Jazz Theory

4th Revised edition

by

Stuart Smith

To Robert Dix Lincoln

Things should be made as simple as possible. But no simpler.
Remark attributed to Albert Einstein

Jazz theory **is** *simple. It has to be.*
S.S.

Acknowledgments

Since the earliest days of my teaching career at UMass Lowell, I had thought about writing a book on jazz theory. I had developed a detailed set of notes for such a book, but the notes spent most of their time languishing in my file cabinet. Every now and then I would take them out and add or change a few things. But then, for lack of a compelling reason to begin writing, I would just put them away again. This project would probably never have come to completion had it not been for my boss, William Moylan (professor of Music and former Chairperson of the UMass Lowell Department of Music) and my 2003-2004 Jazz Lab ensemble students — especially Jaclyn Soep, Chad Gosselin, and M. Xavier ("Maxxx") Lewis. Dr. Moylan welcomed me back into the Music Department after a 21-year stint in Computer Science. He assigned me to direct the Jazz Lab, which made it possible for me to work with young jazz musicians again. Jaclyn, Chad, and Maxxx encouraged me to create the jazz theory course for which this book was written. I was so impressed by their desire to gain a deeper understanding of jazz that I simply couldn't say no to their request to provide a course for them.

The task of actually writing the book was made much easier and more enjoyable by my colleague, friend, and current boss, Paula Telesco, who served as both gadfly and cheerleader on this project. She read several drafts of this book, providing innumerable useful suggestions, pointing out errors and weaknesses in my presentation, and asking many thought-provoking questions. The book is far better than it would have been without her assistance.

I learned jazz by playing with some talented musicians in high school and college. During those years, I was fortunate to fall in with two different groups of musicians who were willing to jam for hours simply for the enjoyment of playing and learning. In the first group were Bill Campbell, Lynn Eberhart, Bill Sprague, Vic Weinrich, and Bernie Yaged. In the second were Joe Goodman, Pete Plonsky, and Bob Shechtman. I've often wished we could all get together for a reunion jam session, but we've long since gone our separate ways and, sadly, members of both groups have already passed on.

Finally, I have to thank my late, multi-talented mother, Marge Smith. For many years, Mom was the rehearsal pianist at a ballet/tap/jazz dance school and had to produce piano arrangements of all kinds of music on short notice. She introduced me to pop chord notation and showed me how she developed piano accompaniments to popular songs from the chord symbols in sheet music. This experience sparked my interest in jazz harmony, which ultimately led to the writing of this book.

Preface

Why write a book like this? It's unlikely to be to the taste of many music students, most of whom find music theory — of both the traditional and the jazz varieties — boring and irrelevant. Exceptions to this glum observation might be jazz pianists, who are typically the resident music theorists of the groups they play with, and budding composers and arrangers (who are also very likely pianists of at least modest accomplishment). Be that as it may, the goal here is to give students some insight into a great musical tradition that appears now to be passing into history. Along with "The Great American Songbook", to which jazz has made numerous contributions, the jazz tradition has bequeathed us an enormous quantity and variety of original music. Because the development of jazz was concurrent with the development of recording technology, we are able to listen to outstanding performances of all the great jazz artists almost all the way back to the origins of jazz. Recordings have in effect kept all of jazz available, and many people — young and old — want to be able to play in various styles they have heard. Big band music, for example, has never gone out of style with amateur groups, and young musicians for decades have considered it a point of pride to be able to play lightning fast bebop tunes from the late 1940s and early 1950s.

There is a need for instructional materials to help these aspiring jazz musicians to learn how to play jazz. In fact, a lot of such material is available. Much of it isn't very good, but there are some outstanding exceptions (which are mentioned at appropriate points in this book). This book was written with a very specific audience in mind: college-level music majors who have completed a standard two-year music theory sequence. These students have acquired a vocabulary and an array of concepts that permit them to approach jazz at a higher level and to accomplish more in a shorter time than would otherwise be possible. With this group of students there is also the possibility of immediately putting into practice anything they learn in class: students can form ensembles and play the music. Jamming is of course the best learning tool for jazz.

Chapters I-VII are pretty down-to-earth and pragmatic. Most of the real "theory" in jazz theory is covered in **Chapter VIII**. Some of this material is fairly heavy going, but, even so, it still only suggests the actual complexity of the most advanced jazz harmony. **Chapters IX** and **X** touch briefly on chord scale theory, modal jazz, and free jazz. These topics are not as amenable to theoretical treatment as the earlier material in the book. All three contain idiosyncratic and controversial elements that students must assess and work out for themselves.

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I. The Structure of Jazz

Much of what happens in jazz is strongly influenced by the rather rigid structure of the genre. But, far from being an obstacle, the structure provides a set of agreed-upon "rules of the game" that allow musicians to come together and play jazz with little more advance communication than is required to pick a tune and the key to play it in. Understanding this structure is essential to playing jazz well.

The structure of jazz has three principal components: rhythmic, formal, and harmonic. The rhythmic component dictates fixed rhythmic relationships among the participating instruments. The formal component is based largely on popular song forms, which follow a few small, highly predictable patterns. The harmonic component is governed by a relatively small number of types of chord progressions; however, these chord progressions — and the individual chords themselves — are subject to a great deal of variation and elaboration, which accounts for much of the real complexity encountered in jazz. Accordingly, several sections of this book will be devoted to various aspects of jazz harmony. Rhythm and form will be treated in this section.

The rhythmic, harmonic, and formal components together confine jazz to a fairly narrow range of musical possibilities. Jazz has been criticized for these limitations[1], but it is this very confinement that allows several musicians to collaborate successfully in the production of mostly improvised performances.

Rhythmic Structure

Rhythmically, jazz has three layers: melody, chords, and bass. These layers have more or less fixed rhythmic relationships. In the typical case, the bass part coincides with the beat, which is generally the quarter note. The melody often moves twice as fast (i.e., in eighth notes), while the chords typically change at half the rate of the bass (i.e., in half notes). The rate at which chords change, the so-called "harmonic rhythm", is sometimes halved or doubled — changed to whole notes or quarter notes — within a piece.

Layer	Typical Note Value
Melody	♪ or ♪
Bass Line	♩
Chord Changes	𝅗𝅥 or 𝅝

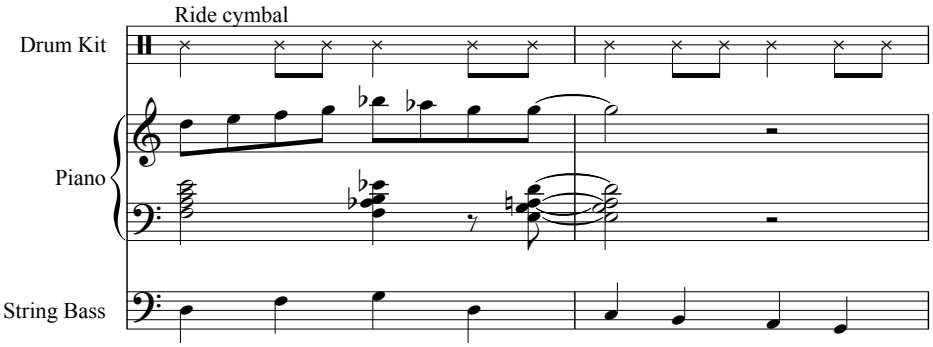
The realization of the three-layer structure is dependent on the available instrumental resources — solo piano, duo, trio, combo, big band, etc. A solo pianist, for example, must either provide all three layers with two hands or else omit one layer. By contrast, a big band offers many ways to provide the three layers. Chords, for example, can be played by just the pianist or the guitarist, or by any combination of the available brass and/or reed instruments.

[1] Igor Stravinsky remarked on the absence of "true rhythm" in jazz in his *Poetics of Music*, and T.W. Adorno was critical of the rigid treatment of melody, rhythm, and harmony in jazz (see, e.g., ____ in Pri

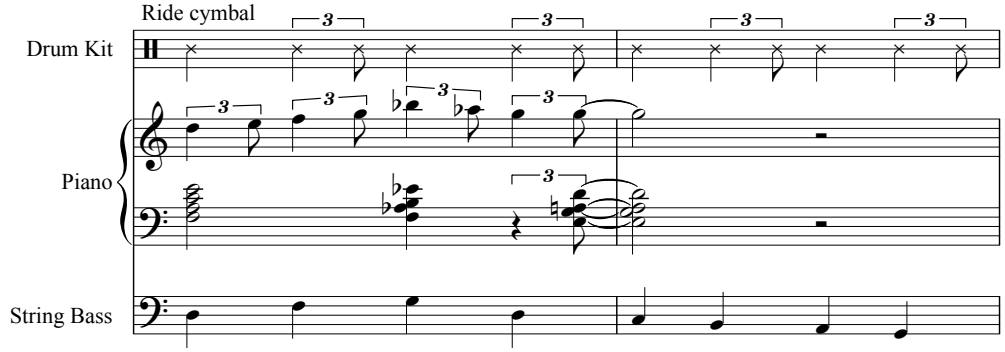
What is the function of percussion in the three-layer structure? To answer this question it is necessary to look at each style, even individual groups or artists, to see how percussion is actually employed. In the traditional piano trio, the ride cymbal or brushes are used primarily to blend and unify the sound of the piano and bass and to maintain continuity of sound. In Latin-oriented groups, percussion plays a foreground role that is essential to the character of the music; often multiple percussionists are needed to realize the full rhythmic complexity of this music. In a big band, the drummer is essential both as a basic timekeeper and as the provider of much of the rhythmic "punch" of arrangements through hits, fills, and solo passages.

Jazz Rhythmic Interpretation

The unique rhythmic character of jazz is generated mainly in the melodic, or eighth-note, layer. This rhythm is not notated in jazz lead sheets, scores, and parts but must rather be supplied as an interpretation by the performer. This interpretation is focused on the treatment of eighth notes. The following example would not sound like jazz if played literally as written at tempos from roughly ♩ = 60 to medium "up" jazz tempos:



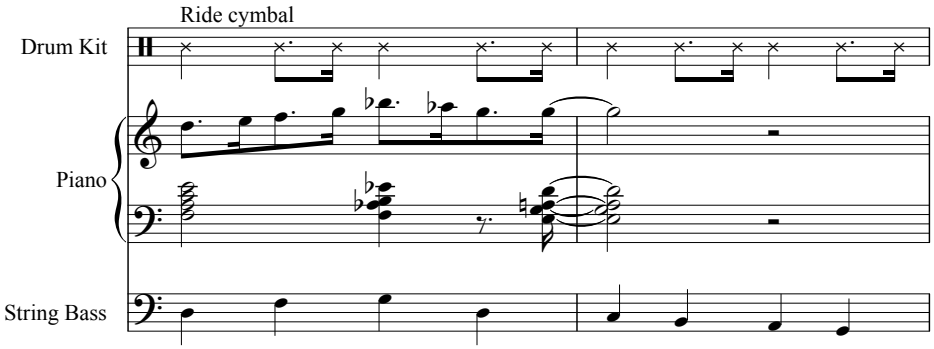
Instead, at tempos in this range, this passage would be played something like the following. Depending on the performer, the eighth-note triplet might be slightly accented:



This treatment of eighth notes is one of the key elements that give jazz its characteristic "swing." Swing cannot be notated exactly. It is learned by listening to more experienced musicians and then attempting to capture the same feel in one's own playing.

Whenever eighth notes occur in the bass or chord layers, the same rhythmic interpretation used in the melodic layer applies. As the tempo is increased into the fast bebop range, the usual interpretation of the eighth notes increasingly approaches the straight eighth notes of the first example above.

Jazz is occasionally notated like this:



It would almost never be correct to play this as written. The dotted eighth/sixteenth rhythm is considered "square" by jazz musicians.[2] This example would instead be played with the eighth-note triplet feel of the preceding example.

With slower pieces, which jazz musicians generally call "ballads," the notated rhythm is interpreted quite freely. The techniques used include rubato and other alterations of the given note values, playing behind the beat, and playing out-of-time (i.e., without a discernible beat or pulse).

Form

Jazz inherited much of its formal structure from earlier music. The typical jazz performance is a type of theme and variations, a form which goes back centuries in European music. In the jazz version of theme and variations, a performance begins with the statement of a pre-composed melody, often a pop standard or a familiar jazz tune, which jazz musicians call the "head". This constitutes the "theme" part of theme and variations. The theme/head is then followed by an indefinite number of improvised variations on the theme. These improvised "choruses" generally follow the structure and harmony of the original theme quite closely. Normally, each soloist will take his or her turn playing one or more choruses; however, several soloists may share one or more improvised choruses by "trading fours" or "trading eights." In this case, the soloists improvise in round-robin fashion on 4- or 8-bar segments of the form. It is traditional to finish off a performance with a restatement of all or part of the original head tune. More elaborate versions of the jazz version of the theme and variations form may include an introduction, one or more interludes, and either a short "tag" or an extended coda section. The form of the theme itself is generally one of a small number of stock patterns that are found in all types of popular music. These are covered next.

AABA

By far the most common song form is the 32-bar "**AABA**" form. In this form, there are two different eight-bar sections, called "**A**" and "**B**." The **A** section is played twice and typically has first and second endings. The first ending generally contains a "turnaround," a passage designed to lead back to the opening of the tune. The second ending often modulates to the key of the **B** section, or "bridge." At the end of the bridge, there is

[2] Ragtime is notated this way and should be played exactly as written.

generally a modulation back to the key of the **A** section. Here is a list of some popular standards that have the **AABA** structure:

Ain't She Sweet
Am I Blue
Anything Goes
As Time Goes By
The Birth of the Blues
Body and Soul
I Cover the Waterfront
I Got Rhythm
I May Be Wrong
It's Only a Paper Moon
Jeepers Creepers
Lullaby of Birdland
The Man I Love
Misty
Oh, Lady Be Good
'Round Midnight
Satin Doll
September in the Rain
Skylark
Softly, As In a Morning Sunrise
Someone to Watch Over Me
What's New?
You AreToo Beautiful
You Took Advantage of Me

ABAC

Another common song form could be called "**ABAC**." This form has four 8-bar sections grouped into two 16-bar units, which are often identical except for their respective endings. Here is a list of some popular standards that have the **ABAC** form:

But Not for Me
Dancing in the Dark
Days of Wine and Roses
Do It Again
Dream
Embraceable You
Fine and Dandy
Fools Rush In
I Can't Give You Anything But Love
I Know that You Know
I Thought About You
I've Got a Crush on You
Sometimes I'm Happy
Time After Time
When Your Lover Has Gone

Through-Composed

A small number of songs is "through-composed." That is, they consist of one big section that runs from beginning to end, although the melody may still be organized as four 8-bar units (yielding an "**ABCD**" form). This form does not preclude a certain amount of thematic repetition. Three well-known through-composed songs are *Avalon*, *Stella by Starlight,* and *You Do Something to Me*.

Ternary

Finally, a much smaller number of tunes uses the **ABA**, or "ternary," form that is common in European art songs. As with **AABA** tunes, this form has two different sections, but the **A** section is not repeated before the **B** section. *I'll Remember April* is one of the best-known popular standards in ternary form.

The Role of Song Forms in Jazz

All of the standard song forms are complete and self-contained within a small number of measures, usually 32. There is only a small number of such forms to remember, and each form is simple enough that players can easily keep the entire structure in mind while improvising. This is what makes these forms so useful for jazz. Longer, more complex forms would require special skills to navigate, making collective improvisation more difficult.

The restrictions imposed by the standard song forms severely limit, among other things, the amount of harmonic exploration that can be accomplished within the scope of these forms. They simply are not long enough to allow the construction of pieces having sections in several different keys. As a result, the harmonic innovators of the jazz tradition — Art Tatum, Duke Ellington, Thelonious Monk, Bill Evans, and John Coltrane, among others — have focused their harmonic imagination on the development of novel chord progressions and distinctive chord voicings and sonorities, musical ideas that can be realized in a relatively short space.

Exercises

1. Analyze the forms of several of the following tunes. Indicate the major sections with the usual letter notation (**A**, **B**, **C**, etc.), and indicate any significant thematic ideas and motives. Also comment on whether each tune exactly follows one of the formal patterns described above or deviates in some way (explain how it deviates). Indicate the starting, highest, and lowest notes. On which note does the emotional high-point of the lyrics occur?

a. Alone Together
b. Angel Eyes
c. April in Paris
d. Autumn in New York
e. Caravan
f. Crazy Rhythm
g. Day by Day
h. Fascinating Rhythm
i. How Long Has This Been Going On?
j. I Get a Kick Out of You
k. I Only Have Eyes for You
l. Just One of Those Things
m. Liza
n. Love for Sale
o. Lover, Come Back to Me
p. Night and Day
q. Please Don't Talk About Me When I'm Gone
r. S'Wonderful
s. Somebody Loves Me
t. Someone to Watch Over Me
u. Soon
v. Thou Swell
w. A Time for Love
x. What is This Thing Called Love
y. What's New?
z. You Go to My Head

II. The Harmonic Vocabulary of Jazz

Notation

Virtually all forms of popular music use a common system for the notation of chords. This system is not entirely consistent, but it is as good as it needs to be for its purpose.

Notational Conventions

In the description of the structure of a chord, individual chord tones are sometimes referred to by the interval they make with the root of the chord, sometimes by the scale degree they occupy. To distinguish between these two usages, this book uses two different fonts. When the text refers to intervals above the root, the following font will be used:

1 2 3 4 5 6 7

When the text refers to degrees of the major scale, the following font will be used:

1̂ 2̂ 3̂ 4̂ 5̂ 6̂ 7̂

Degrees of the minor scale will be indicated with the appropriate accidentals. For example, the "natural" form of the minor scale (or Aeolian mode) would be indicated as

1̂ 2̂ ♭3̂ 4̂ 5̂ ♭6̂ ♭7̂

Standard Chord Notation

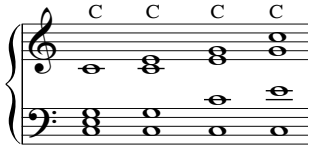
In the standard system for the notation of chords, a chord symbol gives the letter name of the root of each desired chord, as well as any further information needed to indicate the correct pitches for the third, fifth, sixth or seventh, and "tensions." Chord symbol notation does not specify the "voicing" of chords, that is, the actual deployment of the chord tones. Voicing is left to the performer, composer, or arranger.

Chord symbols follow this general sequence of components:

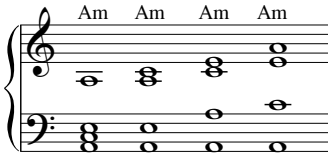
Root [Third] [Sixth or Seventh] ["Tensions"] [/ Bass note]

The bracketed components are optional. Only the root is required. The other elements of a chord symbol are incorporated as necessary to make clear what harmony is intended. The grammatical rules for each component of a chord symbol are as follows:

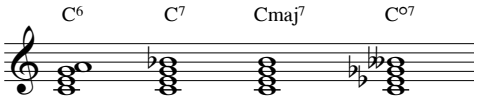
- **Root.** The root of each chord is specified by a capital letter denoting the pitch class of the root (a "pitch class" is all the notes that have the same name. For example, all E's — no matter which octave they are in — are in the same pitch class.) A single-letter chord symbol denotes a *major* chord. For example:



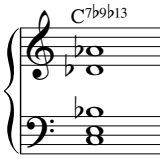
- **Third.** If the third of a chord is *major*, this component is omitted. If the third is *minor*, the chord symbol must contain either "m" or "-". For example:



- **Sixth or Seventh.** Jazz chords almost always have a sixth or seventh above the root (i.e., the basic jazz chord consists of *four* different notes: root, third, fifth, and sixth or seventh). The sixth is always the major sixth. The seventh is the minor seventh unless the major seventh or diminished seventh is explicitly specified. The major seventh is indicated either as maj^7 or Δ^7; thus, for example, C^7 denotes the dominant seventh built on C, while $Cmaj^7$ or $C\Delta^7$ denotes the major seventh chord built on C. The diminished seventh is indicated either as $^{\circ 7}$ or dim^7.



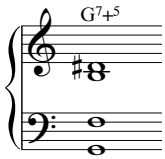
- **Tensions.** The basic four-note chords can be extended upwards to include ninths, elevenths, and thirteenths. In jazz harmony, chord tones beyond the sixth or seventh are called "tensions" (this term, although common, is somewhat misleading). In current jazz practice, almost every chord contains one or more tensions and/or one of the alterations described below. If a chord is to have tensions, they are generally given in a list following the sixth or seventh. The chord symbol $C^{7\flat9\flat13}$, for example, calls for a C dominant seventh chord with the flatted ninth ($D\flat$) and flatted thirteenth ($A\flat$) added:



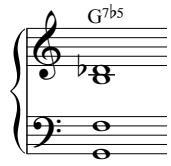
Ninths and thirteenths are assumed to be *major* unless otherwise indicated. Elevenths are assumed to be *perfect* unless otherwise indicated.

- **Alterations.** Certain alterations of basic chord types are common. These alterations are most often applied to the fifths of dominant sevenths to give these chords a bit of added interest. The alterations are:

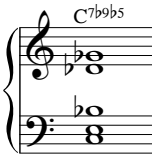
+5 raises the fifth of a chord based on a major triad:



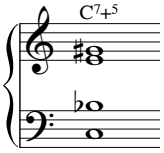
♭5 lowers the fifth of a chord based on a major or minor triad:



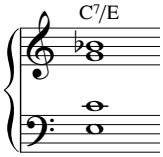
Alterations are indicated in the list following the sixth or seventh. The chord symbol $C^{7\flat9\flat5}$, for example, calls for the C dominant seventh chord with flatted ninth (D♭) and flatted fifth (G♭) added:



C^{7+5} calls for the C dominant seventh chord with augmented fifth:



- **Bass note.** In standard chord notation, the lowest tone of a chord is assumed to be the root; however, depending on the artist or the style, the actual lowest tone *played* may turn out to be any of the four in the basic chord or, occasionally, even a tension. When a composer or arranger wants to guarantee that some specific tone will be the lowest, the desired pitch is appended to the chord symbol preceded by a slash. For example, C^7/E specifies the first inversion of the C dominant seventh chord:



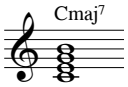
The use of these so-called "slash" chords is often an indication that the composer or arranger has a specific bass line in mind. The performer should therefore study the chord symbols carefully to see if such a line is implied. (See the ***Implied Countermelodies*** section below for more details on this practice.)

NB: In jazz chord notation, "m" and "-" (for "minor") refer only to the *third* of a chord, and "maj" and "Δ" (for "major") refer only to the *seventh* of a chord. The third of a chord is assumed to be major unless an explicit indication of minor is given; the seventh of a chord is assumed to be minor unless an explicit indication of major or diminished is given. The fifth of a chord is assumed to be perfect unless an alteration is specified.

