Getting Into... Fusion Jazz Guitar (Book and CD) MB99925BCD

MEL BAY'S

GETTING INTO.....

JAZZ FUSION GUITAR

by

SCOTT MILLER

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4	C Lydian	12	C Mixolydian ♭6	20	C Lydian ♯2
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Introduction

Jazz-fusion, fusion, or jazz-rock as it is sometimes called, is the "fusing" or mixing of jazz elements, such as chord/scale relationships, with the heavy repetitive rhythms of rock or other styles of music. The traditional acoustic instruments used in jazz are usually replaced by electric ones, with the electric guitar being one of its primary instruments, often assuming the lead voice of the ensemble.

The intent of this book is to provide the guitarist with a resource of the most important chord/scale relationships found in jazz, jazz-fusion, and other contemporary styles of music. Modes of the major, melodic minor, harmonic minor, diminished, and whole-tone scales are presented in depth, with the chord or chords over which they are most commonly played, as well as their most typical function within a composition.

Biography

Scott Miller began playing the guitar in the year 1984. He currently divides his time between teaching guitar at Utah Valley State College in Orem, Utah, and serving as Director of Guitar Studies at the Scott Miller Guitar Studios which he founded in 1992, also located in Orem, Utah. In addition, he is active in recording, and performs with various ensembles in the Salt Lake City area.

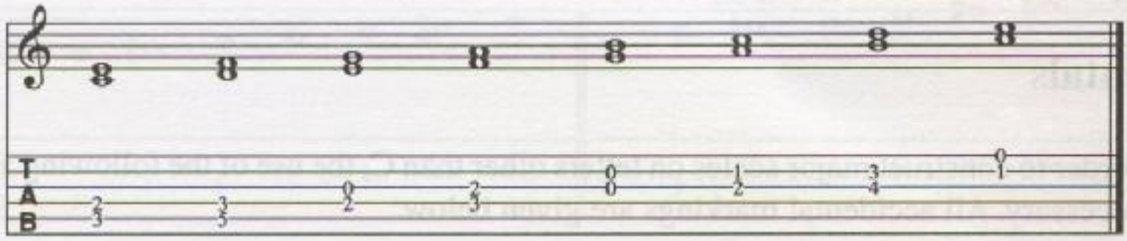
Chapter 1
Music Theory Fundamentals

Before an earnest study of scales, modes, and chords can be undertaken, one must become acquainted with the rudiments of music theory. In this chapter we will concern ourselves with the following: intervals, scale construction, triads, scale harmonization, and chord function.

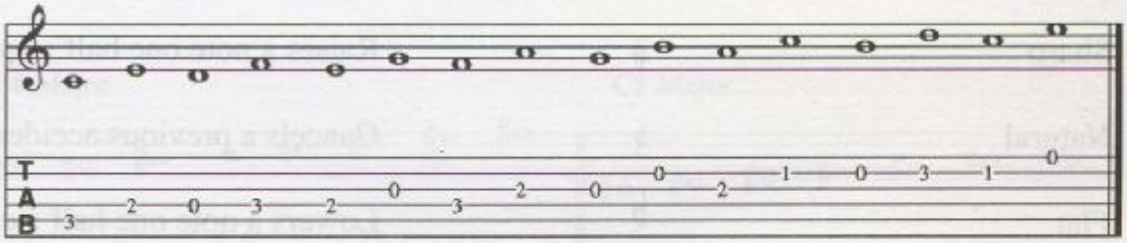
Intervals

An interval is the distance between two notes. Intervals are described in two ways, either as a harmonic interval, or as a melodic interval. A harmonic interval results when two tones are sounded simultaneously, or at the same time. A melodic interval occurs when two tones are sounded in succession, or one at a time.

Example 1-1
Harmonic Intervals



Example 1-2
Melodic Intervals



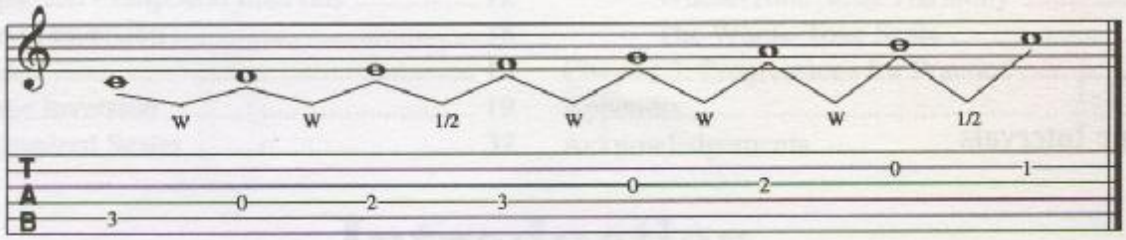
Major Scale Construction

Most scales used in improvisation are constructed by combining various whole steps and half steps. A half step on the guitar is equivalent to one fret in either direction; a whole step, two frets in either direction. Major scales can be created above any note using the following formula:

W-W-1/2-W-W-W-1/2

The following example illustrates a major scale starting on C:

Example 1-3



Accidentals

In order to construct major scales on letters other than C, the use of the following alterations may be necessary. All accidental markings are given below.

Example 1-4

Name	Symbol	Effect
Double Sharp	𝄪	Raises a note two half steps
Sharp	♯	Raises a note one half step
Natural	♮	Cancels a previous accidental
Flat	♭	Lowers a note one half step
Double Flat	𝄫	Lowers a note two half steps

Major Scales

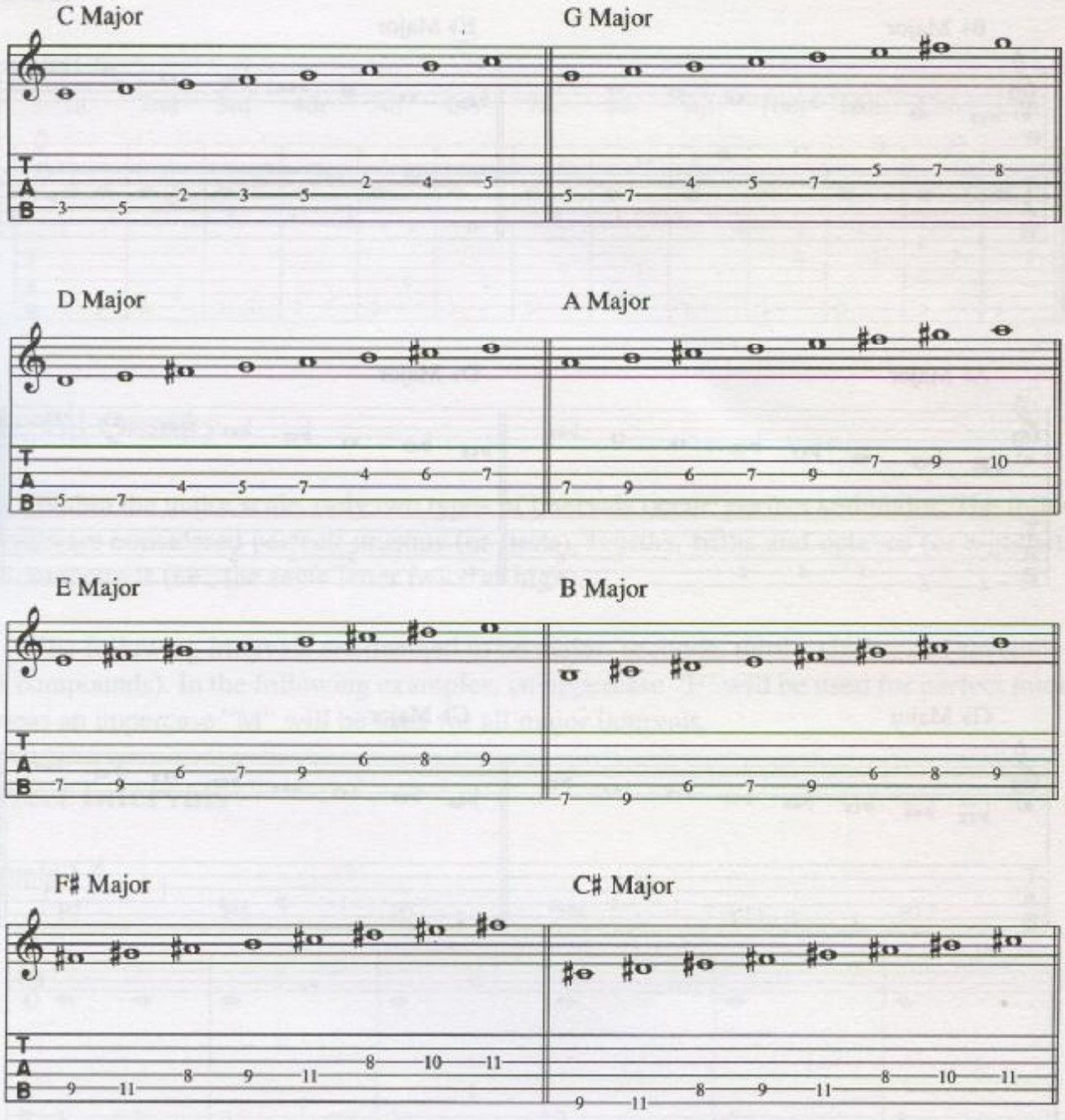
The subsequent example diagrams all major scales in one-octave segments. It should be noted that there are fifteen possible major scales, including enharmonic spellings. Three scales have two different spellings. Those scales, which are written differently but actually sound the same, are as follows:

B Major = C♭ Major

F♯ Major = G♭ Major

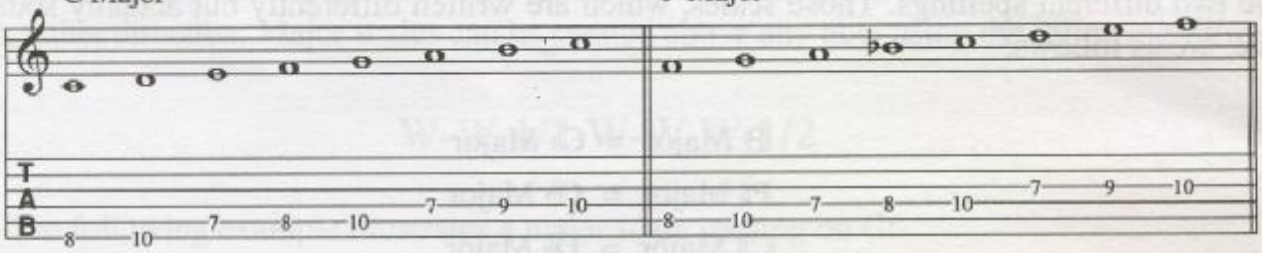
C♯ Major = D♭ Major

Example 1-5



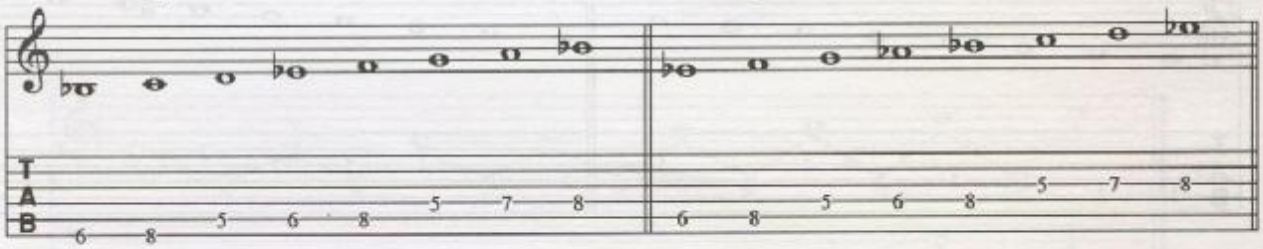
Example 1-5 (continued)

C Major



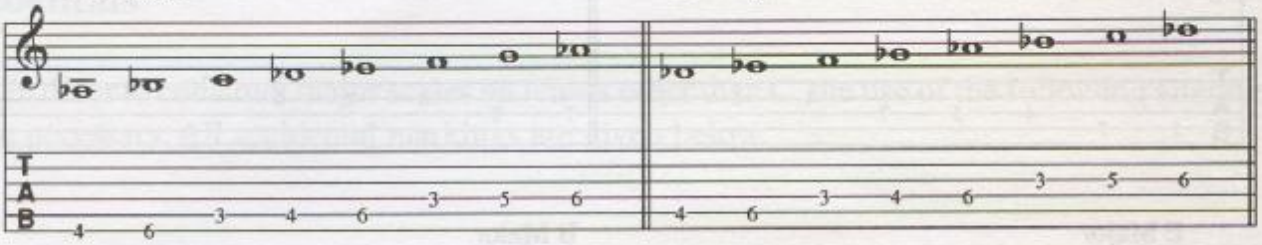
F Major

B♭ Major



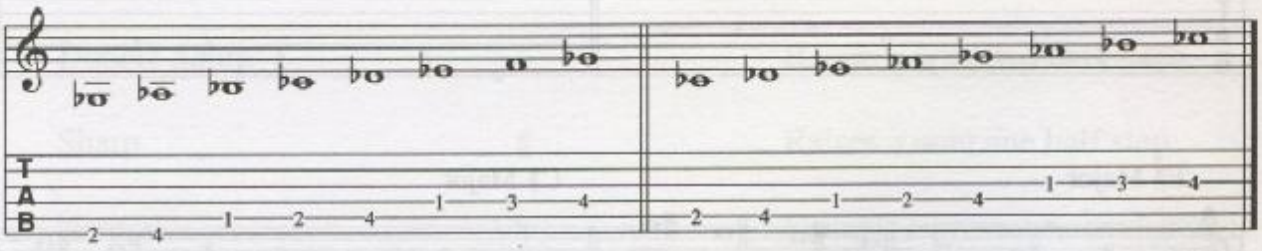
E♭ Major

A♭ Major



D♭ Major

G♭ Major



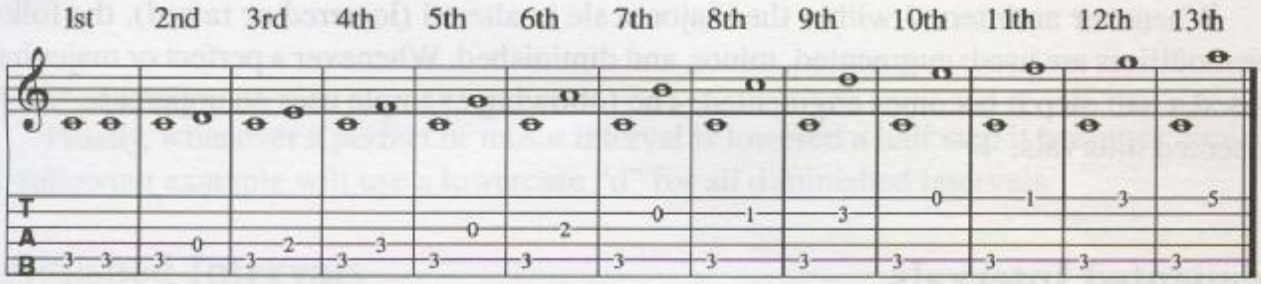
C♭ Major

Interval Classification

Perhaps the best way to become familiar with the miscellaneous intervals found in music is to first become accustomed to the intervals found within the major scale. When measuring intervals one should be aware of the two factors used in describing an interval, distance and quality.

