

Jazz Chords for Baritone Ukulele



Dennis C Merritt

*Jazz Chords
for
Baritone Ukulele*

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for
Nancy

Acknowledgements

I'd like to thank Chip Bell for introducing me to the baritone ukulele, which was a lot easier to play than my guitar, in the Asheville Open Contra Band (after we lost our spots as alternating bass players), and Meg O'Malley's Irish Pub in Melbourne, Florida, for hosting a warm and welcoming Irish jam each week.

I'd like to thank my girlfriend Nancy for encouraging me to learn the jazz chords to accompany her singing those wonderful old songs. And for listening to me go on and on about chords and fretboards, when, really, as a single-note-at-a-time flutist, she could care less. And (despite getting a bit grouchy sometimes) for simply being there through the process that all authors acknowledge as getting a bit tedious near the end.

I'd like to acknowledge two excellent software tools I used. Sketch for making it easy to create all the diagrams in the book, and Scrivener for providing beginning-to-end tools for organizing, editing and compiling the manuscript. (However, for working out early ideas and organization, no software tool can compete with 1/4 sized sheets of colored paper and Mirado Black Warrior pencils.)

From my past, I'd like to acknowledge the influence James Martin (one of the all-time best-selling text book authors) had on me with his idea that, in a text book, the figures are not to illustrate the text but rather that the text is the glue that explains and ties the figures together.

And from the distant past, I'd like to thank Pythagoras for applying his analytical mind to figuring out the hows and whys of the musical harmonies that move the planets and our souls. (Well not the planets it turns out.)

Dennis Merritt

Shelburne Falls, Massachusetts 2019

Preface

I played some guitar and wanted to accompany my girlfriend on the jazz songs she liked to sing. Like Rodgers and Hart's *Bewitched Bothered and Bewildered*.

But I quickly ran into chords I'd never seen before, like these:

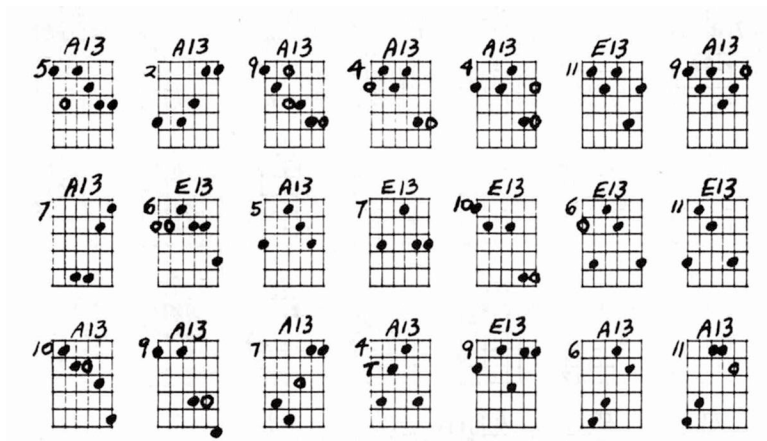
Dm7	G9	Em7	A13
. . .	But a fool	can have his	charms . . .
Dm7	G13	G7	G7+5
. . .	Put me on the blink.	I'm . . .	

Bewildering chords

I was OK with the 7th chords, but G9? A13? G7+5?

Looking them up generally led to one of two equally unsatisfying results. Either a single diagram was displayed that just didn't sound right in the song I was trying to play, or I was presented with an overwhelming array of possibilities.

Here, for example, are 13 ways to play an A13 chord on a guitar, from Ted Greene's encyclopedic *Chord Chemistry*.



Curiously, the single recommended fingering of an A13 that came with my version of *Bewitched Bothered and Bewildered* apparently wasn't good enough to make this list.

I wanted to learn more about how these chords were derived, I wanted to know which of the dots made a chord an A, which made it a 13, and which dots made the G7 to G7+5 so full of anticipation.

I started to delve into these issues on my guitar, making notes, drawing the sorts of diagrams that appear throughout this book, but still, six strings, so many ways to play the four note chords, some fingerings difficult to play.

Maybe there's a simpler way to learn about jazz chords. A way with fewer strings to deal with, yet one that aligns perfectly with the four part harmonies of the chords. A way that's easier to play and still captures the subtle sounds and beauty of those chords...

I had a baritone ukulele.

Dennis Merritt
Shelburne Falls, 2019

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CHAPTER ONE

Introduction

“Everything should be made as simple as possible, but not simpler.” — Albert Einstein

In case you missed the cover, here’s how a guitar, baritone ukulele and soprano ukulele compare in size. The baritone has the simplicity of four strings, but with a larger body than the soprano. That makes it sound more like a small guitar than a big ukulele.



Guitar, baritone ukulele, soprano ukulele

But it doesn’t matter which you use with this book. That’s because it’s all about movable chord shapes and the jazz voices they play.

The four strings of the baritone ukulele are tuned the same as the four high strings of the guitar, so everything in this book can be played on a guitar. Further, the ideas in the book can be easily extended to the full guitar, adding complexity of course.

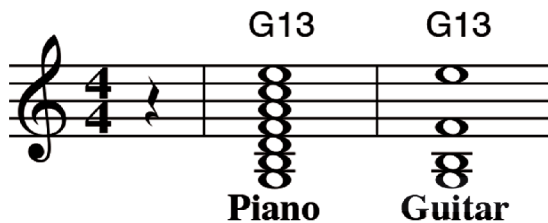
As to the soprano ukulele, it is tuned differently from the baritone ukulele but the relative spacing of the strings is the same. This means that any chord shape in this book can be played on the soprano ukulele as well, it will just be at a different pitch. For example, the shape and fret used to play a G7 on the baritone ukulele will play a C7 on the soprano.

Four Note Chords

Almost all jazz chords for guitar are defined by four notes. You might say there are lots of five and six string guitar chords. Yes, but they usually only have three or four unique notes. The rest are duplicates. For example, the classic six string E chord has three Es in it.

For lots of jazz chords, and in particular all the seventh chords, which are the foundation of jazz, there are only four notes in the chord. Three for the base chord and one for the seventh. As you read on you'll see that the ukulele tuning is ideal for playing these. It's almost as if it were designed for that purpose.

The higher, more complex chords have additional notes. The biggest is the thirteenth chord with seven notes in it. It can be played on a piano, but for guitar only the notes that give it its distinctive sound are used.

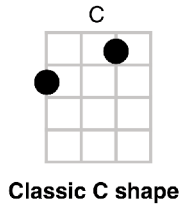


So for whatever chord, four notes covers it.

Hidden Voices Beneath the Dots

There are two factors that go into any chord diagram: fingering and voicing.

Fingering tells you where to place your fingers to make a chord. Here's the chord diagram for the classic C chord.



It gives the fingering. The how of playing a chord.

Voicing tells you the notes that go into a chord and the order in which they're played. That classic C chord has, starting from the low fourth string, these notes in this order.

E G C E

Those are the voices of the chord. The why of the chord.

The voices are hidden in the classic dot diagrams!

For the basic chords, this isn't a problem. It's just fine to memorize the few shapes needed to accompany most regular songs. When the music says strum a C, well then, strum a C. It's not necessary to understand the why of a particular voicing of chord, just how to play it.

But for jazz, it's all about the voices.

- ◆ You can learn to play a G13, but what makes it a 13th chord? What gives it its special flavor? And how does it relate to a 7th chord?
- ◆ You can learn to play a G7 and a G7+5, but what is it that creates that anticipation? How do they work together?
- ◆ And does one have to start all over for an A13? Or is there some overlap, and if so where?

The answers to all these questions are in the hidden voices.

The How and Why of Chords

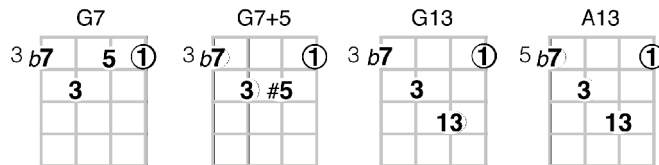
This book is all about understanding both the how and why of chords. The more you understand the why, the less you'll need to refer to chord charts for the how.

To this end, normal chord diagrams are used, except the dots are replaced with numbers. Each number indicates the relative note number being played on each string, a (1) for the root, 3 for the 3rd, etc.

This still tells you where to put your fingers, but also shows you the music, the harmonies, you hear when you play.

(Spoiler alert — the following example comes from near the end of the book, so it might not make perfect sense now but should give you a flavor of where the book is going.)

Here's one shape for a G7 along with three other chords that are closely related. They all have the root on the first string.



G7 and friends

The voicing for each shows exactly what the relationships are. In these four shapes we can see:

- ◆ The sense of anticipation you hear playing G7 to G7+5? It's caused by moving the 5 up one fret, making it sharp. And it's on the second string, so it's easy to play by dropping a pinky on it after playing the G7.
- ◆ A G13? It turns out to be nothing more than a variation on a G7 with the 13 (that's jazz talk for a 6) replacing the 5. Know one and you know the other.
- ◆ The A13? It's included for free. Move the G13 shape so the root on the first string is over the A on the fifth fret.

And so on, each chord has a shape that shows how to play it and a voicing that tells its story. Knowing the stories let's you understand the multitude of shapes available for jazz, and how best to link them together for that smooth jazz sound.

So let's begin at the beginning with scales, the fretboard, and major chords.

CHAPTER TWO

Scales and Chords

Chords are made up of notes from a scale that sound good together, or more accurately, create a certain feeling or mood. For example, a major chord creates an upbeat sort of feeling and a minor one a more mellow feeling.

The beauty of jazz chords is that they have a rich texture of harmonies that go beyond the basic major and minor chords. But before we get to them, we'll look at the hows and whys of the basic chord shapes.

Chromatic Scales

A chromatic scale is made up of 12 notes spanning an octave. It can be played on the ukulele by moving up a string one fret at a time.

Starting at the first fret on the second string, a C, these are the notes played up til the 13th fret, which is another C an octave higher.

C C# D D# E F F# G G# A A# B C

(Each sharp could also be a flat of the note after, so C# and Db are the same note. Just the sharps are shown here.)

We could also play the chromatic scale starting at D. Starting with the open D string, these are the notes played by moving up that fourth string one fret at a time, until the 12th fret, another D an octave higher.

D D# E F F# G G# A A# B C C# D

Each fret represents a **half step**. A two fret jump is called a **whole step**, and is the key to defining scales.

Major Scales

A **major scale** is a sequence of notes following a particular pattern of whole steps and half steps.

Whole Whole Half Whole Whole Whole Half

In the key of C these are the notes, with the _ indicating the notes skipped over.

C _ D _ E F _ G _ A _ B C

This scale can be played starting at the C on the second string and finishing on the C at the 13th fret, making whole and half steps as appropriate.

Playing the sequence of full and half steps starting with the open D string plays these notes of the D scale, or the notes in the key of D.

D _ E _ F# G _ A _ B _ C# D

Major Chords

A **major chord**, is made up of the 1st, 3rd, and 5th notes of a scale. The starting note is called the **root**. So, a C major chord (written simply as C) contains the notes:

C E G

Likewise, a D major chord (written simply as D) contains the notes:

D F# A

The trick to finding these chords, then, is to find places where these notes can be played using the ukulele fretboard. Now, of course, these basic chords are well known, but it's useful to see how they were derived.



Baritone ukulele fretboard

Chord Search

Welcome to chord search! You know those word search puzzles where there is a grid of random letters with words hidden here and there? Well here are the letters for the notes in the key of C as they occur on the fretboard. Hidden in them are the chords.

(These full fretboard diagrams are arranged left to right, with the nut on the left.)

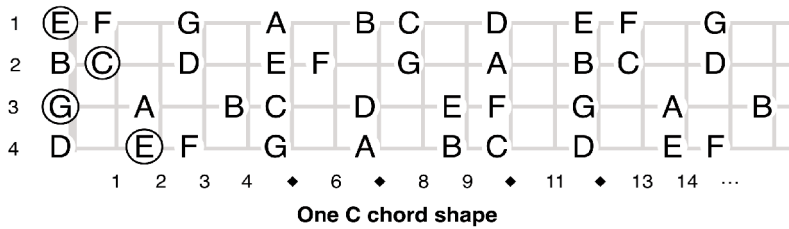
The idea is to find a C, E, and G within close reach of each other, with one note being duplicated to give a four note chord.

1	E	F	G	A	B	C	D	E	F	G					
2	B	C	D	E	F	G	A	B	C	D					
3	G	A	B	C	D	E	F	G	A	B					
4	D	E	F	G	A	B	C	D	E	F					
	1	2	3	4	◆	6	◆	8	9	◆	11	◆	13	14	...

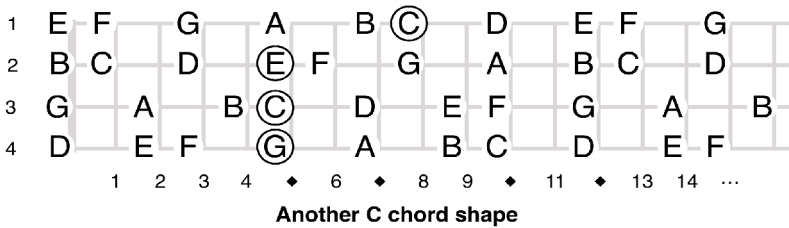
Notes in key of C

Here's one solution, the classic pattern for a C chord.

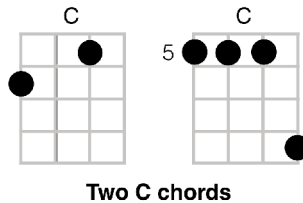
Jazz Chords for Baritone Ukulele



Here's another that would be played with a bar on the 5th fret.



These two discoveries yield two standard chord diagrams. The small 5 on the second one means it is played at the 5th fret. (The chord diagrams are arranged top to bottom, with the nut towards the top.)

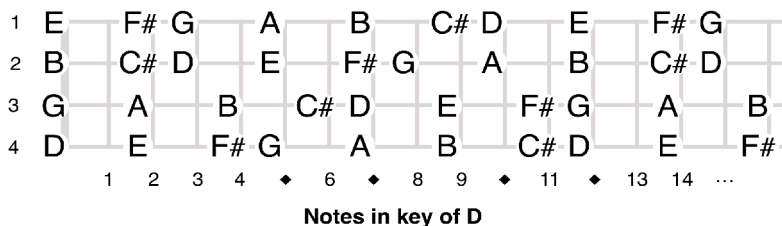


There are a number of other solutions for our C chord hidden in the fret board, and it's a useful exercise to look for them. But for now, these two will suffice.

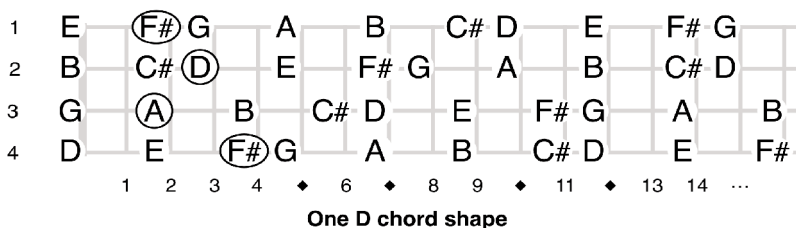
We can repeat the same process for a different key, say D major. As mentioned above, a D major chord (D), made from the 1st, 3rd and 5th notes of the D major scale. It has the notes:

D F# A

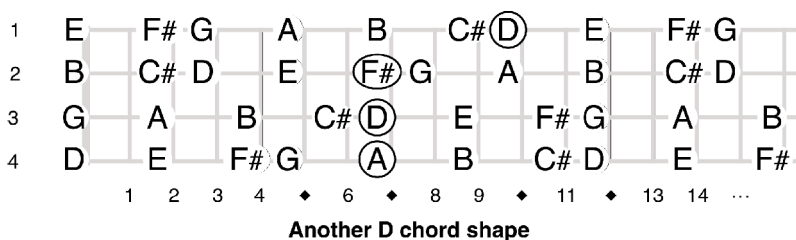
Here are how the notes in the key of D are laid out on the fretboard. Again, the chord-search puzzle is to find places where the notes of the D chord could be played together.



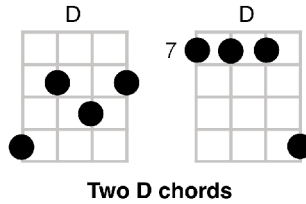
Here's one solution.



And here's another.



These two patterns yield these two chord diagrams:



Note that these are the same patterns as for C (with a bar replacing the two open strings in the left one) but at different positions on the fret board.

In fact, for any key these two patterns will pop up as possible, but at different frets.

Generic Scale

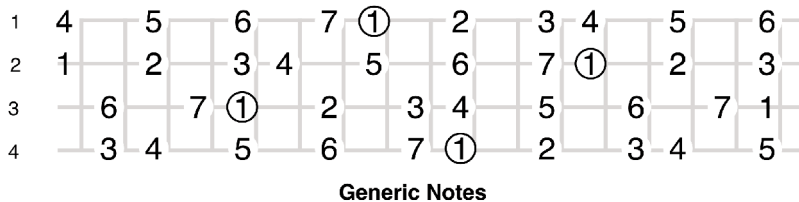
Rather than look for patterns for each key, it makes sense to generalize a scale based on the intervals, and number the notes rather than use letters particular to a given scale.

1 _ 2 _ 3 4 _ 5 _ 6 _ 7 1

Given this, a major chord is:

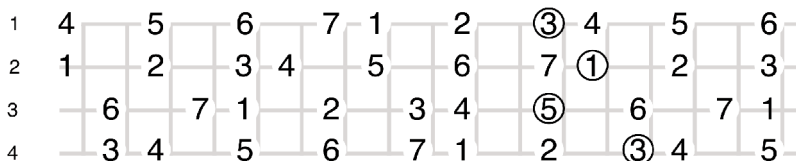
1 3 5

These generic intervals can then be mapped onto a floating map of the frets. They represent the relative spacings of the notes on the fretboard, but not the specific notes.



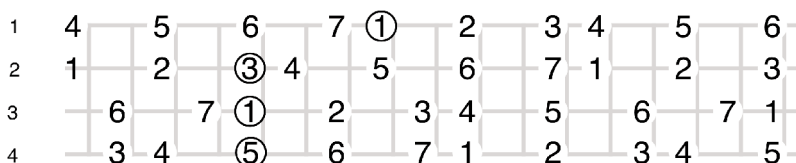
The circled (1)s are the root note of a scale. If you overlay this diagram on the actual fretboard, whatever note is under the (1) is the scale being shown. If the (1)s are over the Cs, then it shows the notes of a C scale. If the (1)s are over the Ds, then the notes are of a D scale.