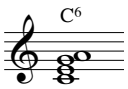
Basic Chord Types

The harmonic vocabulary of jazz consists of seven basic types of chords together with some "tension" notes and alterations. As in traditional harmony, jazz chords are built up in thirds from a root pitch; however, in jazz each basic chord consists of *four* different tones (bare major and minor chords are used sparingly in jazz, but they are common in current pop music.) The seven basic chord types are the following:

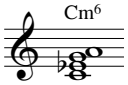
- **Major seventh**



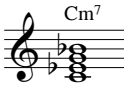
- **Sixth**



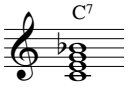
- **Minor sixth**



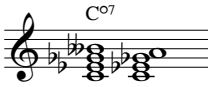
- **Minor seventh**



- **Dominant seventh**

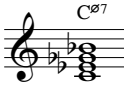


- **Diminished seventh**



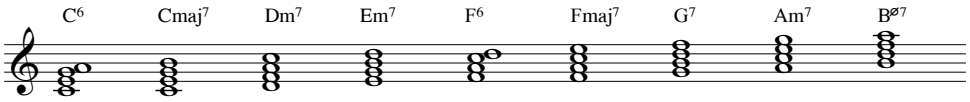
The use of accidentals is often haphazard in jazz, and enharmonic spellings abound. It is rare to find a double sharp or double flat when these would be the correct accidentals. In the chord on the right above, for example, A replaces the B𝄫 which would be the correct spelling of this note.

- **Half-diminished seventh**

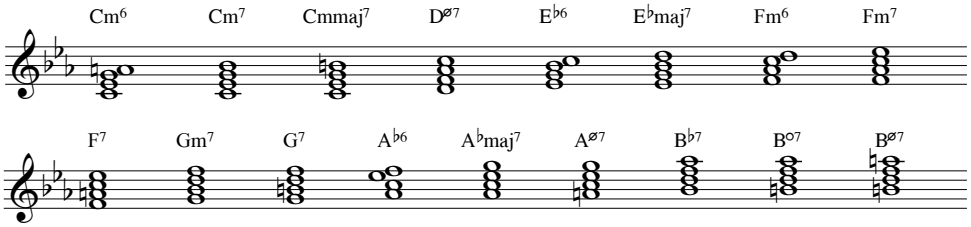


These seven chord types are sufficient to account for all of the distinct harmonic functions found in jazz.

Here are the basic diatonic jazz chords in C major:



The list of basic diatonic chords in C minor is considerably longer because of the possibility of using either the natural or raised sixth and seventh scale degrees in minor:



Note that E♭maj^{7+5} is not included in this list even though it is diatonic. The reason is that in jazz harmony *as presented here*, any chord containing an augmented fifth is considered to be an altered chord rather than a basic chord. For a complete list of all of the basic jazz chords, see **Appendix A: Jazz Chord Dictionary**.

An Interlude on Shorthand and Anomalous Notations

Several shorthand and anomalous chord notations are in common use:

- Sometimes a shorthand notation is used for chords with tensions. For example, C^{9} denotes a C^{7} chord with added major ninth; C^{13} denotes a C^{7} chord with added major thirteenth; Cmaj^{9} denotes a Cmaj^{7} chord with added major ninth; Cm^{9} denotes a Cm^{7} chord with added major ninth.

- The diminished seventh chord is indicated with the ° symbol or dim. C°^{7} and Cdim^{7}, for example, both denote the chord C E♭ G♭ B𝄫. This usage does not follow the rules given above, but it is standard practice.

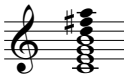
- The half-diminished seventh chord is often indicated with the ø symbol. Cø^{7}, for example, denotes the chord C E♭ G♭ B♭. This usage does not follow the rules given above. This is apparently the reason that the m$^{7♭5}$ notation for the half-diminished seventh chord has become standard: this notation follows the rules. On the other hand, m$^{7♭5}$ suggests that the designated chord has an altered (i.e., lowered) fifth. This is often not the case since the half-diminished seventh chord is diatonic in both the major mode (as VII) and minor mode (as II).

- The dominant seventh chord with augmented fifth is sometimes indicated as, for example, C+^{7}. This notation puts the alteration of the fifth, +, *before* the ^{7} instead of after. This notation is common and musicians are not confused by it.

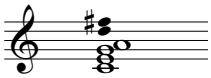
Tensions

Here are the tensions generally used with the basic chord types (the tensions are indicated by stemless quarter note heads above the basic chord, which is given in whole notes):

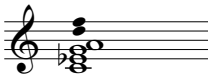
- **Major seventh**: major ninth, augmented eleventh, major thirteenth



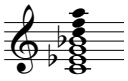
- **Sixth**: major ninth, augmented eleventh



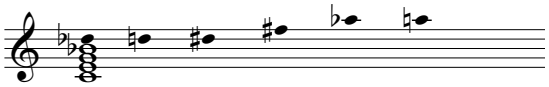
- **Minor sixth**: major ninth, perfect eleventh



- **Minor seventh**: major ninth, perfect eleventh, major thirteenth



- **Dominant seventh**: minor, major, or augmented ninth; augmented eleventh; minor or major thirteenth. These tensions can be combined and voiced in many different ways to produce a wide variety of colors. The only combinations to be avoided are those that would put together two tensions separated by a half-step, such as the minor and major ninth; however, to achieve a particular effect a composer, performer, or arranger might deliberately use such a combination.



  The tensions here are strung out on the staff in melody-like fashion simply because there are too many of them to stack up vertically as in the other examples in this section. This physical arrangement should not be taken to imply that the tensions should be played one after the other in the order shown as a sort of melody.

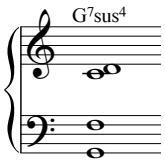
- **Diminished seventh and half-diminished seventh chords:** these chords ordinarily take no tensions (as explained below, they are sometimes used as "incomplete" dominant ninths).

Some general words of advice about tensions: When they are desired, ninths, elevenths, and thirteenths should always be indicated in a chord symbol. If you find yourself writing lots of tensions into the chord symbols, you probably have very specific sonorities in mind. Because of the inherent vagueness of chord notation, the performer may not be able to infer from the chord symbols exactly the sound you want. In such cases it's better to simply write out the specific chords you want. Many composers and arrangers provide chord symbols that indicate only the *basic* chords (i.e., no ninths, elevenths, or thirteenths), anticipating that pianists and guitarists will add their own favorite tensions. They include specific tensions in a chord symbol only when they occur in the main

melody or another prominent part. The purpose of this practice is to allow pianists and guitarists latitude in creating their accompaniments, but to alert them when a particular tension is present in another instrument's part in order to avoid clashes. Many of the musical examples in this book follow this practice.

Suspensions

sus or *sus* **4** suspends, or withholds, the third of a chord and inserts a fourth above the root:



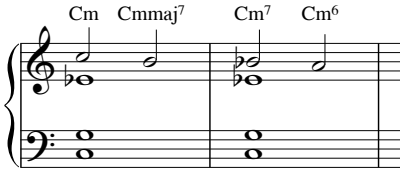
Although the suspension originated as a melodic device, the *sus* tone is treated in jazz as a chord tone. It has no obligation to resolve downward by step; however, the jazz artist may choose to provide such a resolution to achieve a particular musical effect.

It should be noted that the extensive use of *sus* 4 chords found in the playing of some recent pianists implies a harmonic system based on chords built in *fourths* rather than thirds. The tones of the G7sus4 above, for example, could be rearranged to form the chord D G C F, a "quartal" (i.e., fourth-based) harmony. Standard chord symbol notation is not well suited to the representation of quartal harmony. When quartal harmony is in force, the composer or arranger should probably write out the exact sonorities he or she wants rather than using the *sus* notation and hoping the performers will guess the desired sounds.

Implied Countermelodies

It is a common practice in jazz to write simple countermelodies into the chord notation. There are two distinct ways to do this, depending on whether the countermelody is a bass line or an upper line:

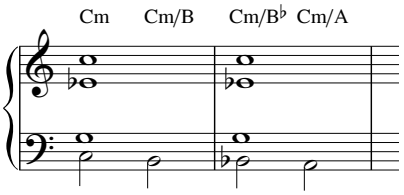
1. If the countermelody is in the top or inner voice, it can be written as the numeric parts of a sequence of chord symbols. For example, the melody C-B-B♭-A over a C-minor chord can be written into the chords symbols as Cm Cmmaj7 Cm7 Cm6:

   The chord symbols do not say whether the top or inner part is to play the implied countermelody. This decision is left up to the performer. For an example of this technique, see the opening bars of *My Funny Valentine*.

2. When the countermelody is the bass line, a different notational technique must be employed: the so-called "slash" chord notation mentioned above. With slash

chords, the letter name of each note of the countermelody is written after a slash ("/") in the chord symbol. For example, the bass line C-B-B♭-A under a C-minor chord would be written as Cm Cm/B Cm/B♭ Cm/A:

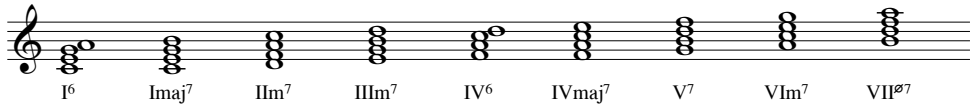


For an example of this technique, see the opening bars of *Like Someone in Love*.

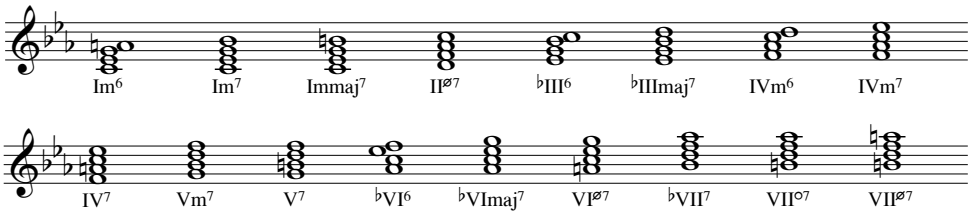
Both of these techniques have an obvious limitation: the rhythm of the countermelody is tied to the harmonic rhythm indicated (sometimes ambiguously) by the chord symbols. The resulting melodies are necessarily very simple and predictable. For this reason, several authors refer to such melodies as "line clichés." When the composer or arranger has in mind a countermelody that has its own independent rhythm and contour, he or she should write it out in full.

Roman Numeral Chord Notation

When it is desired to describe chords or chord progressions in general terms — without reference to a specific key — it is standard practice to use a form of Roman numeral notation similar to that used in connection with traditional harmony. In the major mode, a Roman numeral in the range I to VII identifies the scale degree on which a chord is built, and the other attributes of the chord (third, sixth or seventh, tensions and alterations, bass note) are indicated exactly as with standard jazz chord notation. Here, for example, are the diatonic jazz chords in C major, but this time with their Roman numeral designations:



Chords belonging to the minor mode are treated as modifications of the major mode in jazz Roman numeral notation. The chords on the scale degrees in the minor mode are indicated as I II ♭III IV V ♭VI or VI ♭VII or VII. Here, for example, are the diatonic jazz chords in C minor with their Roman numeral designations:



The jazz Roman numeral notation treats the third, sixth, and seventh degrees of the natural minor scale as lowered versions of these scale degrees in the major.

Exercises

1. Notate the following chords: Am^{6}, $E^{\flat 7}$, $Emaj^{7}$, $B^{\flat \circ 7}$, $F^{\varnothing 7}$, $A^{\flat}m^{7}$, $F^{\sharp 7}$.

2. Notate the following chords: C^{9}, E^{13}, $D^{7\flat 9}$, Gm^{9}, $A^{7\sharp 9}$, $Dmaj^{9}$, $B^{\flat 7\flat 9\flat 13}$.

3. Notate the following chords: F^{7+5}, $D^{\flat 7\flat 5}$, E^{+7}, $Gmaj^{9+11}$, $Dm^{7\flat 5}$, $A^{7}sus^{4}$, $F^{\sharp 7\flat 5}$.

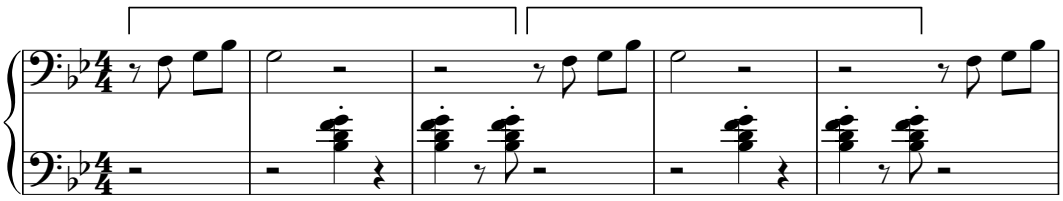
4. Write the diatonic ninth chords in G major (There are only five of them. Why?). Give the standard chord symbol that specifies each chord.

5. Find the implied countermelodies in *Liza*, *The Birth of the Blues*, *Body and Soul*, *The Man I Love*, *It Could Happen to You*, *Someone to Watch Over Me, But Beautiful,* or *Memories of You (*note: some of these are tricky and require attentive listening). Write out the countermelody and describe how it is indicated in the score.

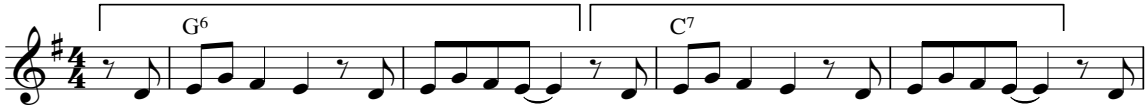
III. Jazz Melody

Unlike harmony and counterpoint, which are grounded in principles that can be taught to almost any musician, melody remains a largely personal art. Some people have a gift for it, others don't. Fortunately, jazz has a simple technique for creating melodies that is quite often successful: *riffing*. A *riff* is a short melodic fragment — typically two bars in length — that is repeated as many times as necessary to fill out an 8-, 12-, or 16-bar section of a tune. Riffing is used both by soloists during improvisation and by composers when they are writing new compositions. Riffing has been a basic technique throughout most of the history of jazz, but it played an especially prominent role in the big band music of the 1930s and 40s. Many of the hits of this period were simple tunes based on one or more riffs. The musical examples in this section are all drawn from this time. These tunes are still played today by high school, college, and amateur big bands, evidence of the enduring interest and utility of the riffing technique.

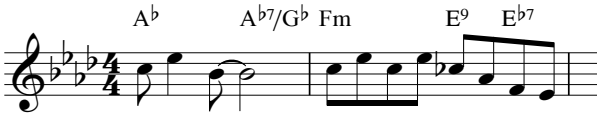
In the simplest type of riffing, the riff is repeated note-for-note. Count Basie's 1938 hit *Jumpin' at the Woodside* employs a two-bar riff that is repeated four times in the **A** section of the tune. This example shows the first two repetitions of the riff together with its accompanying brass figure in the lower staff:



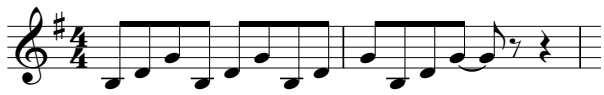
A slightly more sophisticated riffing technique repeats the riff note-for-note except for the last statement of the riff, which is often a modified version of the riff. Sy Oliver's *Opus One* (1943), written for the Tommy Dorsey orchestra and also recorded by the Mills Brothers, repeats a two-bar riff three times, followed by a two-bar unit based on a truncated version of the riff. This example shows just the first two repetitions of the riff, which itself contains two slightly different versions of a simple figure:



Flying Home (1940) by Benny Goodman and Lionel Hampton repeats the following riff note-for-note three times and then concludes the section with a different melodic idea. Notice that the chord symbols imply a scalewise descending bass line:



Many of Glenn Miller's hits were simple, riff-based tunes in which the riff is modified on each repetition just enough to fit the prevailing harmony. Miller's *In the Mood* (1939), for example, uses this arpeggiated riff on a very simple G blues chord progression:



Duke Ellington made frequent use of riff-like melodic ideas in his compositions. *In a Mellow Tone* (1940), *Don't Get Around Much Anymore* (1942), and *Do Nothing 'Til You Hear From Me* (1943) — three of Ellington's perennially popular favorites — combine literal repetitions of a riff, modified versions of the riff, and additional melodic ideas not based on the riff.

A riff can be used as the foreground melody of a composition or as a background behind a composed or improvised melody. Both uses often occur within the same composition. In any case, riffs do not occur in a vacuum. At a minimum, they are played against the background provided by a rhythm section. A great rhythm section like Count Basie's could transform a simple riff like the one used in *Jumpin' at the Woodside* into a powerful musical statement.

Exercises

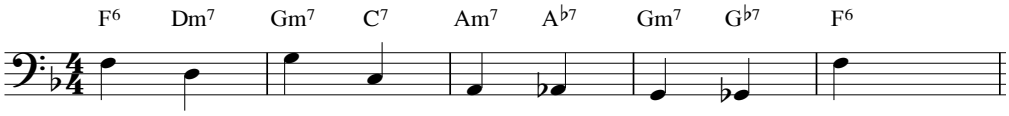
1. Write three different two-bar riffs. Try to make the rhythmic pattern of each one different, and have at least one riff begin on a pickup.
2. Write the **A** section of your own riff-based **AABA** tune over chord changes provided by the instructor. Present your tune in lead sheet form: melody on the treble staff, with each chord symbol placed immediately above the first note the chord is to accompany. Use first and second endings for the **AA** part of the form.
3. Write the **B** section, or "bridge", of your riff-based tune. The bridge should use a different riff from the **A** section. Again, present your tune in lead sheet form: melody on the treble staff, with each chord symbol placed immediately above the first note the chord is to accompany.

IV. Developing a Bass Line

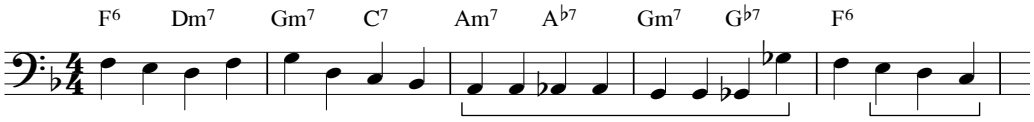
With the exception of solo jazz pianists and the occasional jazz duo (e.g., two guitars, guitar and a horn, etc.), most jazz groups have a bass player. Jazz bass players usually create their own bass lines from the information provided by chord symbols; however, it is important for any jazz musician who wants a complete understanding of jazz harmony to be able to write appropriate bass lines.

Ideally, a jazz bass line will be a true melody, perhaps simpler than the lead part, but a melody nonetheless. As with melody in general, writing a good bass line is an art; however, one can make a good start toward the development of a successful bass line by following a few simple guidelines. Assuming a half-note harmonic rhythm, use the following procedure:

1. Place the roots of the indicated chords on beats 1 and 3 to create the skeleton of the bass line. As far as possible, select the root notes so that the interval between them is minimized (e.g., choose a fourth up rather than a fifth down, a third down rather than a sixth up, etc.).



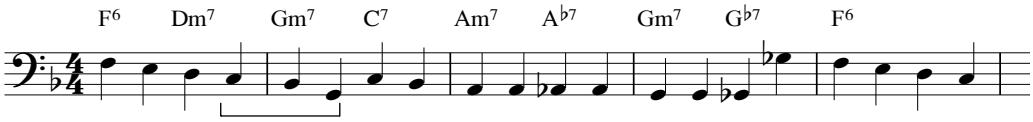
2. Fill in beats 2 and 4 according to the interval between the notes on beats 1 and 3:



   The different intervallic situations, and their solutions, are as follows:

   a. If the roots are separated by a third, put a diatonic passing tone between them. In measure 1 we insert E between F and D, and from measure 2 to measure 3, we insert B♭ between C and A.
   b. If the roots are separated by a fourth or fifth, fill out the interval with a tone drawn from the *first* chord. In measure 1 we insert F between D and the G in the following measure, and in measure 2 we insert D between G and C.
   c. If the roots are separated by a major or minor second, repeat the bass note as shown in measures 3 and 4. As can be seen in measure 4, an octave leap can be used instead of a repetition. This move is sometimes used reposition a bass line that is approaching either the lower or the upper extreme of the range of the instrument.
   d. If a chord is held for the entire duration of a measure, the bass line can be filled out with a scalewise line from the root of the chord down to the fifth. This is done under the F^6 chord in measure 5.

3. Finally, look for opportunities to smooth out the bass line through judicious use of the third, fifth, or seventh of a chord, or non-chord tones. Here, for example, the scalewise line in measure 1 is continued downward through C (the 7th of the Dm^7 chord) to the B♭ on the first beat of measure 2. This movement puts the root of the Gm^7 chord on the *second* beat of measure 2, which is perfectly acceptable:



This method is unlikely to produce a bass line with the fire and drive of one by a Ray Brown or a Charles Mingus, but a competent bass player will be able to make the line swing and it will adequately support the harmony of a piece.

Exercises.

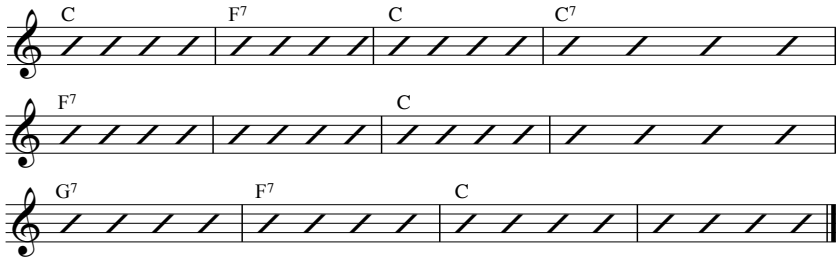
1. Write a bass line for a tune selected by your instructor. The bass part should include both chord symbols and a written-out bass line. Also prepare a guitar/piano part that includes chord symbols and "virgules" (bolded slashes) to indicate the rhythm. If possible, have class members play the tune, the chords, and your bass line.

2. Choose a tune from the lists in the ***Form*** section of **Chapter I** and write a bass part for it. The bass part should include both chord symbols and a written-out bass line. Also prepare a guitar/piano part that includes chord symbols and "virgules" (bolded slashes) to indicate the rhythm. If possible, have class members play the tune, the chords, and your bass line.

V. Standard Chord Progressions: Blues and "Rhythm"

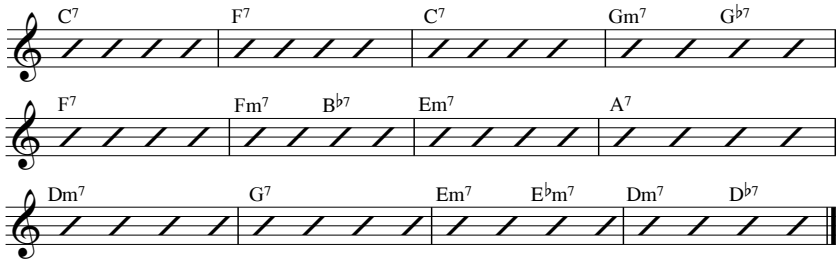
A Jazz Approach to Blues

The blues has been, and continues to be, a strong influence in jazz. Within the jazz tradition, a 12-bar form of the blues has become standard; however, there is considerable variety in the chord progressions used. These progressions generally exhibit root movement by fifth, up or down, but the actual chords used can range from basic triads to richly extended seventh chords connected in chromatic patterns. The traditional blues progression, which had already become standardized by the 1920's, is the following:



An even more basic (not to say primitive) form of the blues chord progression can be obtained simply removing all the sevenths from chords in this example and just using plain triads. Such simple harmony would be almost unthinkable in jazz, but rock groups have used it.

Here is a more modern version of the blues progression:

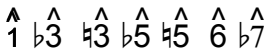


As can be seen, this version uses "borrowed" chords, secondary dominants, and linear chords, which should all be familiar to students from the study of traditional harmony.