To determine the distance from one note to the next, simply count the bottom letter as one and the following letter as it relates alphabetically. For example, in the key of C the distance from C to D is a 2nd, C to E is a 3rd, C to F is a 4th, C to G is a 5th, C to A is a 6th, and C to B is a 7th. This approach works with all scales, regardless of which notes are being used. The following example depicts this aspect with all of the most common intervals from the first through the thirteenth.

Example 1-6



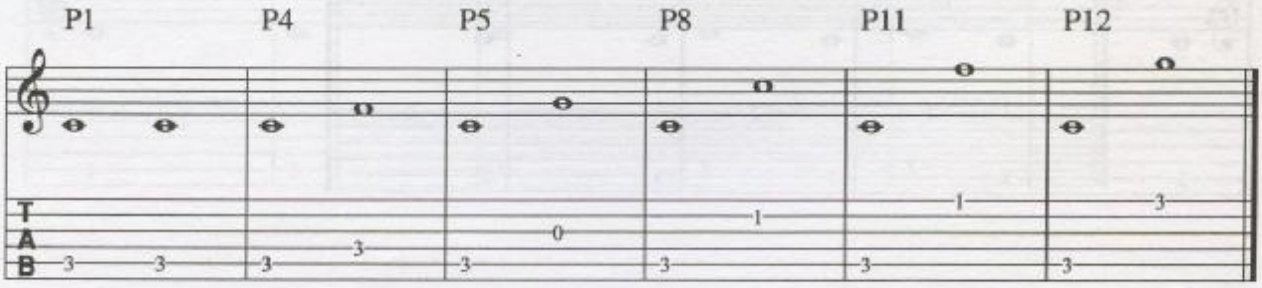
Interval Quality

Within the major scale, only two types of intervals occur: perfect and major. The following intervals are considered perfect: unisons (or firsts), fourths, fifths and octaves (or eighths), and their compounds (i.e., the same letter twice as high).

The following intervals are deemed to be major: seconds, thirds, sixths, and sevenths (and their compounds). In the following examples, an uppercase "P" will be used for perfect intervals, whereas an uppercase "M" will be used for all major intervals.

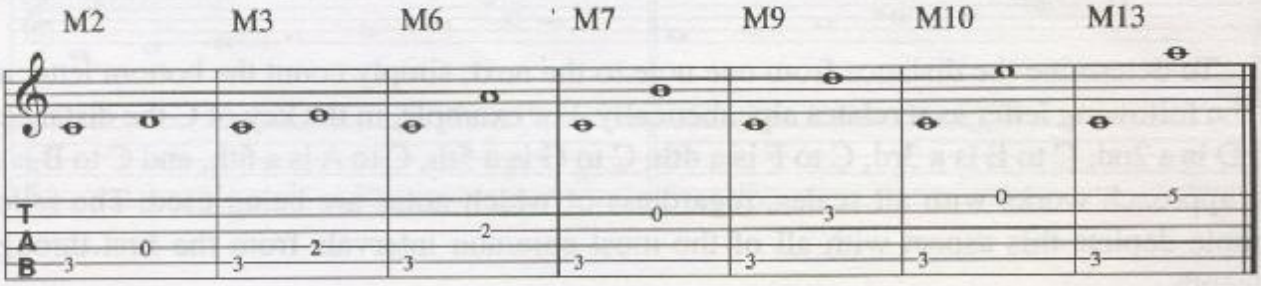
Perfect Intervals

Example 1-7



Major Intervals

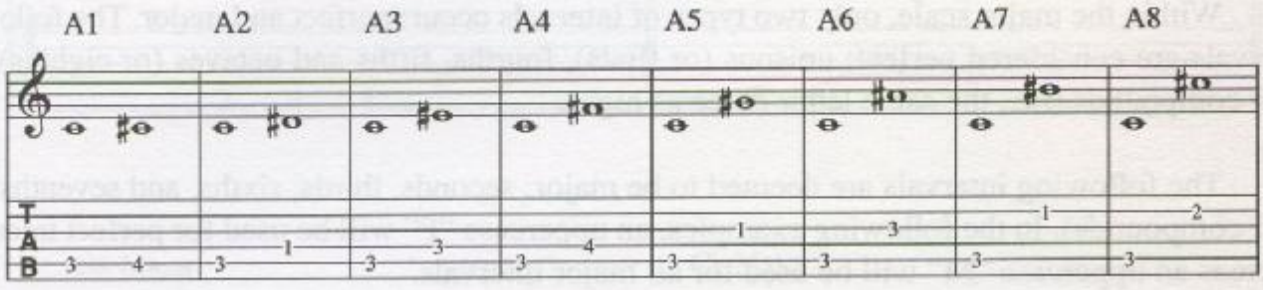
Example 1-8

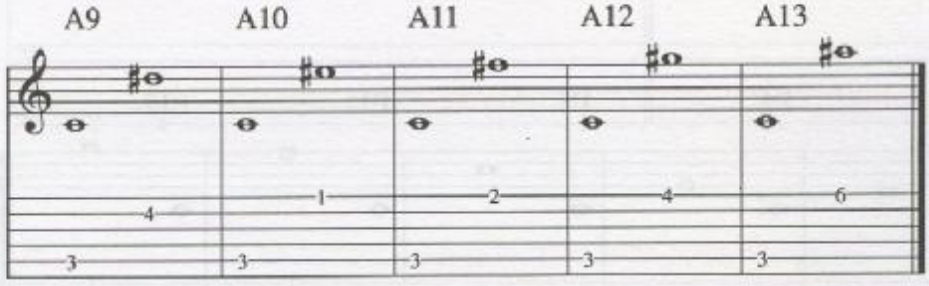


Whenever an interval within the major scale is altered (lowered or raised), the following three modifiers are used: augmented, minor, and diminished. Whenever a perfect or major interval is raised a half step it becomes augmented. The following example uses an uppercase "A" for all augmented intervals.

Augmented Intervals

Example 1-9

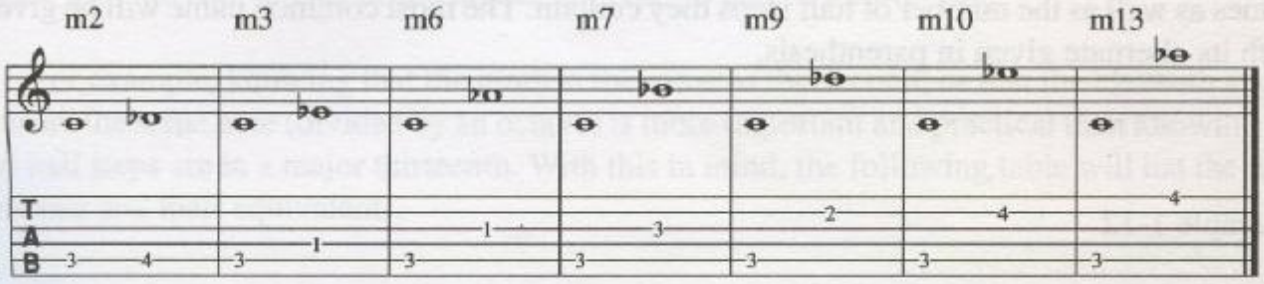




Whenever a major interval is lowered a half step it becomes minor. The following example uses a lowercase "m" for all minor intervals.

Minor Intervals

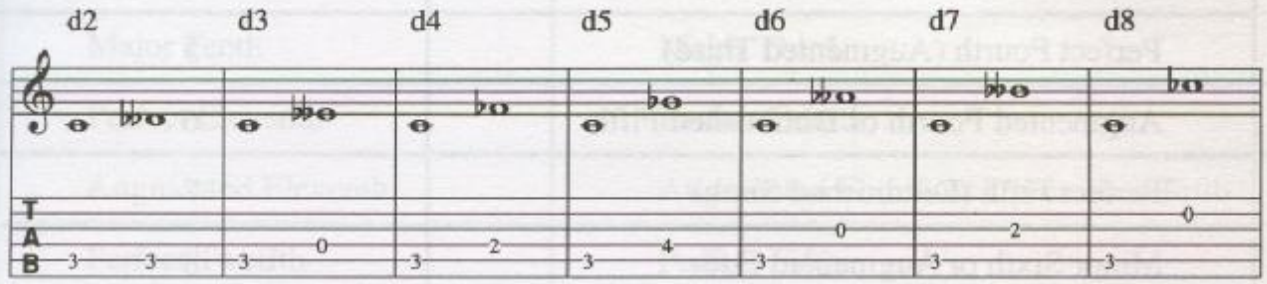
Example 1-10

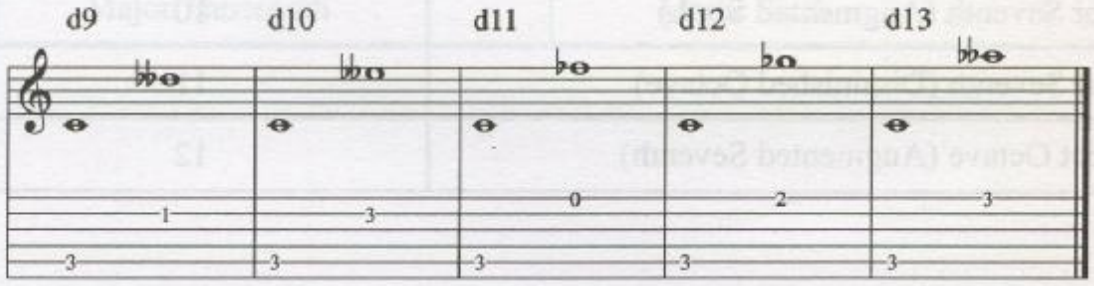


Finally, whenever a perfect or minor interval is lowered a half step it becomes diminished. The following example will use a lowercase "d" for all diminished intervals.

Diminished Intervals

Example 1-11





Enharmonic Intervals

It should be obvious from the preceding examples that intervals can be spelled in various ways. When something is spelled two (or more) different ways but actually sounds the same, it is said to be enharmonic. In addition, it should be noted that intervals can be written using different letters coupled with accidentals but contain the same number of half steps as another interval. The following example lists all of the aforementioned intervals (within an octave) with their enharmonic names as well as the number of half steps they contain. The most common name will be given first with its alternate given in parenthesis.

Example 1-12

Interval Name	Number of Half Steps
Perfect Unison (Diminished Second)	0
Minor Second (Augmented Unison)	1
Major Second (Diminished Third)	2
Minor Third (Augmented Second)	3
Major Third (Diminished Fourth)	4
Perfect Fourth (Augmented Third)	5
Augmented Fourth or Diminished Fifth	6
Perfect Fifth (Diminished Sixth)	7
Minor Sixth or Augmented Fifth	8
Major Sixth (Diminished Seventh)	9
Minor Seventh (Augmented Sixth)	10
Major Seventh (Diminished Octave)	11
Perfect Octave (Augmented Seventh)	12

The importance of having a command of intervals cannot be overemphasized. This will allow the student to have a true understanding of how scales, modes, and chords are constructed, etc. Although intervals above the octave are indeed common and are found in numerous chords in more sophisticated music, learning the specific number of half steps in those intervals would perhaps be impractical. It is recommended that the student memorize the information found in the preceding example, 1-12. As for the remaining intervals, it is best that the individual becomes familiar with the equivalents of the higher intervals to that of a lower one.

For example, knowing that the ninth is the same as the second, or that the eleventh and the fourth are the same note (divided by an octave) is more important and practical than knowing how many half steps are in a major thirteenth. With this in mind, the following table will list the upper extensions and their equivalents.