This generic fretboard can then be used to find general patterns for chords. Looking for ways to play a major chord, 1 3 5, we can find these two possible patterns.



One way to play a major chord

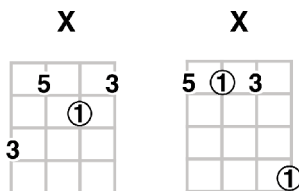
And



Another way to play a major chord

You'll notice that those are the same two patterns found above. If either pattern is played with a C under the (1), then it will be a C chord. If a D is under the (1), then it's a D chord. And if it's an Eb, well, then an Eb chord.

Here's how these chord diagrams will be displayed in this book. The X indicates any chord. For these major chords, the label is simply X, but for say a minor chord the label will be Xm and for a seventh chord X7.



Two shapes for movable major chords

Instead of dots in the chord diagrams, the relative position of the notes is displayed. The circled (1) is the root and in text, like this, will be represented by (1). The note under the root determines the chord. For example, playing the pattern on the left with a bar on the second fret will be a D chord since the (1) will be over a D.

The other relative tones are indicated as well, which will make it easier to analyze chords and their sounds. For example, the diagram on the left emphasizes the 3 more, and the one on the right has two root tones.

Using this tool, we'll proceed to analyze and derive the basic major and minor chords in more detail. The chord shapes found will be the common ones, but this method of finding them will lead to greater insights into the particular finger patterns for each, and lay the groundwork for moving into all the wondrous 7th and beyond chords of jazz.

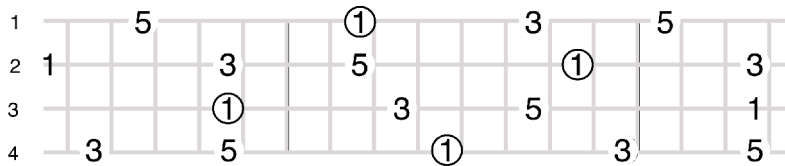
CHAPTER THREE

Major Chords

Finding chord shapes requires balancing two constraints.

- ◆ The notes in the chord, and
- ◆ The geometry of the fretboard.

As we've seen, major chords are made up of the 1, 3 and 5 notes of a scale. We can cheat to make the chord search easier by just showing the relative positions of those notes.

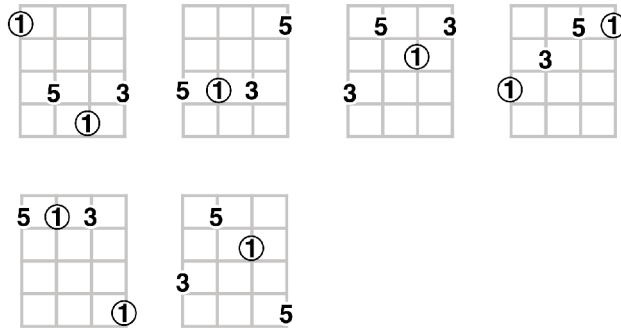


Relative positions of major chord notes

Examining this diagram yields six different ways to play a major chord, some easier to play than others.

X

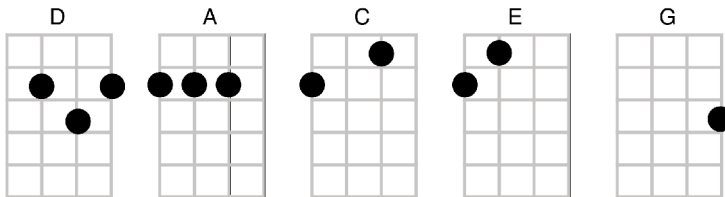
1 3 5



Major chord shapes

Each of these diagrams uses all four strings, so they can be barred and slid anywhere on the fretboard. It's a fun exercise to take each of them and play it from the 1st to the 13th fret, thus playing all the possible major chords six different ways.

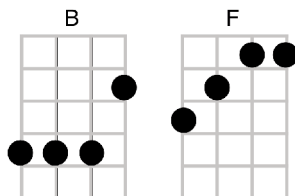
What about the 0th fret? The nut? That means the notes closest to the nut (uppermost in the diagrams) are played as open strings. Looking at them we discover that the first five patterns are the classic major chord forms from any ukulele book.



Major open string chord dots

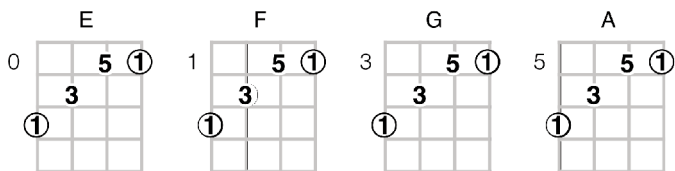
For this reason we'll call the first 5 major chord patterns the D, A, C, E and G shapes.

If we slide the A shape up two frets, and the E shape up one fret, we get the classic diagrams for B and for F.



Major bar chord dots

Note that, knowing the scale it's easy to find chords up the fretboard. For example, the E shape, slid up a half step (one fret) is an F, slid up another whole step (2 frets) is a G, and slid up another whole step is an A.



Sliding the E shape

The same can be done with each of the major chord shapes, opening up a whole world of possibilities.

Bali Ha'i

Here's the starting phrase for *Bali Ha'i*. Its haunting melody is accompanied by a sequence of unusual major chords, providing a perfect playground for movable shapes.

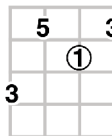
Bali Ha'i (South Pacific)

Richard Rodgers and Oscar Hammerstein II

The musical score for 'Bali Ha'i' is presented in four staves. The first staff has a key signature of one flat (Bb) and a 4/4 time signature. The lyrics are: 'Most peo - ple live on a lone - ly is - - land - - - -'. Chord symbols F and Eb are shown above the staff. The second staff has the lyrics: 'Lost in the mid - dle of a fog - gy sea'. Chord symbols F and A are shown above the staff. The third staff has the lyrics: 'Most peo - ple long for an - oth - er is - - land'. Chord symbols F and Gb are shown above the staff. The fourth staff has the lyrics: 'One where they know they would like to be'. Chord symbols Gm7, C, and C7 are shown above the staff.

Instead of looking up diagrams for the Eb and Gb chords, it would be great to find one of the major chord shapes that could be slid to get all these chords. It has to play the F high enough up the fretboard so it can be slid back two frets to get Eb.

The C shape works very well.



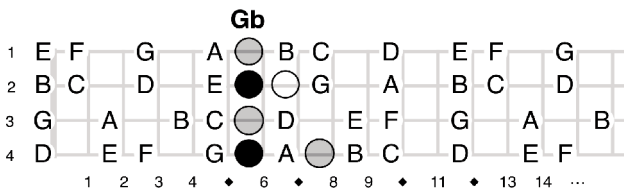
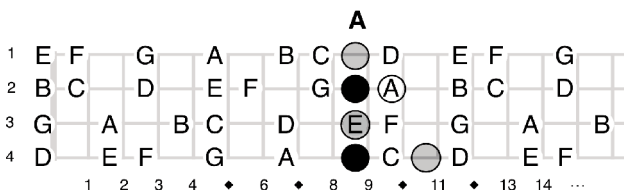
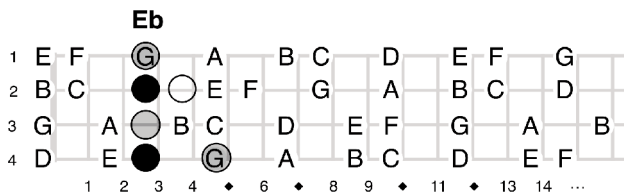
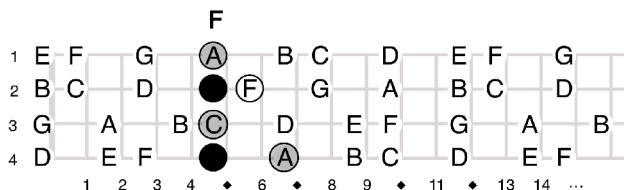
Movable C shape

The following diagrams illustrate how a movable shape can be positioned on the fretboard for different chords.

- Covered by bar
- In the chord
- Root

Key to symbols below

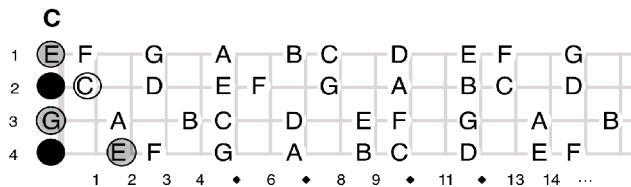
The F can be played at the 5th fret as the diagram shows. The circle reveals the root tone of the chord, an F. Moving the shape up and/or down then gives the Eb, A, and Gb chords, corresponding to the note under the circle in each case.



Sliding the C shape for Bali Ha'i

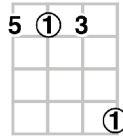
In other words, with just this one shape we can play the four chords that appear in the first twelve measures of the song. Try it, it's fun.

Jumping ahead to the C at the end of the selection, the C shape could, of course, be used for that as well.



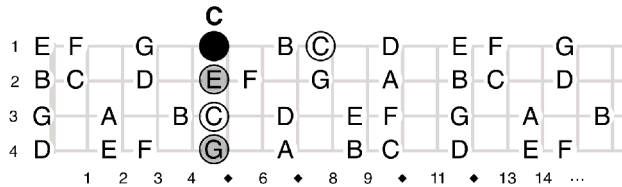
C shape for making C chord

But that's not much fun since a lot of the action in the chord shapes chosen above happens around the 5th fret. So a better choice might be to use the G shape to make a C.



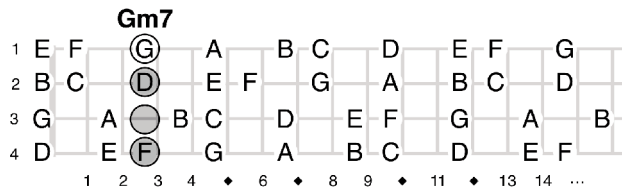
Movable G shape

It can be used to find a pleasant C at the 5th fret.



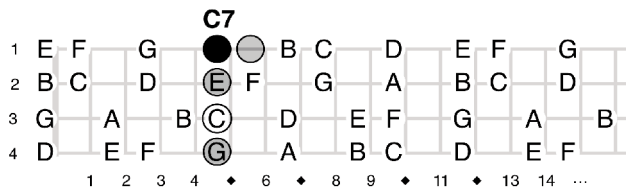
G shape for making C chord

To complete the whole phrase we need two more chords. Here's two from later chapters that work well with the playing pattern developed so far.



Gm7 at third fret

And



C7 at fifth fret

This C7 is sweet because it lets the pinky drive the transition from the C to the C7.

The idea here has been to show how the movable patterns can be mapped to different places on the fretboard. It's a fun exercise to experiment with the different shapes for other ways to accompany this song.

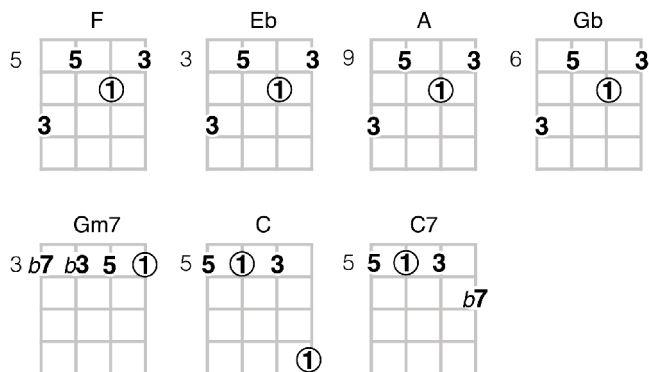
The G shape, for example, works as well, allowing for sliding a few frets farther up on the fretboard.

The E shape can be used to make an A at the 5th fret which you might like better than the A at the 9th fret.

Clearly a knowledge of the notes on the fretboard is key to placing movable chords, but it's not necessary to memorize the fret board right away. Note that the 12th fret is an octave and the notes are the same as the open strings, D G B E, and that the 5th fret, used for tuning, has the notes G C E A. If you memorize just those, then you can count up and down on the strings to find other notes as needed.

For the rest of this book, the descriptions of movable patterns will be much more concise. All the analysis above can be summarized with this chart of the chord shapes used to play the introduction to *Bali Ha'i*.

Jazz Chords for Baritone Ukulele



Shapes for Bali Ha'i introduction

Take some time to enjoy playing these, and then move on to the minor chords next.

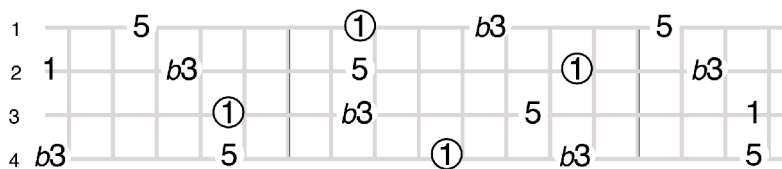
CHAPTER FOUR

Minor Chords

Minor chords are built with a minor third followed by a major third. This means, if we keep our generic numbers for a scale, a minor chord has a flatted third. The notes are thus:

1 *b*3 5

As we did with the major chords, we can isolate the relative positions of those notes on the fretboard.

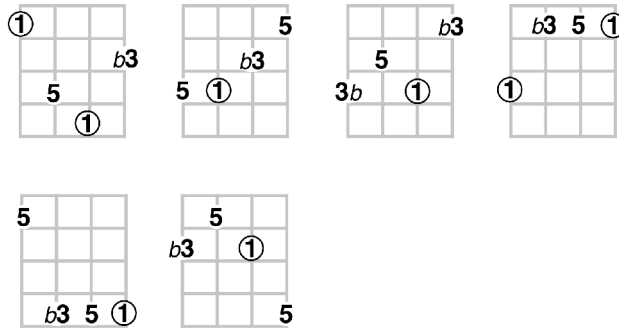


Relative positions of minor chord notes

Examining it yields these patterns.

Xm

1 b3 5



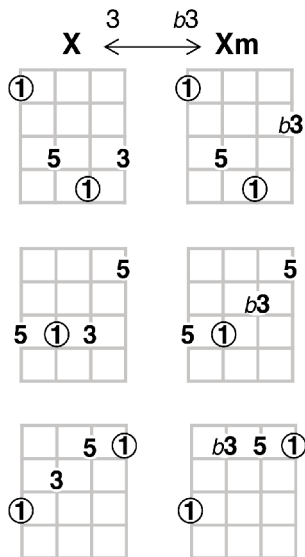
Minor chord shapes

Moving the 3 to b3

At this point we're dealing with familiar chords. But still, seeing the voices reveals some stories about how these minor chords relate to the major ones.

The location of the root (1) is key for knowing which note defines the chord. The fun bit is knowing where the 3 is in the major chord and seeing if it can be easily moved to a *b3* to create a minor chord.

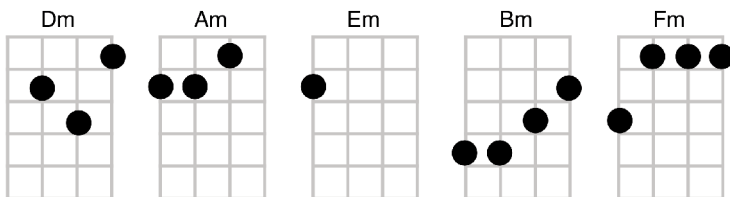
Looking at the major chord diagrams for the D, A and E shapes, notice that the 3 of each of those movable chords is not in the top (lowest) fret of the chord. This means there's room to move it down one fret to a *b3*.



D, A and E shapes move easily from major to minor

For these shapes, if you know one, you know the other, and it's easy to move back and forth between the two, if you know which string has the 3/b3.

These transformations yield three common open minor chord diagrams and two fretted ones.



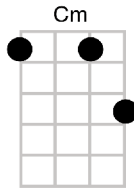
Common minor chord dots

What about the C and G shapes? Each creates some different issues.

The movable C major shape can also be morphed to a minor chord by sliding both 3s down to b3s, and that makes for a nice movable pattern for playing minor chords up and down the fretboard. You'll notice it's the third pattern in the list of Xm patterns.

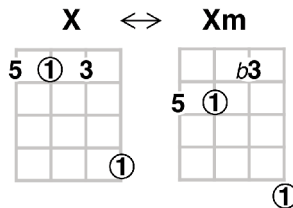
But it does not provide a way to play a Cm at the nut with open strings. That's because one of the 3s is an open string.

Fortunately, the new sixth minor chord pattern can be used to make an open string Cm.



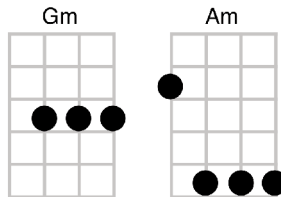
Sixth minor shape makes open Cm

The G shape has a similar issue, but worse. Sliding the 3 back to a *b3* makes for an unplayable pattern.



G shape 3 -> b3 Yuch

But the newly revealed fifth pattern comes to the rescue. It provides an open string Gm and is also fun to slide. Here it is for both Gm and a pleasant way to play Am. In both cases, the three notes together can be played with the pinky making a partial bar.



Fifth minor shape makes Gm and Am

These insights all come to light by seeing the voicings of the major and minor chords.

But enough of rediscovering the common chord patterns. It's time to move on to seventh chords and more.

CHAPTER FIVE

7th Chords and a 6th

Seventh chords are the soul of jazz, and the baritone ukulele tuning is ideal for playing them—four notes, four strings, tuned for perfect four-part harmony.

There are a number of different sevenths chords. The most common, and the one referred to as a 7th chord, adds, not the 7, but the *b7* to a major chord.

1 3 5 *b7*

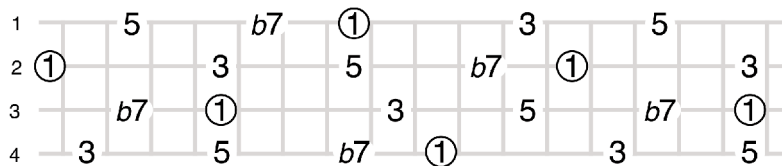
These chords are generically named X7. For example, C7 has:

C E G B*b*

D7 has:

D F# A C

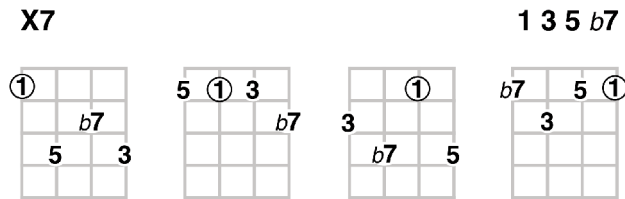
Here's how the notes for building 7th chords lay out on the fretboard.