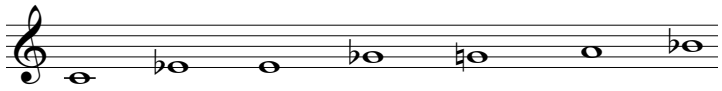
Here is a list of well-known blues tunes that should be studied:

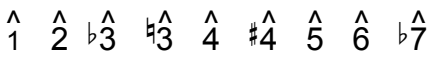
All Blues
Au Privave
Bags' Groove
Ba-Lue Bolivar Ba-Lues Are
Bessie's Blues
Bud's Blues
Blue Monk
Blues for Alice
Blue Trane
C-Jam Blues
Jumping with Symphony Sid
Misterioso
Mr. P.C.
Now's the Time
Opus de Funk
Short Stop
Stolen Moments
Straight, No Chaser
Tenor Madness
West Coast Blues

The so-called "blues scale" is often proposed as the basic melodic material for improvisation on blues chords. Here are two versions of the blues scale:

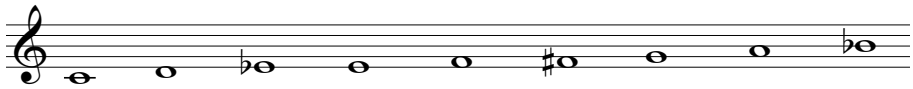


For C blues, this scale would be:





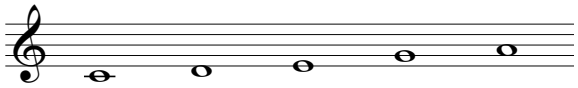
Again for C blues, this scale would be:



These scales correspond quite closely to actual blues practice; however, to understand how jazz, blues, and rock musicians use these scales, careful listening to a variety of blues performances is necessary.

Traditional/Rock Approach to Blues

A traditional approach to blues, which is often used in rock, is to combine the traditional blues chord progression shown above with melodies based on the pentatonic scale.[3] The pentatonic scale *could* be thought of as a major scale minus the fourth and seventh degrees:



However, this view of the pentatonic scale is somewhat misleading. Because of the absence of half-steps in this scale (and the resulting absence of the tritone between the fourth and seventh scale degrees), it is impossible to establish a Tonic by the usual harmonic or melodic means (e.g., the V^7-I cadence). Thus, unlike the major and minor scales, the pentatonic scale does not have an unambiguous Tonic. Also because of the absence of half steps, it is impossible to create a strong dissonance with any combination of tones from the pentatonic scale — the notes all sound good together. This has been discovered by countless generations of children "improvising" on the black keys of the family piano (which form a pentatonic scale), and it is also one of the cornerstones of the Orff-Kodaly method of music instruction. The special characteristics of the pentatonic

[3] The pentatonic scale is used in all forms of American popular music and thus deserves a fuller treatment than can be given here.

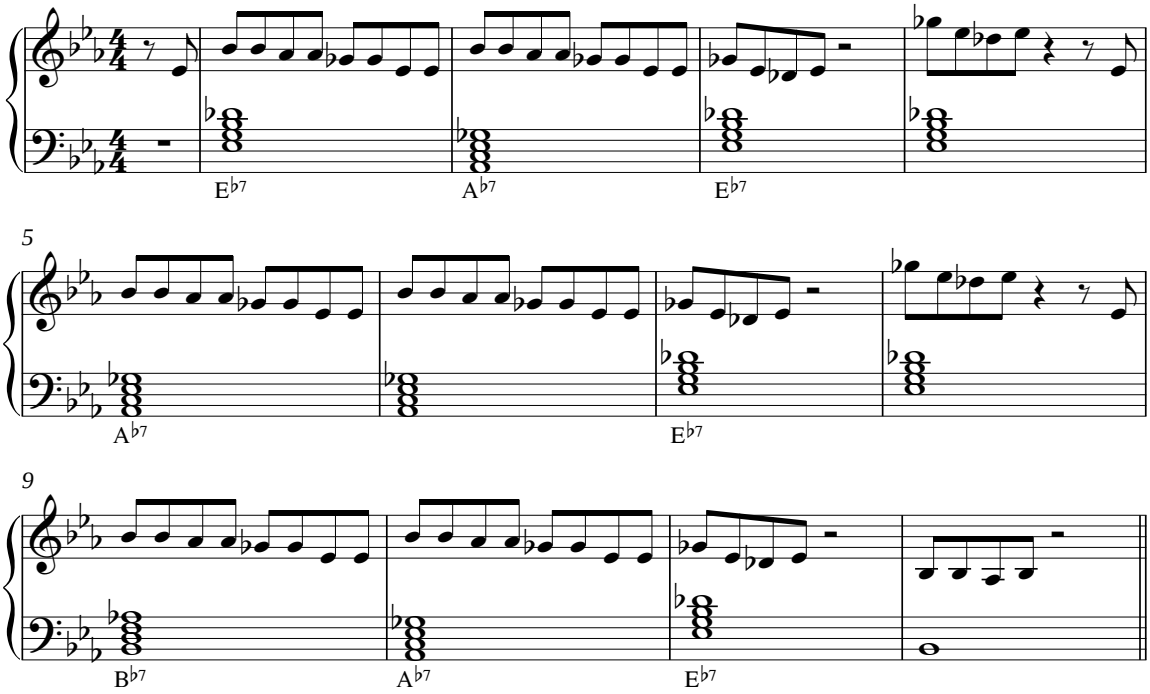
scale make it an excellent vehicle for improvisation, especially for beginners. There simply are no "wrong" notes.

For purposes of the blues, the appropriate pentatonic scale pattern to use is

$\hat{1}\ \ \flat\hat{3}\ \ \hat{4}\ \ \hat{5}\ \ \flat\hat{7}$

Thus, for example, the scale notated above (C D E G A) would be used for blues in A (i.e., this scale begins on the "blue" third, C).

As an experiment with this approach to the blues, try the following at the piano: with your left hand play the traditional blues chords in E♭, and with your right hand play arbitrary black notes or perhaps try to improvise a simple melody. The following is an example of the kind of results that can be obtained with a little practice. Notice that the exact same pentatonic phrase is used over each 4-bar unit of the blues progression even though the harmony of each unit is different. The use of the pentatonic scales guarantees that, from the standpoint of blues usage, there will be no harmony/melody clashes.



Exercises

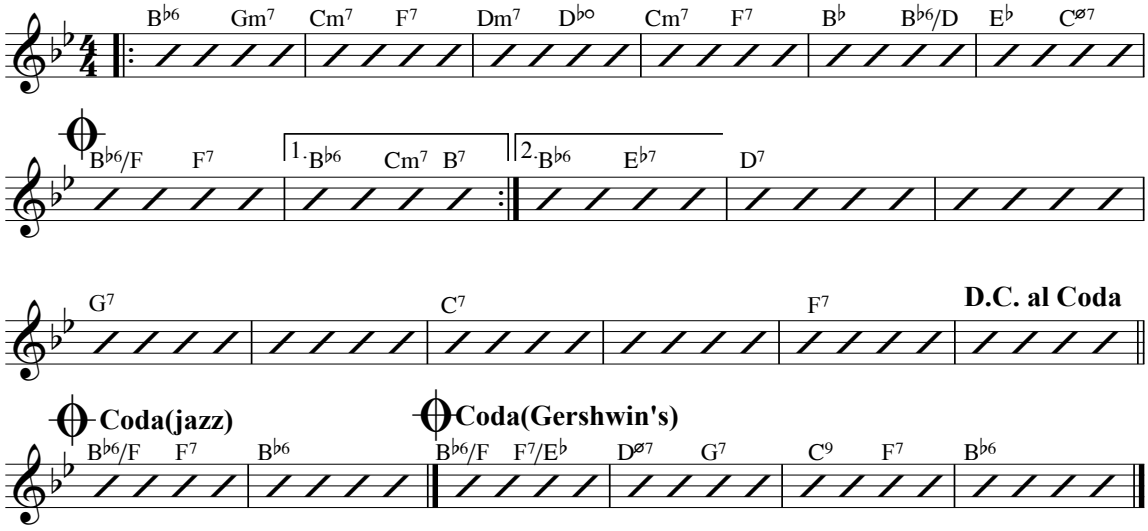
1. Write your own blues melody over the chord changes of a tune selected from the list in the ***A jazz approach to the blues*** section above.
2. Write a bass line and piano/guitar part for the tune selected for exercise 1. Play the original tune and your melody with your bass and piano/guitar accompaniment.

3. Write a blues melody based on a two-measure riff using a blues scale, and then write bass and piano/guitar parts for it using the "traditional" blues chord progression. Play the entire composition.
4. Write a blues melody consisting of three identical four-bar phrases. Write bass and piano/guitar parts to accompany the melody. Play the entire composition

---

"Rhythm" Changes

The chord progression of Gershwin's *I Got Rhythm* is the second most commonly used in jazz, the blues progression being the most used. Because the *I Got Rhythm* progression is so common, musicians often refer to it simply as the "Rhythm changes." Here is the traditional version of the Rhythm changes:



Among the many well-known jazz tunes based more or less on the Rhythm changes are:

Thelonious Monk: *Rhythm-a-ning*
Sonny Rollins: *Oleo*
Charlie Parker*: Anthropology, Moose the Mooche*
Bud Powell: *Bud's Bubble, Wail*
Duke Ellington: *Cottontail*
Dizzy Gillespie: *Salt Peanuts*
Count Basie: *Lester Leaps In*

Exercises

1. Write your own riff-based melody over the Rhythm changes. Use different riffs for the **A** and **B** sections.

2. Write a bass line for the tune written for exercise 1 and play the entire composition.

3. Write your own riff-based melody over the version of Rhythm changes in one of the other tunes in the list above. Use different riffs for the **A** and **B** sections.

4. Write a bass line for the tune written for exercise 3 and play the entire composition.

5. Compare the harmony of any of the Rhythm-based tunes above with the "standard" Rhythm changes and comment on any differences between the two.

6. If you compare *all* of the Rhythm-based tunes listed above with Gershwin's original, what (if anything) stays constant across *all* of the tunes?

VI. Chord Voicings

"Voicing" refers to the way chord tones are deployed. There are many different approaches to chord voicing. The choice of which approach to use is partly a matter of what kind of musical group is involved: solo keyboard, piano trio, big band, soli group, vocal jazz ensemble, etc. The choice of approach is also affected by the aesthetic preferences of the performer, composer, or arranger. And, finally, the choice of approach is affected by the background and training of the performer, composer, or arranger. Musicians who have had training in traditional harmony, counterpoint, and orchestration are likely to use more sophisticated voicing techniques, while musicians with less formal training are more likely to use automatic techniques based on the mechanical application of a few voicing rules. As crude as these latter techniques may appear, they do not necessarily give poor musical results.

Solo Keyboard Voicing

This section presents some guidelines for a reasonable approach to solo keyboard voicing. Students of traditional harmony will recognize several of the guidelines as standard procedures for writing the typical textbook exercises in four-part harmonization. These guidelines are fairly general and can therefore be extended, with appropriate modifications, into other musical contexts; however, one caveat concerning piano voicing of chords should be noted here. In the excellent little book, *Composing for the Jazz Orchestra*, William Russo observes that

> …the piano 'absorbs' sound very well — it minimizes dissonant structures. Consequently, a chord which would be terrifying in its impact if voiced for brass will be mildly tingling when played on the piano. This fact can be turned around: much clear and clean wind instrument writing sounds weak when played on the piano. The piano is inadequate as the sole criterion of orchestral writing. It does not give a representation of the orchestra.[4]

The general guidelines for keyboard voicing are:

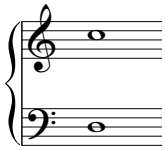
- Include the root as the bottom note of the chord.
- Include the characteristic tones of the chord:

Chord Type	Characteristic Tones
Minor seventh and dominant seventh chords	third and seventh
Sixth chords, major or minor	third and sixth
sus 4 seventh chords	fourth and seventh
Half-diminished seventh chords	root, fifth, and seventh*
Diminished seventh chords	root, fifth, and seventh*
Augmented seventh chords	third, fifth, and seventh

* if the chord is functioning as a dominant, the characteristic tones would be the third, seventh, and ninth above the root of the underlying dominant chord.

[4] William Russo. *Composing for the Jazz Orchestra*. Chicago: The University of Chicago Press, 1961.

- Observe the recommended range for characteristic tones:



- Include an altered fifth (+5 or ♭5) in the chord if it is indicated in a chord symbol, but the unaltered fifth may be omitted.
- Keep all tensions above F on the fourth line of the bass staff.
- Allow no more than an octave between adjacent chord tones, except that the lowest tone may be up to two octaves from the next lowest tone,
- Don't double tensions or altered notes; however, the sixth or seventh may be doubled.

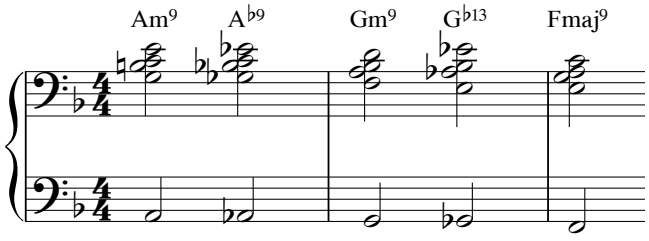
The characteristic tones shown in the table above are sometimes called "guide tones" in the context of melodic improvisation. Guide tones may be used as known points to guide the development of a melody. The improviser may, for example, try to arrive at a guide tone on the first beat of each measure or wherever he or she places a dynamic accent. Guide tones are also important in writing for small ensembles. If the part for each melody instrument makes intelligent use of guide tones, a satisfying sense of harmony can be created with only one or two voices.

Chord Voicing Styles

The voicing of chords in jazz is every bit as free as it is in classical music; however, a few specific voicing styles occur over and over in jazz. Every jazz musician should understand how chords in these styles are constructed and in what contexts they are most typically used.

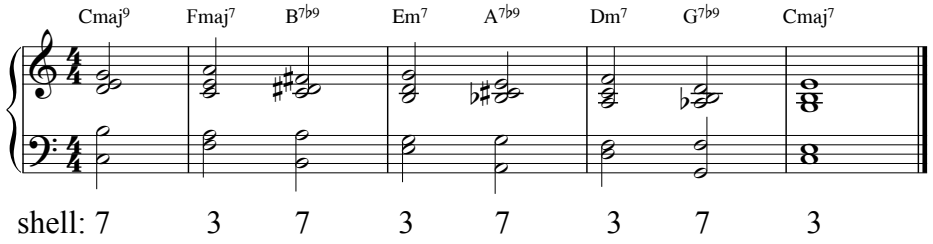
Close Position

In close position voicing, chord tones are grouped together so that they fit in an interval smaller than an octave. The bass note, which is generally the root of the chord, is treated separately: if the bass note is the root of the chord, the root may be omitted in the upper group of notes and replaced with a tension, as can be seen in this example:



"Shells"[5]

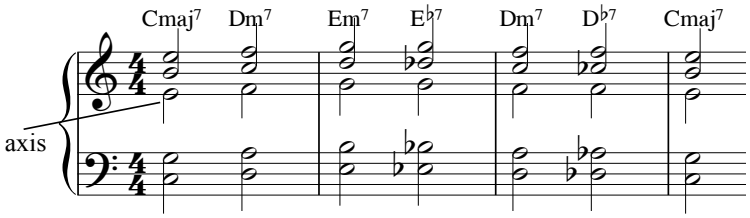
In the shell style, the two lowest chord tones form the "shell" of each chord. A shell consists of the root and either the third or seventh, that is, just the outline of a chord. The upper parts provide the remaining characteristic tone(s), other chord tones, and any desired tensions. The following example shows 7 and 3 shells in the typical 7-3 alternation used in both solo playing and "comping":[6]



In this example there are three upper parts: the characteristic tone not included in the shell, a chord tone, and an either a tension or a doubled third. The choice of the number and the pitches of the upper tones are determined by the performer, composer, or arranger according to his or her taste, the effects he or she is trying to achieve, and the available musical resources. A common jazz piano style consists of shells in the left hand and a single-line melody in the right hand.

"Axis"

Axis voicing is so named because a particular tone in the *middle* of a chord serves as an axis, or reference point, around which the rest of the chord is built. This type of voicing always has a fifth on the bottom (the root and fifth of the given chord), and the axis tone is always third or seventh of the chord. In an axis-3 chord, the third of the chord is the axis, and the upper parts are typically 7 and 3 above the root:

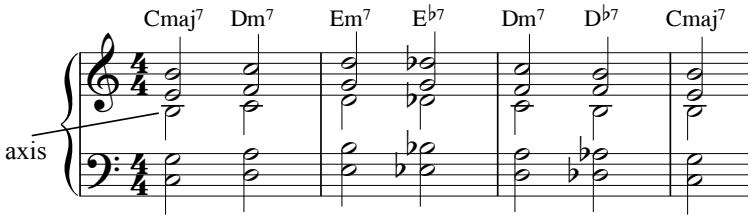


In an axis-7 chord, the seventh of the chord is the axis, and the upper parts are typically 3

[5] The "shell" and "axis" terminology used here is due to John Mehegan, whose four-volume work, *Jazz Improvisation*, was one of the first serious attempts to present a complete and consistent theory of jazz.

[6] "Comping," undoubtedly a contraction of "accompanying", refers to the chordal accompaniment a jazz pianist plays behind an ensemble or soloist. It typically consists mostly of block chords played to coincide rhythmically fairly closely with the harmonic rhythm implied by the written chord changes.

and 7 above the root:

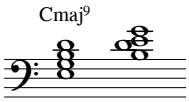


Axis chords are most frequently used in parallel motion, as illustrated in the two examples here. From the point of view of the solo pianist, the purpose of the axis is to provide a known anchor point for the right hand thumb. Above this point, the remaining chord tones (if any) can be deployed between the melody and the axis tone. Since the left hand part is always a fifth, and since the melody note is generally given, the pianist need only select whichever axis tone, 3 or 7, is more convenient. Thus, the mental workload imposed by this style during performance is relatively small, which accounts for its popularity with pianists of modest ability. Axis voicing also works well in orchestrations for big band or other jazz ensembles with multiple horns.

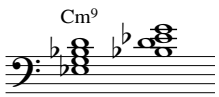
"Rootless" Chords

So-called "rootless" chords are often used by pianists in contexts where another instrument, usually a bass, is available to play the roots of the chords. A rootless chord consists of the characteristic tones plus one or two others, all in close position (in the sense that the entire chord fits within the space of one octave). The additional notes will generally be tensions. When playing in a rootless style, jazz pianists will include these tensions whether or not they are indicated in the chord symbols. In all cases, the bottom tone of the chord is the third or seventh. Here are the "standard"
voicings of the rootless jazz chords:

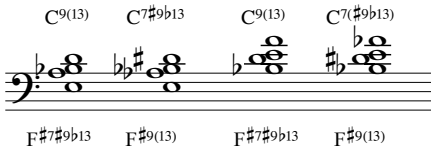
- **Major seventh**



- **Minor seventh**



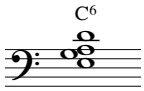
- **Dominant seventh**



These are the four most commonly used rootless dominant seventh chords. Notice that two sets of chord symbols are given. The reason is that each chord can

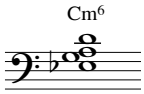
represent *two* different dominant seventh chords. The roots of these chords are separated by a tritone (C and F♯ here). The dual use of each of these chords is a consequence of the ♭II^7 dominant seventh substitution, which is discussed in **Chapter VIII**. One and the same chord can be used as V^7 in one key (here it would be F) and also as the ♭II^7 substitute dominant seventh of another key that lies at the interval of a tritone (which would be B in this example).

- **Sixth**



The sixth and minor sixth chords are the most limited rootless forms, each having only one usable voicing: 3 5 6 9 above the missing root. Other arrangements of the tones of the sixth chords do not produce a sonority of the same musical character as the other rootless chords shown here. Of course, if consistency of sound is not a primary consideration, other voicings of rootless sixth chords are possible.

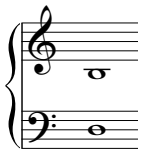
- **Minor sixth**



As noted above, there is only one usable voicing of the minor sixth chord if consistency of sound is desired.

- **Diminished seventh and half-diminished seventh**
  The diminished seventh and half-diminished seventh do not have rootless forms. Generally, whichever inversion of these chords gives the smoothest movement to the following chord will be used.

In order to maintain a consistent musical character, the bottom tone of a rootless chord should normally be within the following range:



Below this range the chords become dark or muddy; above it, they sound noticeably lighter and brighter than chords within the normal range. Because this range is less than an octave, it may be necessary to cheat a little by going slightly beyond the limit of the range at one end or the other in order to obtain a desired chord. This is especially true for the rootless sixth chords, which have only one usable voicing. For example, how would you voice A^6, Am^6, or A♭^{6} in a rootless chord context?

Although rootless chords are popular with jazz pianists, they are — as the discussion here suggests — quite restricted. They are generally effective only in the range shown above, and the number of distinctly different chords is very limited; the examples above almost completely exhaust the possibilities. For a complete list of all of the "standard" rootless chord voicings, see **Appendix B: Rootless Chord Dictionary**.

Exercises

1. For each of the chords in the list below, write a solo piano voicing in (a) close position, (b) shell, (c) axis, and (d) rootless styles. You may include tensions not given in the chord symbols. Make sure each voicing follows the general guidelines given on pp. 33-34 above.
    a. $F^{7\flat5}$
    b. Am^{9}
    c. $D^{7\flat9\flat13}$
    d. $Gmaj^{9+11}$
    e. $E\flat^{7}$
    f. $B^{6(9)}$
    g. $C^{\varnothing7}$

2. Choose a root tone and then write all of the "standard" rootless versions of the major seventh, minor seventh, sixth, minor sixth, and dominant seventh chords on that root. Write the chords in the bass staff as a left-hand piano part.

3. Using the rootless chords you wrote for exercise 2, add to each chord three different right-hand parts in the treble staff. Each right-hand part may be (a) all or part of the underlying triad that the left-hand part is based on, (b) an upper structure triad, (c) additional tensions to the left-hand part, or (d) some combination of all of these. The chords you create should be ones that sound right to you.

4. Write a block-chord piano accompaniment based on the Rhythm changes. Use one voicing style for the **A** section and a different voicing style for the bridge. Don't worry too much about voice leading; this will be covered in the next section.

VII. Voice Leading

This little book cannot do justice to the range of concerns lumped under the heading of "voice leading." Superficially, this topic is concerned with how the composer or arranger conducts the individual instrument or voice parts from note to note. In reality it involves a set of interrelated issues:

- *technical* concerns such as counterpoint — a subject deserving extensive study in its own right (highly recommended)
- *pragmatic* concerns such as instrument ranges and capabilities
- *artistic* concerns such as style and the creation of particular musical effects.

The view of voice leading in current jazz and pop professional practice is well summed up by Felts:

> Traditional voice leading focuses on the resolution of tendency tones and avoidance of such intervals as parallel fifths, octaves, and certain doublings of pitches within chords. … Current jazz and pop composers are less concerned with traditional voice leading rules, but still strive for balanced note spacing and reasonably smooth connection from one chord to the next.[7]

Following are some general principles that, if observed, will generally lead to a smooth overall texture. These rules are all familiar to students of traditional music theory.