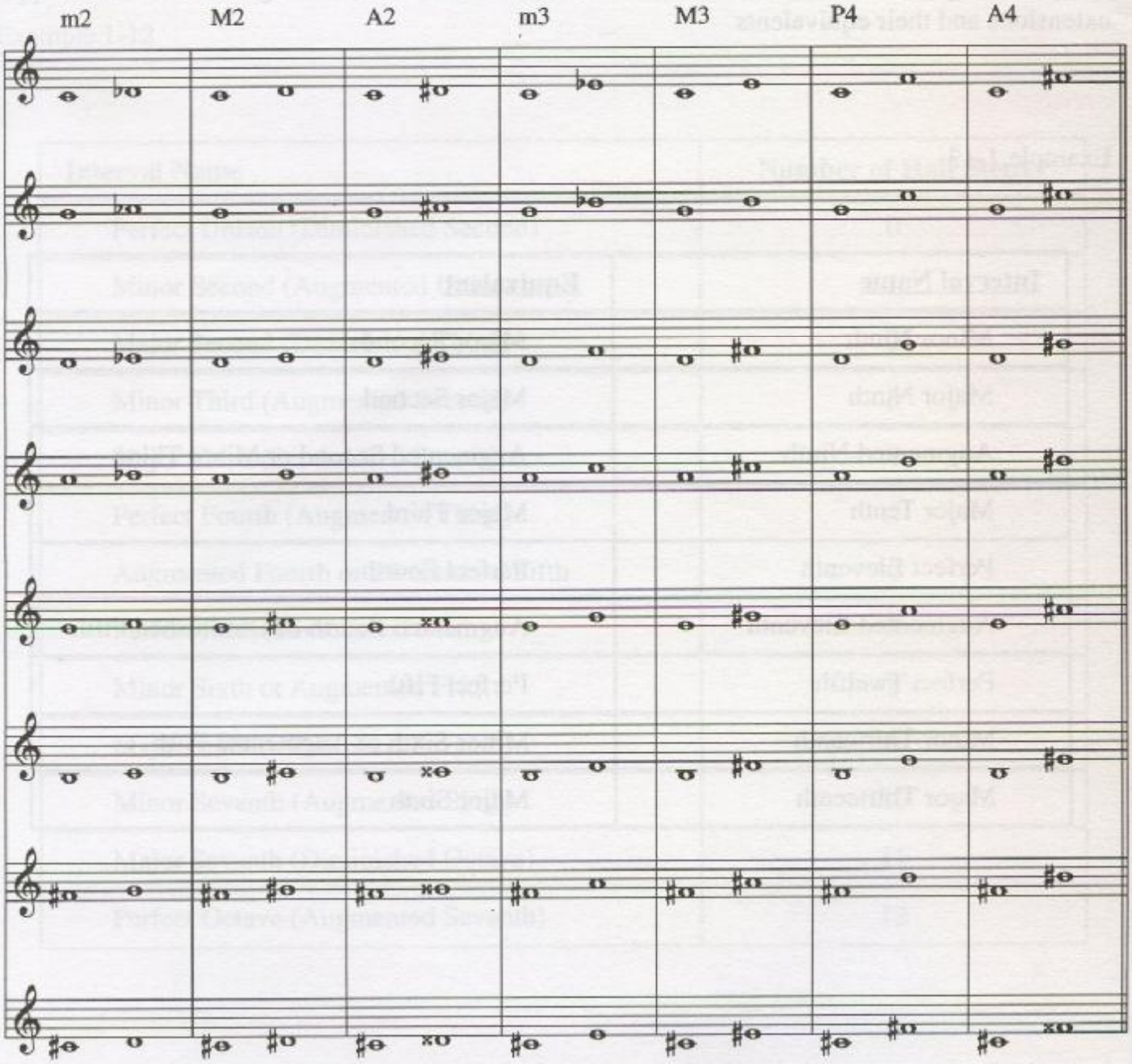
Example 1-13

Interval Name	**Equivalent**
Minor Ninth	Minor Second
Major Ninth	Major Second
Augmented Ninth	Augmented Second or Minor Third
Major Tenth	Major Third
Perfect Eleventh	Perfect Fourth
Augmented Eleventh	Augmented Fourth or Diminished Fifth
Perfect Twelfth	Perfect Fifth
Minor Thirteenth	Minor Sixth or Augmented Fifth
Major Thirteenth	Major Sixth

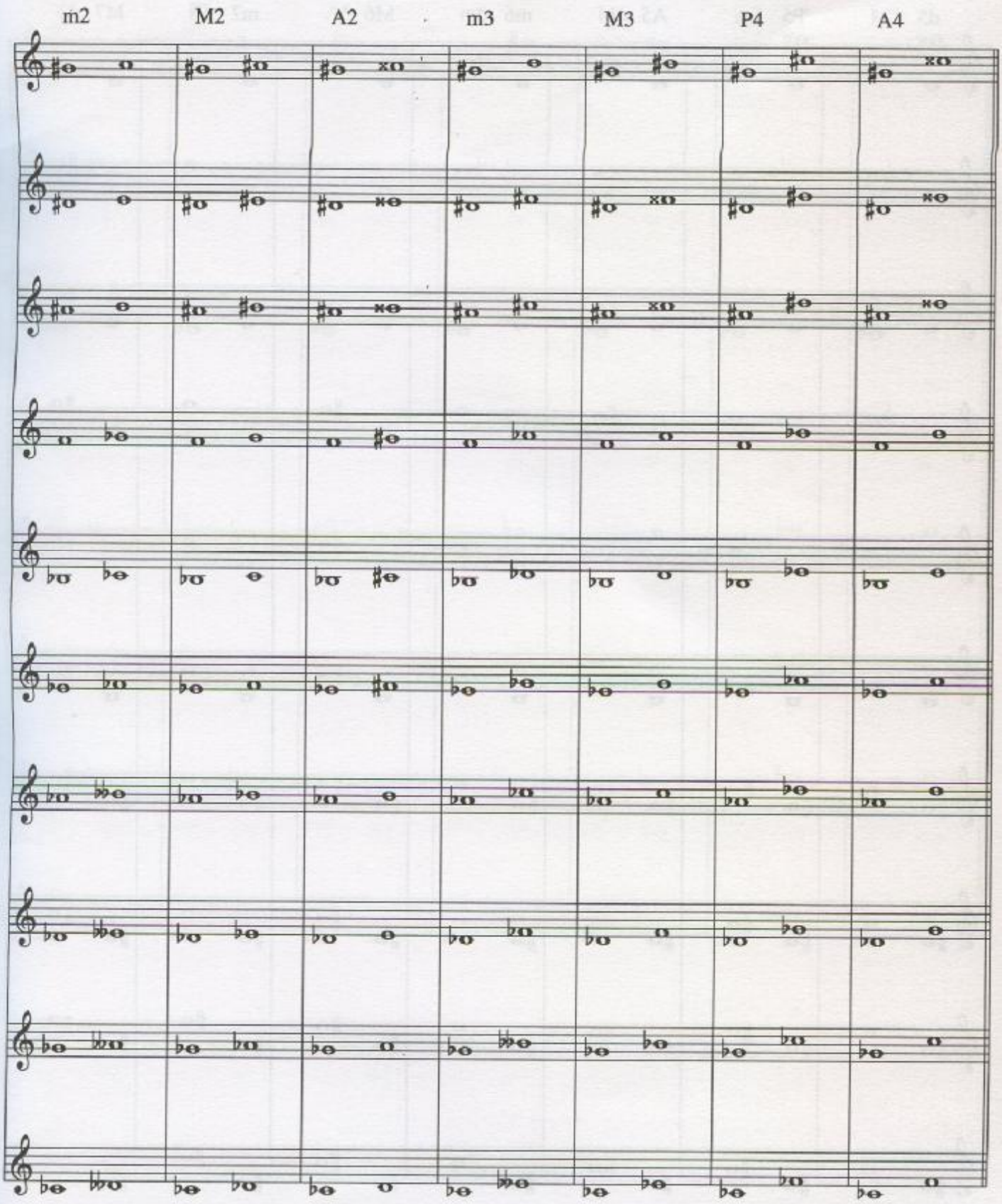
Simple and Compound Intervals

Whenever intervals are found to be less than the span of an octave, they are classified as simple intervals. All intervals above the span of an octave (including the 8ve itself) are classified as compound intervals. The following charts, which are labeled as examples 1-14 through 1-17, will codify all of the most common simple intervals above various tones. Examples 1-18 and 1-19 will show the most common compound intervals.