Relative positions of seventh chord notes

It would be nice if four chord shapes could be found, each one having its root on a different string.

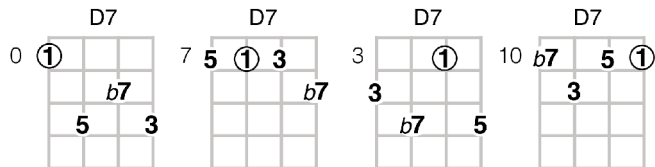
It turns out that's easy.



Seventh chord shapes

What a powerful tool this is! It means that, when trying to come up with an accompaniment for a song, and you need, say, a D7, you can make one rooted at any D on the fretboard.

Here are the four ways to play a D7.

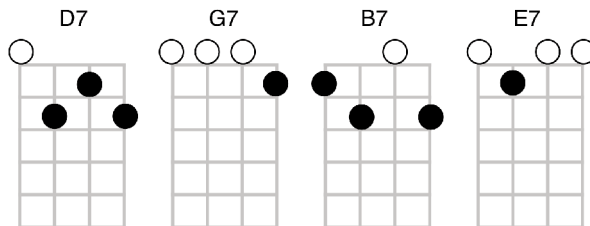


Four D7s rooted on different strings

When playing accompaniments, sometimes chords sound better when played in the same area of the fretboard. So where might you like your D7? Near the nut? Way up at the tenth fret? Somewhere in the middle? You've got choices.

They give you variety in position on the fretboard, and in voicing. The chords with the root on one of the two lower strings sound different from the ones with the root on the higher strings.

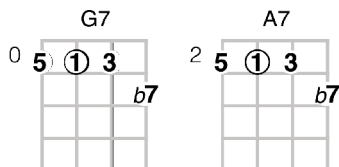
Note that each one of these shapes has a corresponding standard open string shape corresponding to the tuning of that open string. (Remember the strings are tuned to D G B E.)



Common open string seventh dots

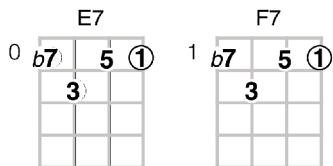
Knowing the voices lets us realize that these are the chords where the root is the open string. So, for the G7 the open G string is the root. This can help you remember which string has the root for each movable shape.

Slide that open G7 shape up two frets and the root is on the A of the third string, and thus an A7.



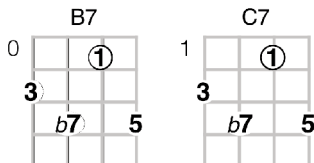
G7 shape slides to A7

Similarly an E7 can be slid one fret to make a F7.



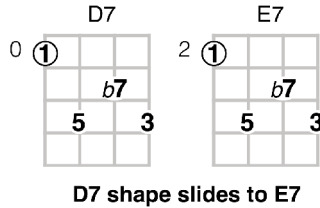
E7 shape slides to F7

And a B7 to a C7.



B7 shape slides to C7

While we're playing with the basic shapes, do we really like that E7 with its root on the highest string? Might it sound better if we had the root on the lowest string? We can get it by sliding the D7 up two frets.



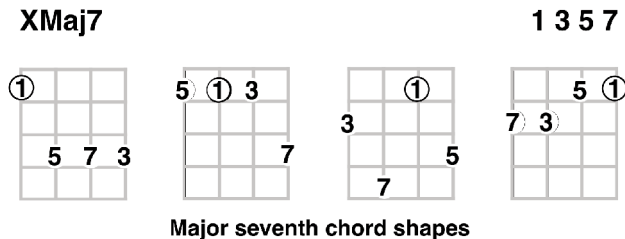
See, or rather hear, the difference. Depending on the chords around it in a progression, one will sound better than the other.

Major 7th Chords

Major 7th chords use the actual 7 rather than the *b7* in the chord. To find the major 7th chords we could repeat the process above, showing where those notes are on the fretboard and looking for shapes that work. But there's an easier way.

We can simply modify the X7 shapes to make them XMaj7 shapes. Knowing where the *b7* is in a 7th chord, we can just take each X7 shape and move the *b7* up one fret to a 7.

Doing that yields:

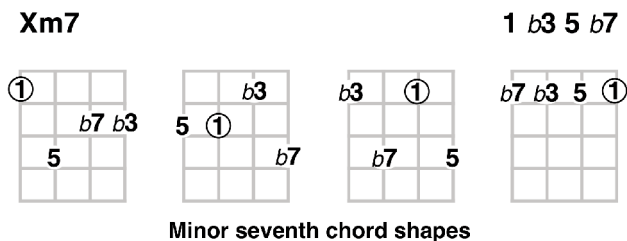


Compare this to the X7 patterns. If you understand this relationship, you don't really need to memorize the XMaj7 fingerings as they can all be derived from the X7 ones by simply moving the *b7* up a fret.

Experiment with these shapes and compare the sounds to those of the 7th chords.

Minor 7th Chords

A minor 7th chord is the same as a regular 7th chord, but with a flatted 3rd instead of a 3. I know what you're thinking. We can take the shapes for the 7th chord and simply flat the 3s to come up with the four shapes for minor 7th chords. Exactly.



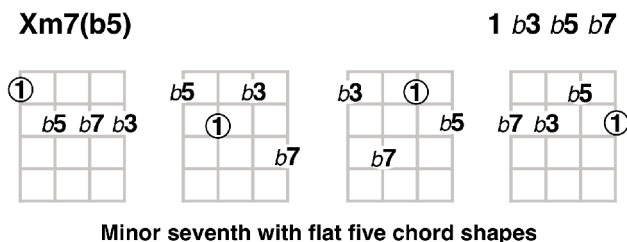
Once you know the shapes for the four 7th chords, you can easily figure out the minor 7th ones on the fly by flattening the 3s.

Note that the terminology is confusing for these chords. The “major” in Major 7th refers to the major 7th interval from 1 to 7. The “minor” in minor 7th refers to the first three notes being a minor chord.

Play with these up and down the fretboard along with the others. There are a lot of nice sounds here.

Minor 7th Chords with b5

The name of this chord, Xm7(b5), is very descriptive. It is just like a minor seventh chord, but with a flatted 5, and can be easily derived by making that change to the Xm7 shapes.



This chord's name makes it sound like a lot of the fancier, far-out, jazz chords. Many of those are non-essential variations for creating different moods.

But this one isn't like those others. It plays a critical role in the suite of sevenths chords used in chord scales and progressions. We'll see more about that soon.

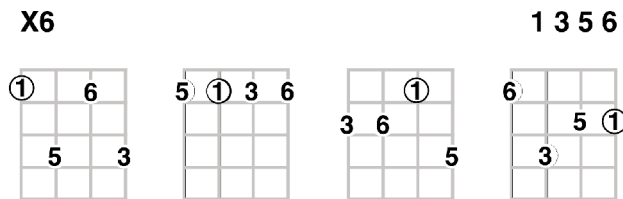
6th Chords

There are more 7th chords, but they are used more for spice than substance. We'll cover them later. There is a 6th chord, however, that really belongs with these essential 7th chords.

A 6th chord has a

1 3 5 6

Its shapes can be easily derived from the 7th chords by moving the *b*7 back one fret to the 6. Like so:



Sixth chord shapes

But wait, did you notice something? These are the same fingerings as for the X_m7 chords, except the voices under the fingers have changed. For example, the *b*3 of the X_m7 is the (1) of an X6.

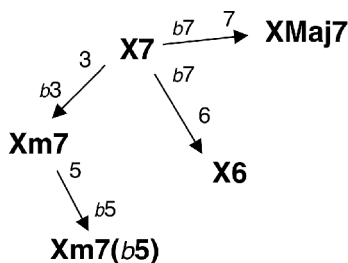
This situation is called a chord homonym, two different chords that are fingered the same, sharing the same notes but in different roles.

Is this a problem? Strangely it's not. Each chord will sound correct for the context in which it is used. The voices moving from one chord to the next set expectations for the ear.

This will be illustrated in some of the progressions to follow.

Transformations

Here's a summary of the transformations we've used so far to get the most important sevenths chords. Everything else will be just fluff.



One fret transformations of seventh chords

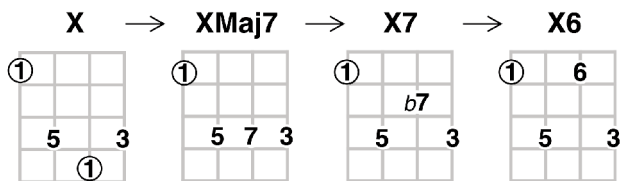
D and G Shapes (1) 7 b7 6

You can get a nice sense of how these chords go together by playing them in sequence. Especially for those XMaj7 shapes that differ from a major (X) shape by having a duplicate (1) moved to a 7.

For those shapes you can start with the major chord and then keep moving the fingering on one string, creating this sequence:

(1) → 7 → b7 → 6

Here it is for the major chord D shape.

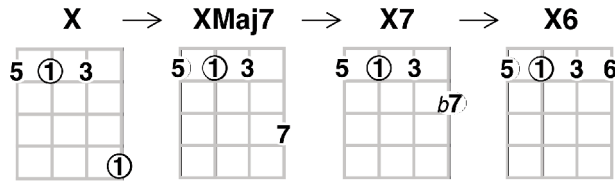


Flowing sevenths with D shape

It can be played anywhere. Playing it using the open string D gives the progression:

D → DMaj7 → D7 → D6

You can do the same thing with major G shape.



Flowing sevenths with G shape

It can be used anywhere on the fretboard. Playing it using the open G is fun because it requires just one finger to play this progression:

G → GMaj7 → G7 → G6

Note that when you get to the G6 playing in this progression it sounds like G6, not its homonym Em7. This is because the ear has just heard the same 5 (1) 3 voicing three times and expects it again.

C and E Shapes (1) 7 b7 6

Trying to do a similar thing, playing the (1) - Maj7 - 7 - 6 progression starting from the other major chord shapes, the A, C or E, illustrates some of the compromises necessary in making chord progressions. None of these morphs nicely into the chord progressions above.

The problem with the major C and A shapes is they only have one (1). They don't have a spare to drop one fret to make a 7.

The E shape, on the other hand, has an extra, and there is no problem unless you try to play it using an open E chord. You run out of frets trying to drop down to the final 6.

However if you want to play the progression for A, C or E, it's easy using the movable shapes. The progression can be played:

- ◆ in A by playing the G shape at the second fret,
- ◆ in C by playing the G shape at the fifth fret, and
- ◆ in E by playing the D shape at the third fret.

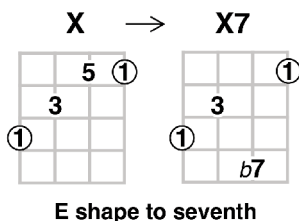
Yay movable chords!

In fact, since the D and G shapes are about a half a scale apart, they can be used to play that descending sequence in any key without having to move above the fifth fret.

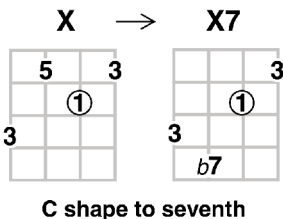
Other Solutions

There are other ways to make a C7 and an E7 using open strings. Both require losing the 5 and replacing it with a *b7*.

Here's how to morph the E shape to E7, moving the 5 up to *b7*.



Here's how to morph the C shape to C7, again by moving the 5 to a 7b.



Because both of these compromises make for pleasing 7th chords, and both are fun to play by dropping a pinky down after playing the major chord, they teach an important lesson.

It is not always necessary to get all the notes in the right places. And, as we'll see when we start adding additional notes to chords, the 5 (sorry 5) is often expendable.

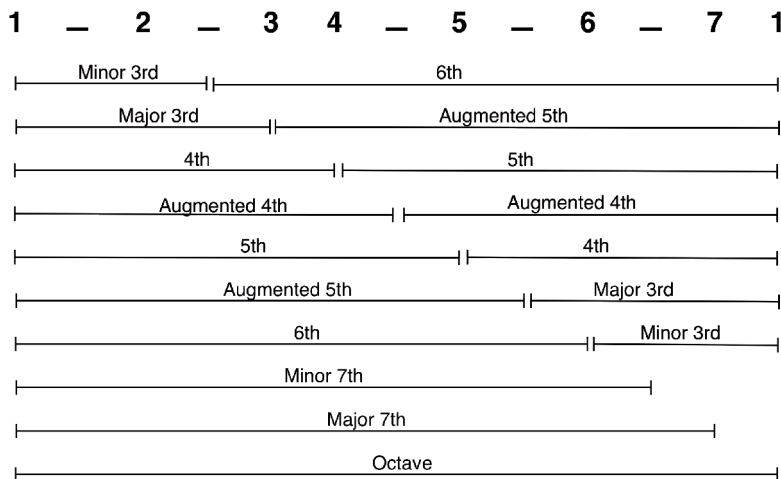
CHAPTER SIX

Intervals

Intervals provide another way of looking at chords. Rather than notes, they are the distances between the notes, the number of half steps. They all have names.

There are twelve half steps in an octave, which corresponds to the twelve notes of the chromatic scale. Two intervals whose lengths add up to twelve half steps are said to complement each other.

Here, for reference, are the intervals and their complements. Some are more important than others.



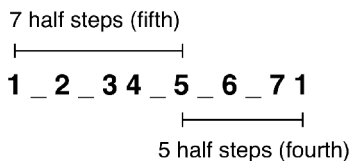
Intervals

Note that the interval names are derived from the note you end on if you start at (1) and go up. This can cause some confusion.

For example, the seven half-step interval between a (1) and the 5 above it is called a fifth. The five half-step interval between a (1) and the 4 above it is called a fourth.

The interval is the same, it's the distance, whether it goes up the scale or down, no matter what note it starts on. Seven half steps anywhere in any direction is a fifth. So a (1) up to a 5 is seven half steps, and a 5 down to a (1) is seven half steps.

Here's the confusion. If you go down the scale from a higher (1) to the 5 below it, it's five half steps, a fourth.



Intervals between 5 and (1)s above and below

So the distance from a (1) to a 5 depends on whether you're going up the scale or down the scale. Going up, it's a fifth. Going down, a fourth.

This matters for the ukulele fretboard where we're constantly connecting (1)s and 5s. Sometimes the (1) is higher, sometimes the 5. Don't let the word "fifth" or "fourth" confuse you, they mean seven half steps and five half steps, seven frets and five frets.

Building Blocks of Chords

Almost all chords are built from thirds, some major, some minor.

Major third — two whole steps, like between 1 and 3, 5 and 7, or C and E.

Minor third — a whole step and a half step (in either order) like between 1 and *b*3, 3 and 5, or C and *E_b*.

These thirds are stacked to build chords, from the simplest major chords, 1 3 5, to the monstrous 13th chord, 1 3 5 *b*7 9 11 13, mentioned in the introduction. Here's how thirds define the three notes of major and minor chords.

Major chord — a chord formed by adding first a major third, then a minor third to a root tone. Like 1 3 5, C E G, or D F# A.

Minor chord — a chord formed by adding first a minor third, then a major third to a root tone. Like 1 b3 5, C Eb G or D F A.

Here's how those chords, plus another third, define the key 7th chords.

7th chord — a major chord with a minor third added. 1 3 5 b7.

Major 7th chord — a major chord with a major third added. 1 3 5 7.

Minor 7th chord — a minor chord with a minor third added. 1 b3 5 b7.

Minor 7th with b5 — three minor thirds. 1 b3 b5 b7.

Intervals Within a Chord

A chord gets both its shape and its sound from the other intervals inside it.

Fifth — a major third and a minor third in any order like between 1 and 5 or C and G.

Consider a major 7th chord with the notes 1 3 5 7. The interval between the 1 and 5 is a fifth, as is the interval between the 3 and 7.

We'll see that the chord shapes take advantage of this.

Fourth — a major third and a half step (in any order) like between 1 and 4, or more importantly, between a (1) and the 5 below it.

Augmented Fourth — two minor thirds. Like between (1) and a higher #4 / b5.

It is the only symmetric interval, the same going up or down.

Consider a 7th chord with the notes 1 3 5 b7. Significantly, the interval between the 3 and b7 is an augmented 4th.

Tuning of the Ukulele

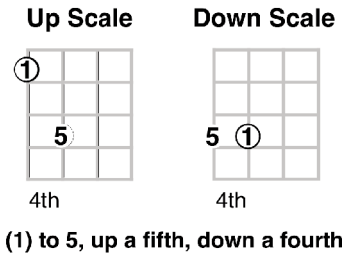
Here's the significance of knowing whether an interval is between a root, (1), and a note lower or higher than the root, in particular, a 5.

Consider the third and fourth strings. They are tuned a fourth, 5 half steps, apart.

If a chord has a (1) and a 5 on those two strings, which is which makes a difference.

Going from a (1) on the fourth string up to a higher 5 requires seven half steps. So over one is five half steps and then two more makes seven.

Going from a (1) on the third string to a lower 5 requires five half steps. So simply over one.

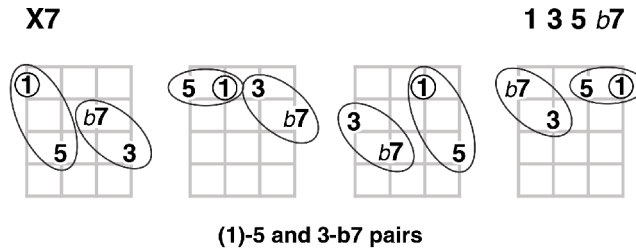


The same relationships hold for any two chord notes a fifth apart, such as a 3 and 7.

The Brilliance of the Tuning

The notes of a chord do not have to be played in order, and, in fact, rarely are. These alternate sequences are called **inversions**. Due to the geometry of the fretboard, almost all chords are inverted one way or another.

In the previous chapter we saw four different ways to play the 1 3 5 *b*7 notes of a seventh chord. In each of those the (1) and the 5 were on adjacent strings, and the 3 and *b*7 were too. Each of the four shapes represents a different inversion, or way to flip, or trade those two pairs.



The brilliance of the ukulele tuning might start to become clear here.