- *Hold common tones.* Whenever a tone is common to neighboring chords, hold that tone when moving from the first chord to the second.
- *Move to the nearest note.* Move each part to the nearest note in the next chord. Try to move stepwise as much as possible. When leaps are necessary, choose the smallest available.
- *Avoid parallel octaves.* Parallel octaves are a form of doubling, with one voice simply copying the motions of another. Thus, they effectively reduce the musical texture by one part. Such doublings can be objectionable if they occur unpredictably and without any justification in the given musical context. Octave doubling may of course be used to reinforce a particular line or voice, or to thicken a sequence of chords.
- *Think of the bass line as a countermelody.* Write bass lines that have nice melodic shapes and that have a combination of contrary, parallel, and similar motion with respect to the upper parts (which in some jazz styles move more or less in parallel with one another and may therefore be thought of as a single "thickened" melodic line). The formal study of counterpoint will help greatly in achieving this goal.

The following publications give the contemporary professional view of jazz voice leading

[7] Randy Felts. *Reharmonization Techniques*. Berklee Press, 2002. ISBN: 0634015850, p. 96.

for the piano, small and medium ensembles, and big band, respectively:

- Randy Felts. *Reharmonization Techniques*. Berklee Press, 2002. ISBN: 0634015850. Presents a different take on much of the material in this book and has a good discussion of piano voicing techniques.
- Ted Pease and Ken Pullig. *Modern Jazz Voicings.* Berklee Press, 2001. ISBN: 0634014439. A study of voicing techniques for small and medium jazz ensembles, with some discussion of jazz theory.
- Dick Lowell and Ken Pullig. *Arranging for Large Jazz Ensemble.* Berklee Press, 2003. ISBN: 0634036564. Detailed study and analysis of big band arranging techniques from the earliest big bands to the present.

These books should be consulted for information about the specific voicing and voice leading techniques used in the instrumental group of interest.

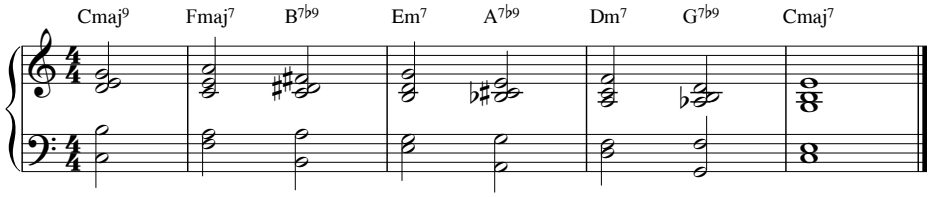
It should not be assumed that a smooth texture is the goal of every jazz artist. Smooth texture implies notions of craftsmanship and professionalism, values that are not given top priority by every jazz artist. The composer/arranger of a high-budget TV special or Las Vegas show almost certainly has a set of musical standards different from those of the leader of a small jazz group who views his or her work as an aspect of social protest or as avant garde art.

Standard Voice Leading Techniques

The comping techniques commonly used by jazz pianists provide a reasonable starting point for learning jazz voice leading. The specific voice leading technique chosen for any given situation depends partly on root motion: one technique is used when root motion is up or down by fifth, a different technique when root motion is up or down by second, and yet another technique when root motion is by third. It should be understood that all of these techniques are generalizations of *average* practice, and that the greater the skill and inventiveness of the musician, the less likely his or her playing can be characterized by any simple application of these techniques. Even pianists of very modest abilities quickly learn how to combine and modify these techniques to produce more interesting effects.

Circle of Fifths Root Motion

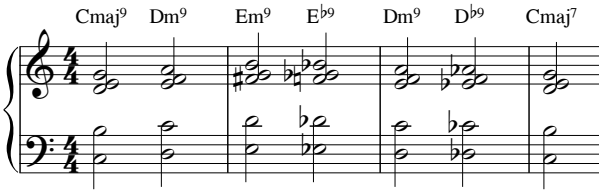
When chords follow the circle of fifths, the "7-3" voice leading technique based on the chord "shells" discussed above is a good choice. Here is an example of this approach:



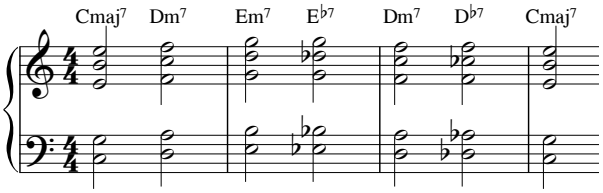
The lower two parts alternate sevenths and thirds, while the upper parts fill in whichever characteristic tone is not present in the lower voices, additional chord tones, and any desired tensions.

Root Motion by Second

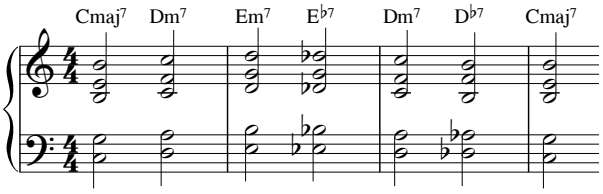
When chords move up or down by second, parallel voice leading is often used. In this technique, the pianist chooses a nice voicing for the first chord and then simply transposes it up or down to obtain the succeeding chords (adjusting, of course, as necessary to get the required chord quality). In one style, each chord has a seventh (shell) in the two lowest parts:



In another style, each chord has a fifth in the two lowest parts, and either **3 7 3** or **7 3 7** above the root in the upper parts. Here the chords use the "axis" structure described above. This is an example of the **3 7 3** or "axis 3" version:

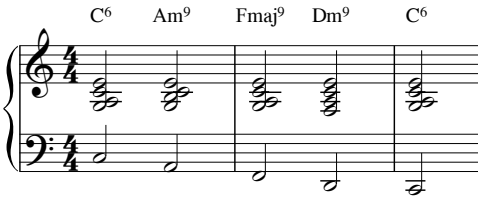


And here is an example of the **7 3 7** or "axis 7" version:



Root Motion by Third

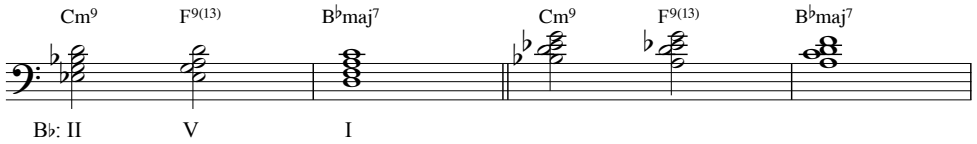
When root motion is by ascending or descending third, the typical approach is to hold the common tones and move to the new chord tones by the shortest and smoothest route available. Here, for example, C and E in the upper voices are held throughout, and the upper parts as a group are arranged in close position:



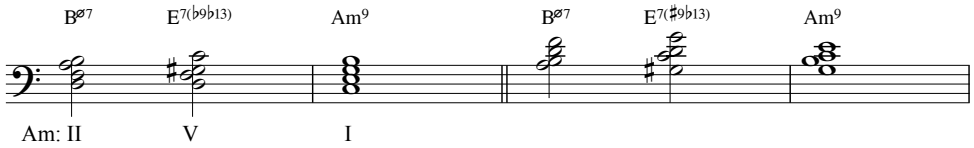
Voice Leading with Rootless Chords

Voice leading with rootless chords is very simple because there are so few different rootless chords — it amounts to little more than moving from one standard rootless chord to another by the shortest route possible. The usual way to illustrate voice leading with rootless chords is to present different realizations of the II V I chord progression. Here,

for example, is the II V I progression in major. There are two basic forms, corresponding to the two possible voicings of the IIm^7 chord:

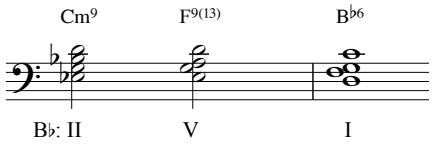


And here is the II V I progression in minor. Again there are two basic forms, corresponding to the two possible voicings of the II^{ø7} chord:

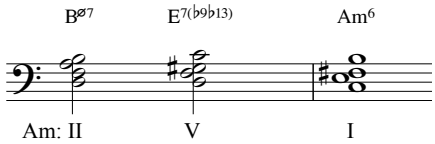


Note that the II^{ø7} chords are not rootless, but rather first or third inversions of the ordinary half-diminished seventh chord. This is standard practice.

Some limited variation of the patterns above is possible. For example, the II V I progression can end with a sixth chord, rather than a major or minor seventh, when the II chord has its third as the lowest note (i.e., when it is in first inversion). In major, for example, we could have



And in minor:

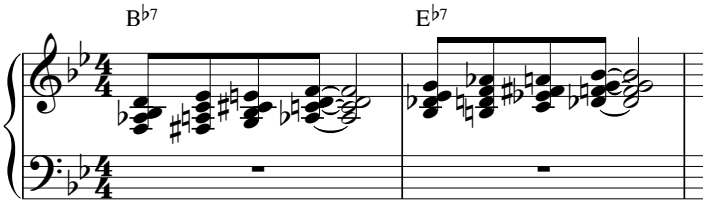


The Am^6 here goes slightly below the normal range for rootless chords. This is acceptable if it occurs only occasionally.

Parallel Voice Leading Styles

There is a family of voice leading styles in which all of the harmony parts simply follow the lead line in parallel. Every note of the lead line is harmonized with an appropriate chord, which in each case is determined by a few simple rules. Here are the first few bars of Thelonious Monk's *Blue Monk* arranged in the basic "close position" parallel style, which is discussed below. As can be seen, all the parts have the same melodic contour

and they all fit within an interval smaller than an octave below the lead line



All of the other parallel voice leading styles discussed in this section are variants of this basic style. They are derived from the basic voicing simply by doubling one or more voices an octave below or by transposing a voice down an octave. All of these parallel styles are "automatic" techniques in the sense that, once a voicing scheme is chosen, the harmonizing parts can be determined in most instances by rule from the given lead line and the accompanying chord symbols.

The Basic Close Position Style

The basic close position style is aptly called the "thickened line" by Russo[8] because the parallel motion from one close-position chord to another effectively produces a single, "thick" melodic line. To create an arrangement in this style, it is necessary to follow only two rules — with some qualifications:

1. If the current lead line note is a chord tone (i.e., it is the root, third, fifth, sixth or seventh, or tension of the prevailing chord), fill out the harmony with exactly *three* chord tones taken in order reading down from the lead line note. Unless the lead line note is the root of the prevailing chord, the root of a chord is often omitted in favor of a tension. In any case, make sure the characteristic tones of each chord are always included. In the *Blue Monk* example above, the D of the $B\flat^7$ in the first measure and the G of the $E\flat^7$ in the second measure are harmonized with the remaining notes of the chord; however, the harmonization of the F of the $B\flat^7$ at the end of the first measure and the B♭ of the $E\flat^7$ at the end of the second measure substitute the ninth for the root.

2. If the current lead line note is a non-chord tone — a neighbor- or passing tone, for example — it may be harmonized with an appropriate linear chord in close position. Some experimentation with different harmonizations of non-chord tones may be necessary to achieve a completely satisfactory arrangement. A common technique used with passing tones is to harmonize them with the diminished seventh chord based on their letter pitches. In the *Blue Monk* example, the passing tones E♭ and E♮ in the first measure are harmonized with $E\flat^{\circ 7}$ and $E^{\circ 7}$, respectively. Similarly, A♭ and A♮ in the second measure are harmonized with $A\flat^{\circ 7}$ and $A^{\circ 7}$, respectively.

After a basic arrangement has been created following these two rules, it can be modified to achieve different musical effects or to accommodate different instrumental resources by applying the simple techniques discussed next.

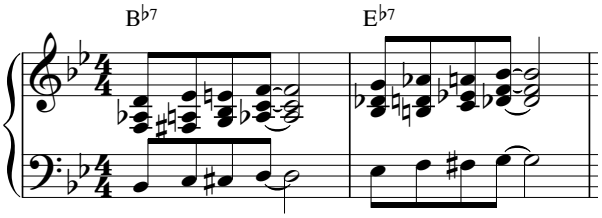
---

[8] Op. cit., p. 35. The account of "thickened line" given here is somewhat oversimplified. Russo's description of this technique contains many subtleties that are not discussed here. In the end it is up to your ears to decide if a particular thickened line passage works, whether it follows the rules or not.

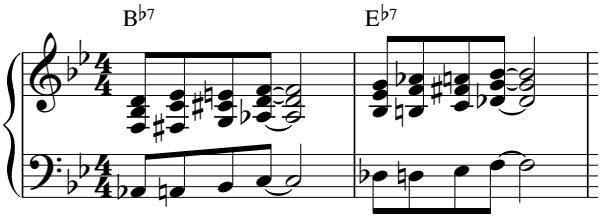
The Widened Line: Drop 2 and Drop 3

The widened line[9] consists of the lead line and three harmony voices, just as in the thickened line. The difference is that one of the harmony voices of the basic close position is dropped down an octave, thereby producing a more spread-out texture. All parts still move in parallel.

A "drop 2" widened line transposes the second part (i.e., the part immediately below the lead line in the basic close position) down an octave. Here is the *Blue Monk* example again, this time in a drop 2 arrangement.



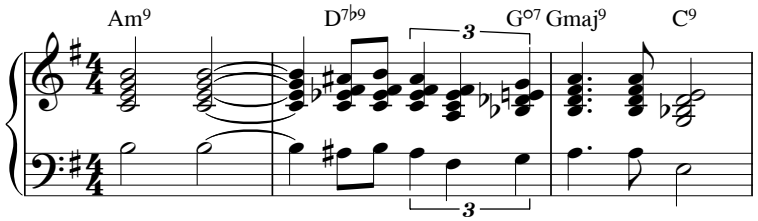
A "drop 3" widened line transposes the third part (i.e., again counting down from the lead line in the basic close position) down an octave. This modification has the effect of spreading the texture out quite a bit, as can be seen in the *Blue Monk* example:



Other variations on the basic parallel model are also used. For example, the combination of a "drop" pattern with a doubling of the lead melody at the octave above or below is often encountered.

Locked-Hands

The "locked hands" style is a also simple variation of the basic close position. The locked hands style is so named because, on a keyboard, the right and left hands both play exactly same melodic line one octave apart. The hands are thus "locked" together in parallel motion. This style has been popular with pianists and organists since at least the 1950s, but it was originally derived from big band section writing techniques of the 1930s and 40s. Here is an example of locked hands applied to the opening of *Laura*:



[9] Another apt term coined by Russo, op. cit., p. 36.

Note the departure from strict parallelism in this example: the alternation between B and A♯ in measure 2 is not matched by corresponding movement in the interior parts. This partial independence of the lead and the interior parts is a common feature of the locked hands style.

Exercises

1. Choose an **AABA** tune from the list in the ***Form*** section of **Chapter I**. Write a block-chord piano accompaniment for the **A** section using (a) 7-3 voicing, (b) axis-3 and/or axis-7 voicing, or (c) rootless chords — whichever seems most appropriate. Write the melody on a separate treble staff above the piano's treble/bass system.

2. Write a piano accompaniment for the **B** section of the tune selected for exercise 1 using a different voicing style.

3. On a separate bass staff, add a bass line to the arrangement you wrote for exercise 1. Play the arrangement with class members.

4. Do exercise 1, but provide a "broken" or arpeggiated piano accompaniment suitable for a solo piano arrangement of the tune..
5. Write your own tune in one of the standard forms and provide a block-chord piano accompaniment and bass line. Play the arrangement with class members.

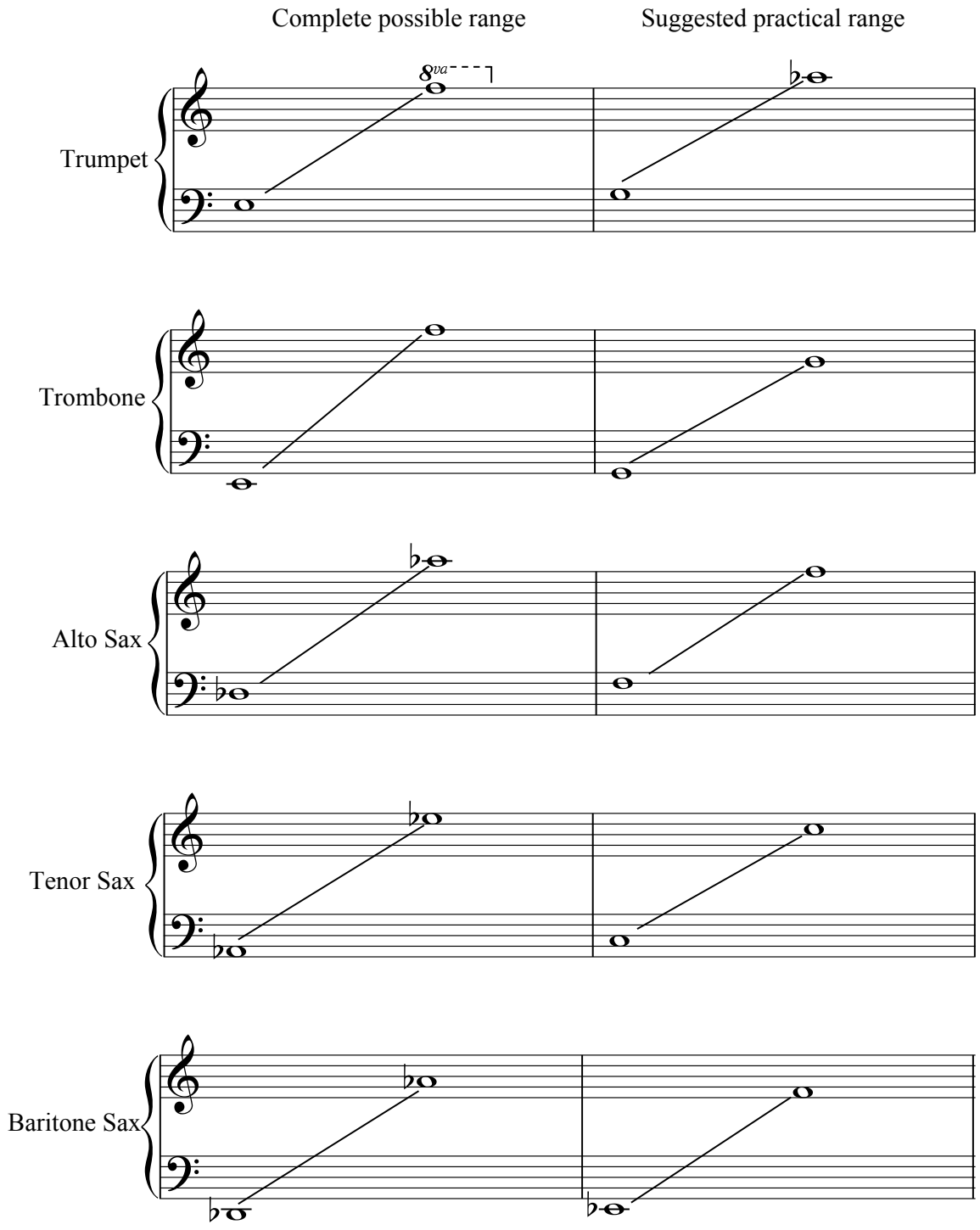
Scoring for Small Jazz Ensembles

Now that you have some facility with jazz voicings and voice leading, it will be possible to begin to write for small jazz ensembles consisting of a rhythm section and two to five "horns."[10] The same piano voicing and voice leading techniques we have studied can be applied with little or no modification to small groups consisting of some combination of trumpets, trombones, and saxophones, which are the most common jazz horns.

Instrument Ranges

Unlike writing for the piano, small ensemble writing demands that the composer/arranger into account the limited ranges of the jazz horns. Every horn has a lowest note, below which it cannot physically produce a usable tone, and it also has a somewhat more variable upper limit beyond which even the most skilled player cannot go. Within these extremes lies a practical range where any competent player will feel comfortable and produce a good sound. The chart below illustrates these ranges for the five basic jazz horns. In the left column is the physically possible complete range, in the right the generally accepted practical range.

[10] In jazz parlance, a "horn" is any brass or woodwind instrument.



If you are using music notation software such as *Sibelius*®, you will be warned whenever you attempt to enter a note out of an instrument's range. This is a very useful capability that will help beginning composer/arrangers to avoid common mistakes.

Instrumental Combinations

Certain instrumental combinations work very well with the voicing and voice leading techniques discussed above. The list below gives many of the more commonly used combinations.

1. Basic Close Position (ranges permitting)
    a. alto alto tenor tenor
    b. alto tenor tenor tenor
    c. alto alto tenor baritone
    d. alto tenor tenor baritone
    e. tenor tenor tenor baritone
    f. alto tenor trombone tenor
    g. alto tenor trombone baritone
    h. trombone tenor trombone tenor
    i. trombone tenor trombone baritone
    j. trumpet alto trombone tenor
    k. trumpet tenor trombone tenor
    l. trumpet alto trombone baritone
    m. trumpet tenor trombone baritone
    n. trombone trombone trombone trombone
    o. trumpet trumpet trumpet trumpet
    p. trumpet trumpet trumpet trombone
2. Drop 2/Drop 3 (ranges permitting)
    a. trumpet alto trombone baritone
    b. trumpet tenor trombone baritone
    c. trombone trombone trombone trombone
    d. trumpet trombone trombone trombone
3. Axis and Shells (ranges permitting)
    a. alto alto tenor baritone
    b. alto tenor tenor baritone
    c. tenor tenor tenor baritone
    d. alto tenor trombone tenor
    e. alto tenor trombone baritone
    f. trombone tenor trombone baritone
    g. trumpet alto trombone baritone
    h. trumpet tenor trombone baritone
4. Five horns, any voicing style (ranges permitting)
    a. trumpet alto tenor tenor baritone
    b. trumpet alto alto tenor baritone
    c. trumpet tenor tenor tenor baritone
    d. trumpet alto trombone tenor trombone
    e. trumpet tenor trombone tenor trombone

Note that each sublist is presented with the caveat “ranges permitting.” A given voicing technique doesn’t necessarily work automatically with a given instrumental combination.

The composer/arranger still has to make sure that the selected technique doesn't drive one or more instruments outside their ranges.

Exercises

1. Choose a tune from the list in the ***Form*** section in **Chapter I**. Write a piano arrangement of an 8-bar section using any of the parallel voicing styles described above. Add bass and drum parts. Score the arrangement for any appropriate combination of four horns.

2. Do exercise 1 again, but this time using the **Arrange** feature described in **Appendix C** if you have access to Sibelius®. Try several different jazz styles and pick the one that gives you what you think are the best results.

3. Complete the score for the tune selected for Exercise 1 and extract the individual parts.

VIII. Functional Harmony in Jazz

In functional harmony each chord plays a specific role within the sequence of chords where it occurs. A chord may be used to establish the tonality at the beginning of a piece, to serve a concluding function at the end, to rove between more stable points, to prolong a preceding chord, etc. By contrast, chords in a non-functional context are used primarily as sonorities, that is, as sounds that have a particular color or texture. It is not possible to determine whether an isolated chord is functional or non-functional because almost any given chord could be used in either a functional or non-functional way.

Jazz today spans the full spectrum of harmonic possibilities from functional to non-functional. This book covers the primarily functional practice that extends from the origins of jazz in New Orleans to the post-bop music of the 1950s and 60s. This practice continues to this day, but since the late 1950s new, non-functional harmonic languages have been created and have taken their place alongside the traditional, functional harmonic language.