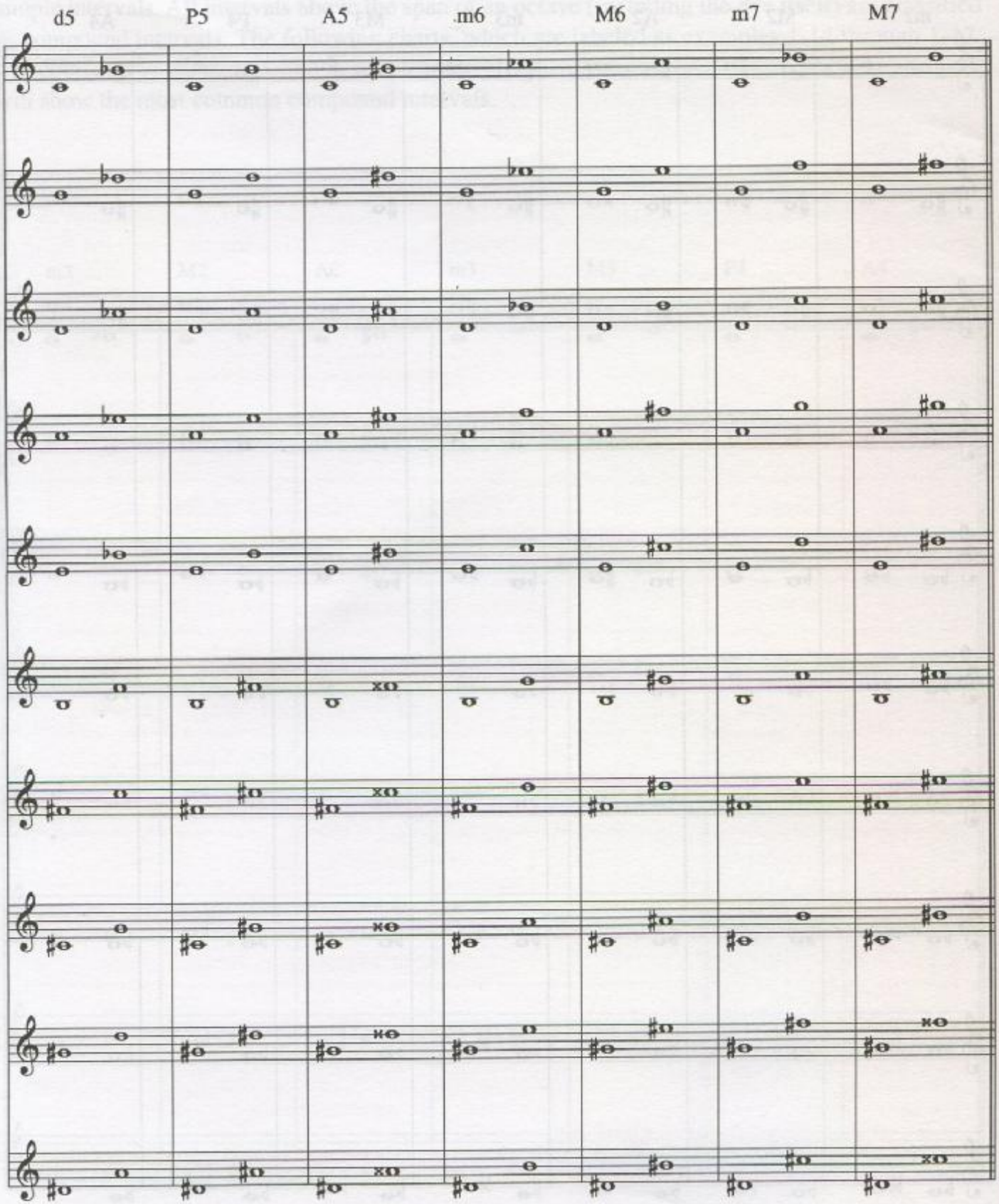
Example 1-14



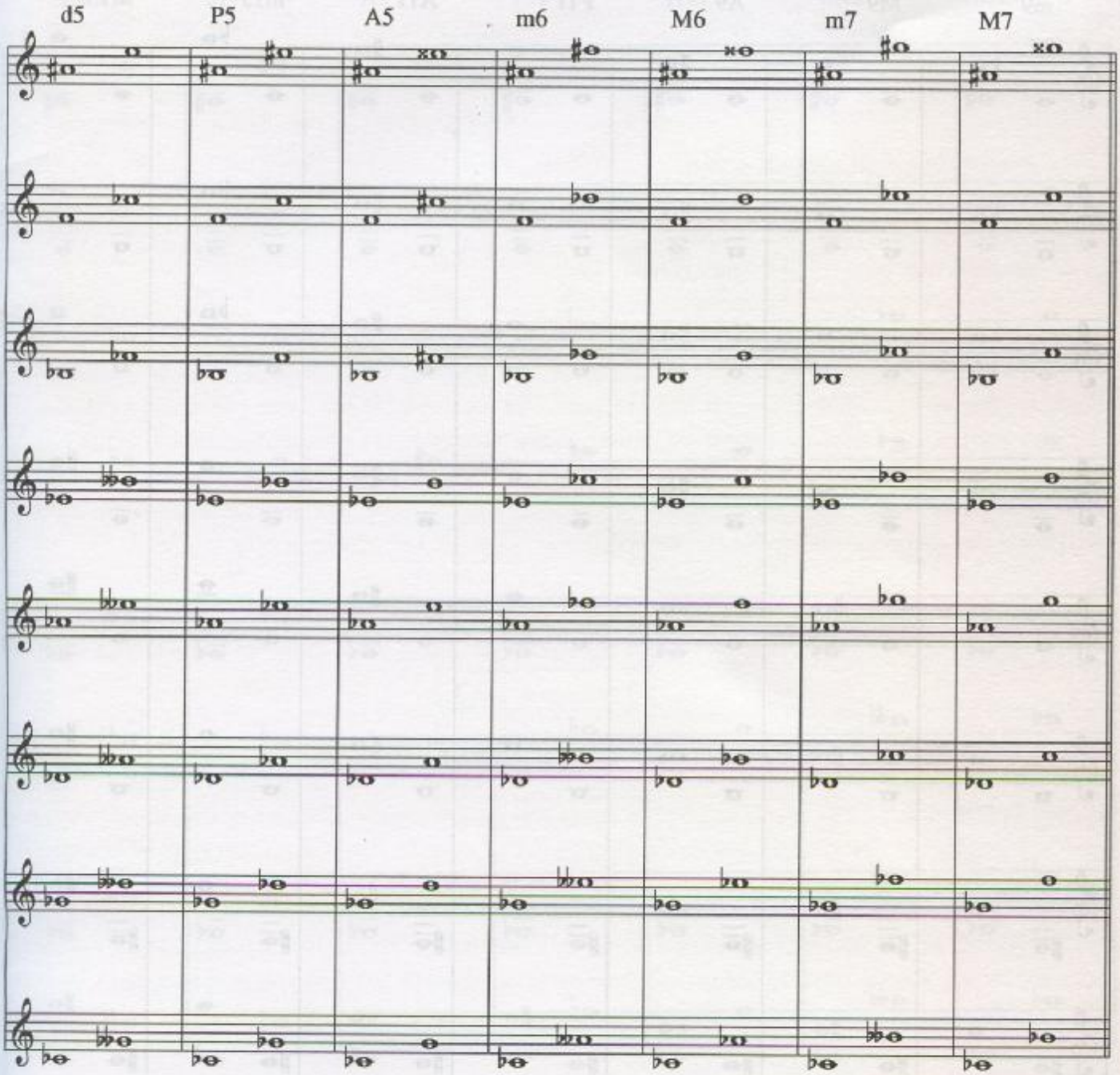
Example 1-15



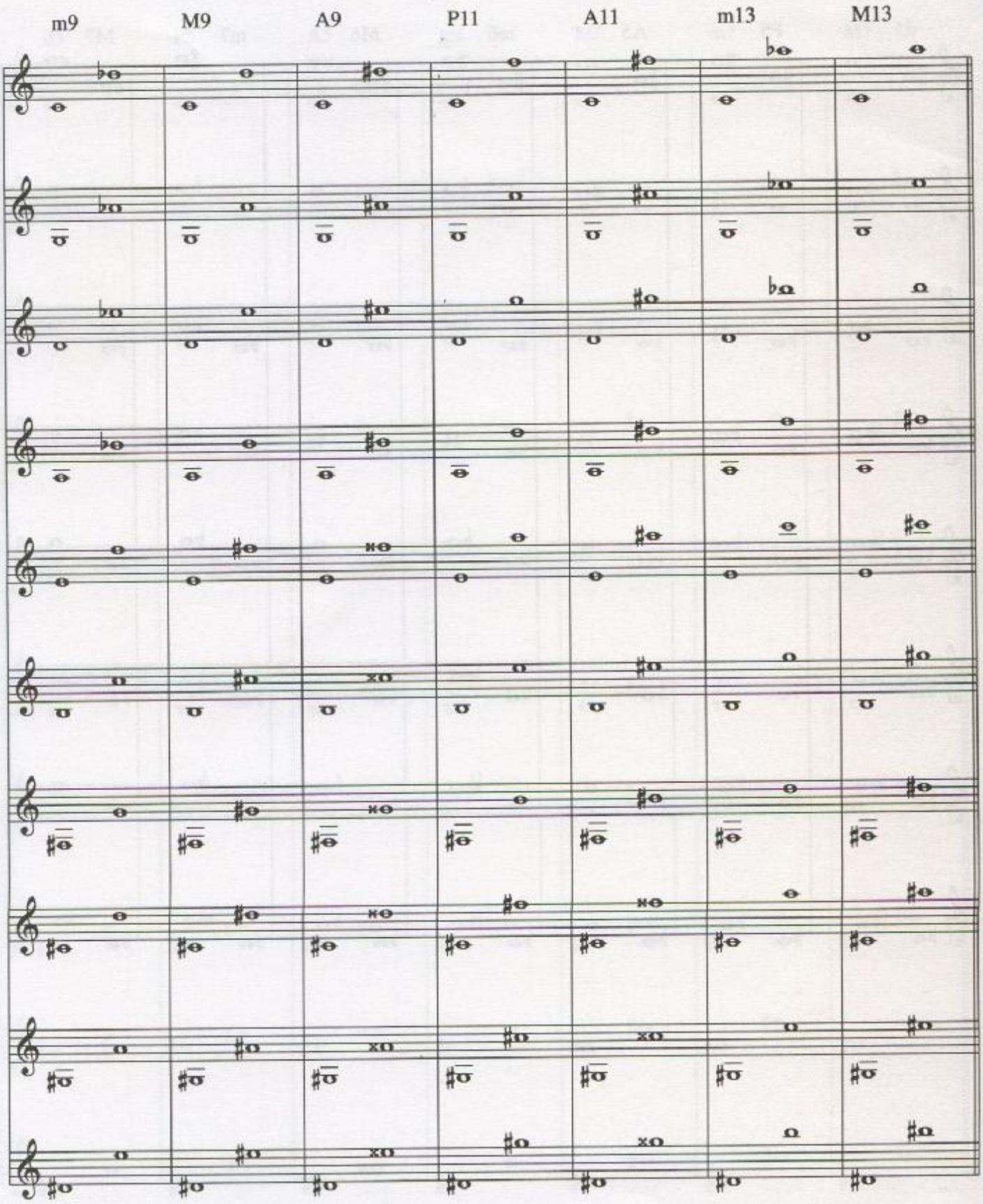
Example 1-16



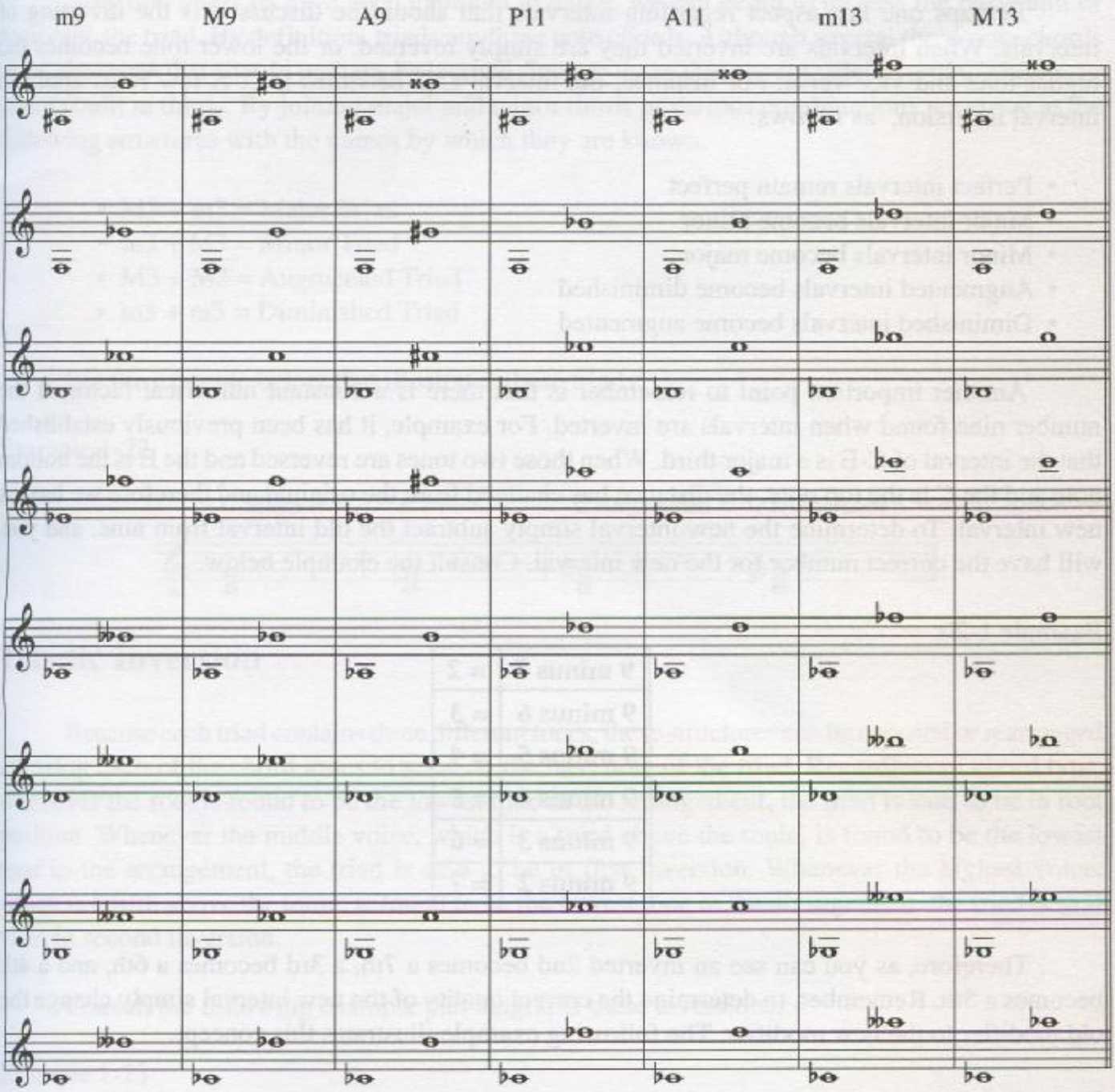
Example 1-17



Example 1-18



Example 1-19



Interval Inversion

Perhaps one last aspect regarding intervals that should be discussed is the inverting of intervals. When intervals are inverted they are simply reversed, or the lower tone becomes the higher tone and vice versa. For instance, the interval C-E becomes E-C. A few rules apply to interval inversion, as follows:

- Perfect intervals remain perfect
- Major intervals become minor
- Minor intervals become major
- Augmented intervals become diminished
- Diminished intervals become augmented

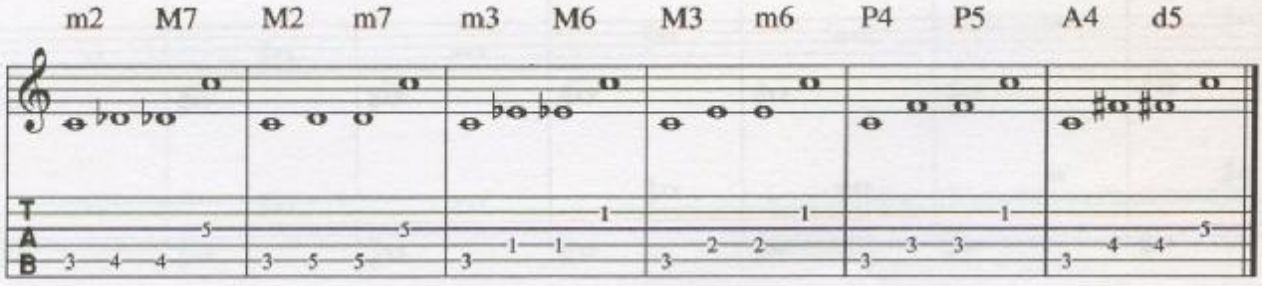
Another important point to remember is that there is a constant numerical factor of the number nine found when intervals are inverted. For example, it has been previously established that the interval of C-E is a major third. When those two tones are reversed and the E is the bottom note and the C is the top note, the distance has changed from the original and therefore we have a new interval. To determine the new interval simply subtract the old interval from nine, and you will have the correct number for the new interval. Consult the example below:

Example 1-20

9 minus 7	**= 2**
9 minus 6	**= 3**
9 minus 5	**= 4**
9 minus 4	**= 5**
9 minus 3	**= 6**
9 minus 2	**= 7**

Therefore, as you can see an inverted 2nd becomes a 7th, a 3rd becomes a 6th, and a 4th becomes a 5th. Remember, to determine the correct quality of the new interval simply change the old modifier to the new modifier. The following example illustrates this concept.

Example 1-21



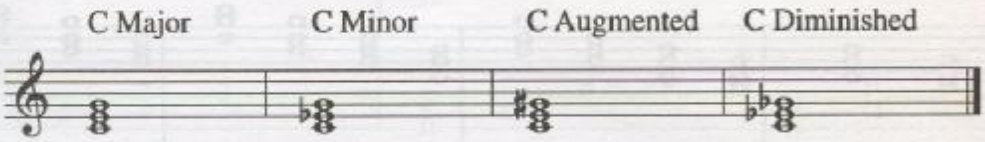
Triads

Now that intervals have been explored in depth, we can begin to discuss the basic unit of harmony, the triad. By definition, triads are three note chords. Although several three-note chords exist, the types that should perhaps be learned first are those that are considered tertian chords, or chords built in thirds. By joining major and minor thirds in various combinations we arrive at the following structures with the names by which they are known:

- M3 + m3 = Major Triad
- m3 + M3 = Minor Triad
- M3 + M3 = Augmented Triad
- m3 + m3 = Diminished Triad

See the example below that illustrates these triads:

Example 1-22

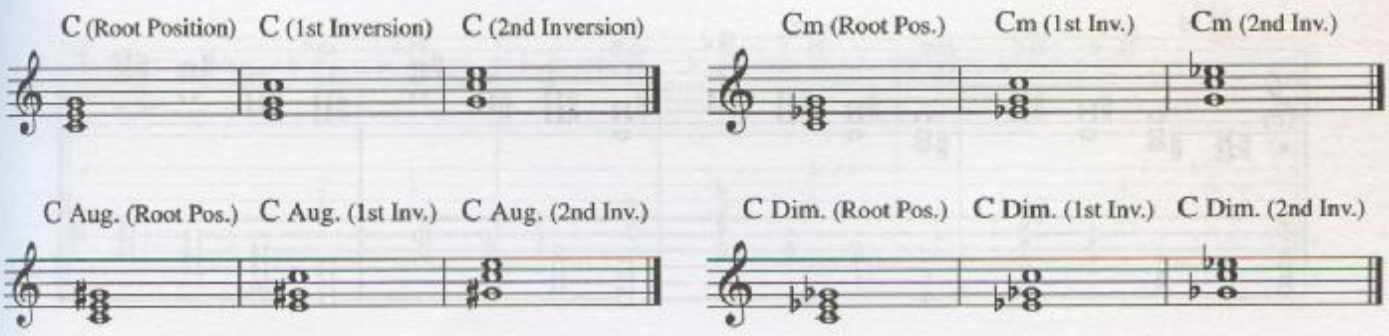


Triadic Inversion

Because each triad contains three different tones, these structures can be inverted or rearranged allowing each of the chord tones to serve as the bass note of the triad. Regardless of chord type, whenever the root is found to be the lowest tone in the arrangement, the triad is said to be in root position. Whenever the middle voice, which is a third above the tonic, is found to be the lowest tone in the arrangement, the triad is said to be in first inversion. Whenever the highest voice, which is a fifth above the tonic, is found to be the lowest tone in the arrangement, the triad is said to be in second inversion.