The tuning between the top two, and bottom two strings is a fourth. So it's easy to play the (1) and 5 on one pair and the 3 and *b7* on the other.

In other words, the tuning of the outer pairs of strings is perfect for playing those two pairs of notes.

What about the middle? The tuning of the center two strings is a major third, four half steps or frets. It turns out to be ideal for linking the two pairs.

The pairs are connected by slightly smaller intervals which play easily across that tuning. They are:

- ◆ 5 - *b7*, a minor third;
- ◆ 1 - 3, a major third;
- ◆ *b7* - 1, a whole step; and
- ◆ 3 - 5, a minor third.

This means, when you're trying to remember how to play a chord, if you know where the (1) is, you then know where the 5 is, either straight across or over and up two frets as the green circles show above.

Then take the easiest link between the centermost string and connect it to the 3 *b7* pair. And voila, you've got the chord shape without looking up a diagram.

Did I mention how brilliant the tuning of this instrument is? It's as if it was designed for playing four part harmony.

CHAPTER SEVEN

Chord Scales

Chord scales are a relatively simple concept, but difficult to explain. It's maybe best to start with the notes of two octaves of the C major scale.

C _ D _ E F _ G _ A _ B C _ D _ E F _ G _ A _ B C

A chord scale built on this scale has a chord starting on each note of the scale, with, and this is the absolutely key point, all of the notes in the chord being in the scale. The chords are all built by stacking thirds, sometimes major, sometimes minor, on the root note of the chord.

Here are the chords in the chord scale based on the key of C.

C	E	G	B
D	F	A	C
E	G	B	D
F	A	C	E
G	B	D	F
A	C	E	G
B	D	F	A

This would all be trivial to play on a piano. Just play four white keys, each a third apart up and down the scale. The black notes will make the chords sound different, but all of the chords will be made up of just the white keys, that is, notes in the key of C.

For the guitar or ukulele player, it's not that simple. Those simple looking notes make up different types of chords. Some have minor thirds (m3) after major thirds

(M3), and some the other way around, and then the interval to the 7 can be different...

CMaj7 :	C	—	—	E	—	—	G	—	—	B	(M3 m3 M3)
Dm7 :	D	—	—	F	—	—	A	—	—	C	(m3 M3 m3)
Em7 :	E	—	—	G	—	—	B	—	—	D	(m3 M3 m3)
FMaj7 :	F	—	—	A	—	—	C	—	—	E	(M3 m3 M3)
G7 :	G	—	—	B	—	—	D	—	—	F	(M3 m3 m3)
Am7 :	A	—	—	C	—	—	E	—	—	G	(m3 M3 m3)
Bm7 (b5) :	B	—	—	D	—	—	F	—	—	A	(m3 m3 M3)

Different intervals for chords in chord scale

If you've ever seen these chords with a song and wondered why, for example, a FMaj7 was used instead of a F7. The answer is, so all the notes stay in C.

Generic Chords

Like notes, the chords of a scale are named generically with numbers, in this case Roman numerals. Major chords have an upper case Roman numeral, and minor chords a lower case. The chords of a scale are thus:

I ii iii IV V vi vii

Many songs are defined by these chords. For example, classic blues songs are made up of I, IV and V chords, as are many popular songs.

The chords for C can be generalized for any key as:

I — Maj7
ii — m7
iii — m7
IV — Maj7
V — 7
vi — m7
vii — m7(b5)

If you see these chord forms in the accompaniment for a song, you know that they're most likely using chords whose notes all stay in the key of the song.

Jazz Progressions

Jazz is made up of sequences of these chords, or progressions. One of the most famous is:

ii V I

Using the chord scale above, and adding a sixth for good measure, the chords for the progression are:

ii-m7 V-7 I-Maj7 I-6

In the key of C that would be:

Dm7 G7 CMaj7 C6

One online source, which I've long since forgotten, recommended playing this sequence starting at C and descending by whole steps back to C again. So:

C -> Bb -> Ab -> Gb -> E -> D

This is a wonderful idea and is a perfect way to showcase the various possibilities of movable 7th and 6th chords.

These are the shapes I used for this. There are three distinct arrangements of the progression. Each is played twice, the second time two frets lower. Play these in order and you'll find you can just keep going around and around the circle. Here it is starting at C.

Jazz Chords for Baritone Ukulele

ii V I

Dm7	G7	CMaj7	C6
Cm7	F7	BbMaj7	Bb6
Bbm7	Eb7	AbMaj7	Ab6
Abm7	Db7	GbMaj7	Gb6
F#m7	B7	EMaj7	E6
Em7	A7	DMaj7	D6

Linking different shapes for ii V I

Note how the chord homonyms sound right. The shapes for *Bb6* and *Bbm7* use the exact same fingering, but the roles of the notes are different, and the first sounds like a 6th and the second like a m7th, based on the context in which it's played.

Experiment with different arrangements for these chords, trying different shapes for any given chord.

CHAPTER EIGHT

Pythagoras

There is geometry in the humming of the strings, there is music in the spacing of the spheres.

In Pythagoras's day, around 500 BC in ancient Greece, there were stringed instruments called lyres. They were like mini-harps. They had no frets, but had seven or so strings that when plucked sounded good together. Those harmonies touched the early Greeks, and in them they saw clues to the movements of the heavens and the workings of the human soul.

Pythagoras, of mathematical fame, turned his scientific mind to trying to figure out why some tones sounded so harmonious together, and others didn't.

He invented and used a monochord for his experiments, which, as the name implies, is one long single string stretched over a sound chamber. The string could be pressed down to experiment with the sounds created from different string lengths. Sometimes two were used together to see how two different string lengths sounded together.

Pythagoras was looking for mathematical relationships between the most harmonious of notes. He made some discoveries.

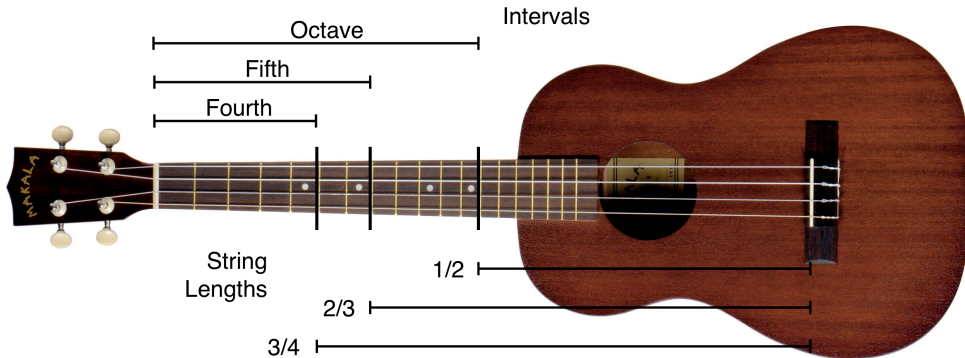
◆ The most harmonious note came from pressing the string in the middle. That is, when the ratio of the full string to the shortened section was 2:1. We know this today as an octave.

◆ The next most harmonious sound came from pressing 1/3 of the way down the string. That is, when the ratio of the full string to the shortened string was 3:2. We know this today as a fifth.

◆ And then, pressing 1/4 of the way down he found another wonderful harmony at the ratio of 4:3. This we know as a fourth.

Picking up your own stringed instrument you can repeat his observations.

- ◆ The 12th fret divides the string in $1/2$, an octave.
- ◆ The 7th fret divides the string at the $2/3$ point, a fifth.
- ◆ The 5th fret divides the string at the $3/4$ point, a fourth.



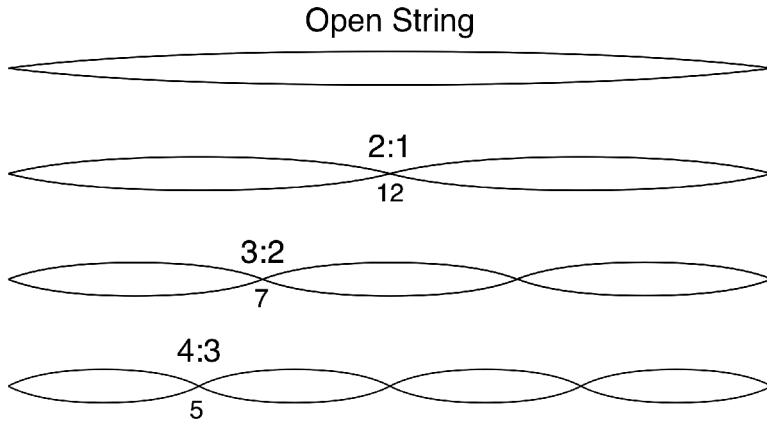
Relationship between today's intervals and Pythagoras's harmonic ratios

Remember, Pythagoras started with what sounded harmonious, and from that discovered the small integer ratios behind those harmonies. Those dots on the fretboard indicate that we, thousands of years later, still recognize the power of his observations.

Harmonics

There's more magic in these intervals and it has to do with harmonics, or vibrations of a string. If one lightly damps a string in the middle and plucks it, it will sound an octave higher. The string vibrates then, not as one long string, but as two half length strings as shown in the diagram below.

Try it on the ukulele by holding your finger lightly over the 12th fret. It works best with the lower notes. When you find just the right spot you'll hear a bell shaped tone, an octave above. (It helps to pluck cleanly and gently with a thumb nail to get that nice harmonic sound.)



Harmonics of vibrating strings

You get the same effect by placing your finger over the seventh fret, thus dividing the string into vibrating thirds.

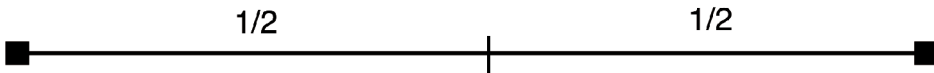
Holding your finger over the fifth fret, the $1/4$ point, effectively cuts the string in half twice. In other words, creating a tone two octaves higher.

Clearly there is a special place for these ratios.

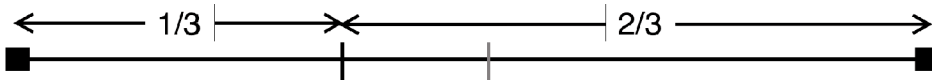
Pythagorean Scale

Full of the discovery of these simple ratios, Pythagoras set about developing a musical scale, a collection of notes that could be played at different positions on the monochord.

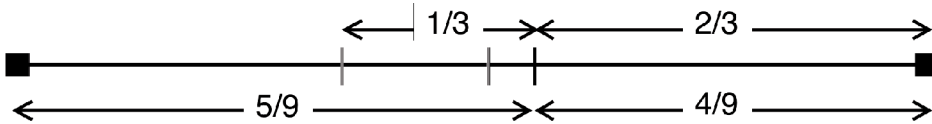
Step one was the octave. He drew a line on his monochord under the $1/2$ way point, where our 12th fret is today. He wanted the scale to be within the octave.



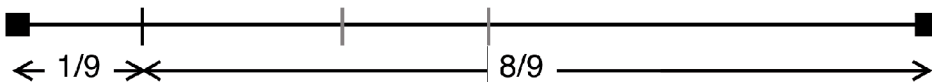
He then based his first note on his favorite 3:2 harmonic ratio, and drew a line $1/3$ way down the full string. This is where our 7th fret is today, and is where the 5th note of a major scale is played.



Now comes the clever part. He decided that the 3:2 ratio was the key to harmony and so he was going to continuously use it to find more notes in his scale. Thus, he went down $1/3$ of the way from his new note, and made another mark. This brought the playable part of the string to $4/9$ of the original string: $2/3 \times 2/3$ if you remember fractions and math (Pythagoras was good at this stuff). It's our 14th fret.



But that's out of range of the octave. What to do? Well simply lower it an octave to bring it back. How is that done? By making it twice as long, which is $2 \times 4/9 = 8/9$. He made another line. That is our 2nd fret.



And so on, he continued this laborious process, with increasingly complex fractions until, miracles of miracles, after the 12th note he was at the next octave. He had gone full circle.

Pythagoras had thus invented the 12 chromatic notes of the Western musical scale, deriving them from a cascading sequence of beautifully harmonious 3:2 ratios, or, as we call them, fifths.

His work is most obvious on stringed instruments, where the frets correspond to our notes and his simple ratios. Have you noticed how the frets get closer as you move up the neck? No matter which fret you start on, if you go up 12 frets you divide the string in half, up 7 frets finds the $2/3$ mark, and 5 frets the $3/4$ mark. Harmonious.

You've probably heard of the Circle of Fifths, and it's sometimes explained as a pattern in the scale, but it's really the other way around. Pythagoras circled the fifths and invented the scale.

Epilog — It worked out beautifully, almost, well not quite. The perfect fifths didn't exactly converge on an octave as I said and as Pythagoras had hoped. It was close, but not perfect. To make it work, some intervals had to be shortened, which was okay if it was an interval not used in a particular key. But if one wanted to play in

different keys, or build an instrument like a piano with fixed pitches, or a baritone ukulele with frets... musicians from the Renaissance on kept experimenting with very small adjustments, temperaments, to the intervals trying to get something that played the same in every key.

They finally did, and that's the actual scale and the precise spacing of frequencies that we have today. Still, a musician with a sensitive ear and a fretless instrument, like the violin, will sometimes play those perfect harmonies that so moved Pythagoras.

Music of the Spheres

Pythagoras and other Greeks of the day spent their evenings under the full splendor of the Milky Way, pondering the motions of the stars, planets and moon. When Pythagoras found that simple integer ratios were the key to musical harmony, well isn't it obvious that those simple ratios also explained the motions and harmony of the cosmos as well?

They called this idea the Music of the Spheres.

Which brings us to a jazz classic based on the Circle of Fifths—*Fly Me to the Moon*.

CHAPTER NINE

Fly Me to the Moon

Circle of Fifths

The Circle of Fifths is exactly the sequence of notes discovered by Pythagoras, and can be reconstructed using our modern scale by continuously going up a fifth from a starting note. Here are those notes, each a fifth higher than the previous one. (Each sharpened note has a corresponding flatted note not shown.)

C G D A E B F# C# G# D# A# F C

Those can be used as notes in a song, or chords in a progression, or changing keys. In each case the Circle of Fifths provides the harmonic structure discovered by Pythagoras.

Many jazz songs use parts of the Circle of Fifths, but *Fly Me to the Moon* is famous for its chord changes that walk the full circle. Well almost.

- It's a simpler circle, and
- a different scale, and
- backwards.

A Simpler Circle

Because we're playing chords whose notes want to stay in the main scale, we're not really interested in the chromatic sharps and flats. We can skip them by using the 1 and 5 of the chords to define the fifths, rather than strict, 7 half step, perfect fifths.

For example, in the key of C the first chord is CMaj7.

C E G B

The 5 in that chord is G, so G is the next chord. Now for this case, the interval from C to G is a perfect 5th, so it makes no difference.

And it's the same for almost all of the other chords, which start with either a major-minor third pair or minor-major third pair. That is, chords with a perfect fifth between the (1) and 5.

But the seventh chord in the chord scale is different. It's half diminished, meaning it starts with a minor-minor third pair. In C it's the Bm7(b5).

B D F A

It indicates the next chord will be F! Not F#. Yay! (The interval from B to F is one fret shy of a perfect fifth neatly creating a short cut over all the sharped/flatted notes.)

This is called the diatonic Circle of Fifths, meaning, for the key of C, that all the notes used are notes in the key of C. Here are the notes in the diatonic Circle of Fifths for the key of C.

C G D A E B F C

A Different Scale

We've just talked about major scales in this book because the notes of the major scale are used to define chords. A minor chord, for example, is defined as 1 b3 5, still referring to the major scale.

But now that we're talking about songs in keys, major and minor matter. The chords for *Fly Me to the Moon* start with A minor. It is the minor key associated with C, so it uses all of the same notes, just starting at a different place.

We can use it to build the minor Circle of Fifths, starting at Am7. The B - F transition again saves us from the #s and bs.

A E B F C G D A

Backwards

Fourths are the same as fifths but going in the other direction. Up a fifth is the same as down a fourth. The Circle of Fifths, drawn as a circle, has the chords going clockwise, but if you go around counter clockwise, the intervals are all fourths.

Here is the Circle of Fourths for A minor.

A D G C F B E A

The Chords

We can now associate that circle with the chord scale.

Am7 Dm7 G7 CMaj7 FMaj7 Bm7(b5) Em7 Am7

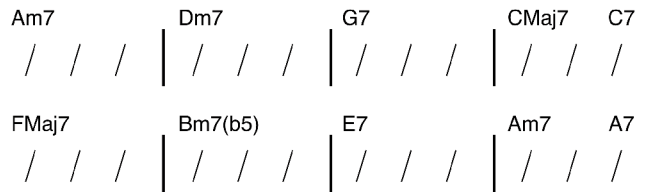
These are the chords of *Fly Me to the Moon*. The Circle of Fifths, abbreviated, in a minor key, backwards. Beautiful.

The Verse

Fly Me to the Moon is made up of verses and choruses. It is the verse that uses the full Circle of Fourths. Here are the chords indicated in 3/4 time, although it is often played in 4/4 time as well. There is one small change, an E7 is used instead of Em7, which, we'll see, is just fine.

Jazz Chords for Baritone Ukulele

Fly Me to the Moon (verse chords)

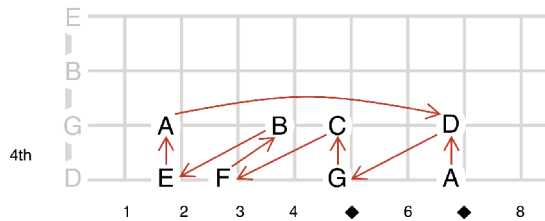


Fly Me to the Moon chords from "Fly" to "Mars"

There are numerous choices for playing these chords, but it's fun to pick shapes that allow them to be played cascading down the fretboard along with the melody.

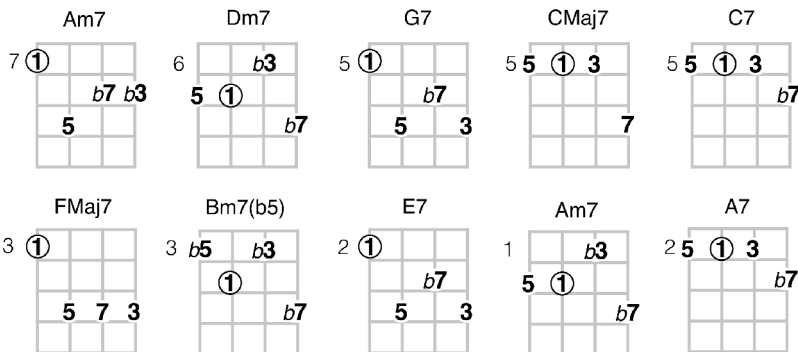
The first step then is to find the places on the fretboard where the roots of the chords will be.