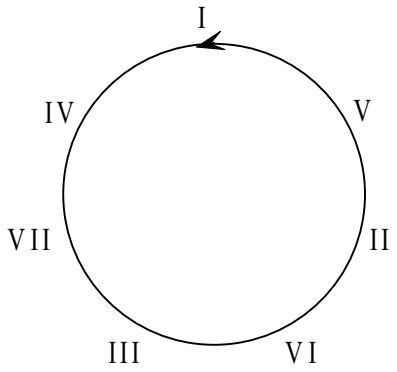
Theory of Chord Progressions

Root Motion

In jazz, chord progressions are usually described in terms of root movement. The most common root movements follow the "circle of fifths," moving in either direction from a given chord to one of its neighbors in the circle. There are two different versions of the circle of fifths: diatonic (in-key) and chromatic.

The Diatonic (In-Key) Circle of Fifths

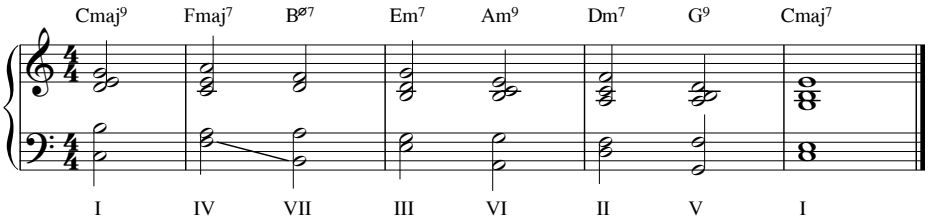
The basic jazz chords in any key are the diatonic, or scale-tone, seventh chords. It is possible to harmonize many tunes using these chords alone. The roots of the diatonic chords can be arranged in a circle that summarizes their fifth relationships:



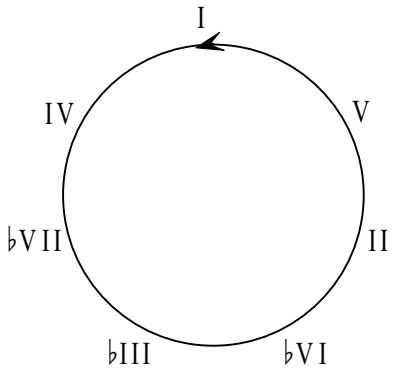
The Major Diatonic (In-Key) Circle of Fifths

The counterclockwise arrow indicates that the most typical movement between diatonic chords is by descending fifth (or ascending fourth). Many chord progressions use all or most of either the major or the minor circle.

The following example shows a typical jazz piano realization of the complete major circle of fifths in the key of C major. Notice that the bass moves by perfect fourth or fifth except from **IV** to **VII**, which is a tritone. When the harmony of a piece follows the circle of fifths, jazz pianists will often alternate sevenths and thirds in the left hand and build the rest of the chord in the right hand as shown here.

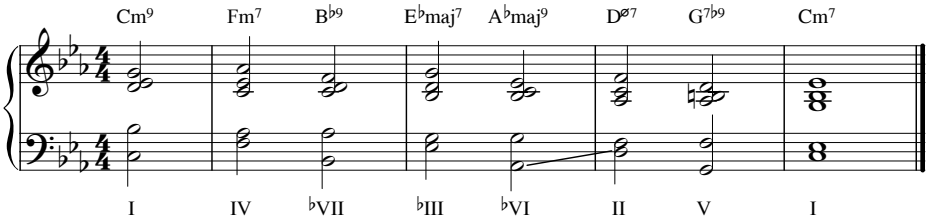


The minor mode has its own diatonic circle of fifths. The traditional jazz practice is to show scale degrees **III**, **VI**, and **VII** as lowered versions of these degrees in the parallel major:



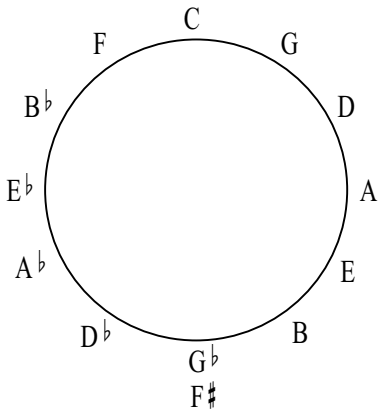
The Minor Diatonic (In-Key) Circle of Fifths

The following example shows a typical jazz piano realization of the complete minor circle of fifths in the key of C minor. Notice that the bass moves by perfect fourth or fifth except from ♭VI to II, which is a tritone:



The Chromatic Circle of Fifths

There is also a chromatic circle of fifths, which shows the fifth relationships of all 12 chromatic pitches:

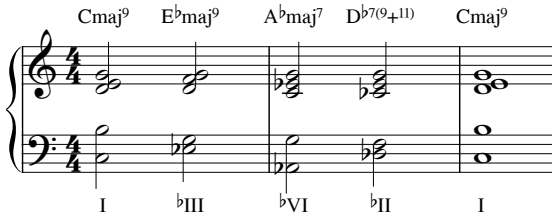


The Chromatic Circle of Fifths

Some chord progressions use segments of the chromatic circle of fifths. As with the diatonic circle of fifths, the chromatic circle illustrates the tendency of chords to succeed one another in root patterns of descending fifths (or ascending fourths) regardless of the qualities of the chords built above the roots. Although there are several tunes that use the entire diatonic circle of fifths (*Fly Me to the Moon (In Other Words), Prelude to a Kiss, All The Things You Are,* and *Autumn Leaves,* for example), it is extremely unlikely that one could be found that uses the entire chromatic circle of fifths; however, certain segments of the chromatic circle are often used. For example, this "turnaround" chord progression is used in Tadd Dameron's *Lady Bird*:

| I maj^7 ♭III^7 | ♭VImaj^7 ♭II^7 | Imaj^7 - - |

The following is a typical jazz piano realization of this progression:



Strong/Weak Alternation of Chords

It is a noteworthy feature of much jazz harmony that chords tend to occur in a strong-weak alternation, creating a downbeat-upbeat feel within the harmonic rhythm. The paradigm of this feature is the **II V I** chord progression, which is ubiquitous in jazz. As generally used, **I** and **II** are strong chords, while **V** is a weak chord. A sequence of **II V I** progressions would typically be arranged as follows:

| 𝅗𝅥 𝅗𝅥 | 𝅗𝅥 𝅗𝅥 | 𝅗𝅥 𝅗𝅥 | 𝅗𝅥 𝅗𝅥 | 𝅗𝅥
| I * | II V | I * | II V | I … etc.

where "*" denotes a "weak" chord. In a context where the harmonic rhythm is the half note, the first (strong) half of each measure is occupied by **I** or **II**, while the second (weak) half is occupied by **V** or some other weak chord.

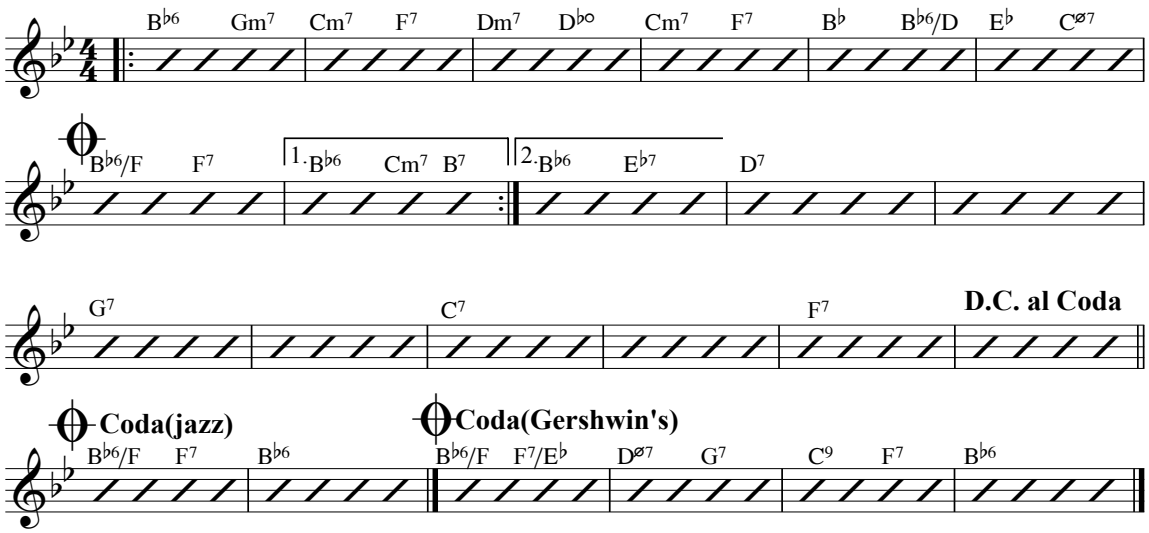
Three functions — **Dominant Preparation**, **Dominant**, and **Tonic —** are needed to establish a key. A single major or minor chord is undefined. Prefacing it with its own dominant somewhat clarifies its meaning, but the situation is still ambiguous. A third chord is needed to "prepare" the dominant — that is, to make it sound like the dominant — after which the original major or minor chord will sound unambiguously like the tonic. A dominant preparation chord is typically some form of **II** or **IV**. A variety of chords can perform each of these functions. Following is a table of some of the possibilities. A **Dominant preparation-Dominant-Tonic** progression can be developed by taking one chord from each column and deploying the chords in the indicated strong and weak positions within the prevailing harmonic rhythm.

Dominant Preparation Occurs in strong position	**Dominant** Occurs in weak position	**Tonic** Occurs in strong position
IIm^7	**V^7**	**I^6** or **Imaj^7**
IV^6 or **IVmaj^7**	**♭II^7**	**Im^6** or **Im^7**
IVm^6 or **IVm^7**	**VII^{ø7}**	**(IIIm^7)**
II^{ø}7	**VII$^{°7}$**	**(VIm^7)**
♭VI^7		
♭VIm^7		

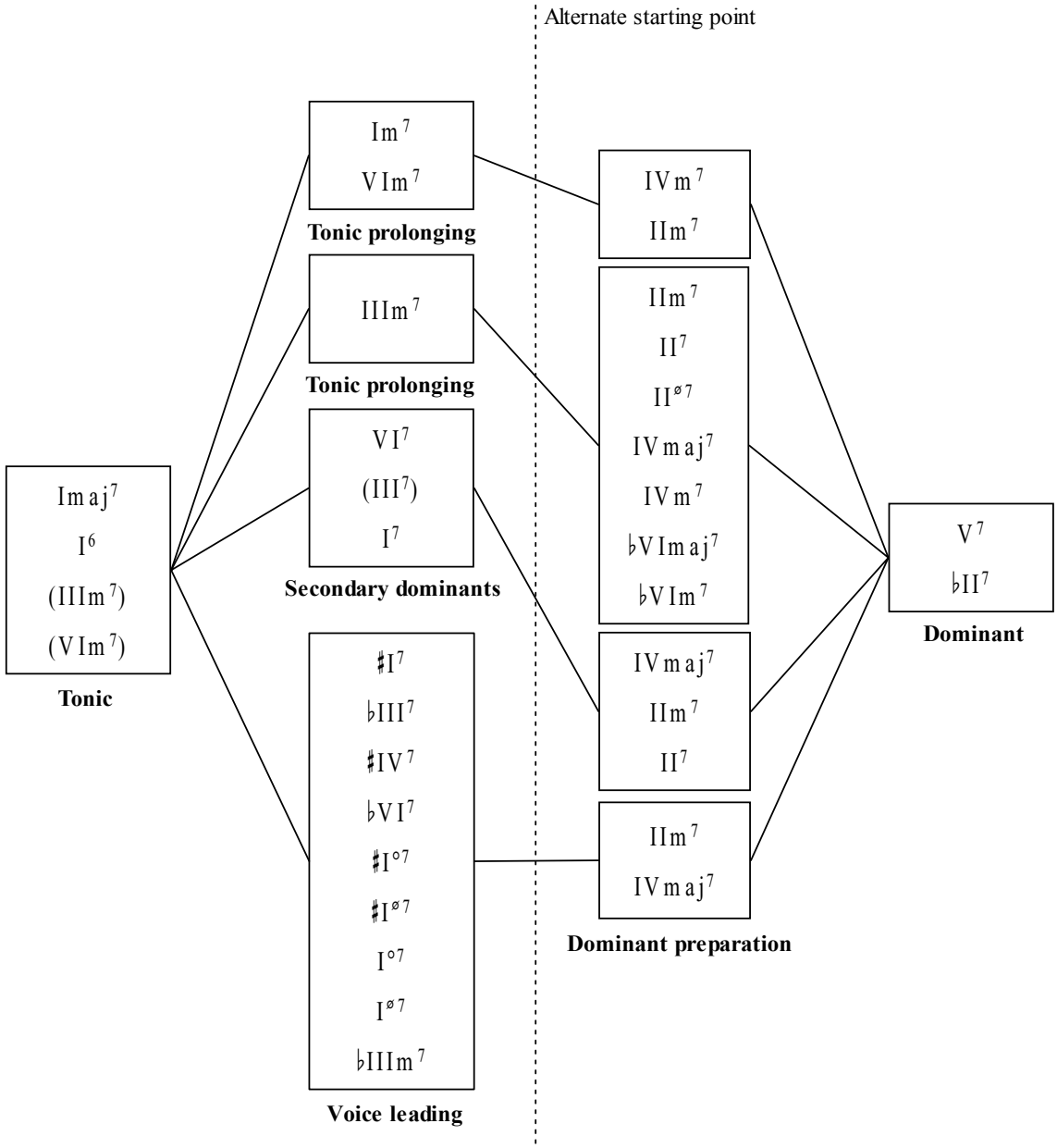
If we compare the chords in each column, we observe that (1) all of the dominant preparation chords have at least two tones in common with **IV**, the subdominant; (2) all of the dominant chords contain scale degrees $\hat{4}$ and $\hat{7}$; and (3) all of the tonic chords have at least two tones in common with **I**, the Tonic. This overlap in the content of the chords within each functional category is related to — but not identical with — the concepts of "characteristic tones" and "guide tones" explained below. The essential point of all these concepts is that a satisfactory sense of chord function can be achieved with less than a full chord. The complete, richly extended and altered chords that have become customary in jazz are not necessary, but rather an artistic option..

I, II, and **IV** are generally treated as strong chords. **V**, **VI**, and **III** are generally treated as weak (IIIm^7 and VIm^7 as representatives of the Tonic constitute a special case, which is discussed below.) As we shall see, VII has a context-dependent role in tonal music. Sometimes it is treated as a form of dominant, while at others it is used as part of a circle-of-fifths structure such as **IV VII III**. In either case it would be considered a weak chord in the sense used here.

The chord progression of Gershwin's *I Got Rhythm* illustrates all of the principles discussed in this section.



There are many variations on the Rhythm changes. The Rhythm changes "map" below attempts to capture the underlying logic of these variations. The map focuses on the **A** section of the tune since the bridge of most Rhythm-based tunes generally stays quite close to the original harmony, i.e., III^7-VI^7-II^7-V^7. To develop a variation on the Rhythm chord progression using the map, simply follow a path from left to right through the boxes, selecting one chord from each box.



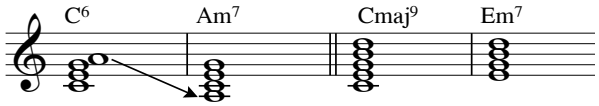
Rhythm Changes Map

The movement from weak to strong is more constrained than is the movement from strong to weak. **V**^{7}, for example, typically goes to some form of **I**. On the other hand, **I** can go to a large number of different chords, as shown in the Rhythm changes map. In general, the movement from a weak chord to a strong chord requires some kind of justification. Typical justifications are:

1. The weak to strong movement follows the circle of fifths. A typical case is a secondary dominant that "tonicizes" the following strong chord.
2. The weak chord is made up of neighbor/passing tones that connect the preceding strong chord to the following strong chord. A very common case is the ♭III^7 in the progression

   | IIIm^7 ♭IIIm^7 | IIm^7
   | 𝅗𝅥 𝅗𝅥 | 𝅗𝅥

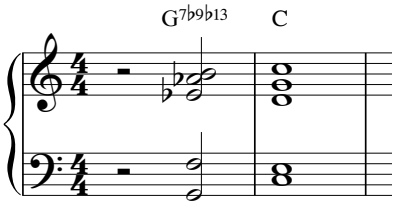
   The ♭IIIm^7 here is made entirely of chromatic passing tones. In this book, such chords are called "voice leading" chords because they are essentially the result of horizontal movement from chord tone to chord tone. Other authors call these chords "linear" harmonies. Voice leading chords are discussed below.
3. The weak chord is justified "backwards" to the preceding strong chord. A very common case is a I chord followed by either VIm^7 or IIIm^7. Both of the latter can be seen as prolongations of **I**: VIm^7 is simply an inverted I^6, while IIIm^7 is a "rootless" Imaj^9. In C major, for example, we have



   In both cases, the weak chord prolongs the preceding strong chord, but gives it a slightly different color.

Tensions and Chord Function

Adding tensions to a chord does not change its function. For example, a dominant seventh chord with added ♭9 +11 13 still functions as a dominant chord in its key. From the point of view of traditional harmony, the effect of tensions on chord function is such that more tensions create a greater tendency for the chord to resolve to a *particular* chord. In the following example, every note in the first chord except G is, in traditional theoretical terms, a "tendency tone," that is, a tone that has a sense of being directed towards another specific tone:



The tritone F-B resolves outward to E-C according to the usual rules for dominant seventh chords. E♭ and A♭ are both lowered notes, which exhibit a tendency to continue downward by half step to notes of the next chord. Thus, there is a strong "pull" toward the specific C chord with added 9th shown here.

Whether the jazz composer, arranger, or performer respects such tendencies is a separate issue. Because of the looser treatment of dissonance in jazz, a dissonant chord has no obligation to resolve to a chord predicted by the stylistic conventions of classical music.

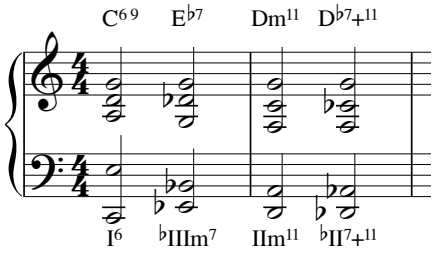
Non-Tonic Beginnings

Many tunes do not begin on the Tonic; however, such tunes often use chord patterns that are simply displaced versions of the Rhythm changes. **I VI II V** is frequently employed in a form beginning on II, so that one cycle of this pattern appears as **II V I VI** (The "alternate starting point" in the Rhythm changes map above illustrates this usage.) The opening four bars of the standard *Gone With the Wind* follow this pattern.

Turnarounds

In standard **AABA** , **ABAC**, and **ABA** song forms, it is generally necessary to conduct the harmony from wherever it is back to the chord with which the **A** section begins. This is typically accomplished with a two-measure unit called a "turnaround."

The chord progression used to support a turnaround generally follows the strong/weak alternation described above. In a typical case, a turnaround involves four chords in the prevailing harmonic rhythm. For example:



The general pattern for a turnaround is:

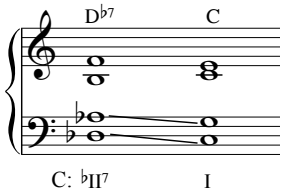
| *Turnaround* . . . . . | **A** . . . .
| 𝅗𝅥 | 𝅗𝅥 | 𝅗𝅥 | 𝅗𝅥 | 𝅗𝅥 |
| **Tonic** | **Tonic-prolonging or Voice leading** | **Dominant preparation** | **Dominant** | |

In general, turnarounds end with a dominant on the weak part of the harmonic rhythm, followed by the tonic at the beginning of the **A** section of the piece.

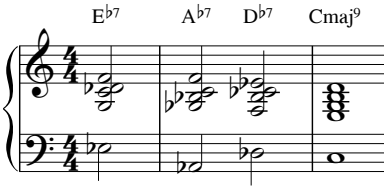
Tritone Substitution: ♭II⁷ Substituted for V⁷

It is often said that jazz uses a lot of "substitute" chords. What this comment generally indicates is that many musicians are unhappy with the blandness of the chords provided in the sheet music for tunes, and they seek to replace these chords with ones that better express their sense of the harmony of the tunes. From the musician's point of view, then, "substitute" in this context means something closer to "correct."

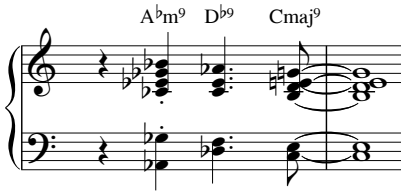
In jazz there is at least one true chord substitution: ♭II⁷ substituted for V⁷. ♭II⁷ is a dominant seventh chord based on a root located a tritone away from the root of the actual dominant. Because ♭II⁷ contains the characteristic tones of the dominant seventh, $\hat{4}$ and $\hat{7}$, it has a similar tendency to move to the tonic. ♭II⁷ also contains $\flat\hat{2}$ and $\flat\hat{6}$, chromatically altered scale tones which tend strongly down to $\hat{1}$ and $\hat{5}$, which define the tonic chord:



The same tritone substitution can be applied to any secondary dominant, and chains of such substitute chords are not uncommon. For example, if ♭II⁷ is used as a substitute for the dominant seventh chord, it my be preceded by its own dominant seventh, ♭VI7, which in turn may be preceded by *its* dominant seventh, ♭III⁷:



♭II⁷ may also be preceded by its own dominant preparation chord. Billy Strayhorn, for example, employs this harmony at the end of the A section of *Satin Doll*:

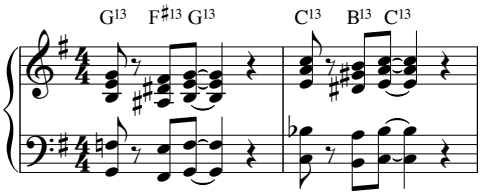


Voice Leading Chords

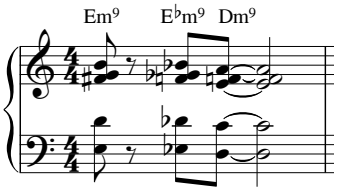
Chords made up mostly or entirely of neighbor- and/or passing-tones are common in jazz. These are designated "voice leading" or "linear" chords because they are primarily the result of the motion of the voices or parts. There are several types of voice leading chords:

- **Neighbor chords.** Often, an entire chord is used as if it were a neighbor note.

Here F♯13 and B13 act as lower neighbors to G13 and C13, respectively:

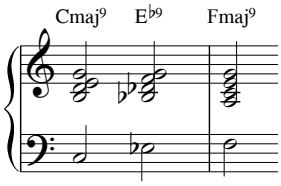


- **Passing chords.** A minor seventh chord may be used to slide chromatically between two diatonic chords. For example: Em9 E♭m9 Dm9. Here the E♭m9 is a passing chord between Em9 and Dm9



Downward sequences of dominant seventh-type passing chords are also common. Sonny Rollins' *Doxy*, for example, begins with B♭7 A7 A♭7 G7.

- **Neighbor-passing chords.** A chord can also be made out of a combination of neighbor- and passing-tones. In the E♭9 in this example, F is a neighbor tone and D♭ and B♭ are chromatic passing tones:



The bass line here supports the interpretation of the middle chord as E♭9, but the voices in the treble staff could easily occur in jazz without this bass line as, for example, "rootless" piano chords or as part of a passage written for four saxophones. In such cases, the middle chord would be indicated as G⌀7.