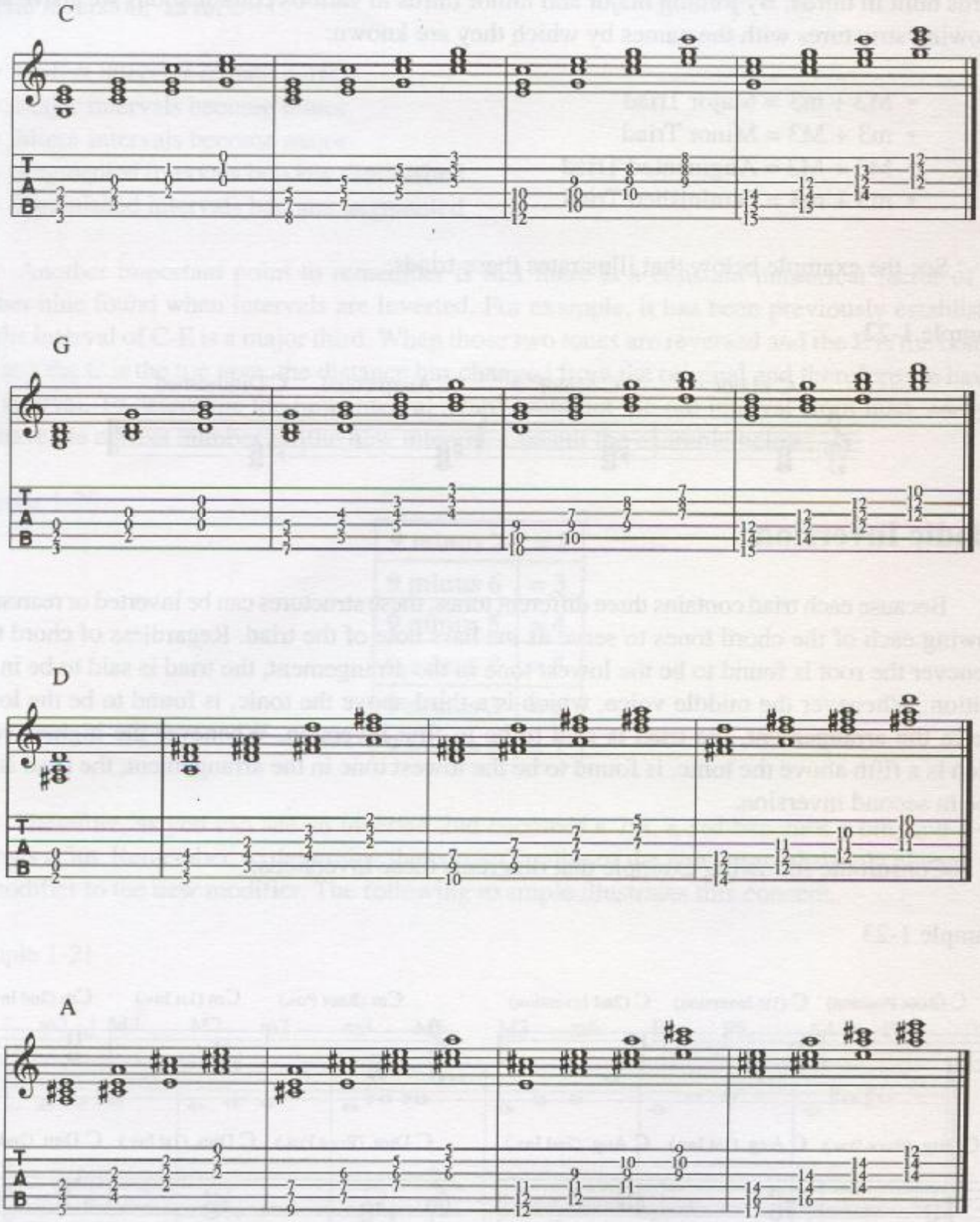
Consult the following example that diagrams these inversions:

Example 1-23

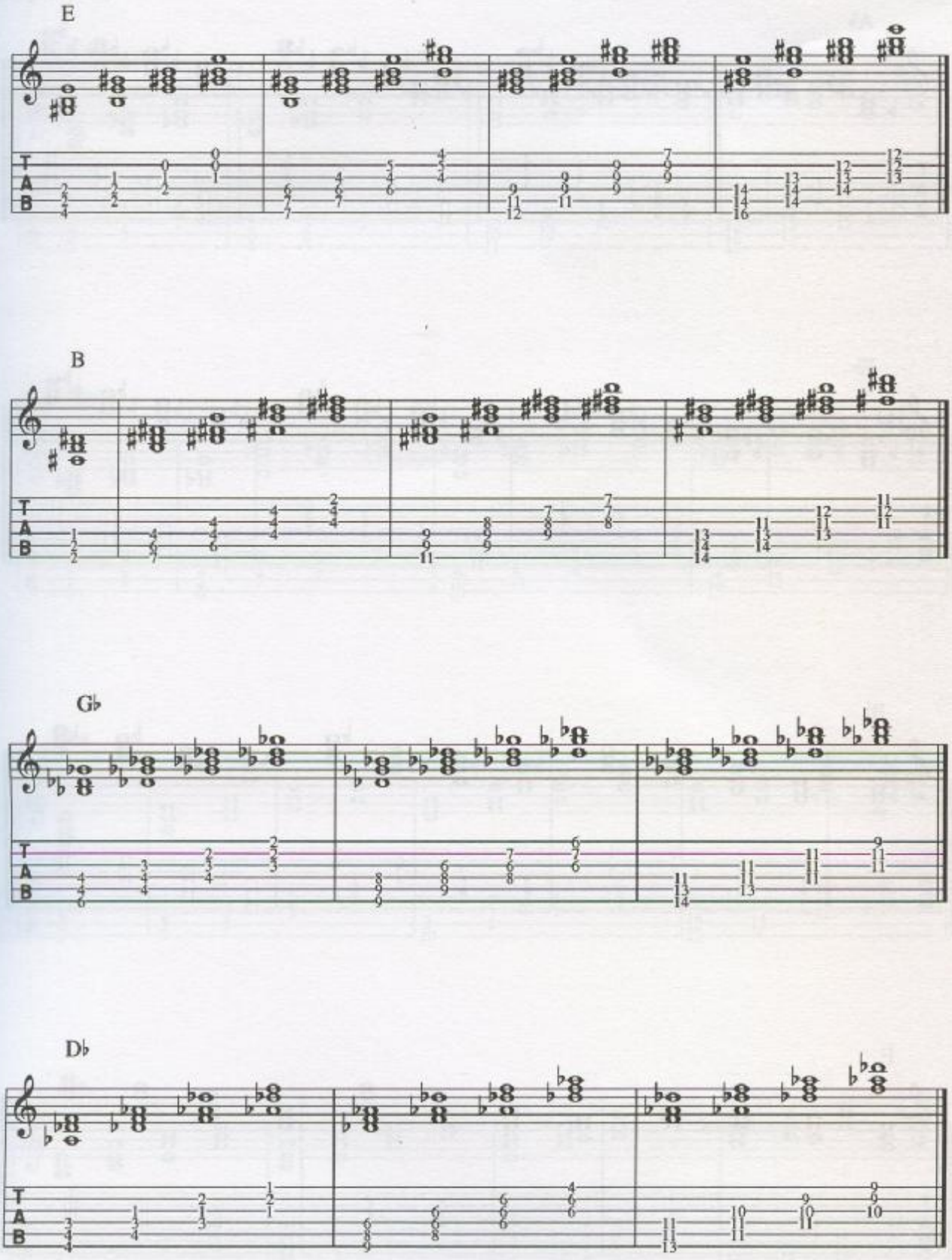


On the ensuing pages, we will delve into all triad types. The following example illustrates all major triads.

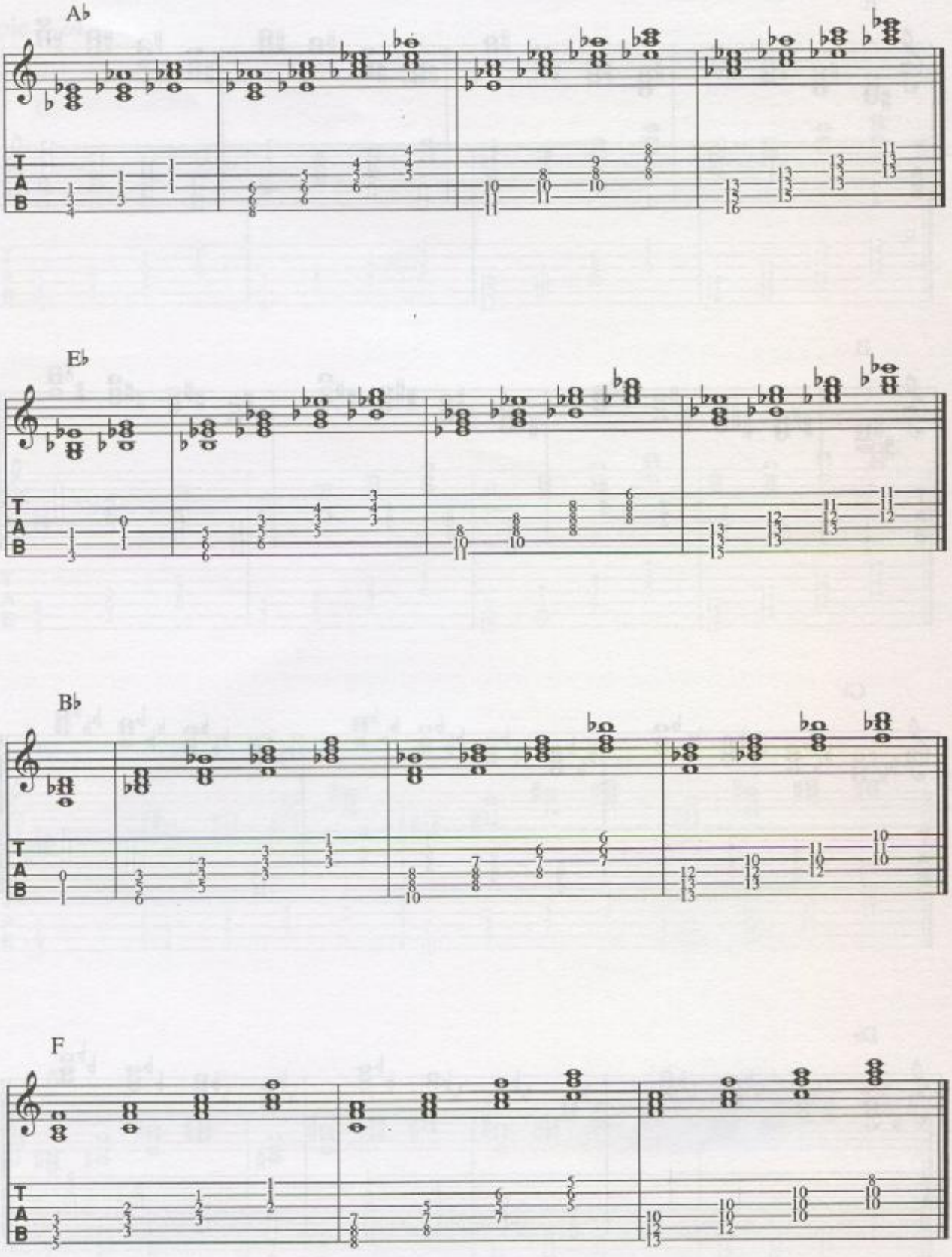
Example 1-24



Example 1-24 (continued)

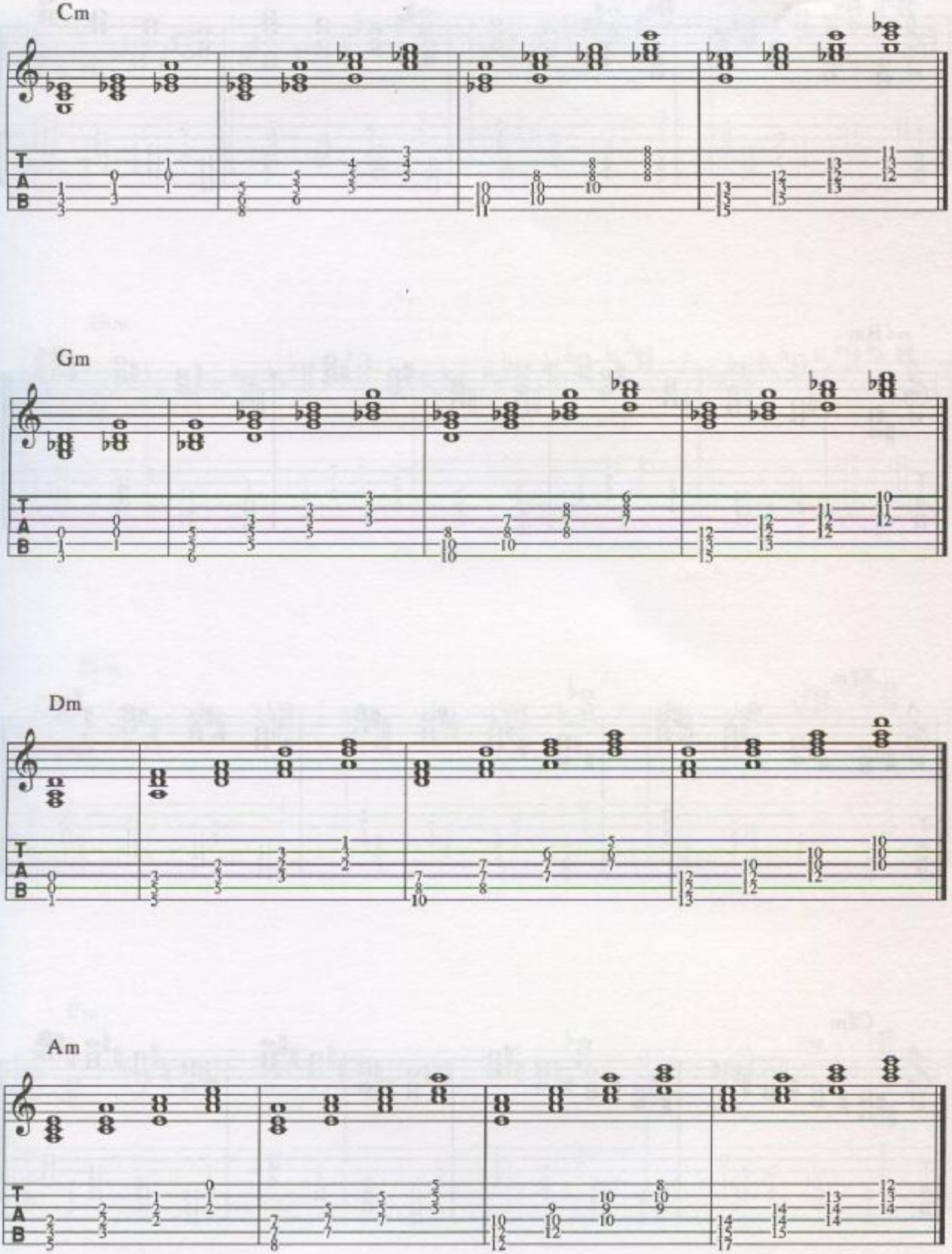


Example 1-24 (continued)



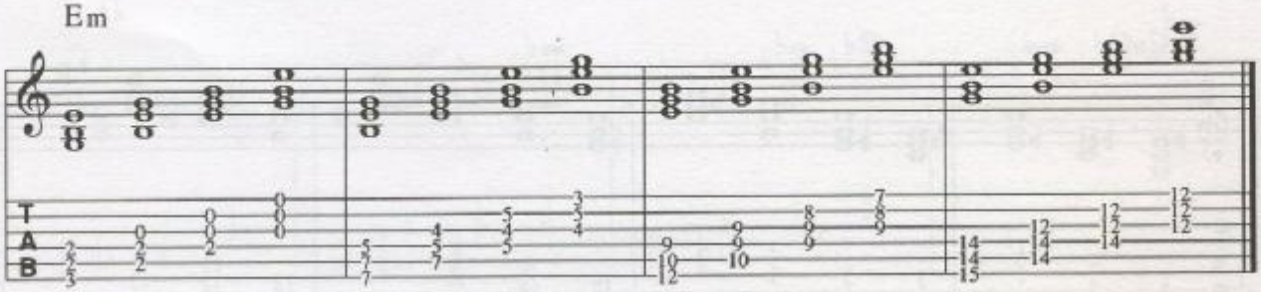
Example 1-25 will diagram all minor triads.

