nothing less. Keep singing if you must.

10. Repeat Step 5.

11. Continue as above until you have composed a full chorus.

If you are anything like the vast majority of my students you will probably find that you have composed a melody comprised mostly of chord tones with the odd tension and/or passing tone here and there. There will usually be a clear repetitive rhythmic and intervallic theme that is slightly developed as the tune goes on. The range of the melody will probably be no more than a P12th. There will be few melodic leaps at the points of a chord change. Chords will be joined smoothly, by step-wise motion or common tones. These are all the hall-marks of a good strong melody.

YOU WILL HAVE DONE THIS ALL SUBCONSCIOUSLY!

The subconscious mind is a lot quicker to put all of the various elements of a musical performance together than the conscious mind is. Take the time to listen to what you hear!

Music is a wholistic process but it involves many little details each of which often needs to be studied separately using a reductionist approach. At some point, however, you have to try to put ot all back together again.

Do the above exercise dilligently and persistently and eventually the time involved can be so drastically reduced that you can actually play what you hear, in real time, on the guitar, while you are hearing it. The above technique IS what improvising is. Improvising is nothing more or less than what I have described above. Everything else, i.e. all the scales, all the arpeggios, all the theory, all the other bullshit is just supposed to help you do a better, more interesting job of the above.