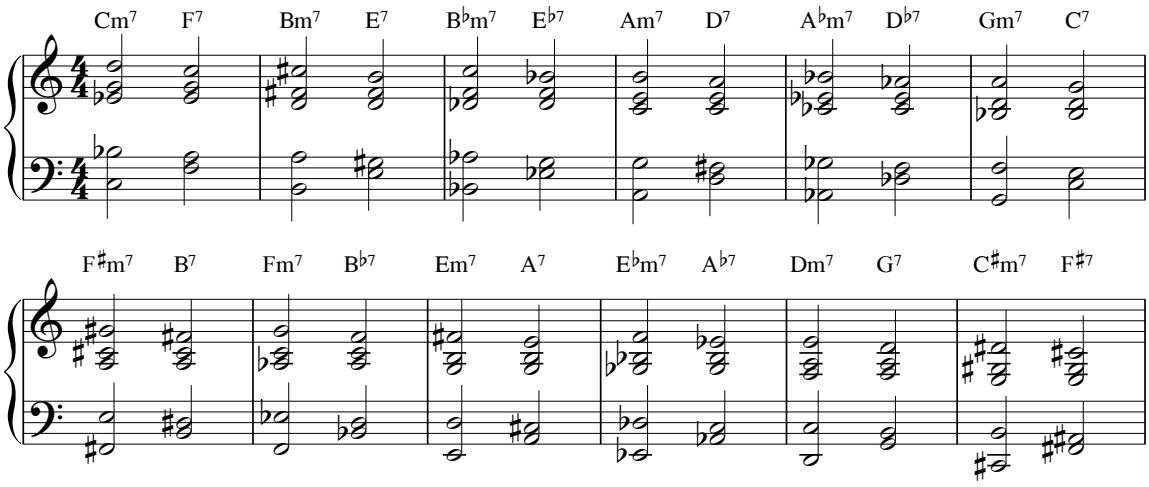
- **Interpolation.** If a voice leading chord is preceded by its own dominant, supertonic, or subdominant, or a combination of these, the result is a more elaborate structure called an "interpolation." The interpolated chords are typically built on raised or lowered steps of the prevailing scale or are borrowed from the parallel key. A typical interpolation is:

𝅗𝅥	𝅗𝅥	𝅗𝅥		𝅘𝅥	𝅘𝅥	𝅘𝅥	𝅘𝅥	𝅗𝅥
IIIm7	VI7	IIm7	becomes	IIIm7	VI7	*♭IIIm7*	*♭VI7*	IIm7

Here the sequence ♭IIIm7 ♭VI7 is inserted between VI7 and IIm7. The interpolated unit, *♭IIIm7 ♭VI7*, is simply the preceding unit, IIIm7 VI7, transposed down a half step. To accommodate this interpolation, IIIm7 and VI7 are played at twice the prevailing harmonic rhythm rate — quarter notes rather than half notes — and the interpolated ♭IIIm7 and ♭VI7 are also played as quarter notes. The interpolation

can be viewed as a slightly elaborated chromatic slide downward from IIIm^7 to IIm^7. (See Thelonious Monk's *Round Midnight* for an example of this type of interpolation.)

The following is a little keyboard exercise that illustrates this type of interpolation. *Every other* measure is part of the chromatic circle of fifths, and the intervening measures are the interpolations. Movement from measure to measure is by half-step down:



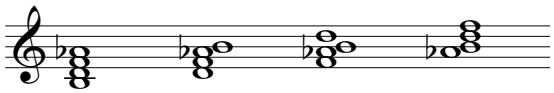
The voice motion in this example is noteworthy. The lower two parts in the right hand hold common tones within each measure, while the upper part in the left hand holds common tones (sometimes enharmonically) across the bar line.

The Diminished- and Half-Diminished Seventh Chords

The diminished seventh and half-diminished seventh chords occur in a variety of roles in jazz and therefore deserve separate treatment.

The Diminished-Seventh Chord

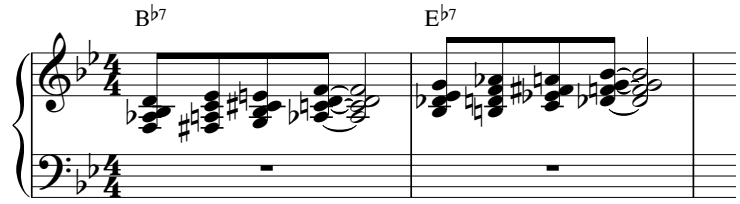
The diminished-seventh chord is symmetrical, being composed entirely of minor thirds. As a result, all four inversions of a given diminished-seventh chord sound approximately the same. For example, B°^{7}, D°^{7}, F°^{7}, and A♭°^{7} all contain enharmonically the same four pitches: B, D, F, and A♭.



No matter which note is the lowest, the structure above it will be (enharmonically) all minor thirds. As a result of the symmetrical nature of the diminished-seventh chord, there are only three different diminished-seventh chords. If a given diminished-seventh chord is repeatedly transposed up by half-steps, the third transposition will give the same set of letter pitches as the original chord. These properties make the diminished-seventh chord somewhat ambiguous and slippery, but also very useful precisely because of this.

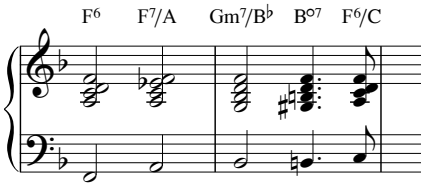
The Diminished Seventh as a Connecting Chord

Diminished seventh chords are most frequently used to connect other chords. A very frequent use of diminished seventh chords in writing for big bands is shown in the following excerpt from Thelonious Monk's *Blue Monk*. Here, diminished seventh chords on the second and third eighth notes of each measure smoothly connect different inversions of B♭7 and E♭7, respectively, on the first and fourth eighth notes.



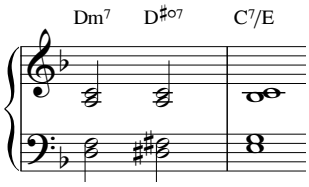
This usage of the diminished seventh chord was described in greater detail above in the **Parallel Voice-Leading Styles** section.

Another familiar use of the diminished seventh as a connecting chord can be found, for example, in Dizzy Gillespie's "Salt Peanuts":



If we consider just the chords in the treble staff, the B°7 clearly results from the chromatic alteration of the G and B♭ in the preceding Gm7, which is IIm7 in F major.

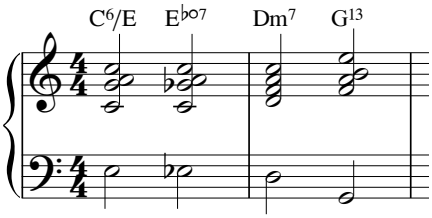
A similar use of the diminished-seventh chord gives this "barbershop quartet" cliché:



The D♯°7 results from the chromatic alteration of the D and F in the preceding Dm7, which is VIm7 in F major.

Another old-timey use of the diminished-seventh chord is the following chromatic slide down from the Tonic chord in first inversion through ♭III°7 to IIm7. Here, the E♭°7 chord results from the chromatic voice motion in the bass (E–E♭–D) and right-hand (G–G♭–F)

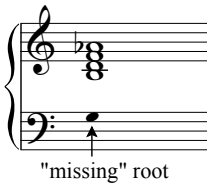
while the A and C in the other voices are held:



Both this usage of the diminished-seventh chord and the barbershop quartet cliché above disappeared from non-retro jazz in the 1940s and both are considered old-fashioned today (which does not mean they cannot be used to achieve particular musical effects).

The Diminished Seventh as an "Incomplete" Dominant

The diminished-seventh chord can be viewed as an "incomplete" dominant seventh with flat ninth. It is incomplete because it is missing the root:



Because there are really only three different diminished-seventh chords, each one must represent *four* of the twelve different dominant sevenths. The following table summarizes these relationships. Enharmonic respellings of some pitches in the left column are necessary to obtain the correct spellings of some of the chords in the right column. For example, the A♭ in the middle row has to be respelled as G♯ and the C♭ has to be respelled as B in order to get the correct spelling for E^7.

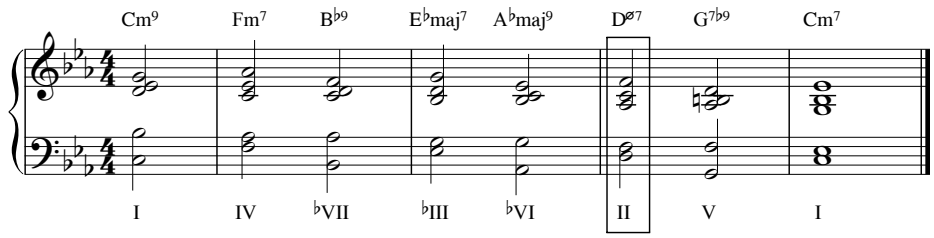
Pitches in °7 chord		Dominant-seventh chord
C♯ E G B♭ in any order	represent	A^7, C^7, $E^{\flat 7}$, or $G^{\flat 7}$
D F A♭ C♭ in any order	represent	$B^{\flat 7}$, $D^{\flat 7}$, E^7, or G^7
D♯ F♯ A C in any order	represent	B^7, D^7, F^7, or $A^{\flat 7}$

Because the diminished-seventh chord has a flat ninth, it is most naturally used as a dominant in the minor mode or as a secondary dominant to a minor chord.

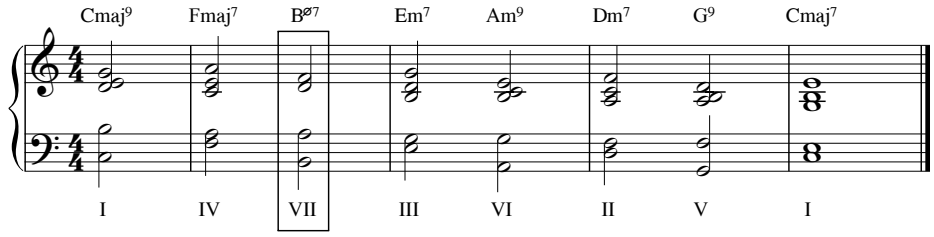
The Half-Diminished Seventh Chord

The half-diminished seventh chord (or either m7♭5 or m7-5, as many musicians prefer to call it) occurs diatonically as **II** in minor, and it can be used as such in a sequence of

circle of fifths-related chords:

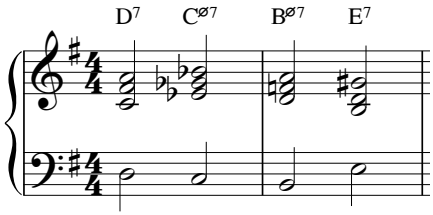


It also occurs diatonically as **VII** in major and, again, can be used as such in a sequence of fifth-related chords:



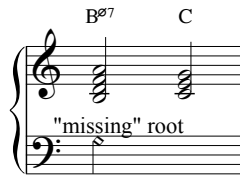
The Half-Diminished Seventh as a Connecting Chord

The half-diminished seventh chord, like the diminished seventh chord, is often used as a connecting chord. Here, for example, $C^{\varnothing 7}$ is used to make a smooth passing movement between D^7 and $B^{\varnothing 7}$:



The Half-Diminished Seventh as an Incomplete Dominant Ninth

The half-diminished seventh chord can be treated as an incomplete dominant ninth chord in major. As with the diminished-seventh chord, the root is missing. However, because the half-diminished chord is not symmetrical, there is no problem of determining which chord it represents: the root of the parent dominant chord always lies a major third below the indicated root of the half-diminished chord. Here, for example, $B^{\varnothing 7}$ functions as the dominant of C:



Which of the possible uses of the half-diminished chord is the one operative in any given case must be determined from context.

Exercises

1. Choose a tune that uses the Rhythm changes. Using the Rhythm changes map above, create an alternate harmonization for the **A** section of the tune. Make sure the new chords fit the melody reasonably well. Write guitar/piano and bass parts for your harmonization. Play your arrangement with class members.
2. *More difficult:* using any of the techniques discussed above (substitute chords, voice leading chords, harmonic rhythm changes, etc.), create an alternate harmonization for the bridge of your chosen Rhythm-based tune. Make sure the new chords fit the melody reasonably well. Write guitar/piano and bass parts for your harmonization. Play your arrangement with class members.
3. Create your own harmonic background for a 32-bar AABA tune. You may draw progressions from the Rhythm changes map or the circle of fifths, or just make up your own sequences of chords. Maintain a half-note harmonic rhythm throughout. Write guitar/piano and bass parts. Play the tune and your background with class members.

Secondary Functions and Tonicization

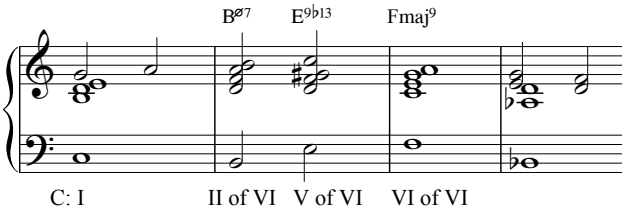
Dominant seventh-*quality* chords abound in jazz. Of course, each key contains only one dominant seventh, the chord built on the fifth scale degree. However, many other dominant seventh-quality chords can be used within a given key. The chord on every scale degree (with the possible exceptions of **VII** in major and **II** and **VI** in minor) can be preceded by its own dominant or dominant seventh chord. This means that there can be a V of II, V of III, V of ♭III, V of IV, V of V, V of VI, V of ♭VI, and V of ♭VII. These dominants are called *secondary dominants* because they function just like the actual dominant of the key except that they go to some chord other than I. The destination chord is said to be "tonicized" by the secondary dominant. That is, the secondary dominant causes the destination chord to treated as a sort of temporary tonic. In jazz, chains of secondary dominants are common. For example, the pop standard *Please Don't Talk About Me When I'm Gone* has the following sequence of secondary dominants:

	……							
E♭6	G7	C7		F7	B♭7	E♭6		
I6	V7of VI	V7of II		V7of V	V7	I6		
𝅝	𝅝	𝅝	𝅝	𝅝	𝅝	𝅝	𝅝	

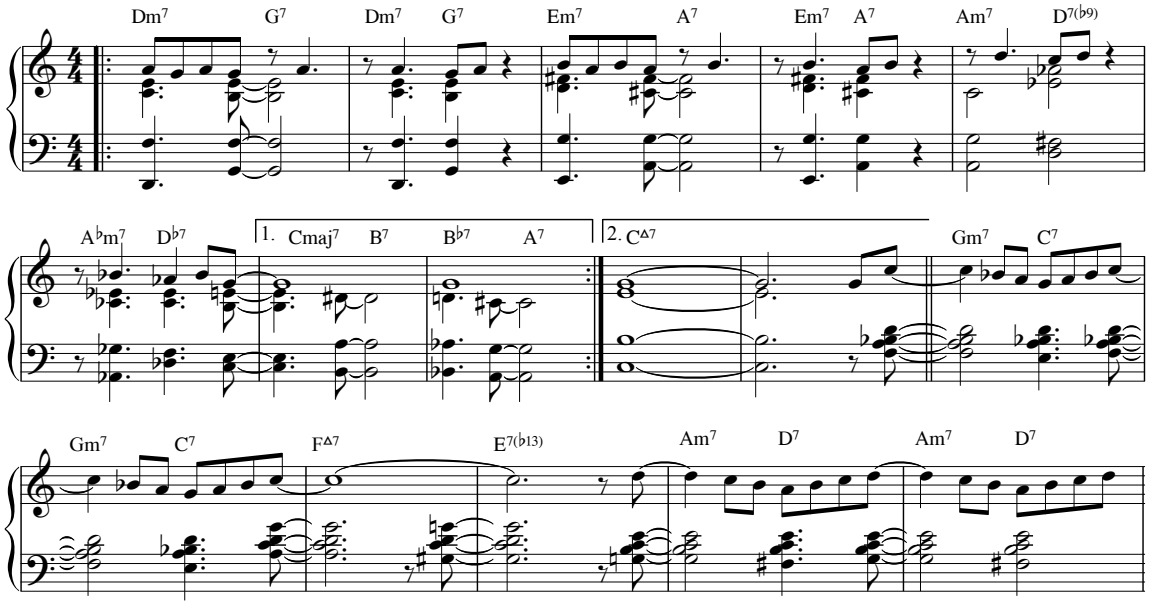
For a chord to be a true secondary dominant, it should resolve to the chord of which it is in fact the dominant: V of V should resolve to V, V of VI should resolve to VI, etc. However, a so-called "deceptive cadence" would also be considered a correct treatment of a secondary dominant. For example, V of VI could resolve upward by half-step to IV, mimicking the deceptive cadence in minor, V ♭VI. *Sunny Side of the Street* contains this move complete with dominant preparation:

	……..		
C6	Bø7	E7	F6
I6	II of VI	V7of VI	VI of VI
𝅝	𝅗𝅥	𝅗𝅥	𝅝

Here is a possible keyboard realization of this chord progression:



As this example shows, a secondary dominant can be preceded by its own supertonic (II). Thus we can have "secondary supertonics." Often these chords are already available in the given key. For example, VI can function as a secondary supertonic to V of V, III to V of II, VII to V of VI, etc. Other chords require some modification to become secondary supertonics. In Duke Ellington's *Satin Doll* the Em7-A7 progression of the **A** section is a secondary supertonic followed by a secondary dominant, as are the Gm7-C7 and Am7-D7 progressions in the bridge. Only the Gm7 requires a modified note (B♭) to function as a secondary supertonic (*Students of traditional music theory, give a Roman numeral analysis of the harmony here*):



There is also a "secondary subdominant" function, that is, a chord functioning as IV in relation to a secondary dominant. Both secondary supertonics and secondary subdominants function as dominant preparation chords, and therefore belong in strong positions in chord progressions. As with the ordinary dominant preparation chords, all the alternate chord possibilities listed in the third column of the Rhythm changes map above are available.

Borrowed Chords (Modal Interchange)

Chords are often "borrowed" from the parallel major or minor; accordingly, such chords are called "borrowed chords." For example, Fm^7 might occur as IVm^7 in the key of C major as a chord borrowed from C minor (see, for example, the bridge of *Sunny Side of*

the Street.) Another common borrowing is the progression from I to Im (see, for example, the opening sections of *I'll Remember April* and *On Green Dolphin Street.*)

Modulation

Actual change of key is relatively rare in jazz. When it does occur, it is most frequently at the end of a formal section of a tune. In the typical 32-bar **AABA** tune, the **B** section is often in a different key from the **A** section. In this situation a brief modulating passage is needed to get from the second **A** section to the key of the bridge, and another is needed to get from the bridge back to the key of the final **A** section. In order to modulate smoothly (which may not be the goal of some artists) we try to find some common element between the first key and the second and then use it to make the transition to the new key.

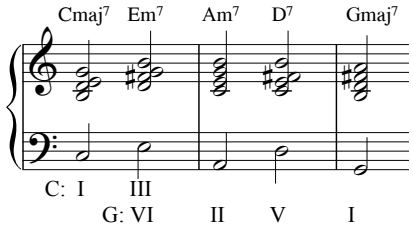
Pivot Chord Modulation

The strongest common element between origin and destination keys is a chord that belongs to both keys. Such a chord is called a "pivot chord." Pivot chords generally occur in a sequence like the following:

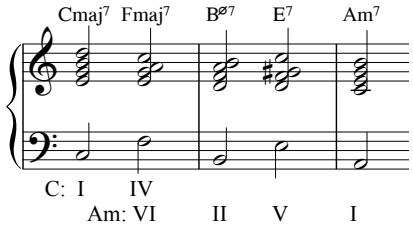
𝅗𝅥	𝅗𝅥	𝅗𝅥	𝅗𝅥	𝅗𝅥
I in original key	***Pivot chord***	**II** in new key	**V** in new key	**I** in new key

Note that the pivot chord is on the weak part of the harmonic rhythm, followed by II-V-I in their typical strong-weak-strong arrangement. This is the same pattern found in the Rhythm changes. The only difference is that the II-V-I sequence is in a new key.

The following three examples illustrate pivot chord modulations to keys closely related to the starting key and also to a more remote key. The specific harmonies used to effect each modulation are not the only ones possible. An experienced composer/arranger can usually find more than one interesting and convincing way to move from key to key. Here, for example, is a passage that modulates from C major to G major:

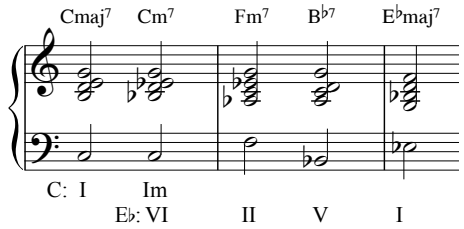


The pivot chord is Em^7, which is III in C major and VI in G major. A similar approach is used in this next example, which shows a modulation from C major to A minor:



In this example, the pivot chord is Fmaj^7, which is IV in C major and VI in A minor. In both of these examples, the pivot chord occurs in the weak position immediately following I in the key that is the point of departure for the modulation.

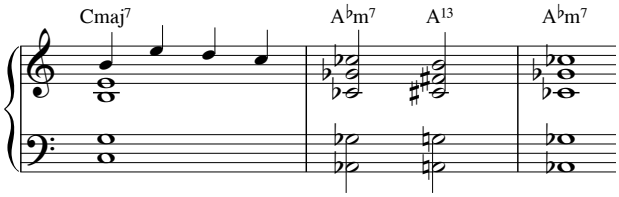
If the destination key is remote (i.e., the key signatures of the origin and destination keys differ by many accidentals) it may be necessary to borrow a suitable pivot chord. In the following example, Cm^7 is borrowed from the parallel minor to serve as the pivot chord in a modulation from C major to E♭ major:



The borrowed Cm^7 chord becomes VI in the new key, E♭.