Example 1-25

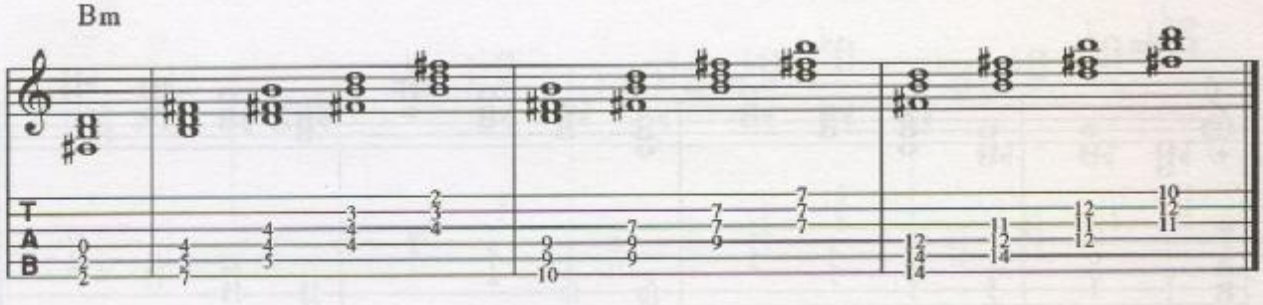


Example 1-25 (continued)

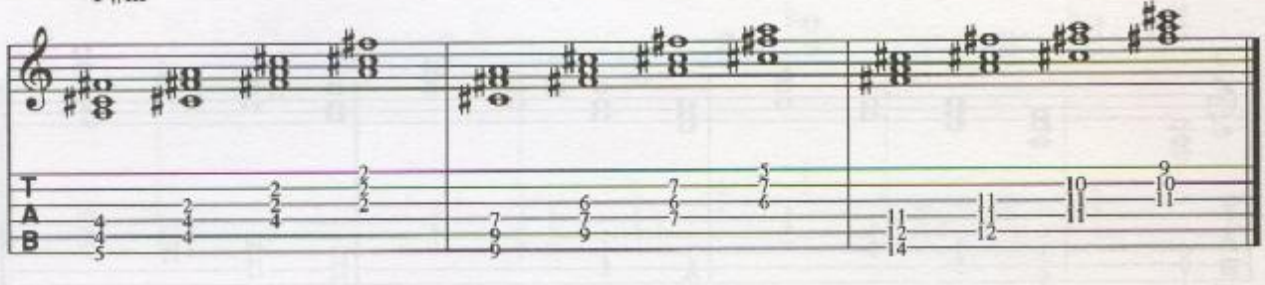
Em



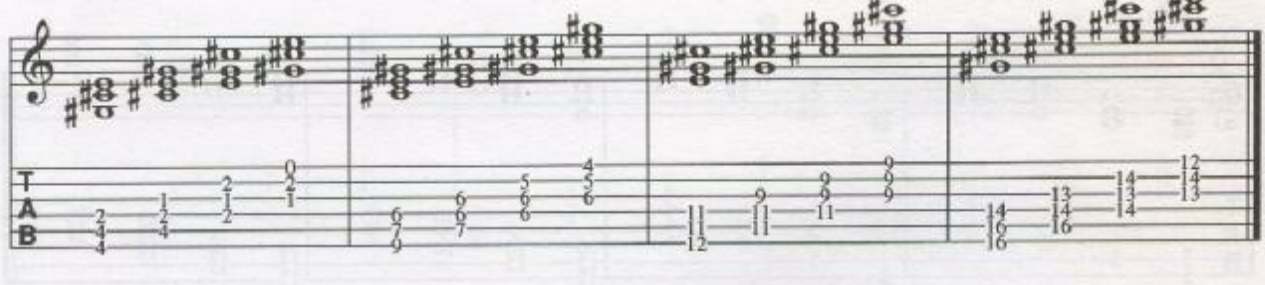
Bm



F♯m

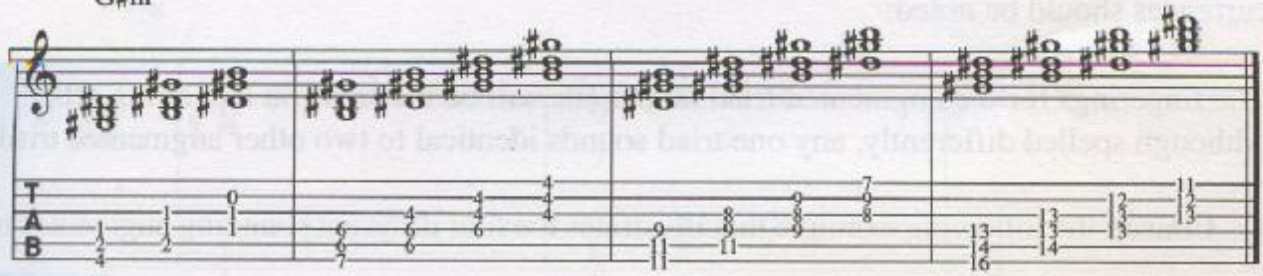


C♯m

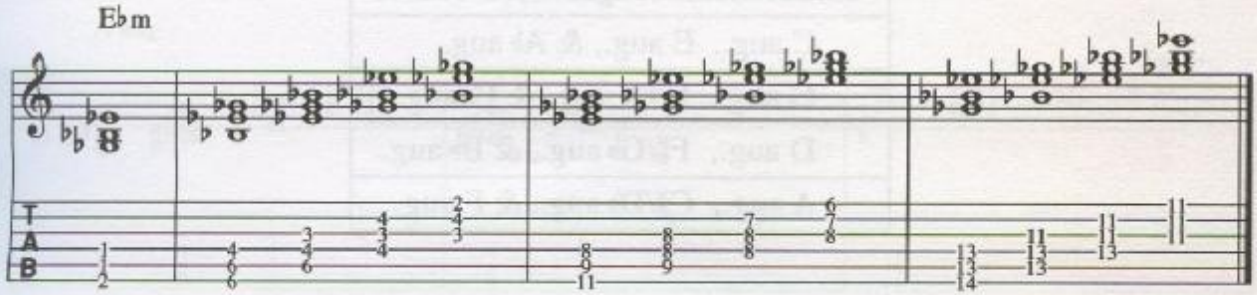


Example 1-25 (continued)

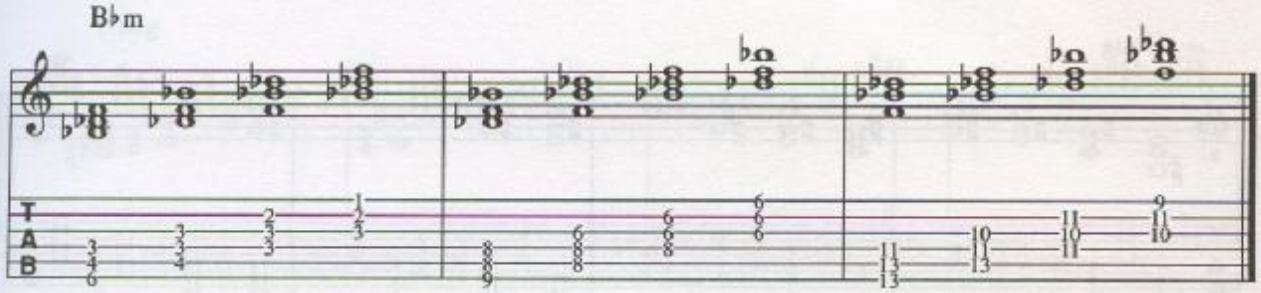
G♯m



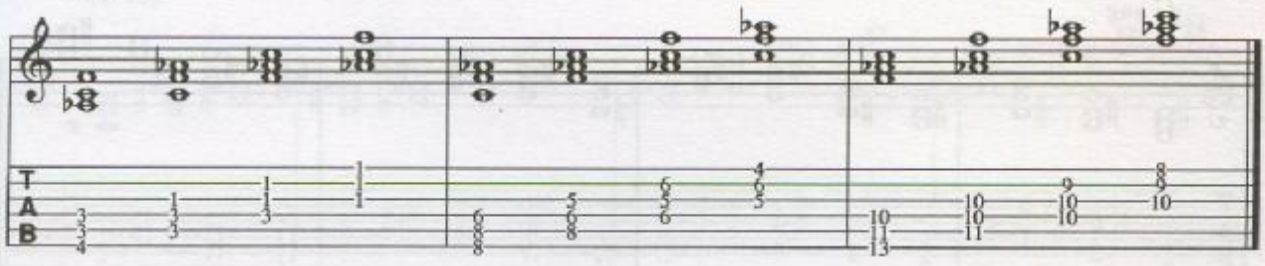
E♭m



B♭m



Fm



The next example will diagram all augmented triads. Out of the four triad types which have been discussed thus far, this is the only one which is symmetric. What this means is that every time you invert this triad its intervallic structure remains the same. With this in mind, two unique occurrences should be noted:

1) The fingerings for the augmented triad inversions will be the same on like string sets.
2) Although spelled differently, any one triad sounds identical to two other augmented triads.

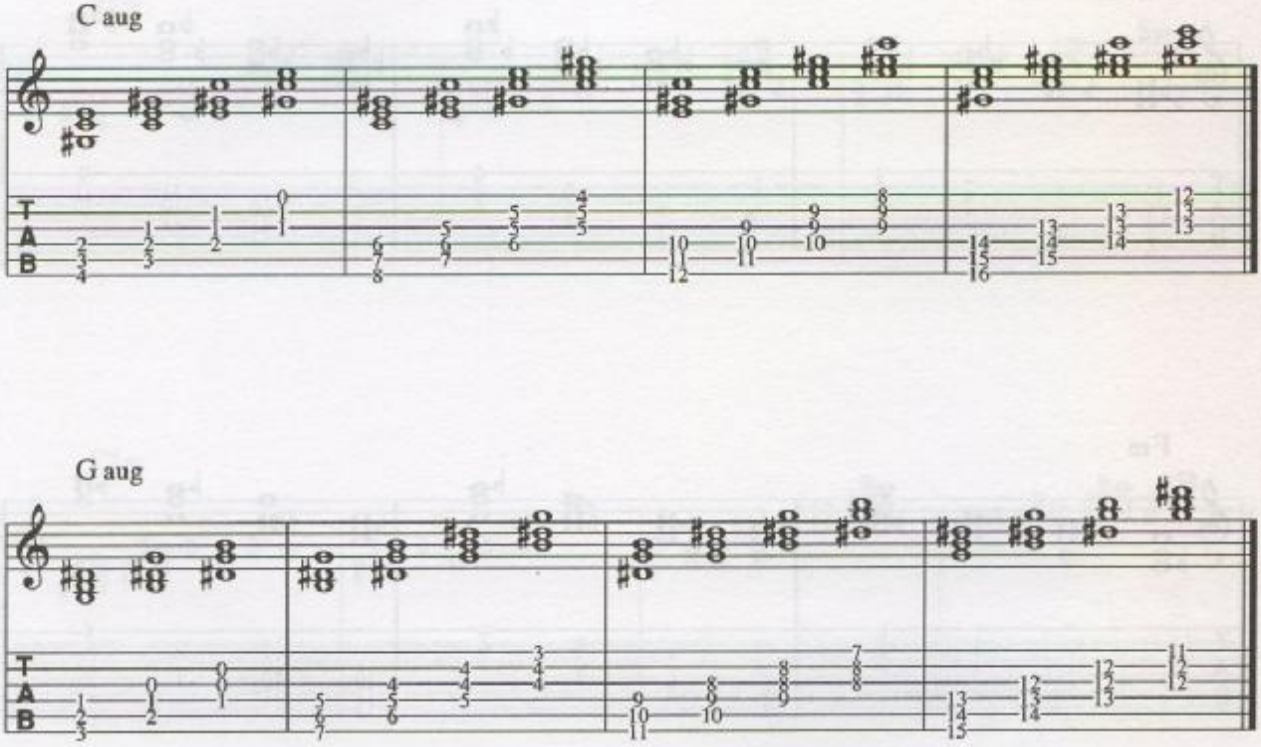
Consult the following example that illustrates the four different sounding augmented triads:

Example 1-26

Enharmonic Augmented Triads
C aug., E aug., & A♭ aug.
G aug., B/C♭ aug., & E♭ aug.
D aug., F♯/G♭ aug., & B♭ aug.
A aug., C♯/D♭ aug., & F aug.

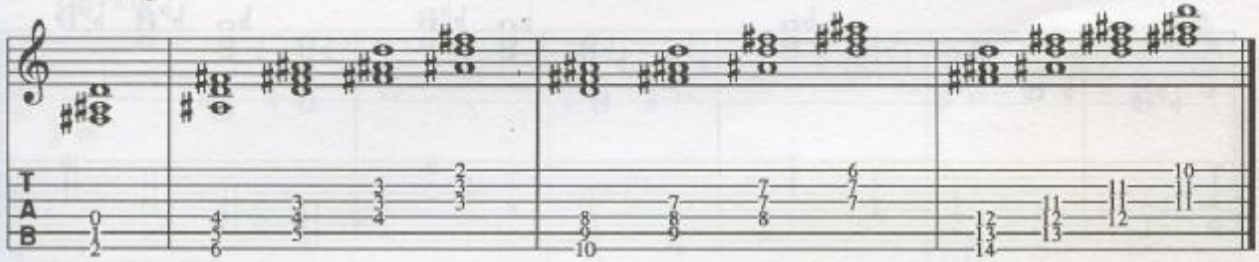
Example 1-27 will illustrate all augmented triads.