Here is a nice sequence starting at the A on the seventh fret and alternating between the fourth and third string finding the notes on the way back to the nut.



Map of chord roots for Circle of Fourths

Using the shapes for the different flavors of chords, Xm7, XMaj7, etc. here are the shapes that, with the (1) over each of the notes above, bring that route of roots to life.



Cascading Circle of Fourths

It's pretty, isn't it? And flows really well with the melody.

The Melody

I can't include the melody here (see the section on copyrights at the end of the book), but, if you don't know it, it can be found for personal use from sources on the Internet.

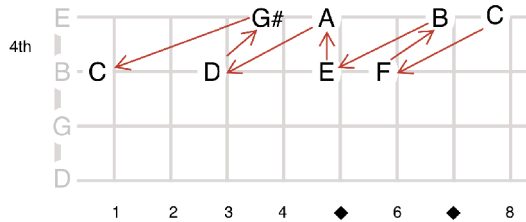
There is a really cool thing that can be discovered about the melody in the chords chosen. The melody notes that start each measure are included in the shapes. They are always the 3 or *b3* of the chord.

Here are the notes in each chord, and the starting note of each measure in the verse.

Am7	Dm7	G7	CMaj7
A	D	G	C
C Fly	F moon	B play	E stars
E	A	D	G
G	C	F	B
FMaj7	Bm7(b5)	E	Am7
F	B	E	A
A Let	D spring	G# Jupiter	C Mars
C	F	B	E
E	A	D	G

Melody in the chords

Our cascading chord progression lines up perfectly with the melody, as its notes also cascade down in perfect harmony with the chords.



Map of melody notes in Circle of Fourths

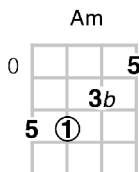
We generated the chord progression by moving the root back and forth between the third and fourth strings. That means the chords alternate between a 1 5 7 3 inversion and a 5 1 3 7 inversion.

Stacking them we see the roots and melody move in perfect harmony.

Root		Melody	
A	1 → 5	7 → 3	Fly
D	5 → 1	3 → 7	moon
G	1 → 5	7 → 3	play
C	5 → 1	3 → 7	stars
F	1 → 5	7 → 3	Let
B	5 → 1	3 → 7	spring
E	1 → 5	7 → 3	Jupiter
A	5 → 1	3 → 7	Mars

Parallel cascading chords and melody

Having said all that, when it comes to actually playing the progression, I find the first Am7 on the seventh fret a bit awkward and really enjoy starting with the Am (or Am7) at the nut instead. It can be dramatically slid up to the Dm7 on the sixth fret (it's the same basic shape), and from there the shapes cascade back to that same chord.



A fun Am to start with

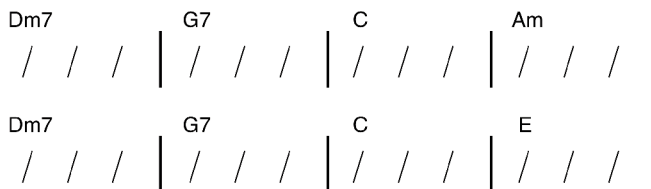
The Chorus

“In Other Words” was the original title of the song and is the basis of the chorus. It has interesting and fun chords but leaves the full Circle of Fourths behind.

There are a number of arrangements of chords that can be used for the chorus. Some continue in the vein above with nice jazz chords played around the middle of the fretboard.

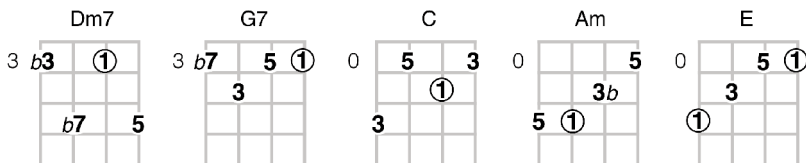
The ones chosen here are a bit different. They make use of open chords around the neck and are easy and fun to play. They might be ones that work well with Frank Sinatra’s version of the song.

There are three versions of the chorus, one with the main verse, one in an instrumental break, and one ending the song.



Other Words (chorus)

Here’s the shapes for those chords.



Other Words (chorus) chord shapes

The instrumental solo has a different set of chords for “Other Words” that is fun to take up to the high Em and back.

Dm7	G7	Em	A7
/ / /	/ / /	/ / /	/ / /
Dm7	G7	C	
/ / /	/ / /	/ / /	/ / /

Other Words (instrumental)

And here’s the shapes.

Dm7	G7	Em	A7
6 5 ① b3 b7	5 ① b7 5 3	7 5 ① 3b 5	5 b7 5 ① 3
Dm7	G7	C	
3 b3 ① b7 5	3 b7 5 ① 3	0 5 3 ① 3	

Other Words (instrumental) chord shapes

The second verse is then repeated and there’s a final flurry to finish “I love you” on a high C note.

Dm7 G7 C Am

/ / / | / / / | / / / | / / / |

Dm7 G7

/ / / | / / / | / / / | / / / |

Dm7

/ / / | / / / |

G G7 C

/ / / | / / / | / / / |

Other Words (finale)

And the chords.

Dm7 G G7 C

3 **b3** ①

3 5 ①

b7 5

①

5 ①

b7 5 3

5 5 ① 3

①

Other Words (finale) chord shapes

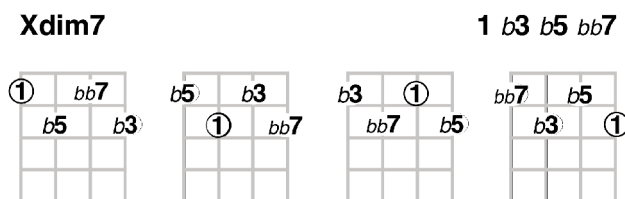
The Point

The point of all this being, armed with a knowledge of how to select chords, one can create instrumental arrangements that fit their own musical sense and digital dexterity. You find the chords that are both fun to play and fun to hear.

CHAPTER TEN

Miracle of Diminished 7ths

The fully diminished chord has some interesting properties. It is formed with a one-step move from the Xm7(b5) chords. The *b7* is flatted again, and, yes, that is a 6, but its role is of a double flatted 7 so that is how it is notated, *bb7*. Here are the chords.



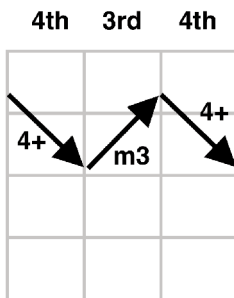
Diminished sevenths chord shapes

Notice that they are all played exactly the same way. But the roles of the notes change based on which is the root.

Why are they all the same? The intervals in a diminished seventh chord are all minor thirds (m3).

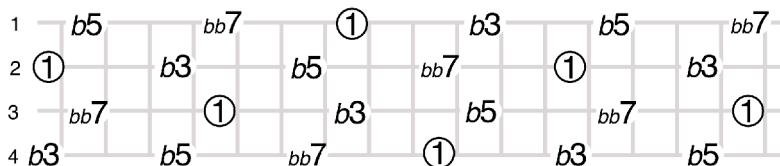
1 (m3) b3 (m3) b5 (m3) bb7 (m3) 1

Which means that the intervals between the 1 and *b5*, and *b3* and *bb7* are augmented fourths (4+). And those pairs link across the middle two strings as a minor third (m3), which gives the zig-zag pattern seen in all the chords.



Diminished seventh intervals

Notice how much easier the chord search game is with diminished sevenths. It's just zig-zags all the way up the neck.

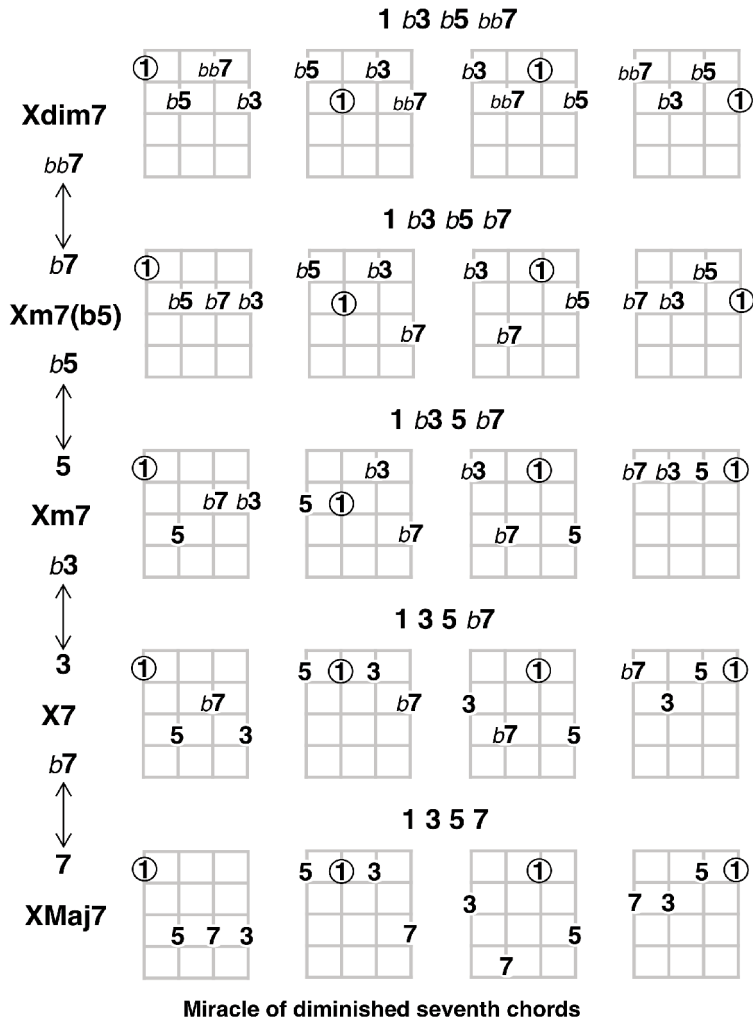


Relative positions of diminished seventh chord notes

This repeating pattern provides a powerful tool for figuring out any of the key seventh chords on the fly, without having to look at diagrams.

1. Find the root note, (1), on the fret board.
2. Make the zig-zag pattern.
3. Note the *b5* is next to the (1) and the other two strings have the *b3 bb7* pair.
4. Add the tones required, maybe the *b5* -> 5, the *b3* -> 3, the *bb7* -> *b7* -> 7

Here is the full miracle:



Example - $F\#m7$

Suppose you needed to play an $F\#m7$ somewhere near the neck. Using the miracle you can easily create it on the fly.

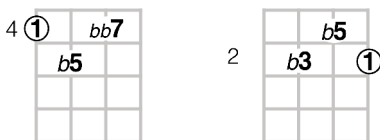
Step 1— Find possible roots. There are two $F\#$ s below the 5th fret, one on the 4th fret of the D string, and the other on the 2nd fret of the E string.



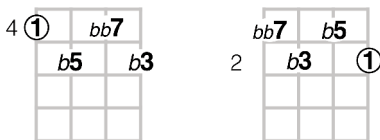
Step 2 — Add the zigs connecting the (1) and *b5* of the diminished chord.



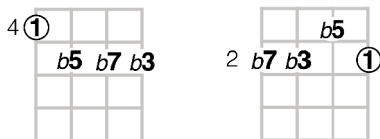
Step 3 — Find the minor third zag across the middle strings.



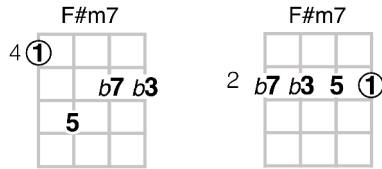
Step 4 — Add the last zig missing note to finish the diminished chord.



Step 5 — Move the *bb7* up a fret to a *b7*, as in a minor 7th chord.



Step 6 — Move the *b5* up a fret to a *5*, as in a minor 7th chord, and voila! Two ways to play F#m7 below the 5th fret.

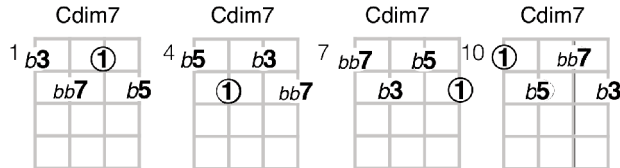


These steps can be used to derive, on the fly, any of the 7ths chords covered so far.

Creating Suspense

A curious fact is that, for any given Xdim7, once found, it can be moved up three frets and still be the same chord.

For example, Cdim7 can be played at the 1st fret, and at the 4th, 7th, and 10th frets.



Curious behavior of diminished sevenths

If you play the chord at the first fret, and then strum it on the second, third, and then fourth frets, you'll hear a suspenseful build up followed by a resolution. If you heard this in a movie sound track you would know something was about to happen.

This is another example of chord homonyms sounding like they should in context. Playing the shape at the fourth fret is also F#dim7, D#dim7, and Adim7, but played as recommended above, it clearly sounds as Cdim7.

So why does this shape keep coming back to the root every three frets? Each note is increased by a third, which keeps it still in a diminished 7th chord, but on a different string. Still, doesn't it seem a bit strange it should work like this?

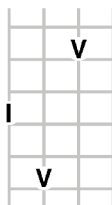
CHAPTER ELEVEN

More Chord Progressions

V I

The shortest and most common chord progression is from the V7 to I. Almost all songs finish with some flavor of the I, and get there from the V7. Clearly there are lots of ways to link these two chords, and it's worth exploring them. We'll cover two shapes here.

First we need to find the roots of the chords, based on the relationship of the I and V chords. The I in the diagram indicates a I chord with its root on the fourth string. The Vs indicate where the roots would be for V chords related to that I. Not all possibilities are shown, just those that might make sense to play. (Note that the relationship is, of course, the same as that between (1) notes and 5 notes.)

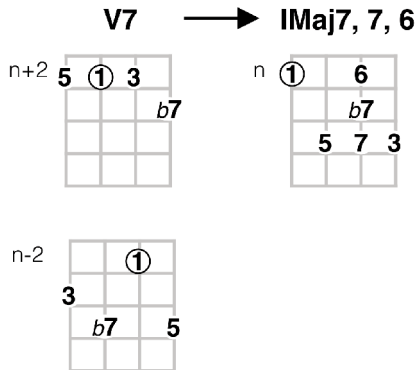


V roots close to a I on the fourth string

Knowing where those roots are, it's a simple matter to then find the correct shapes.

The I can be a regular major chord, or a Maj7 or 7 or 6. All resolve but with different sounds. The shape shown below shows the three variations of the seventh chords.

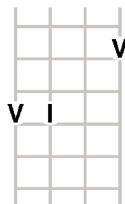
The two options for the V7 can be, as seen above, two frets above or two frets below, one with the root on the third string, the other with the root on the second string.



Two V7s leading to I rooted on fourth string

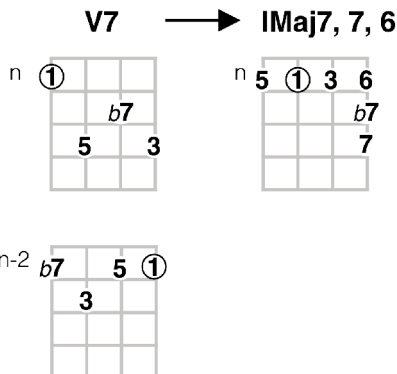
For example, you could play the V7 shape at the seventh fret, that would be a D7, and the IMaj7 at the fifth fret, which would be a GMaj7. Or play the D7 at the third fret using the second shape. Still V7 IMaj7.

We can do the same thing with the I rooted on the third string. Here are two Vs that connect to the I on the third string.



V roots close to a I on the third string

Here's the shapes for those two progressions.



Two V7s leading to I rooted on third string

The same process can be used for I on each of the first two strings, with other V7s that can be linked, but these two progressions are easy to play and make a great start. Experiment with them and discover different ones as well.

I IV V

These three chords are used as the basis for many, many songs. Many common songs use them as plain major chords. But for jazz, the 7ths are used.

Here's the relative positions of the I, IV, and V chords with the I having its root on the fourth string.

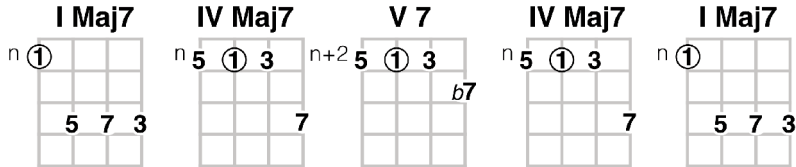
- ◆ I — root on fourth string
- ◆ IV — root on third string
- ◆ V — root on third string



I IV V rooted on fourth string

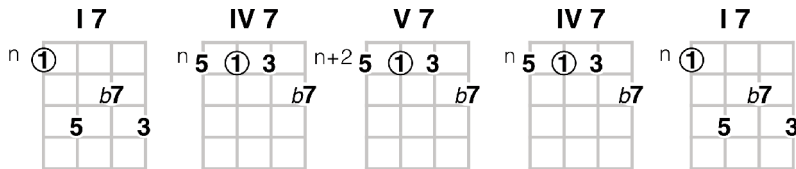
This progression can be played using the major chords. Try it with different strumming patterns.

These are the shapes using the chords of the chord scale. They have a kind of bossa nova feel.



I IV V with chords in the scale

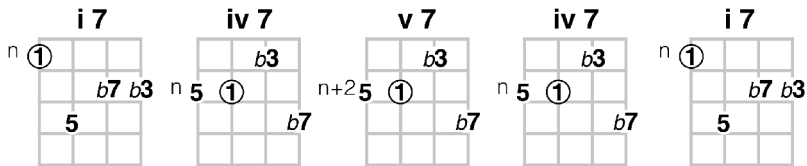
Or all in 7ths.



I IV V with seventh chords

Playing each of these gives a sense of the different flavors. Experiment with mixing the different voices, such as starting with a major chord but then using 7ths.