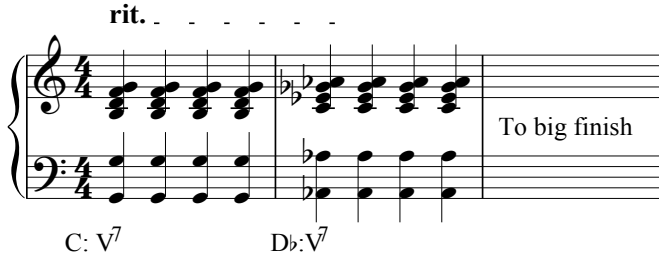
Common Tone Modulation

A weaker form of connection between keys can be obtained by using a single tone common to both keys. The common tone is used in a chord that is otherwise not common to both keys. Here, for example, is a common-tone modulation from C major to A♭ minor. B in Cmaj^7 becomes C♭ in A♭m^7. In order to convince the listener that a modulation to A♭ minor has really taken place, the A♭m^7 is followed by a V-I "confirming cadence" using the tritone substitute ♭II^7 dominant (enharmonically, as A^{13}):



Direct Modulation

A final, very weak, approach to modulation might be called "just go there," which is known more formally as "direct modulation" (and less formally as "truck driver's modulation"). Here, no attempt is made to find a common element between the origin and destination keys. A familiar example of this approach is the half-step up modulation used by pop arrangers to create excitement for the final chorus of a tune:



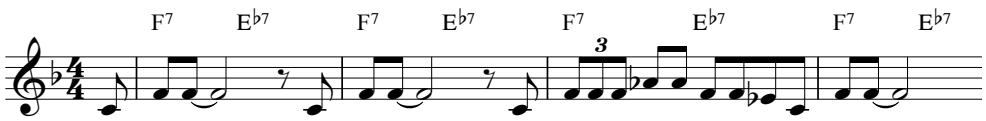
Exercises

1. Write chord progressions that modulate from E♭ major to each of the diatonically related keys except VII. Use the pivot chord approach. Give a Roman numeral analysis of the modulation.
2. Write chord progressions that modulate from F minor to each of the diatonically related keys except II and the VI and VII borrowed from the major. Use the pivot chord approach. Give a Roman numeral analysis of the modulation.
3. Write chord progressions that modulate from B♭ major to E♭ minor, A♭ major, G♭ major, and D major. Use borrowed pivot chords if necessary.
4. Choose a tune from the **AABA** list in the ***Form*** section in **Chapter I** that has a **B** section in a different key from the **A** section. Write a different chord progression for the modulating section (usually the second ending of the **A** section).
5. Choose a tune that has a relatively remote modulation from the **A** section to the bridge (e.g., *Smoke Gets In Your Eyes, Cherokee, Body and Soul, Easy Living, Prelude to a Kiss, The Song is You*). Describe how the modulation is accomplished. If possible, include a Roman numeral analysis.
6. *Unforgettable* begins in the key of G major and ends in the key of C major. How and where is the change of key accomplished?
7. *Baubles, Bangles, and Beads* from the Broadway show *Kismet* has relatively complex harmony for a pop song (it is based on a melody from Borodin's *Polovetsian Dances*). Provide a Roman numeral analysis of the harmony. Make sure to give a plausible account of the modulations or tonicizations you find in this piece.

Miscellaneous Harmonic Techniques

Tonic-by-Assertion

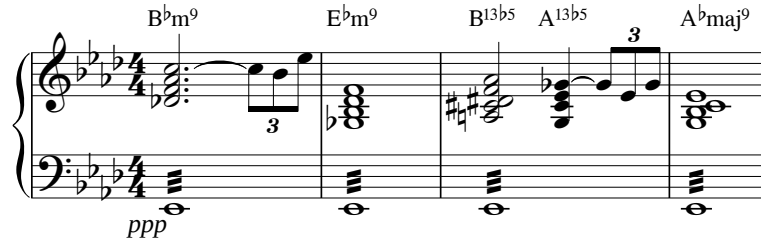
Alternation between I and ♭VII is common in both jazz and pop music. Familiar examples include Charles Mingus' *Nostalgia in Times Square*, Benny Golson's *Killer Joe*, and pop oldies such as *On Broadway*, *Uptight*, and *Got to Get You Into My Life*. The use of ♭VII could be viewed as an example of borrowing in the sense of the discussion above, that is, the ♭VII chord could be analyzed as a borrowing from the parallel minor. However, in the usual context, the ♭VII is used as a *neighbor* chord, with all voices moving strictly in parallel back and forth between it and the Tonic. The effect over several measures of alternation is to establish a Tonic simply by repeatedly asserting it and embellishing it with its lower neighbor. Here, for example, are the opening bars of *Nostalgia in Times Square*:



The overall harmony of this piece is a sophisticated variation on the standard 12-bar blues chord progression, while the portion of the melody shown here uses the pentatonic scale just as in traditional blues and much rock (see the ***Blues*** section in **Chapter V**).

Pedal Point

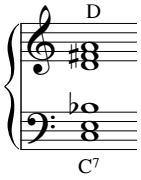
Jazz musicians sometimes use pedal points to create a complex or ambiguous tonality. John Coltrane's *Naima* is a good example of this practice:



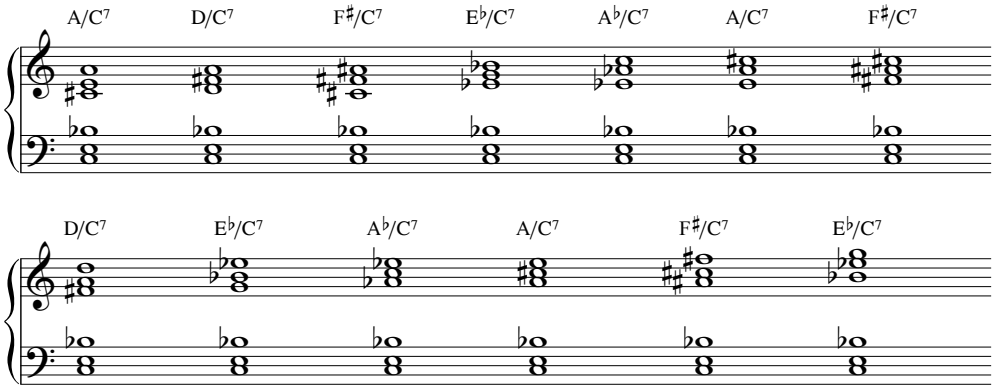
Here the indicated key is A♭, but the E♭ pedal point together with the chromatic harmony of the accompanying chords combine to create a tentative, unstable feeling which is not resolved until the coda provides a sequence of I and IV chords in root position.

Upper Structure Triads

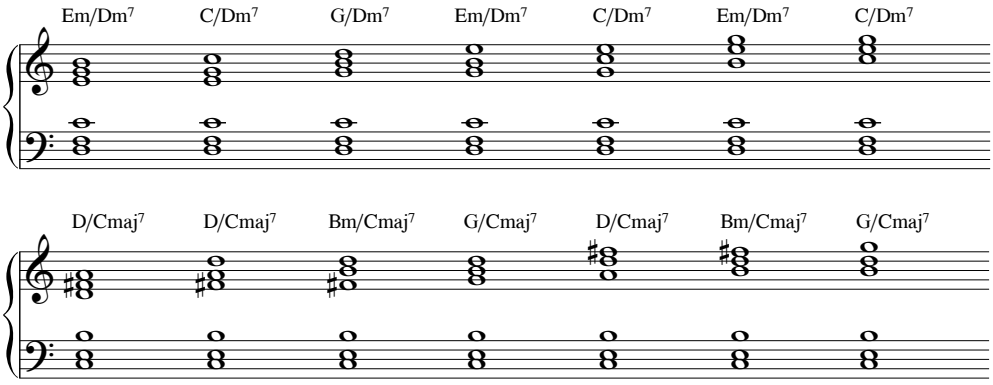
Some jazz artists group tensions into distinct triadic units that are played against an underlying chord. For example, the chord $C^{7(9\ +11\ 13)}$ could be thought of as the combination of a D-major triad over C^7:



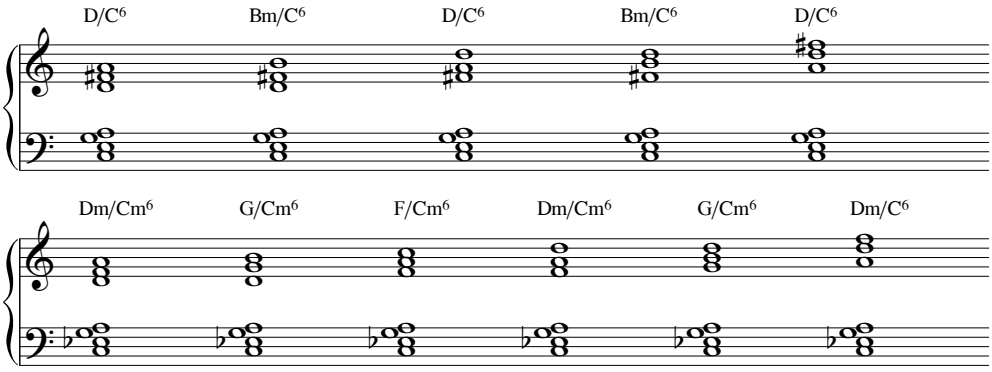
When tensions are treated in this way, they are said to be "upper-structure triads," and the chord as a whole — that is, the lower chord plus the upper structure triad — is a type of polychord. There is a great variety of combinations of basic chords and upper structure triads. The following examples only suggest the possibilities. Note that a non-standard version of the "slash" notation is used for these examples. The chord symbol that precedes the slash is the upper structure triad, while the chord symbol that follows the slash is the lower chord. Here are some of the many possible upper
structure triads that may be added above a dominant seventh:



A smaller number of upper structure triads is available for minor sevenths and major sevenths:



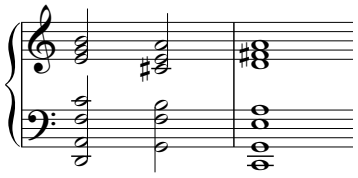
Finally, a still smaller number of upper structure triads is available for sixth and minor sixth chords:



All of the above examples of upper structure triads show the lower chord in root position and voiced in close position. Many colorful harmonies can be achieved by using different voicings for the lower chord. The chords discussed in the ***"Rootless" Chords*** section in **Chapter VI**, for example, offer many interesting combinations.

Polychords and Polytonality

Consistent use of upper structure triads can result in a kind of "bitonality": two different keys in force simultaneously. The upper structure triads can represent one key, while the lower chords represent another. For example, the following chord progression would be indicated in standard chords symbols as $Dm^{7(9\ 11\ 13)}$ $G^{7\ (9\ +11\ 13)}$ $C^{6(9\ +11)}$:



Under a bitonal interpretation, the chord symbols could be rewritten as

Em/Dm^7 A/G^7 D/C^6

This progression could therefore be interpreted as II V I in D major simultaneously with IIm^7 V^7 I^6 in C major. It is up to the jazz artist to determine whether and how such an interpretation is to be brought into prominence.

Exercises

1. How can "tonic by assertion" be explained in terms of linear chords? Are there any chord combinations other than those mentioned above that can be used to create a tonic by assertion? If so, give at least one example. If not, why not?

2. Analyze the pedal-point section near the end of Bach's Prelude #1 from the *Well-Tempered Klavier Book 1* using jazz Roman numeral chord symbols.

3. For the chord Gm^7, find five UST's that you think *don't* work as acceptable extensions of the underlying chord. Explain why in each case.

4. Write a polytonal harmonization of the Rhythm changes such that the chords in the bass staff remain in the standard key of B♭, while the chords in the treble staff are consistently in a different key.

IX. Chord-Scale Theory

Chord scale theory concerns the question of which scales go with which chords. Typically a jazz soloist wants to know what scale to use to improvise a melody over a particular chord or sequence of chords. Chord scale theory provides some *guidelines* (not rules) for choosing scales in this situation. Chord scale theory is most properly used as an *planning* tool to help the musician map out a sequence of scales to be used as material for improvisation, which should be done *before* an actual performance rather than "on the fly" during a solo. The key to using chord scale theory is not to think of the harmony of a piece as a sequence of isolated chords, but rather as sequences of chords related to one another by their functions within a specific key. Under this interpretation of chord scale theory, the goal is to find the longest sequences of chords that can be accompanied by *one* scale. This encourages the performer to think across sequences of chords rather than from chord to chord

A Simplified[11] Approach To Chord-Scale Theory

Only the major and minor scales are needed to accompany all seven of the basic chord types. In practice, then, the simplest application of chord scale theory generally comes down to choosing the right major or minor scale to go with a chord or sequence of chords. In order to apply chord scale theory successfully in jazz improvisation, it is necessary for the performer to know, and be able to play, all of the major and minor scales. In addition, the performer should know how to do the usual Roman numeral analysis of harmony. This traditional skill helps the performer select the right scale to go with a particular chord in a given context.

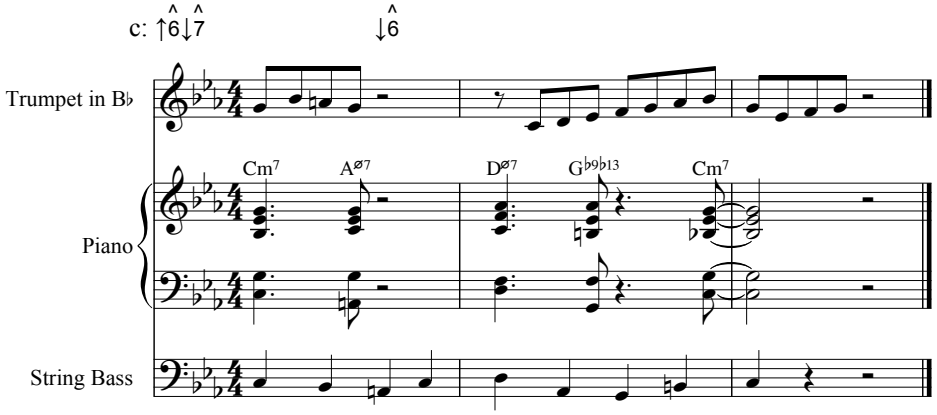
The very simplified approach to chord-scale theory presented here can be summarized in the following table:

Chord Type	Scale To Use For Improvisation
Any diatonic chord in major	The major scale of the prevailing key
Any diatonic chord in minor	The minor scale of the prevailing key (with the necessary adjustment of scale degrees $\hat{6}$ and $\hat{7}$ to avoid clashes)
Dominant 7th –quality chords (including secondary dominants, voice leading 7th chords, and "incomplete" dominant ninths)	The major or minor scale of the key in which the given chord functions as a dominant
Borrowed (modal interchange) chords	The major or minor scale of the key from which the chord is borrowed
Voice leading (linear) chords	See discussion below

[11] As with the federal government's recurring income tax "simplification" proposals, you should keep your hand on your wallet at all times when the "simplification" of anything is promised. I've done my best to simplify chord-scale theory, but, in keeping with the motto at the beginning of this book, I've tried to avoid making it appear simpler than it really is.

The following discusses the details of handling each of the indicated chord types:

1. **Diatonic chords in the major mode:** for all of these, simply use the major scale of the key in force. For example, in the key of C major, the C major scale is used with C^6, $Cmaj^7$, Dm^7, Em^7, F^6, $Fmaj^7$, G^7, Am^7, and $B^{\varnothing 7}$.
2. **Diatonic chords in the minor mode:** for all of these, use the minor scale of the key in force. If it is desired to avoid clashes between the melody and the chords, select the versions of scale degrees $\hat{6}$ and $\hat{7}$ — natural or raised — that coincide with those used in the accompanying chords (it should not be assumed that clashes are always to be avoided; sometimes a clash is precisely the effect that is wanted) Performers can use Kostka and Payne's arrow notation — $\uparrow\hat{6}$, $\downarrow\hat{6}$, $\uparrow\hat{7}$, or $\downarrow\hat{7}$ — to remind themselves which form of scale degrees $\hat{6}$ and $\hat{7}$ to use.[12] $\downarrow\hat{6}$ and $\downarrow\hat{7}$ denote the natural sixth and seventh degrees, while $\uparrow\hat{6}$ and $\uparrow\hat{7}$ denote the raised degrees borrowed from the parallel major. In the following example, all of the chords are diatonic in C minor; however, some adjustment of the sixth and seventh scale degrees is necessary as the piece proceeds from chord to chord. The desired versions of the scale degrees are indicated with the arrow notation. The lower case "c:" indicates that the prevailing scale is C minor.



Notice that the pianist is working from either chord symbols or a fully notated accompaniment, while the trumpet player needs only a few hints about the scale he or she is to use for improvisation.

3. **Dominant seventh-quality chords:** Secondary dominant seventh chords and chords that are built like dominant seventh chords abound in jazz. The simplest approach to selecting scales to go with these chords, including the tritone-substitute $\flat II^7$ and the "incomplete" dominant ninths $VII^{\varnothing}$ and VII°, is to treat them as dominant sevenths and accompany them with the major or minor scale of the key in which they function as the dominant. For example, if in the key of C a B^7 chord occurs as V^7 of E minor, it would be appropriate to accompany it with the E minor scale with suitably chosen sixth and seventh degrees. Furthermore, if the B^7 is preceded by $F^{\sharp\varnothing 7}$ (IIm^7 of E minor), this chord would also be accompanied by the E minor scale. In other words, the entire II V I sequence ($F^{\sharp\varnothing 7}$ B^7 Em^7) should be accompanied by an appropriate form of the E minor scale.

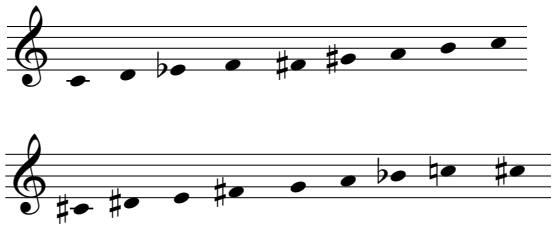
[12] Stefan Kostka and Dorothy Payne. *Tonal Harmony*, 4th ed. Boston: McGraw-Hill, 2000.

4. **Borrowed chords:** When a chord is borrowed from the parallel major or minor, it is usually best to use the scale that would accompany that chord in the key from which it is borrowed. For example, if an Fm^7 chord is used in the context of C major, we identify it as IV in the parallel minor key, C minor, and therefore use the C minor scale with the lowered sixth degree (and probably the lowered seventh degree as well) for improvisation.
5. **Voice-leading chords:** There are two principal cases of chords not already covered by items 1-4. These are chords made up mostly or entirely of neighbor- and/or passing-tones:
    a. If the chord is a minor seventh chord used to slide chromatically between two diatonic chords (Em^7 $E\flat m^7$ Dm^7, for example), use the same scale, major or minor, used with the first chord in the sequence, but transposed down a half-step. In this case, the E♭ minor scale could be used to accompany the $E\flat m^7$.
    b. If the chord is a diminished seventh, it can be treated as an incomplete dominant ninth and accompanied by the appropriate *minor* scale. For example, $B^{\varnothing 7}$ could be treated as an incomplete dominant ninth in C minor (regardless of the prevailing key) and accompanied with the C minor scale with lowered sixth degree. A different approach to diminished sevenths — in any context — is to use the "diminished" (or "octatonic") scale. This is described below.

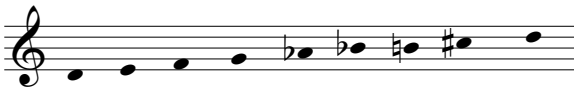
As mentioned above, this is a very simplified version of chord scale theory. It covers all the cases involving the seven basic chord types described above, and it will serve to get the beginning student of jazz started on improvisation. But it should not be imagined that professional jazz performers make any such simple system the basis of their art.

The "Diminished" Scale

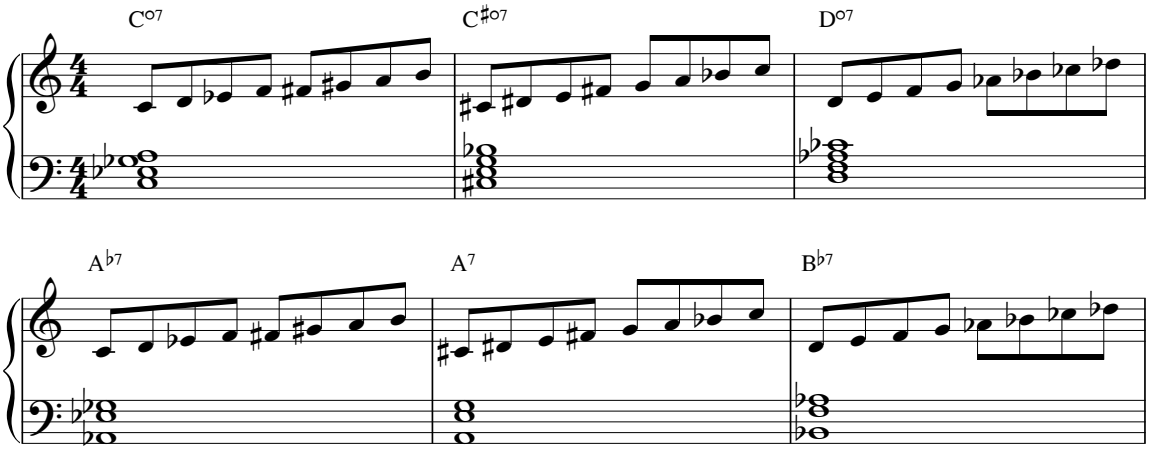
The "diminished" (or "octatonic") scale is often a colorful alternative to the major or minor scales used in the approach described above. This scale is based on the repeating pattern **whole step-half step**, **whole step-half step**, …etc.[13] Like the diminished chord, the diminished scale can be transposed by half-step in either direction only twice. A third transposition simply reproduces the tones of the original. Here are the three diminished scales:



[13] The diminished scale can also be created as the repeating pattern **half-step-whole-step**,…, etc. This does not produce new scales. The resulting scales are the same as the three shown here but starting from a different note.



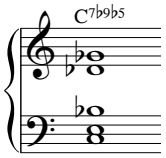
The following example shows one way that diminished scales can be used to accompany diminished seventh and dominant seventh chords:



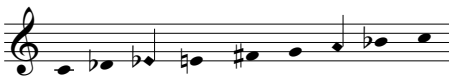
In this example, the **whole-step/half-step** pattern begins on the *root* of the diminished seventh chord and on the *third* of the dominant seventh chord. These are merely reference points for the purposes of this example. In actual improvisation, one could of course begin a melodic line on *any* note of the diminished scale. The diminished scales can be combined with the major and minor scales used in the simplified approach described above to produce a more sophisticated sound.

Chords With Alterations And/Or Tensions:

If the characteristic "sound" of a jazz artist's work will be lost if alterations and tensions are not included in a performance exactly as specified, the simplified chord-scale theory presented above will not work well. In these circumstances it will be necessary to *construct* appropriate chord scales. This is done by making a list of the notes in each chord, including the tensions and alterations. Any gaps are then filled in to form a continuous scale. For example, suppose we need to provide a scale for a chord like this $C^{7\flat9\flat5}$:



An appropriate chord scale for this harmony would include all the chord tones plus (in this case) two passing tones:



Here we have added E♭ and A to complete a scale. These are not the only choices. We could have added D instead of E♭, and A♭ instead of A. Note that the scale we created in

this case is the diminished scale described above (starting on D♭). The diminished scale often works well with altered chords and chords that have chromatic tensions.

Constructing a chord scale is the lowest common denominator of chord scale theory — it will work with almost any harmony. Simply listing the notes of the prevailing harmony, whatever it is, and filling in appropriate passing tones will yield a complete scale for improvisation. A composer or arranger who creates music in this way should write out exactly what he or she wants rather than relying on the informal jazz/pop chord notation to convey his or her intentions.

If a composer or performer uses tensions and alterations in an *essential* way in his or her music (i.e., the character of the music depends critically on all the chords being played exactly as notated), George Russell's *Lydian Chromatic Concept* (Brookline, MA: Concept Publishing Company, 2001) becomes an attractive choice of chord scale theory because it provides a logical choice of scale to accompany almost any conceivable extended and/or altered chord. In effect, Russell has pre-constructed for the jazz musician all the scales that would be needed for improvisation on the most complex harmonies. All the musician has to do is to look up the appropriate scale in Russell's book; however, Russell's system is quite complex, so that one should expect to commit a substantial amount of time and energy to learning how to use it.