Example 1-27

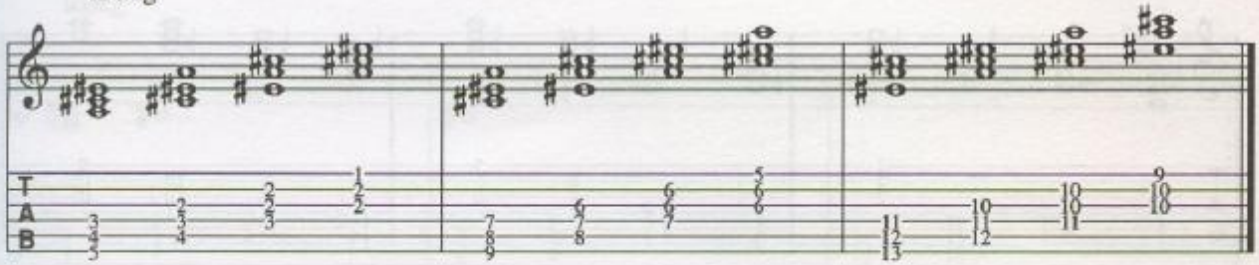


Example 1-27 (continued)

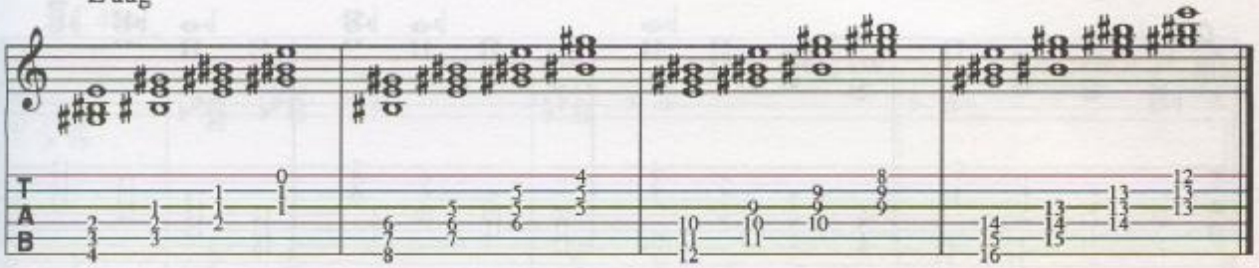
D aug



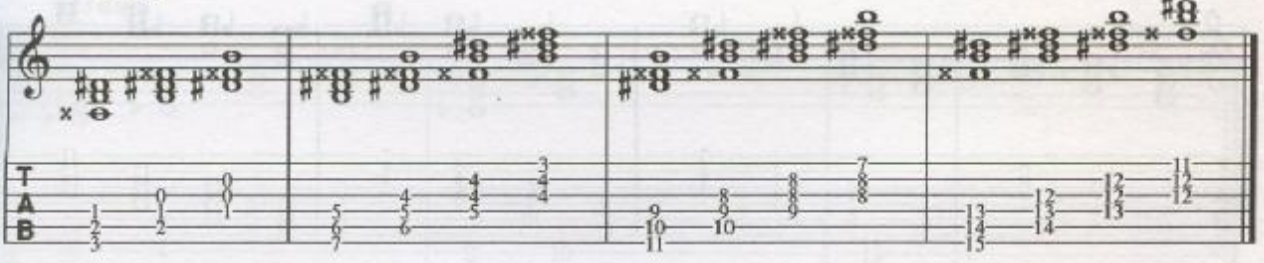
A aug



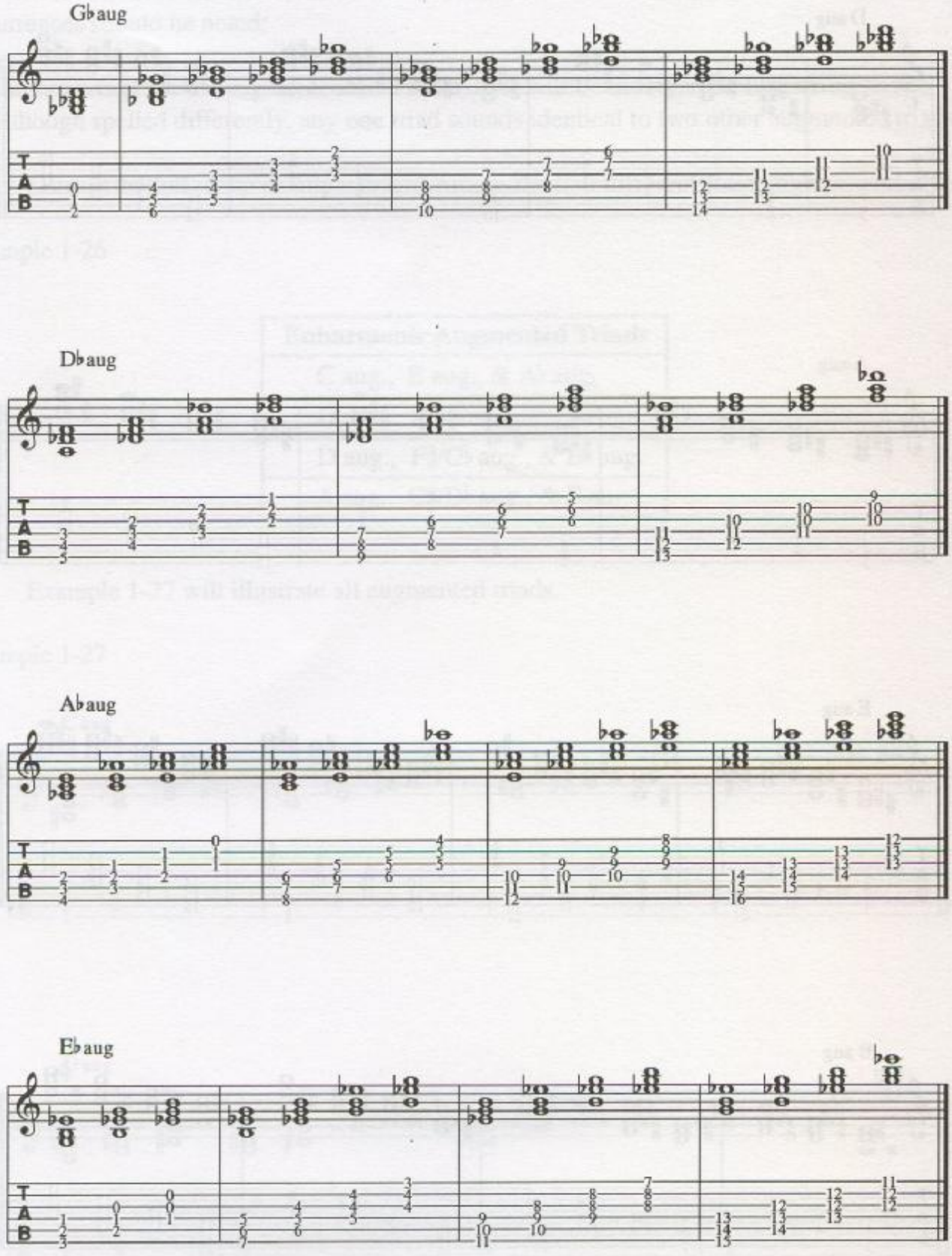
E aug



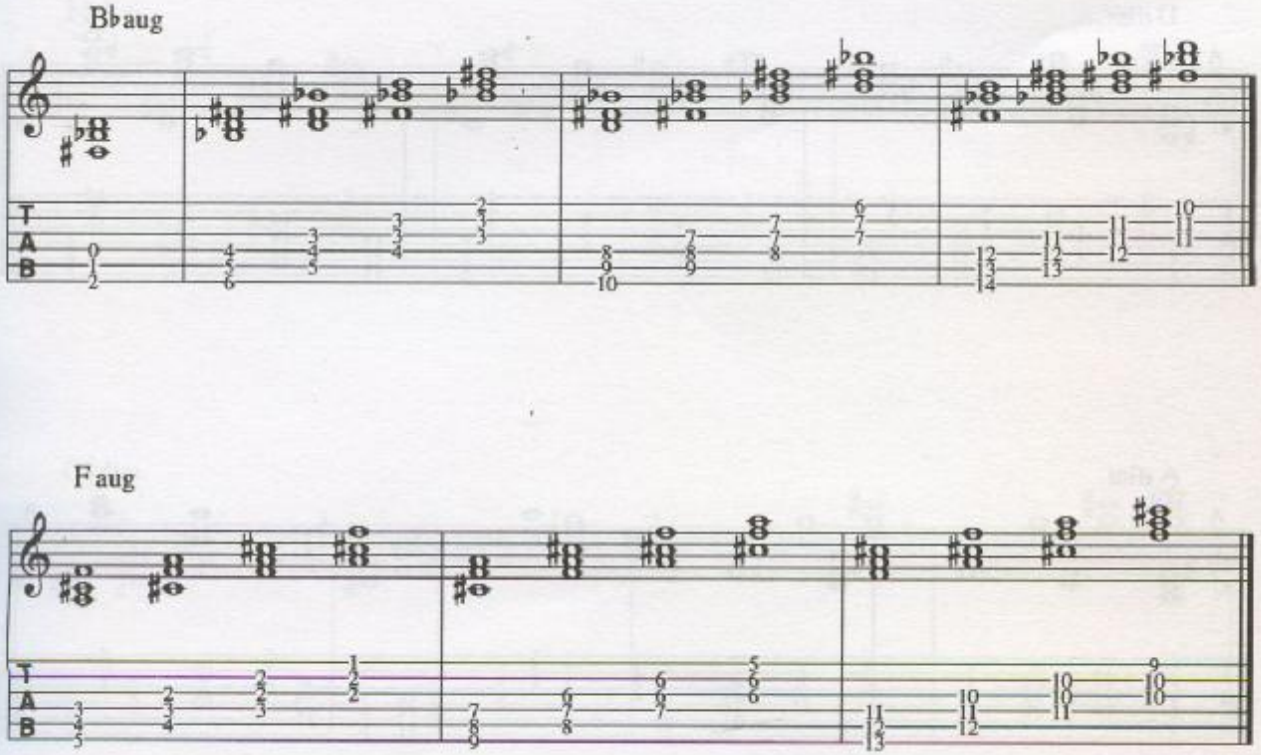
B aug



Example 1-27 (continued)

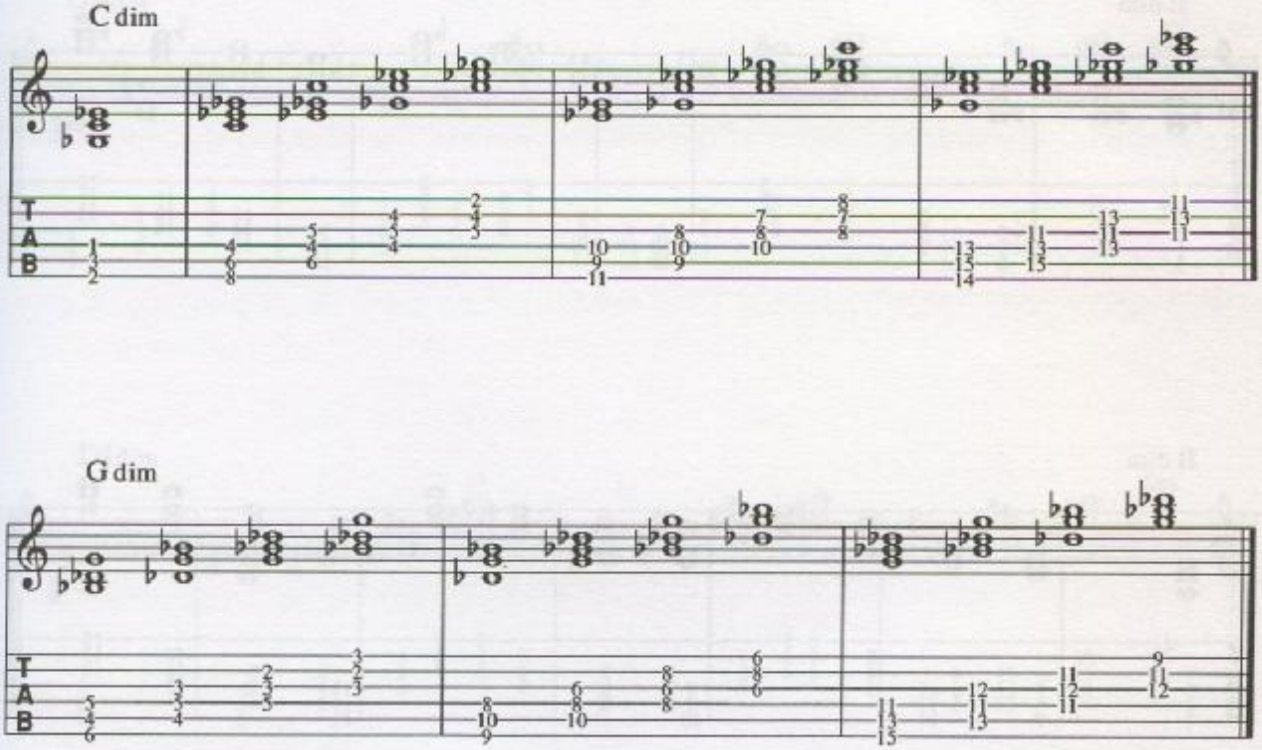


Example 1-27 (continued)



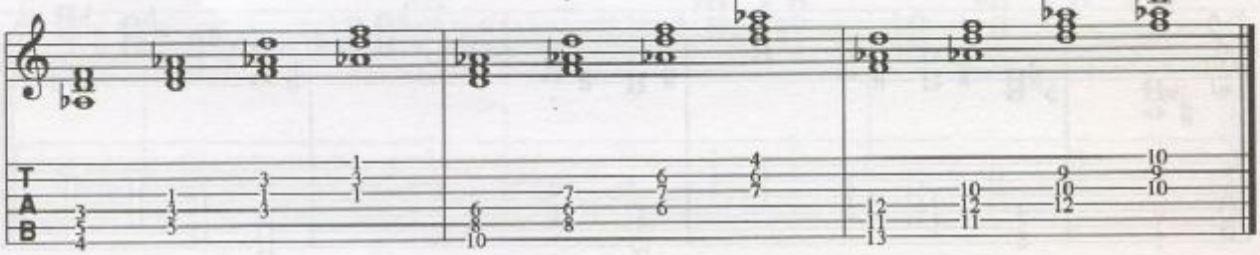
Example 1-28 will diagram all diminished triads.