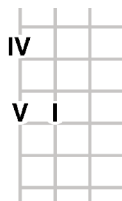
It can also be played using minor 7ths.



i iv v with minor seventh chords

We can do the exact same thing using the:

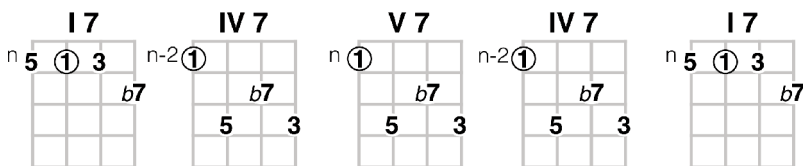
- ◆ I — root on the third string
- ◆ IV — root on the fourth string
- ◆ V — root on the fourth string



I IV V rooted on third string

Using this pattern, the same chord shapes are used as above, but in different roles. The IV - V - IV part of the progression slides up and down two frets on the fourth string instead of the third.

Here it is with the 7th chords.



I IV V rooted on third string with sevenths

Try it with the other chord shapes as well.

Blues

Classic blues are 12 bars long with this chord progression.

I I I I IV IV I I V IV I I

Use the chords above to create different sounding blues. The major chords create a rock sound, the various seventh chords create a jazz sound.

Many jazz songs are based on this progression, sometimes straight, but sometimes with all sorts of complex variations. They might not sound like the blues, but if you listen you'll hear this progression in the song.

Often for jazz this small variation is used, and for both blues and jazz, the last chord is often a V leading back to the beginning I, except for the last time through when it's a I.

I IV I I IV IV I I V IV I V(I)

For strumming, that's up to your personal taste and the flavor of the sound you like. For the blues I tend to use this pattern where the Ds are down and the Us are ups and the xs are silent. These are eighth notes, so they get played once for each measure.

D x D U x U D U

With the more jazzy sounding chords, playing them with a slow strum sounds nice.

Further Reading

There is a ton of information in the Internet about various chord progressions and how and where to use them and which chords to substitute for which when. That discussion is outside the scope of this book, but hopefully armed with the knowledge of how to play the chords you can explore them.

The next chapters will introduce some more variations on chords you might encounter so you can play them when you explore those other sources.

CHAPTER TWELVE

Extended and Altered

Jazz chords include all sorts of variations of the chords we've seen so far. The variations fall into two large categories, **altered** and **extended**.

Altered chords have a basic note in the chord changed. This might be the 5, in which case it's called an **augmented** chord, or it might be the 3, in which case it's a **suspended** chord.

Extended chords have an additional note added to a basic seventh chord. These notes are the 9, 11, and 13. They get their name from thirds stacked for two octaves.

1 3 5 7 9 11 13

The 9, 11, and 13 are just the 2, 4, and 6 of the next octave, and for making the chords on the ukulele, those are the notes that will be played. The name preserves the harmonic roles of the notes, as it is those intervals of thirds that make the sounds we hear.

These two types of variations are indicated in the names of the chords. For example, a G7+5 is a G7 chord augmented with a sharped 5. A G13 is a G7 with a 13 replacing the 5.

Chords can be both altered and extended, and jazz musicians constantly mix and match the various ways to modify the sound of a chord. There is a lot of information on the Internet about which chords can be substituted for which.

Armed with what we know of the voicings of the chords seen so far, we can now explore the subtle sounds these intriguing variations bring to the music.

CHAPTER THIRTEEN

Augmented and Suspended

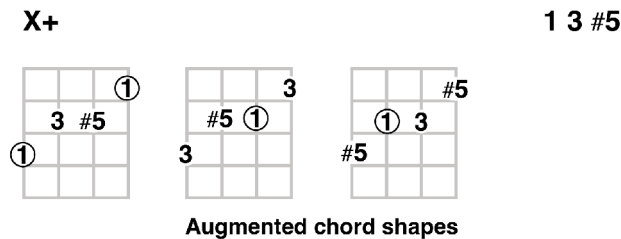
Augmented and suspended chords change the pitch of a note in a chord. For augmented chords, it's the 5 that gets changed, for suspended chords, it's the 3.

Augmented Chords

We've seen two three-note chords, the major, 1 3 5, and the minor, 1 *b*3 5. Augmented chords are another. Their three notes are:

1 3 #5

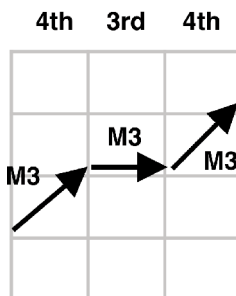
We can derive the augmented chords by moving the 5 to a #5 in the patterns for the major chords. An interesting pattern appears. Just as with the diminished 7th chords, all the augmented chords have the same pattern, but with the notes in different roles.



This is because the intervals of the augmented chords are all major thirds.

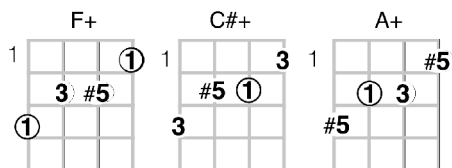
1 (M3) 3 (M3) #5 (M3) 1

Unlike our inverted seventh chords, these can be easily played in sequence across the 4th - 3rd - 4th tuning of the ukulele.



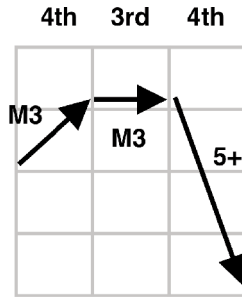
Major third intervals make augmented chords

This means that you can play the same pattern at a given fret, and depending on the chords played before and after, it will sound as three different chords. For example, at the first fret the chords are as follows.



Three chords from same shape

There is a variation on the pattern that might be used sometimes. It involves replacing the last major third interval with its reciprocal augmented fifth interval (5+) which is not a bad idea since that stretch is easy to make with the pinky on the first string.

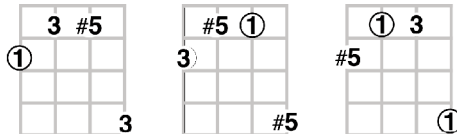


An augmented fifth for augmented chords

Here are the three chords built with that pattern.

X+

1 3 #5



More augmented chord shapes

As with the other pattern, which chord it sounds like will depend on the context.

As with diminished chords that repeat every three frets, augmented chords repeat as well, but in their case it's every four frets. That is, you move each note up a major third each time.

Suspended Chords

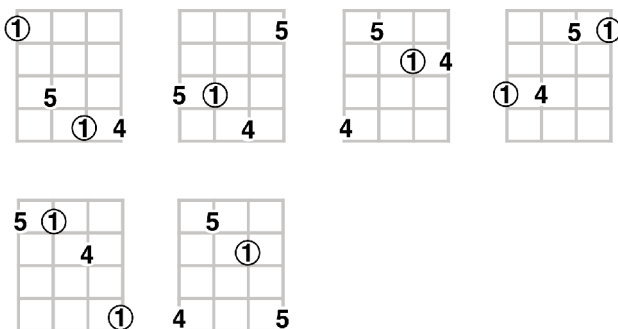
Suspended chords have the 3 moved up or down a note. The more common is up to a 4, and those chords are notated as Xsus or Xsus(4).

1 4 5

It's easy to derive them from the major chords by simply sliding the 3 up one fret.

Xsus(4)

1 4 5



Suspended (4) chord shapes

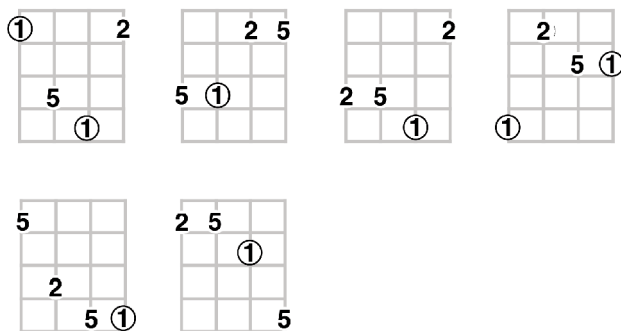
Suspended chords can also be made by sliding the 3 down two frets to a 2. These are notated as Xsus2 and have the notes

1 2 5

They are easily derived by starting with the Xm shapes and lowering the *b3* one fret. Thus the patterns are as follows.

Xsus2

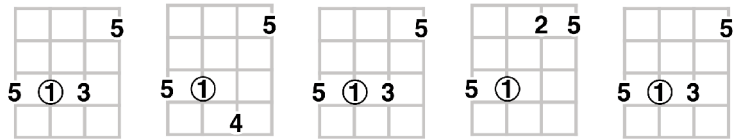
1 2 5



Suspended 2 chord shapes

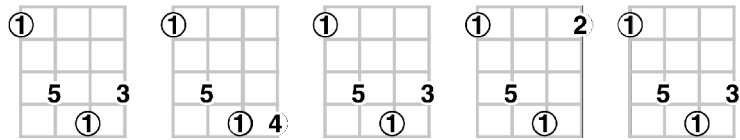
It's fun to play them together, more easily in some configurations than others. The A shape is the most flexible. Use a bar and then three fingers with a pinky on the 3 on

the second string. Then sliding and lifting the pinky lets you play these chords together.



Suspending the A shape

The D shape can also be used like this, but it is a bit awkward to play with the bar. However, playing it as a real D, open at the nut, is fun.



Suspending the D shape

You'll find uses for the other shapes as well, as they often appear as accompanying chords to songs, creating their own distinct feel.

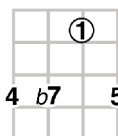
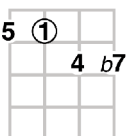
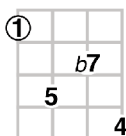
CHAPTER FOURTEEN

More 6ths and 7ths

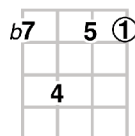
In addition to the 7th chords we've seen so far, there are some more that can be built on the suspended and altered base chords. By now you've probably got the idea on how to create new chords from old. Here's a seventh on a sustained 4.

It's built by taking the X7 patterns and moving the 3s up a fret to the 4s. Look back at the X7 patterns to see the change:

X7sus(4)



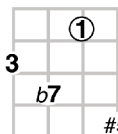
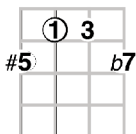
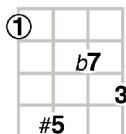
1 4 5 b7



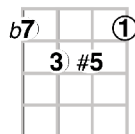
Suspended seventh chord shapes

Similarly the augmented chords can be extended with a 7th as well. The augmented base is indicated by a +5 and the diminished by a -5. Here's the augmented 7th chord with the 5s changed to #5s.

X7+5



1 3 #5 b7

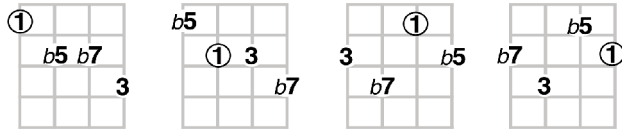


Augmented seventh chord shapes

Here's the diminished 7th chord. Same process, but this time 5s change to *b5*s.

X7-5

1 3 *b5* *b7*

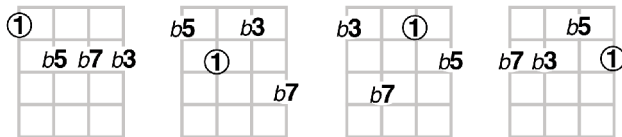


Diminished seventh chord shapes

One more in this vein is the minor seventh chord with a *b5*. We've seen it before as *Xm7(b5)*, and an important chord it was. Here it is on the same page with some of its relatives using the -5 notation.

Xm7-5

1 *b3* *b5* *b7*



Minor sevenths with flat fifths chord shapes

You might run into different chord patterns, but understanding where each voice is in a chord pattern allows you to easily create new patterns for chords not listed in this book.

CHAPTER FIFTEEN

9ths

Ninth chords are a bit more difficult. The elegant design of the instrument that works so well for 7th chords makes one think the creators weren't thinking about 9th chords.

9th Chords

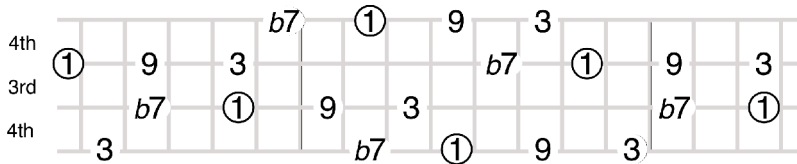
A 9th chord adds a 9 to the chord, which is the same as a 2. The full chord, as played on a piano maybe, has these notes.

1 3 5 *b7* 9

The way all of these chords with extra notes are handled is one or more notes are dropped. Most typically it's the 5, which the ear tends to automatically include by itself. So ideally the notes for our 9th chord are:

1 3 *b7* 9

Here's the notes laid out on the fretboard.

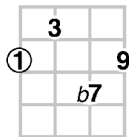


Relative positions of ninth chord notes with root

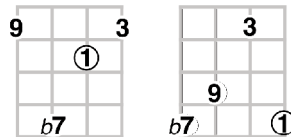
Can you see the difficulty? The notes of the chords we saw earlier were separated by thirds, and spread out nicely on the fretboard. The four notes of the 9th chord are just a whole step apart from each other, leaving long stretches of the fretboard useless in making chord shapes.

We do get some good shapes though.

X9



1 3 b7 9



Ninth chord shapes with root

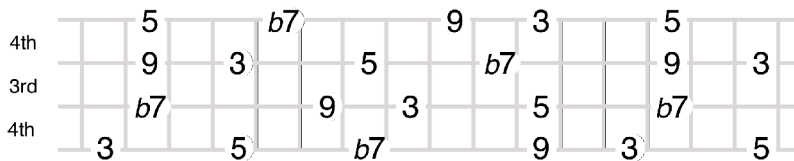
The one with the root on the fourth string is nice. It's almost impossible to build one with the root on the third string (you can but it requires a very long stretch), and the two other shapes are both playable but with long reaches.

There is another option and that is to drop the (1) instead of the 5. You might think the (1) is essential to a chord, but it turns out that the ear can fill it in, especially if the chord is played in a progression where the (1) would be expected.

The notes are then:

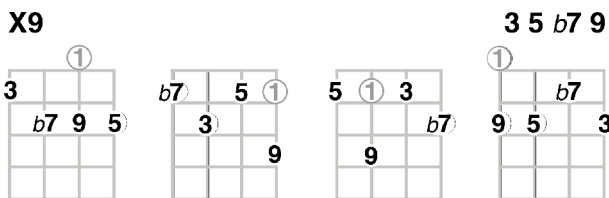
3 5 b7 9

Compare the distribution of these notes to the 1 3 b7 9 distribution above. They're spread out more evenly and there are more reasonable opportunities to play the chords.



Relative positions of ninth chord notes without root

It's a simple transition to take X7 chords and move the (1) up two frets to get these shapes for a 9th chord. The (1) is included in the diagram, shaded out, so you can find where to play these shapes to get a particular chord, say a G9.



Ninth chord shapes without root

It's curious to note that these shapes are all homonyms for Xm7(b5) shapes. This is because the sequence of intervals is the same, minor 3rd, minor 3rd, major 3rd. Again, the ear can sort it out.

Add 9

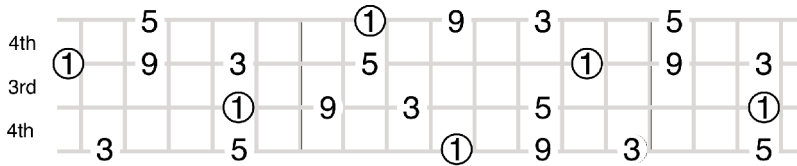
For the 9th chord, the sound of the b7 with the 9 is what gives it its distinctive tone.

When the 9 replaces the b7 it's a different type of 9th chord, called an add9. It has the notes:

1 3 5 9

Here's the fretboard.

Jazz Chords for Baritone Ukulele

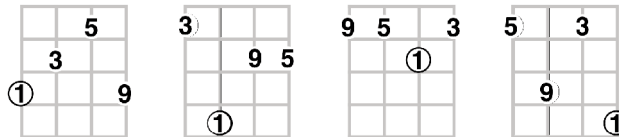


Relative positions of add nine chord notes

This is not as troublesome as the 9th chords, but yields some fingerings that are a bit more awkward than the ones for 7th chords. Note that the interval between the 5 and 9 is a fifth, so that relationship follows old patterns. The (1) and 3 are separated by a third, so that's where some of the stretching comes in.

Xadd9

1 3 5 9



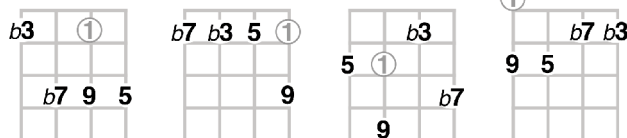
Add ninth chord shapes

Minor 9th and Major 9th

The difficulties in finding ways to map a X9, 1 3 b7 9, to the strings get worse when we consider Xm9, with a b3, or XMaj9 with a natural 7. Both of these changes cause the notes to cluster even more on the fretboard. This makes the drop (1) option the only viable one.

Xm9

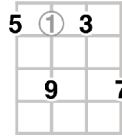
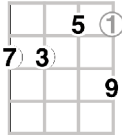
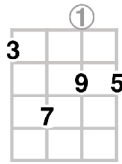
b3 5 b7 9



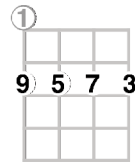
Minor ninth chord shapes without root

And the major.

XMaj9



3 5 7 9



Major ninth chord shapes without root

The point being, unlike with the 7th chords, for which the ukulele seems ideally suited, the extended chords all require compromises to come up with pleasing voicings and playable shapes.

Each of the 9th chords covered here, and the 11th and 13th chords in the next chapter, has its own challenges due to the sound and mood it creates and the geometry of the fretboard available for playing it.

CHAPTER SIXTEEN

11ths

Elevenths have an added 11, which is the same as a 4. As is often the case, the 5 is dropped to make a four note chord.

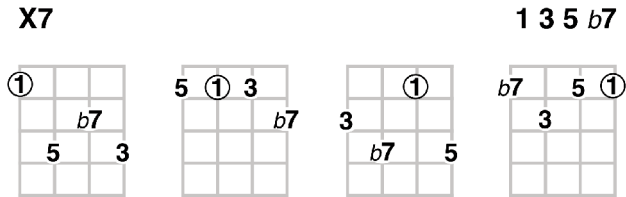
1 3 *b7* 11

This strategy caused problems with ninth chords, since the new note was in an awkward place relative to the other notes. But for the elevenths, the 11 is a 4 and close to the 5 that was taken out.

So it's not hard to come up with 11th chords by changing 7th chords.

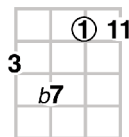
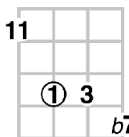
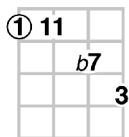
Note that in preserving the essence of these chord extensions, the *b7* is an important note. It's the tension between the extension and the *b7* that provides the flavor.