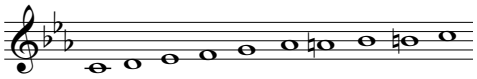
Interlude On The Minor Mode

The discussion of chord-scale theory above was perhaps a bit vague whenever the minor mode was mentioned. Certain issues were deliberately swept under the rug until the basic points could be established, but the time has come to confront the issues. Perhaps surprisingly, the minor mode is a contentious area in music theory pedagogy, even after hundreds of years of tonal music and its accompanying theory. Everyone who has tried to teach beginners about minor is all too aware of the problems. This book's view of minor rests on the following argument:

1. Jazz is a form of tonal music and, like most tonal music, it is — at almost any point in a piece — in some particular key.
2. Each key has a scale, which is simply a list of tones that can be used to create melodies and chords in that key.
3. There are only 24 different scales, 12 major and 12 minor, corresponding to the 12 major and 12 minor keys.
4. There are no inviolable rules concerning the relationship of melody to chords.

These principles are uncontroversial, except perhaps for principle 3, which claims that there are only 12 minor scales. Most of us learned that there are *three* forms of the minor scale — natural, melodic, and harmonic — and thus that there are actually 36 different minor scales; however, if we accept principle 2, that is, that a scale is simply a list of the tones that belong to a particular key, and if we observe which tones are used in real music

in the minor mode, then we must come to the conclusion that there is only *one* form of the minor scale:[14]



This scale has both the natural and the raised forms of scale degrees $\hat{6}$ and $\hat{7}$. For the composer or performer, the question is — as it always has been in all forms of tonal music — *which* form of scale degree $\hat{6}$ or $\hat{7}$ to use in any given situation. This question can generally be answered partially through harmonic analysis of the specific case in question. But in the end you have to use yours ears: what sounds right *is* right.

"Outside" Playing

It should not be assumed that playing "inside" the harmony — the evident goal of chord scale theory — is an absolute requirement for good jazz playing. The attitude of jazz musicians toward the relationship of melody and chords can perhaps be better gauged by considering the practices of two great and widely imitated soloists, Lester Young and Charlie Parker. As early as the late 1930s, both of these musicians had developed techniques for "outside" playing, improvisation that in some way conflicts with the prevailing harmony.

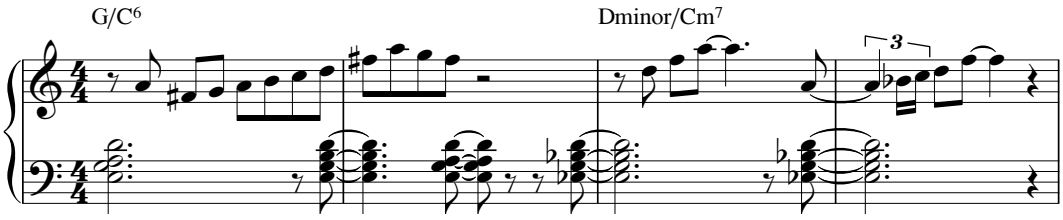
Lester Young would sometimes play slightly ahead or slightly behind the chords, so that his improvised melody would either anticipate the next chord or continue within a chord that had already passed by. The anticipation or delay would typically cause a mild conflict between melody and harmony. Charlie Parker had a somewhat different approach. His idea was to treat the tensions of each chord — ninths, elevenths, and thirteenths — as *basic* melodic materials for improvisation. Tensions such as ♭9, ♯9, +11, and ♭13 could be used freely in melody and required no resolution. When carried through consistently, this approach leads to a form of bitonality, as discussed above. Whether melody that emphasizes tensions is *heard* in a bitonal sense is a separate issue. The point is that the improvising musician can think of melody in this way.

Neither Lester Young's nor Charlie Parker's approach to outside playing represents an attack on tonal harmony or an attempt to escape it. In fact, these techniques depend for their effects on a background of tonal harmony. It is precisely in the perceived clash between the harmonic implications of the improvised melody and the actual harmony that much of the charm of Young's and Parker's outside playing is found. Jazz musicians ever since the time of these two great musicians have adopted their techniques; therefore, these techniques should be viewed now as standard skills for jazz players.

Jazz players have introduced other devices for outside playing, many of which produce what might be called "apparent complexity." These techniques produce a seemingly complex musical texture that can actually be described very simply. One recipe for producing such textures is to improvise melody on a scale at some specific interval above

[14] A full discussion of the issues raised here can be found in Paula J. Telesco. "Rethinking the Teaching of Minor Scales and Keys," *Journal of Music Theory Pedagogy*. 15(2001).

or below the indicated bass note or chord root. This approach often amounts to the same thing as Charlie Parker's technique of emphasizing tensions. Here, for example, the G major scale is used for improvisation over a Cmaj^7 chord (i.e., a perfect fifth above the chord root), and D minor is use for improvisation over the following Cm^7 chord (i.e., a major second above the chord root):



Note the use of "rootless" chords in the left-hand part here. The recommended intervals for this technique are given by Felts:[15]

1. up or down a major second from the bass note or chord root
2. up a perfect fifth from the bass note or chord root
3. up a tritone from the bass note or chord root (less common)
4. up or down a minor second from the bass note or chord root (less common)

The quality of the results obtained using a technique such as this depends — as always — on the skills of the individual performer. It goes without saying that this technique is not for musicians who wish to maintain clarity of harmonic function in their music.

Treatment Of "Non-Chord" Tones

The prevalence of stable dissonances and outside playing techniques raise questions about what a "non-chord tone" is. Traditional music theory gives precise definitions of various embellishing tones — neighbor, passing, changing, escaped, anticipation, suspension, etc. — and prescribes how they are to be treated. The jazz musician can choose to observe these prescriptions or not. The logic of jazz does not depend on their being observed. Thus, a jazz artist may choose to set up a musical context in which embellishing tones are handled in the traditional manner; however, if he or she does this, the treatment of these tones has the status of a stylistic *effect* rather than obedience to the grammatical rules of music. Of course, in one and the same performance there may be passages that follow the traditional rules and others that do not.

[15] *Op. cit.*, p. 146 ff.

Exercises

1. Mark up a copy of the Rhythm changes with the names of the scales that would be appropriate for improvisation.

2. Modify the bridge of the Rhythm changes by using substitute chords and/or interpolations, and then indicate the scales to be used for improvisation on the modified bridge.

3. Choose a tune from one of the lists in the ***Form*** section in **Chapter I**. Analyze the harmony and then indicate reasonable scales to use for melodic improvisation. You may use the arrow notation described in the text or write out the names of the scales to be used. If it is necessary to construct a chord scale, write the scale out in full on a separate staff above the appropriate place in the tune.

4. Write a melody based on the analysis you performed in exercise 3.

X. Other Systems

As was mentioned at the beginning of this book, the system presented here is not the only one in current use in jazz. There are several others that do not share the entire set of core practices of jazz as described in this book. Some approaches represent a minimal departure from the common practice. Among these are the use of quartal and secundal harmonies to accompany standard tunes. These methods appear to be designed mainly to bring a fresher sound to conventional jazz performance. The other elements — form, melody, and rhythm — are kept much the same as in the conventional approach. "Free" jazz, on the other hand, departs radically from the traditional jazz idioms.

Modal Jazz

"Modal" jazz provides a framework for improvisation based on scales rather than chord progressions. For example, Miles Davis' *So What* — one of the earliest examples of modal jazz — has the 32-bar **AABA** structure of many pop standards, but the **A** section is specified as being in the D "Dorian" mode, while the **B** section is in the E♭ "Dorian" mode. No chord symbols are given (except for the misleading — and completely redundant — "Dm7" and "E♭m7" at the beginnings of the **A** and **B** sections, respectively). Solos follow the **AABA** pattern of the head, but the soloist improvises along the modal scale rather than on chord changes. Since all the notes in the modal scale are considered to be consonant with one another, the musician(s) providing the harmonic background can play *any* chords (triadic, quartal, secundal, etc.) made from the notes of the modal scale. This brief description of one modal piece cannot begin to convey the variety of modal approaches developed since Davis' pioneering work in the late 1950's. To give a complete account of modal jazz would require a second book as least as large as this one.

Free Jazz

"Free" jazz presents a truly different picture. The various forms of free jazz do without most or all of the traditional structure of jazz. Free jazz consists of many different musical languages; therefore, the genre as a whole cannot be summed up in any one set of principles or techniques. A free jazz style may use familiar jazz idioms, but it does away with the templates provided by pre-composed material such as chord changes and song forms. From the free jazz point of view, the jazz techniques described in this book represent a kind of surface ornamentation of a fixed underlying framework, namely the harmony of a selected "head." Free jazz players seek to carry improvisation all the way down. As a consequence, continuous improvisation of every aspect of a performance — melody, harmony, rhythm, and form — is required. This requirement is a very demanding one. It requires the jazz artist to confront all of the problems any composer faces: choosing the harmonic, melodic, and rhythmic materials to be used; specifying the instrumental resources required; and designing the larger "architecture" of the work. For this reason it is a fantasy to assume that the move to free jazz will automatically release a torrent of creativity that was previously confined in the box of traditional jazz structure. Not surprisingly, free jazz is a genre that only a few gifted musicians who have worked together for an extended period can explore successfully. Free jazz also makes much greater demands on the listener, who must work to understand the unique musical

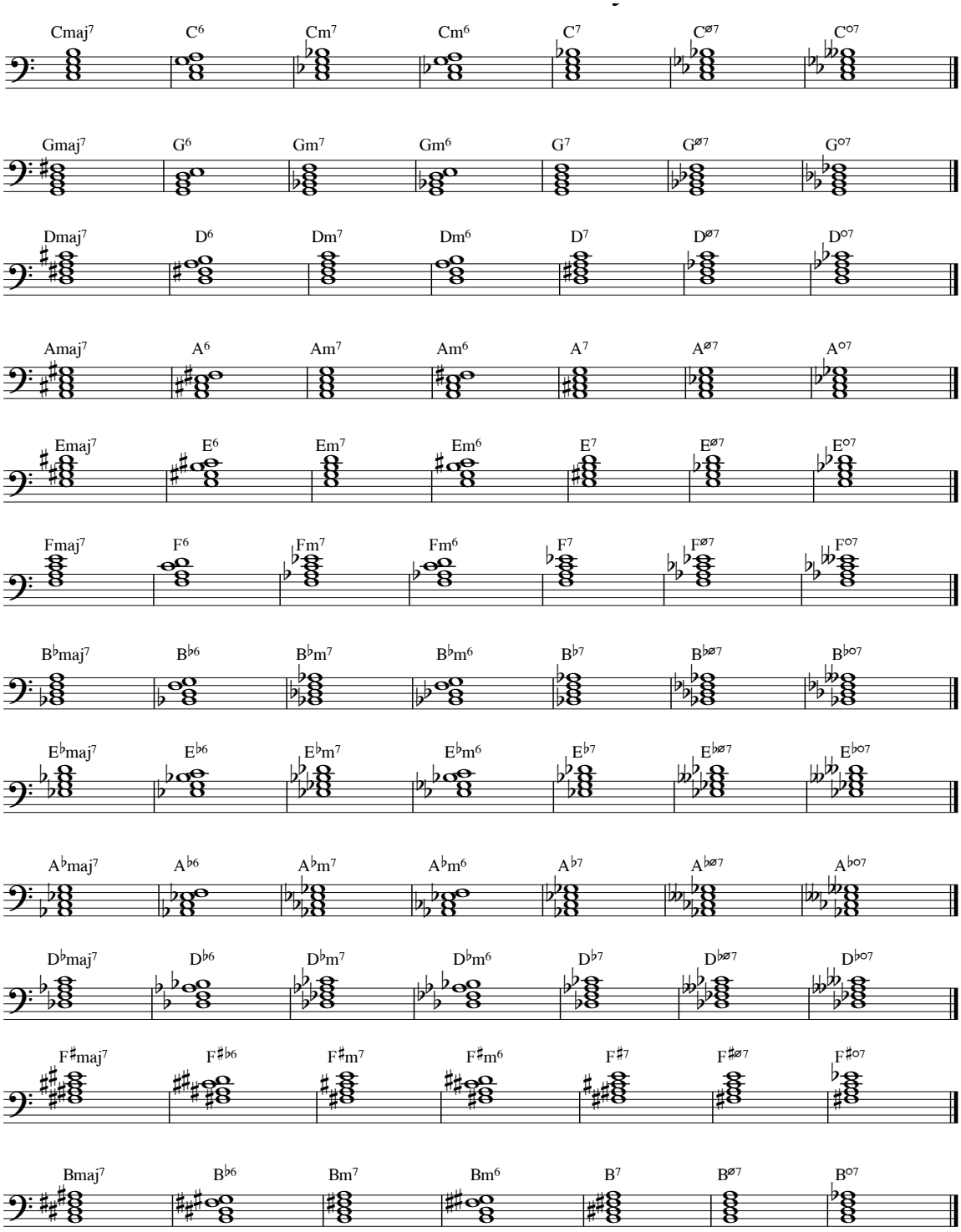
language employed by a free jazz group. Free jazz thus remains less popular than other forms of jazz.

Tonal Systems In Rock

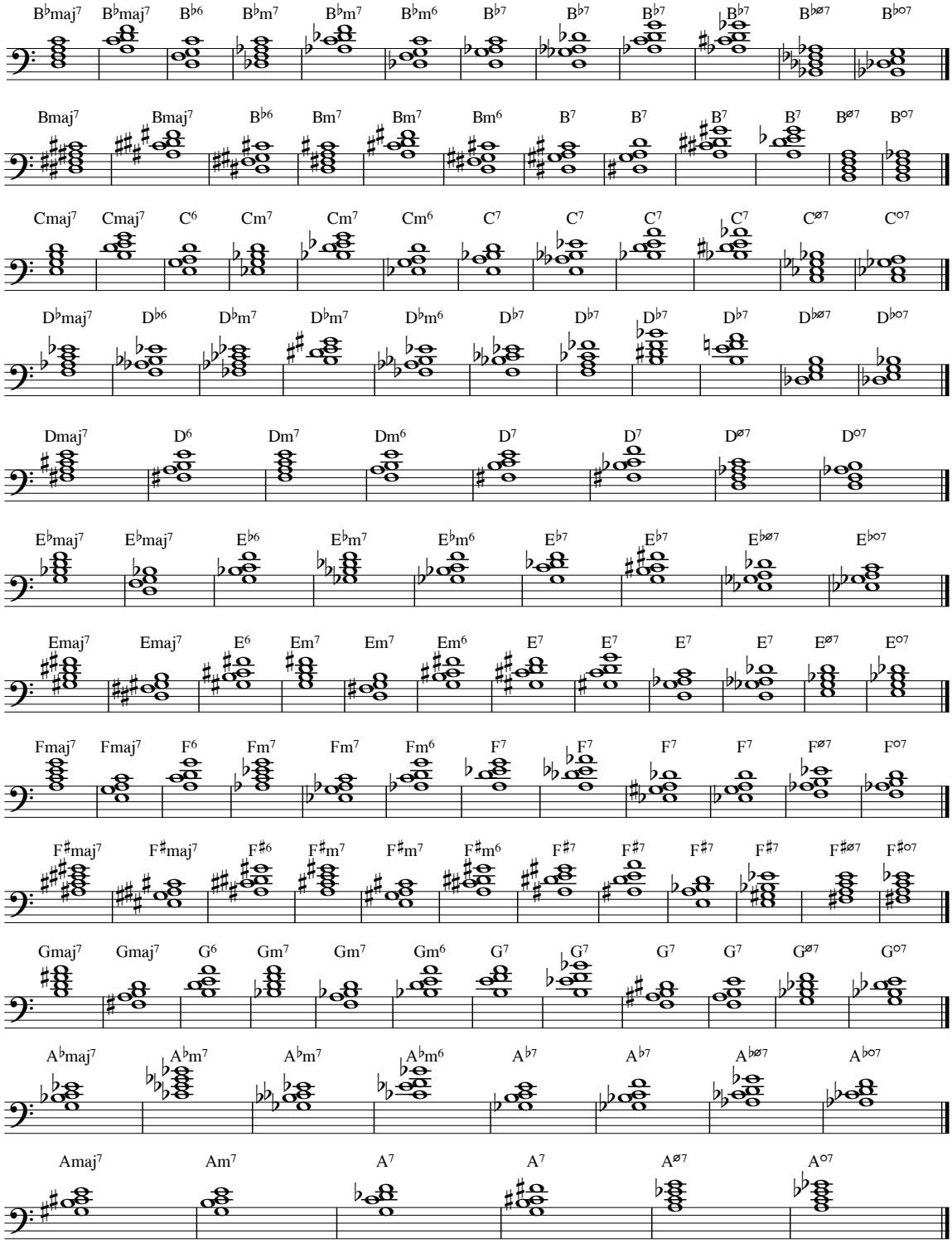
Since the late 1960's there has been considerable interaction between jazz and rock. Although the system of jazz harmony described in this book is still also the dominant one in rock, alternative systems developed by rock musicians have had some influence in jazz. Walter Everett has identified six distinct tonal systems operating in rock.[16] Most of these have already been covered in this book: major- and minor-mode "common practice" harmony, much like what you study in traditional music theory; diatonic modal harmony, as described in the ***Modal Jazz*** section above; and the blues chords + pentatonic melody technique described in **Chapter V.**. Everett's paper should be consulted for detailed descriptions of the other, uniquely rock-oriented systems.

[16] *Making Sense of Rock's Tonal Systems.*
<http://mto.societymusictheory.org/issues/mto.04.10.4/mto.04.10.4.w_everett.html>

Appendix A: Jazz Chord Dictionary



Appendix B: Rootless Chord Dictionary



Appendix C: Using Sibelius®

Sibelius Basics

Using the Sibelius "Arrange" Feature

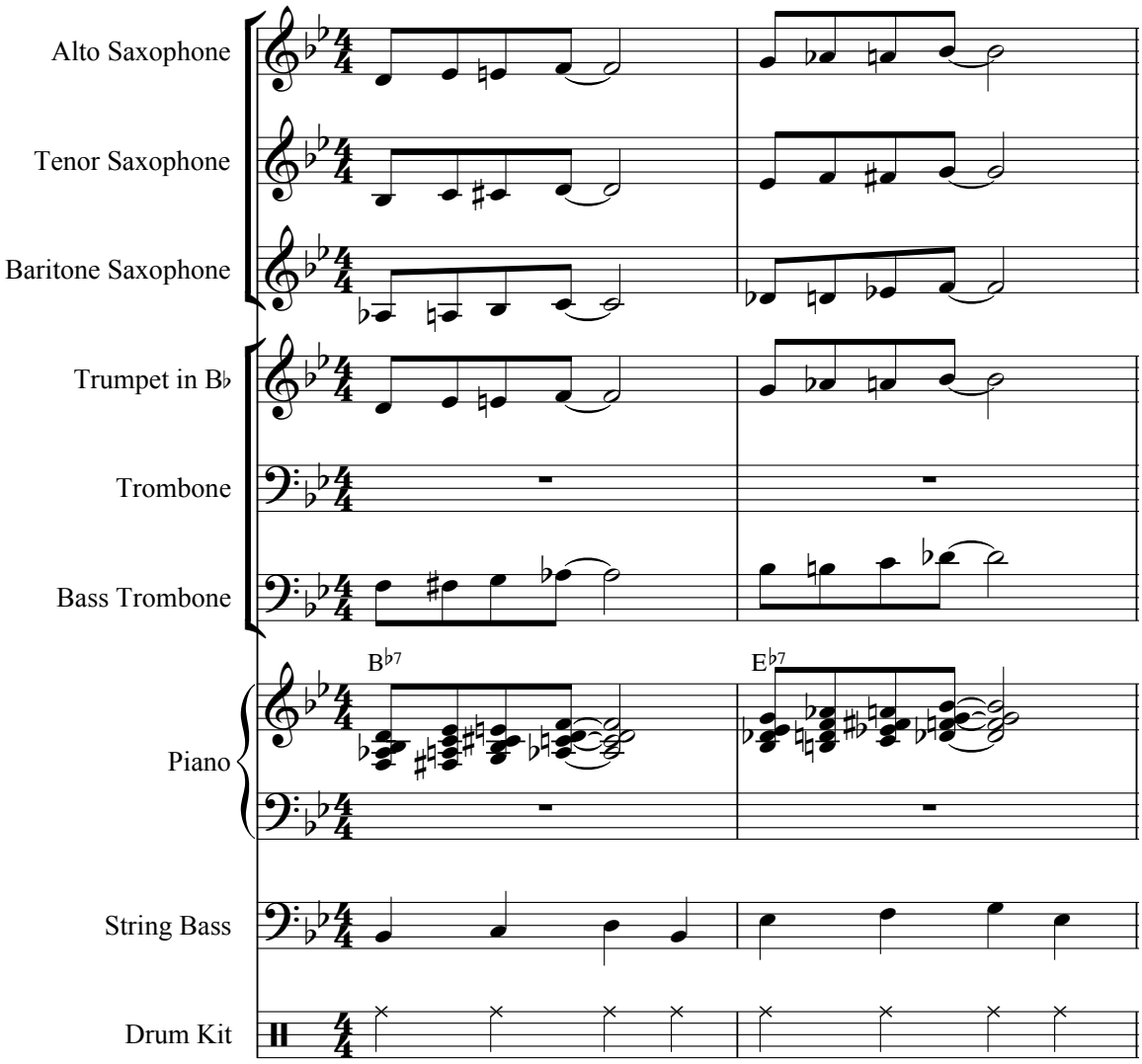
If you are using the Sibelius music notation software, you can take advantage of a very useful capability called **"Arrange**." **Arrange** is designed to assist Sibelius users in making arrangements and orchestrations. It intelligently copies music from any number of staves to any other number of staves. The copying can be done according to many different styles supported by Sibelius, including several jazz styles that are useful for scoring pieces for groups ranging from small combos to big band.

Procedure

1. Make a piano version of your piece. **Arrange** is easiest to use if the piano version has a constant number of voices (all of the "parallel" voicing styles described above work very well). A piece can be broken up into phrases or sections, each with its own constant number of voices.
2. Select the passage you want to arrange and copy it to the clipboard using **Edit > Copy**.
3. Hit **I** on the keyboard and add the instruments you want in your arrangement. Sibelius arranges only *pitched* instruments. While in the Instrument dialog, make sure to group your brass and woodwind instruments together, separate from the rhythm section instruments.
4. Select the staves into which you want to paste the resulting music.
5. Choose **Notes > Arrange**.
6. The **Arrange** dialog appears. Choose the desired style from the drop-down list and click **OK** ("Standard" is a good initial choice if you're not sure about style.)
7. Check out the arrangement Sibelius has made to see if it's what you wanted, and modify as necessary.

Example

In the following example, the piano, bass, and drum parts for the first two bars of *Blue Monk* were given. Staves were then added for three saxophone parts and three brass parts. From among the many jazz styles provided by Sibelius, the *jazz quintet* style was selected in the **Arrange** dialog. The result is shown here. Note that **Arrange** "decided" to double the lead line on the alto and trumpet and to give the lowest part to the *bass* trombone, leaving the trombone part with nothing to do. The arranger could decide to delete the trombone part, or copy the bass trombone part to the trombone, or cut the bass trombone part and paste it into the trombone part. In addition, the piano part could be removed or reduced to just chord symbols since the horns are now carrying both the melody and the complete harmony.


Alto Saxophone
Tenor Saxophone
Baritone Saxophone
Trumpet in B♭
Trombone
Bass Trombone
Piano
String Bass
Drum Kit
B♭7
E♭7