Here are three common 11th shapes, all easily derived from the X7 and XMaj7 shapes by moving the 5 to either an 11 or #11.

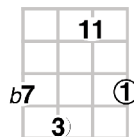


Seventh chord shapes

X11

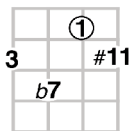
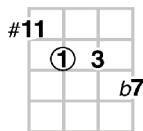
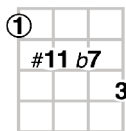


1 3 b7 11

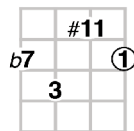


Eleventh chord shapes

X7#11



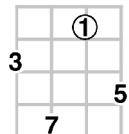
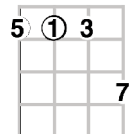
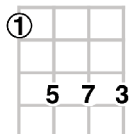
1 3 b7 #11



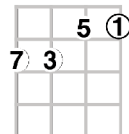
Seventh with sharp eleven chord shapes

Similarly we can take the XMaj7 shapes and turn them into XMaj7#11 shapes.

XMaj7

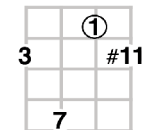
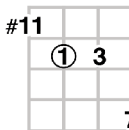
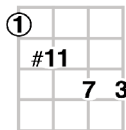


1 3 5 7

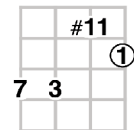


Major seventh chord shapes

XMaj7#11



1 3 7 #11



Major seventh with sharp eleven chord shapes

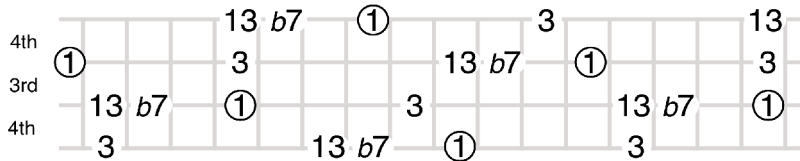
CHAPTER SEVENTEEN

13ths

And we finish where the book began, with 13th chords. Dropping the 5, the notes are:

1 3 *b7* 13

Almost simple, just move the 5 up two frets to the 13, which is the same as a 6. Unfortunately, for the shapes with the root on the second or fourth string, the shape becomes unreachable.



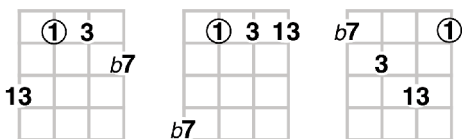
Relative positions of thirteenth chord notes

The problems are caused by the *b7* and 13 being so close to each other.

We do get two options though for playing it with the root on the third string, as can be seen in the view of the full fretboard.

X13

1 3 b7 13



Thirteenth chord shapes

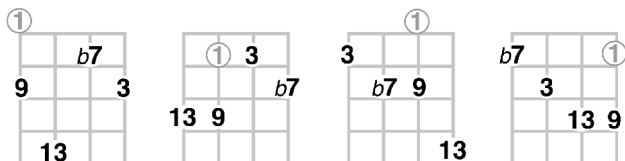
As with the 9th chord shapes, sometimes it makes sense to drop the (1). And, since a 13th chord benefits from the tension with a 9, it can be used instead of the 5. So the notes are:

3 b7 9 13

Now we can start with the X7 shapes and increase the (1) two frets to a 9, and the 5 two frets to a 13.

X13

3 b7 9 13



Thirteenth chord shapes with dropped (1) and added 9

And that concludes our exploration of the shape of jazz on the baritone ukulele. Experiment, enjoy, and be not afraid.

CHAPTER EIGHTEEN

Bali Ha'i

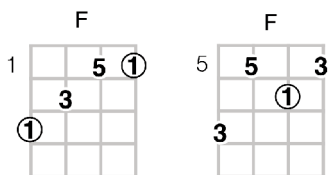
Earlier we covered the major chords of the opening verse of *Bali Ha'i*. The rest of the song has some fun jazz chords, like the diminished 7ths, the ending C9 F6 progression, and the Bb, Bb+, Gm progression in the bridge.

“Bali Ha’i” music by Richard Rodgers, lyrics by Oscar Hammerstein II
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MISSING_IMAGE:/Users/dennis/Projects/Books/Jazz Ukulele/Bali Ha'i (South Pacific).pdf

Given the flexibility of the movable chords, there are a number of options on how to play the chords for this song.

First, it's in F, so an important chord is going to be F. There are two shapes for F worth considering, one the E shape based on a root at the first fret, and the other the C shape based on a root at the sixth fret.



Two possible F shapes

As we saw earlier, the one at the fifth fret gives us more flexibility for moving up and down, so it will be the basis for the rest of the chord choices.

The decision pays off immediately for the Eb.

Verse:

F		Eb
5	5 3	3 5 3
	①	
3		3

Most people live on a lonely island

Earlier we played the A by sliding the C shape up to the ninth fret, which is fun, but maybe it sounds nicer staying closer to our fifth fret home, switching to the E shape.

F		A
5	5 3	5 5 ①
	①	
3		① 3

Lost in the middle of a foggy sea

F		Gb
5	5 3	6 5 3
	①	
3		3

Most people long for another island

The Gm7 is easy to play and flows well into the C.

Gm7		C		C7
3 b7 b3 5 ①		5 ① 3		5 5 ① 3 b7
		①		

One where they know they would like to be. Ba-li

The diminished 7th chords can be played anywhere there's an F, so why not use the same one in our base F chord.

Jazz Chords for Baritone Ukulele

Chorus:

Fdim7	F	Fdim7	F
Ha'i may Ha'i will	call you any whisper on the	night, any wind of the	day. In your sea: "Here am

We could have used the Db7 shape around the second fret, but this one is easier to play and stays in the neighborhood.

E	Db7	F	Db7	C7
heart, you'll hear it I, your special	call you: "Come a island. Come to		way, come a me, come to	

A couple of choices as well for this Bb, but playing it here has a nice advantage moving forward.

1: F	2: F	Bridge: Bb
way." Ba-li	me." Your	own special hopes, your

That's being able to simply drop the middle finger to switch to the #5 in the Bb+. Emphasizing the fourth string on the strums sounds really sweet.

It gets better. The Gm can also be played with the same fingering, this time putting the ring finger on the fourth string. This is not one of the listed minor chord shapes, but putting in that extra b3 keeps the correct notes in the chord, and provides a nice finish to the Bb, Bb+, Gm progression.

Bb+	Gm
own special	dreams bloom on the hillside and

Now moving back up to our base around the fifth fret.

Bbm	C7
shine in the	streams. If you

Chorus:

Fdim7	F	Fdim7	F
try, you'll	find me where the	sky meets the	sea. "Here am

E	Db7	F	Db7	C7
I, your special	island. Come to	me, come to		

And the final progression, to an F6 higher up the neck. In the Bb, it might sound better to play a 6 instead of a 5, as indicated in the diagram. Play with it.

F	Bb	C9	F6
me." Ba-li	Ha'i, Ba-li	Ha'i, Ba-li	Ha'i

In experimenting with the chords it helps to strum each chord slowly, hitting each note so that the movement of the notes, the voices, can be heard from chord to chord. The idea is to get as pleasing a sound as you can through the changes.

CHAPTER NINETEEN

The Girl from Ipanema

One last song with some beautiful chord progressions, *The Girl from Ipanema*.

Many jazz songs follow distinctive patterns. One common pattern is symbolized by A A B A, where each letter represents an 8 bar section. The A sections are the same or similar, whereas the B section contrasts with the As. It is often called the “bridge.”

The *Girl from Ipanema* is almost one of those, except the bridge is 16 bars long.

Here are some chord shapes for the song. There is just one chord per measure, the “/” indicates the same chord as the previous measure.

Chorus

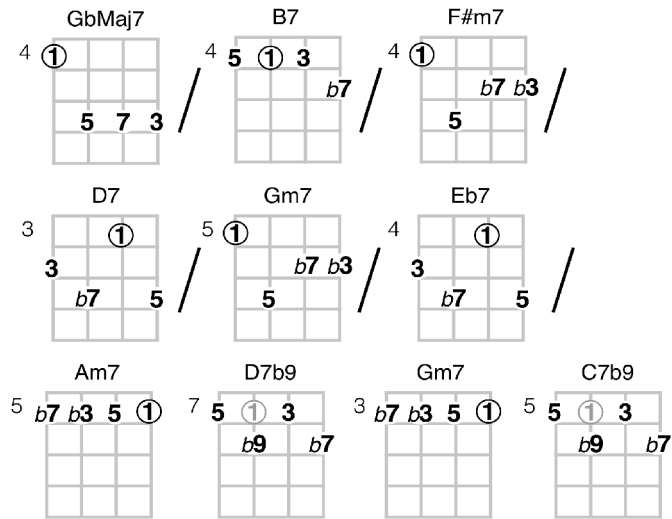
The diagram illustrates the following chord shapes and progressions:

- Top Row:**
 - FMaj7:** Fingering ① (top-left), 5 (middle-left), 7 (middle-right), 3 (bottom-right). Fret 3 is indicated above the 5.
 - G7:** Fingering b7 (top-left), 5 (top-right), ① (bottom-right), 3 (middle-left). Fret 3 is indicated above the 5.
 - Gm7:** Fingering b7 (top-left), b3 (top-middle), 5 (top-right), ① (bottom-right). Fret 3 is indicated above the b3.
 - Gb7:** Fingering b7 (top-left), 5 (top-right), ① (bottom-right), 3 (middle-left). Fret 2 is indicated above the b7.
- Bottom Row:**
 - 1: FMaj7:** Same as the first FMaj7 in the top row.
 - 2: Gb7:** Same as the Gb7 in the top row.
 - 2: FMaj7:** Same as the first FMaj7 in the top row.

Slanted lines (/) indicate that the chord shape remains the same for subsequent measures.

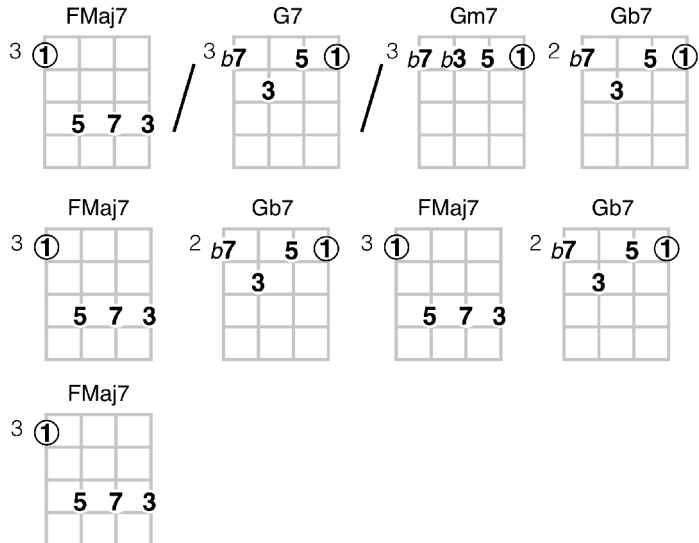
The Girl from Ipanema chorus

Bridge



The Girl from Ipanema bridge

Chorus



The Girl from Ipanema final chorus

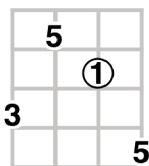
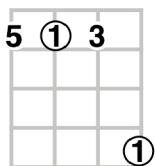
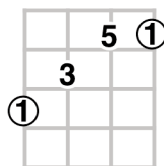
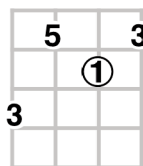
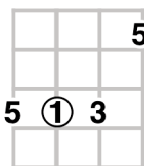
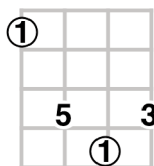
Find a nice Latin like rhythm and enjoy.

Lots of Shapes

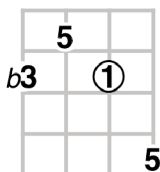
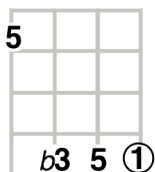
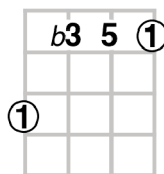
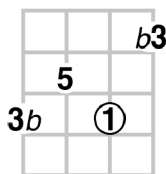
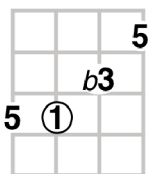
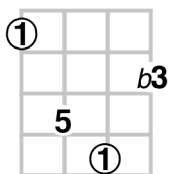
Here are many of the chords for reference. A PDF version intended for printing is available at www.dcmerritt.com.

Triads

X



Xm

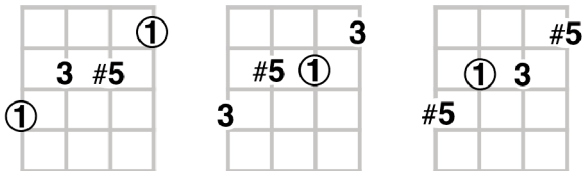


1 3 5

1 b3 5

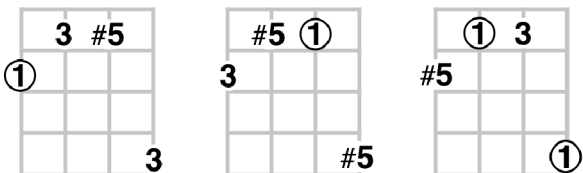
X+

1 3 #5



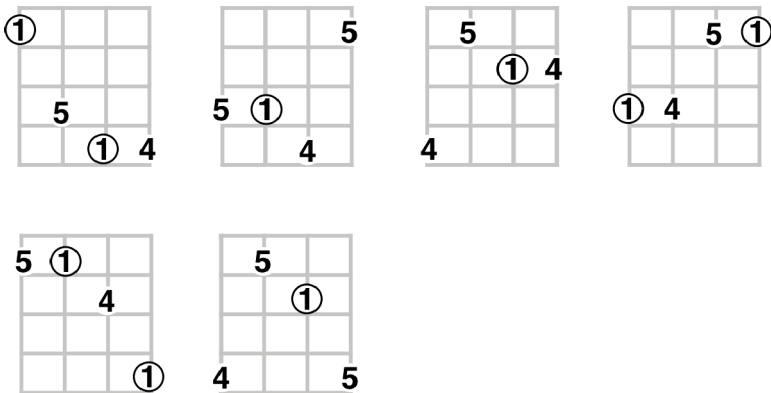
X+

1 3 #5



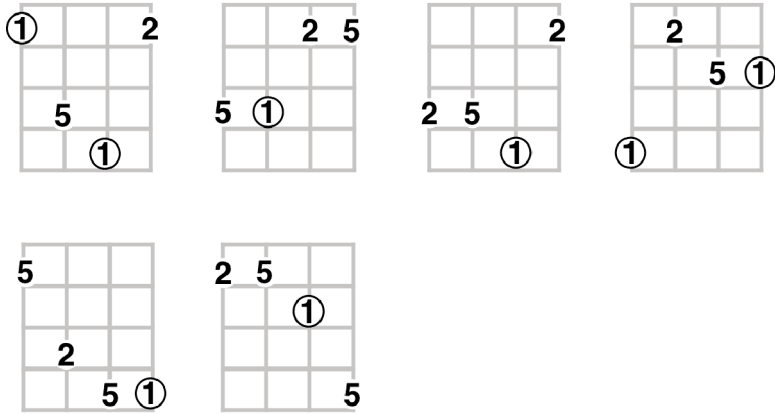
Xsus(4)

1 4 5



Xsus2

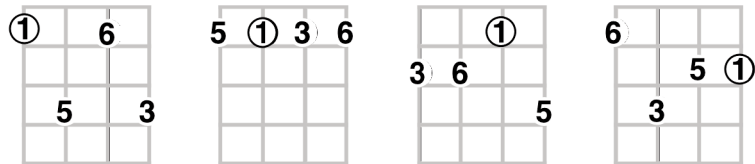
1 2 5



6ths

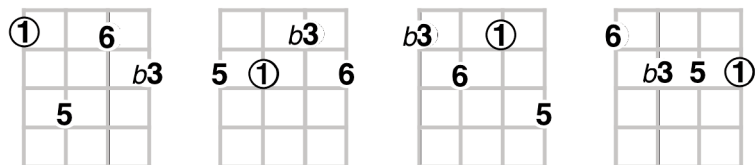
X6

1 3 5 6

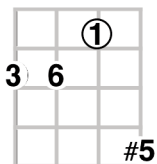
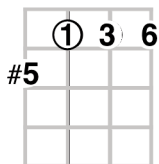
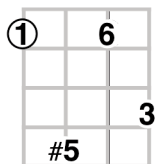


Xm6

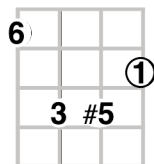
1 b3 5 6



X6+5

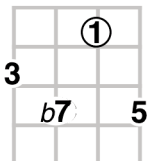
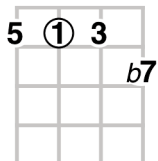
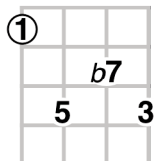


1 3 #5 6

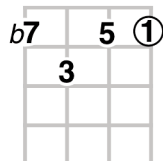


7ths

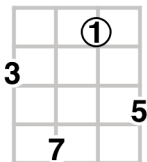
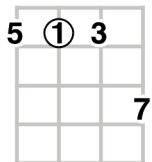
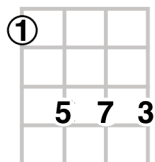
X7



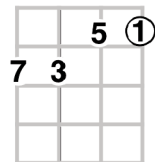
1 3 5 b7



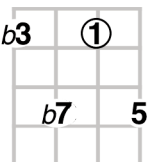
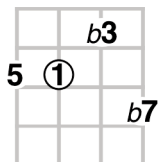
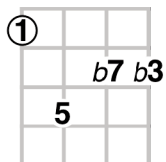
XMaj7



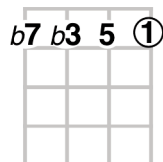
1 3 5 7



Xm7

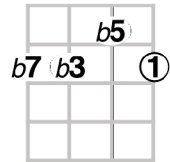
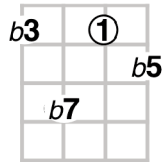
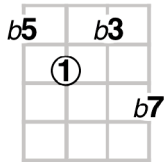
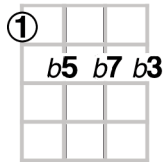


1 b3 5 b7



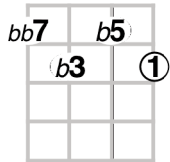
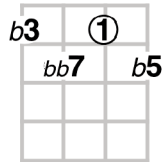
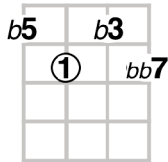
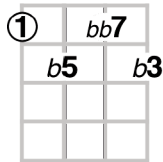
Xm7(b5)

1 *b3 b5 b7*



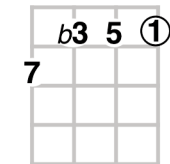
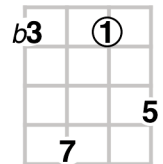
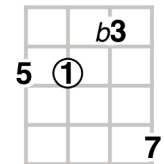
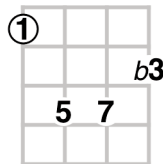
Xdim7

1 *b3 b5 bb7*



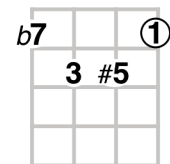
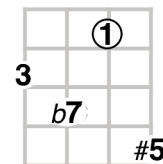
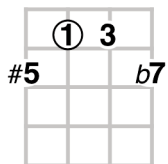
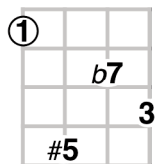
XmMaj7

1 *b3 5 7*



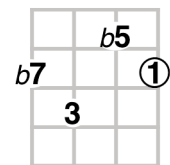
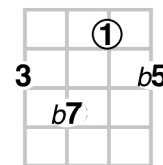
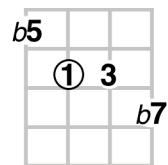
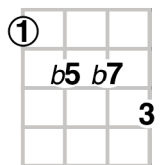
X7+5

1 3 *#5 b7*



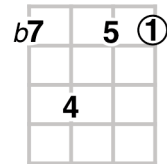
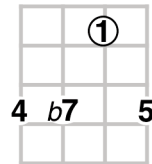
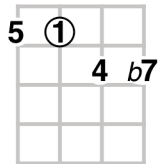
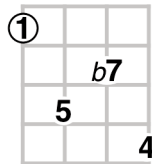
X7-5

1 3 *b5 b7*



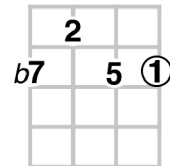
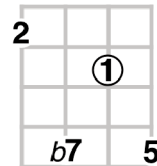
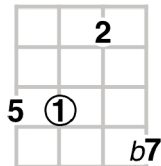
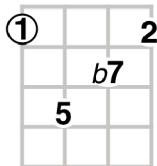
X7sus(4)

1 4 5 *b*7



X7sus2

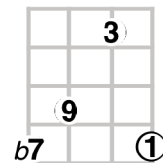
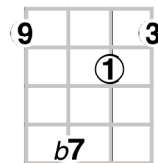
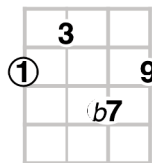
1 2 5 *b*7



9ths

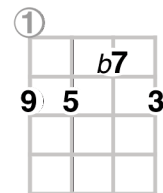
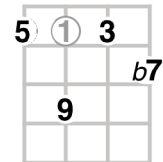
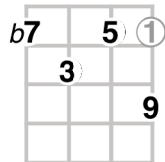
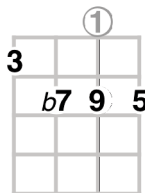
X9

1 3 *b*7 9

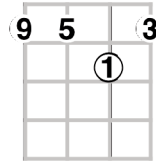
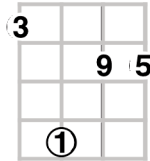
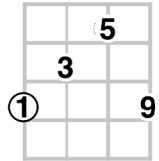


X9

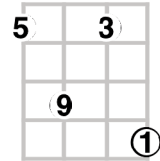
3 5 *b*7 9



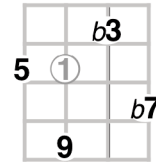
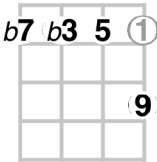
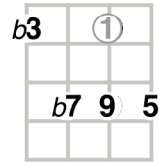
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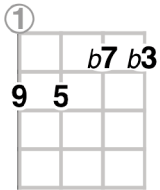
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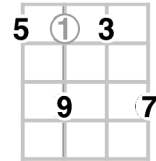
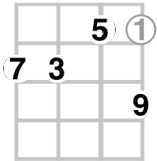
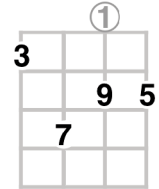
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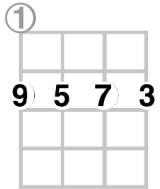
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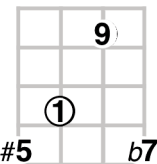
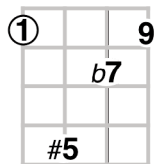
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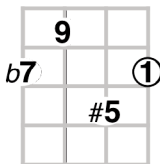
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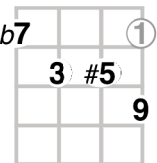
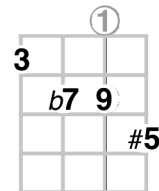
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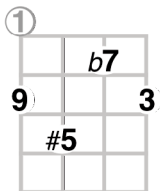
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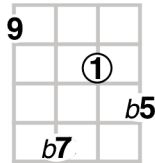
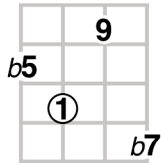
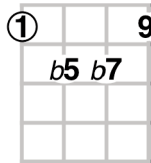
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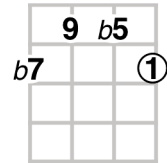
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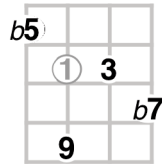
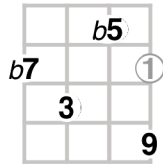
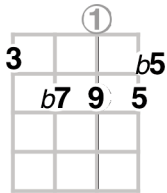
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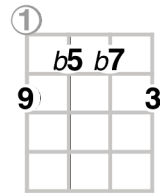
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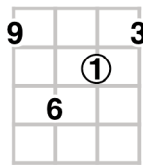
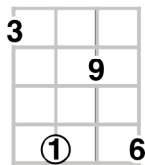
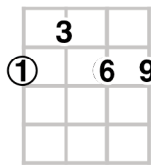
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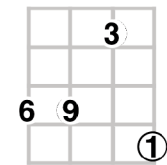
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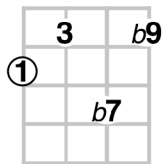
X6/9



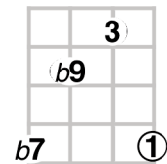
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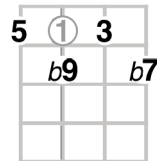
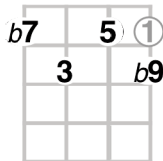
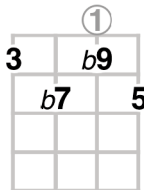
X7(b9)



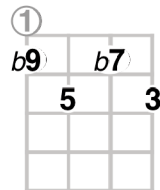
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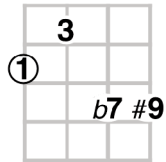
X7(b9)



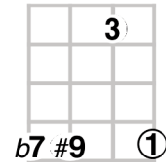
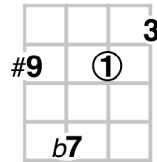
3 5 b7 b9



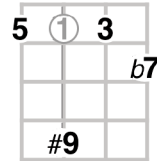
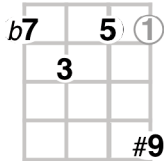
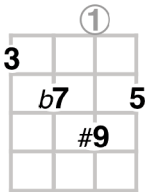
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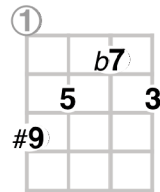
1 3 b7 #9



X7(#9)

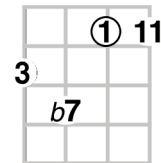
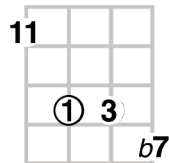
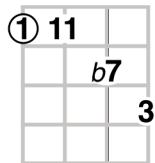


3 5 b7 #9

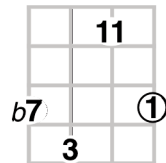


11ths

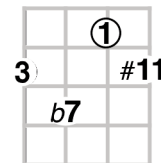
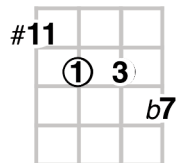
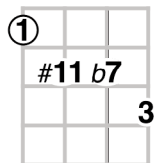
X11



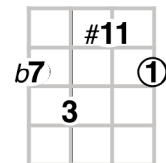
1 3 b7 11



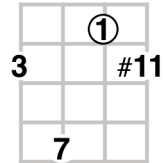
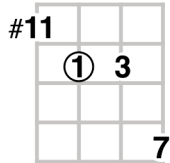
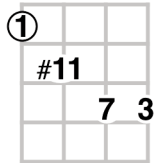
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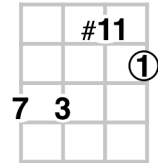
1 3 b7 #11



XMaj7#11

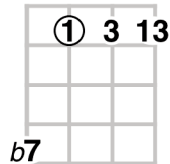
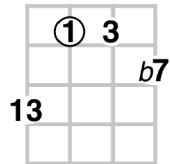


1 3 7 #11

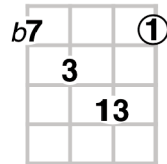


13ths

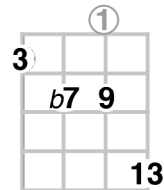
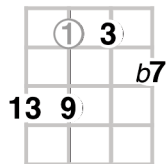
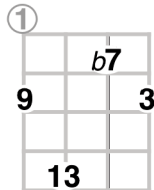
X13



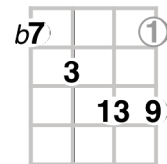
1 3 b7 13



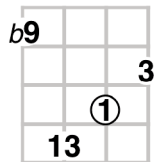
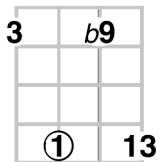
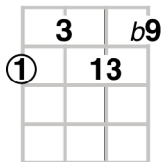
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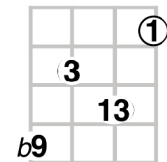
3 b7 9 13



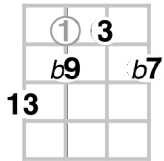
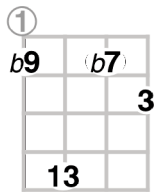
X13(b9)



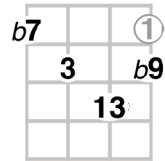
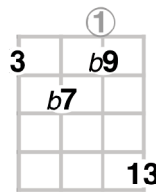
1 3 b9 13



X13(b9)



3 b7 b9 13



Copyrights

In addition to being an education in music theory, doing this book was an education in music copyright law. I attempted to get legal rights for the four songs used in the book. I only managed to get one, for *Bali Ha'i* from Rodgers & Hammerstein. I thank them for that.

“Bali Ha’i” music by Richard Rodgers, lyrics by Oscar Hammerstein
Copyright 1949 by Richard Rodgers & Oscar Hammerstein II
All Rights Reserved. Used With Permission.

I learned that for some songs you need permission from more than one place, requiring separate applications. I found this out after paying a lot for one permission, only to find out that I had to pay someone else more to get the remaining permission. That’s why *Bewitched* just has a small excerpt which should easily be covered by “fair use.”

I learned that “fair use,” the ability to include something without permission, is not precisely defined. There are guidelines, but you can’t really tell if your use of a portion of a song is OK or not. You just have to wait to be sued and then argue in court. I’m pretty sure I’m OK with the bit of *Bewitched* lyrics I included as it is a small excerpt for educational purposes.

I really wanted to get full permission for Bart Howard’s *Fly Me to the Moon* for a number of reasons. The main one being it really is the center piece of the book and ties nicely into Pythagoras’s work. Another reason is I have a warm spot for that song since my first job was working on the Apollo project.

When I tried to get permission I found it would cost me 12.5% of the retail price of the book. Money and accounting time. Sigh.

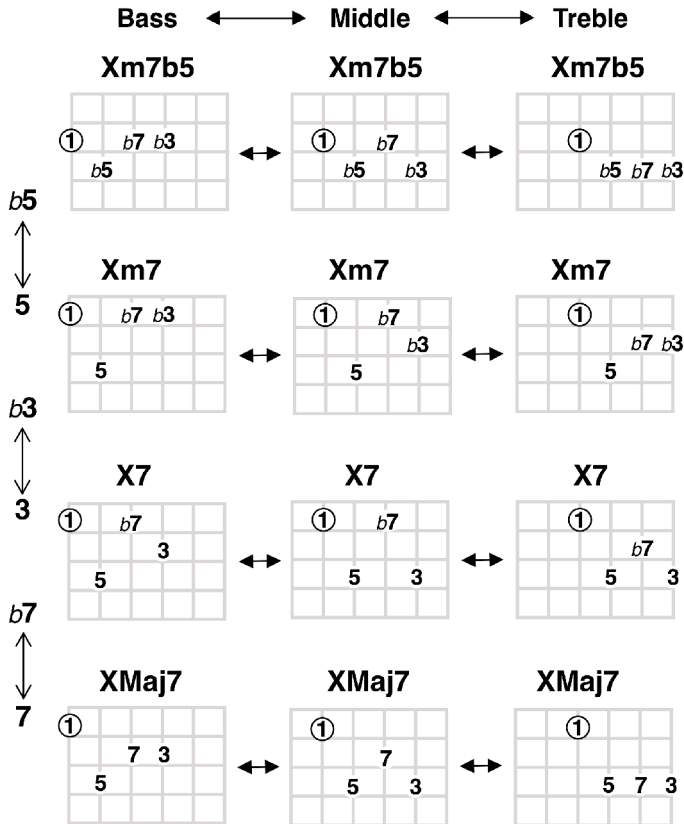
I learned more about what is legal. The name of a song cannot be copyrighted, so I can use any of the song names in this book. Chords cannot be copyrighted, so it’s perfectly fine to list chord sequences and changes. It’s the lyrics and melody that require permission.

I was always curious about the ready availability of song lyrics with chord symbols written above them. The largest resource for these appears to be Ultimate Guitar, and after doing a bit of reading about them, it turns out that they do, indeed, obtain all the legal permissions for the lyrics and music that they publish. For this I say, hat’s off to Ultimate Guitar, and recommend it as the site to get lyrics and chords for any songs, including *Fly Me to the Moon*.

From Four to Six Strings

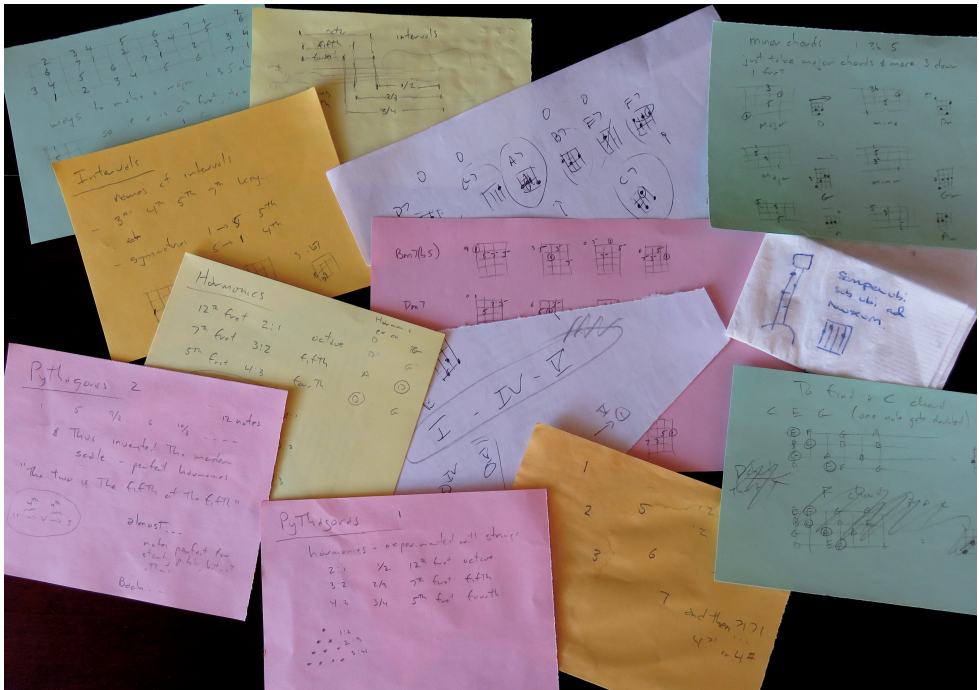
Coming soon, a follow on book showing how to derive chord shapes for the guitar based on the theory and shapes in this book.

Here's a diagram from a chapter focusing on the essential seventh chord shapes with the root on the bass strings.



Check the Web site for the latest information:

www.dcmerritt.com



Intervals

names of intervals

3rd 4th 5th 6th 7th

2nd 3rd 4th 5th 6th 7th

1st 2nd 3rd 4th 5th 6th 7th

to make a major 1 3 5 etc

so 1 3 5 7 9 11 13

intervals

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

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

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

Intervals

names of intervals

3rd 4th 5th 6th 7th

2nd 3rd 4th 5th 6th 7th

1st 2nd 3rd 4th 5th 6th 7th

to make a major 1 3 5 etc

so 1 3 5 7 9 11 13

intervals

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

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

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

Harmonics

12th fret 2:1 octave

7th fret 3:2 5th fret 4:3 6th fret 5:4

12th fret 2:1 octave

7th fret 3:2 5th fret 4:3 6th fret 5:4

12th fret 2:1 octave

7th fret 3:2 5th fret 4:3 6th fret 5:4

Pythagoras 2

5 7/2 6 11/2 notes

8 These intervals the modern scale - perfect harmonies

"The two is the 6th of the 6th"

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

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

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

Pythagoras 1

harmonics = superimposed well strings

2:1 3:2 4:3 5:4 6:5 7:4 8:5 9:4 10:3 11:2 12:1

2:1 3:2 4:3 5:4 6:5 7:4 8:5 9:4 10:3 11:2 12:1

2:1 3:2 4:3 5:4 6:5 7:4 8:5 9:4 10:3 11:2 12:1

I - IV - V

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

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

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

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

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

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

minor chords

just take major chords & move 3 down

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

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

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

Simple chords

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

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

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

To find a C chord

C E G (one note gets divided)

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

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

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