Example 1-28

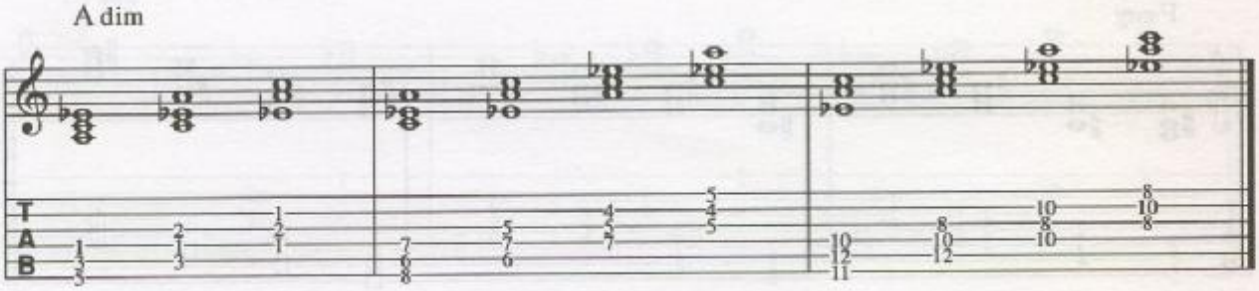


Example 1-28 (continued)

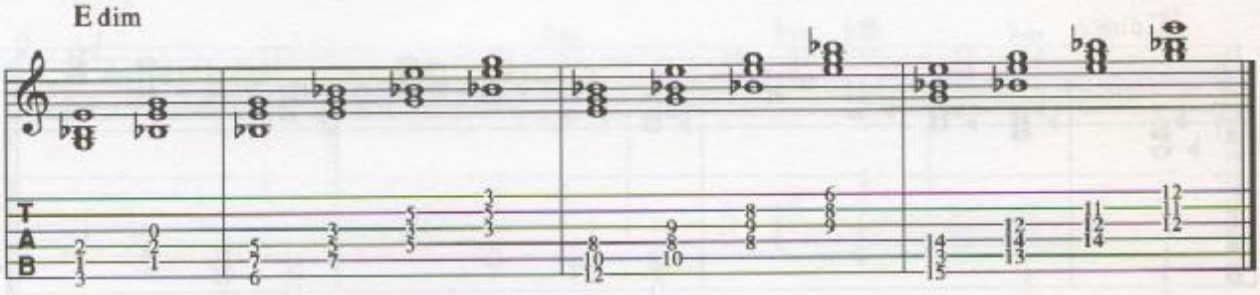
D dim



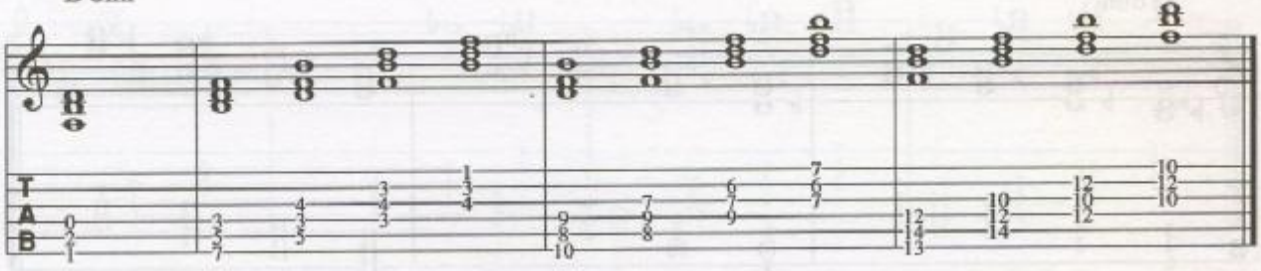
A dim



E dim

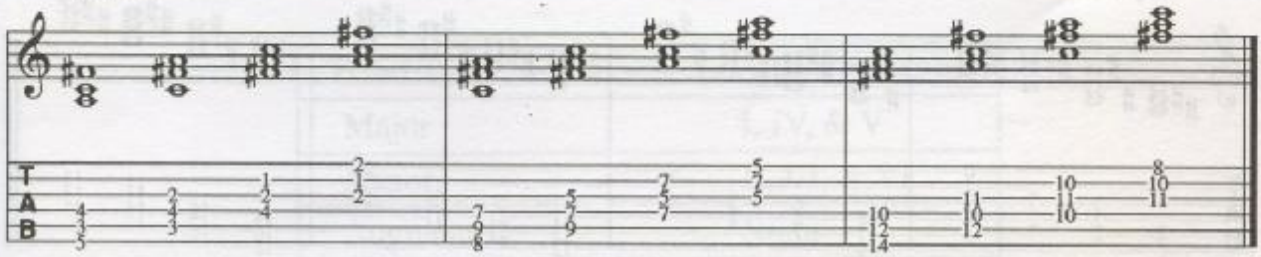


B dim

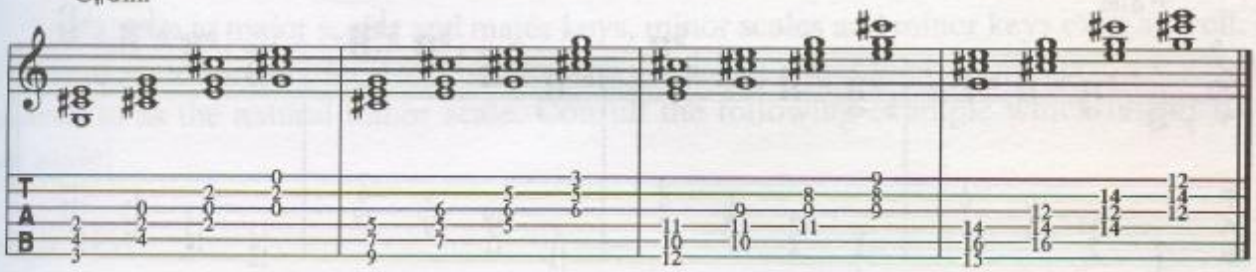


Example 1-28 (continued)

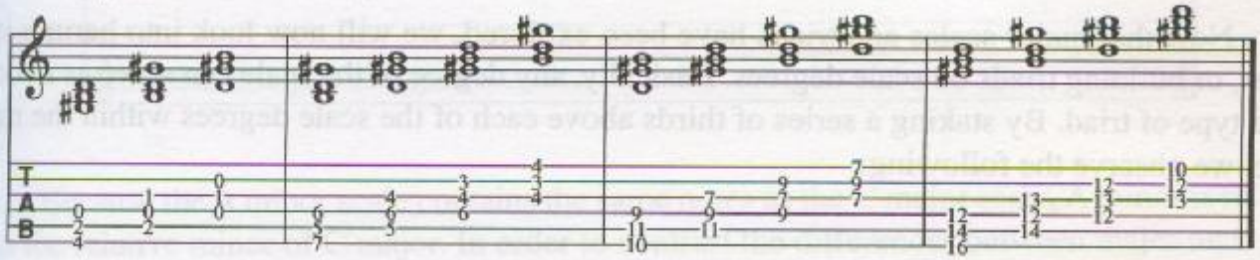
F♯dim



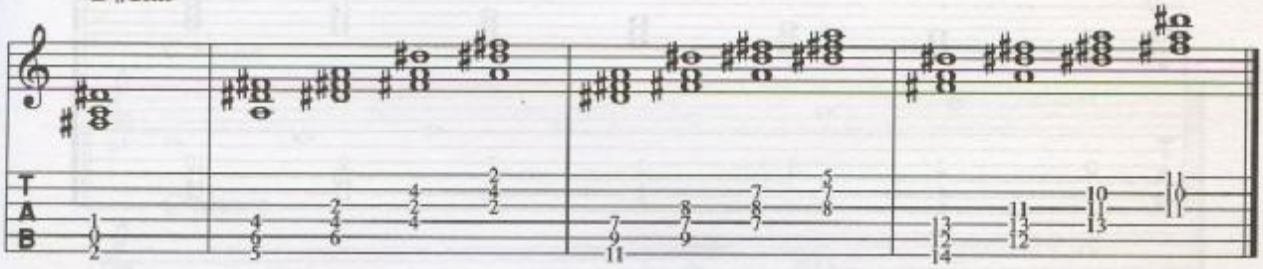
C♯dim



G♯dim



D♯dim

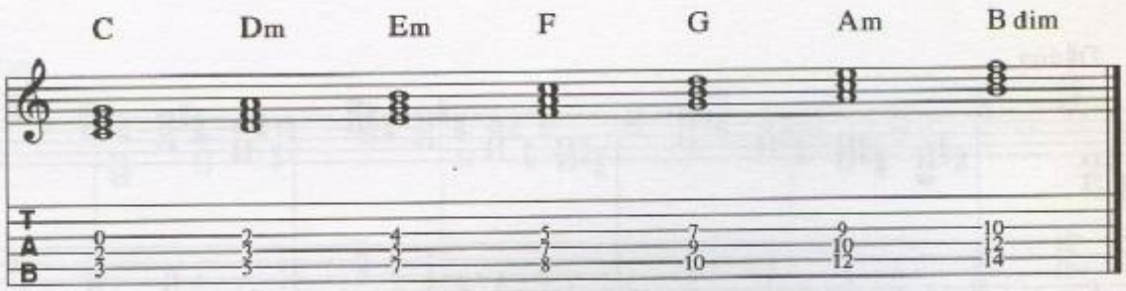


Example 1-28 (continued)

Harmonized Scales

Now that major scales and triads have been explored, we will now look into harmonizing scales, or building triads on scale degrees. Basically, any degree of the scale can serve as a root to some type of triad. By staking a series of thirds above each of the scale degrees within the major scale, we observe the following:

Example 1-29



In order to apply the previous information to other major scales, the following table should be memorized.

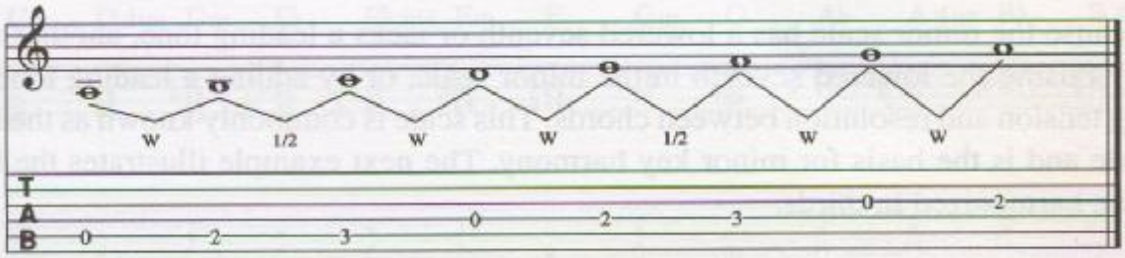
Example 1-30

Triad Type	Location in Major
Major	I, IV, & V
Minor	II, III, & VI
Augmented	None
Diminished	VII

Minor Keys

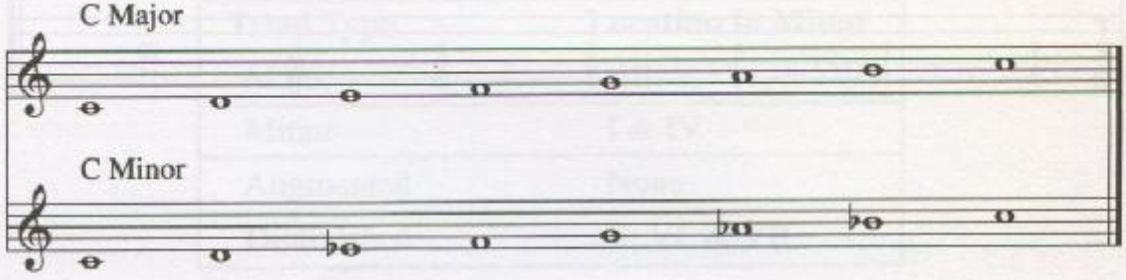
In addition to major scales and major keys, minor scales and minor keys exist as well. If we take a major scale and reorder it so that the sixth degree becomes the first, we have a scale, which is referred to as the natural minor scale. Consult the following example which illustrates an A minor scale:

Example 1-31



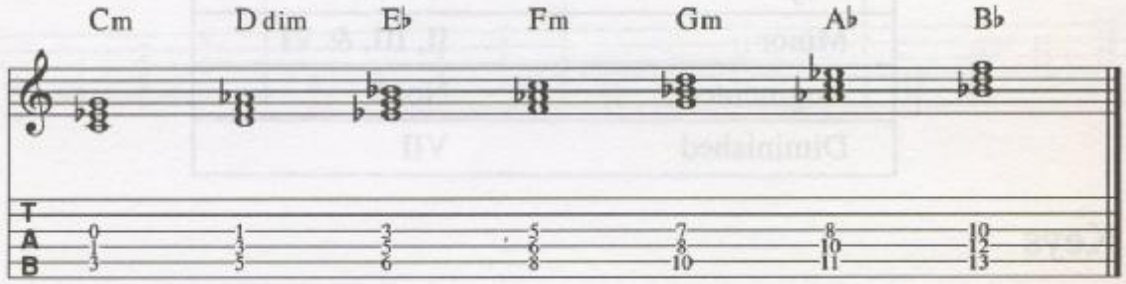
Because the A minor scale contains the same notes as the C major scale, A minor is referred to as the relative minor of C major. In order to contrast the differences between major and minor scales, the next example will compare the C major scale to its parallel minor, or a minor scale built on the same note. Note the differences in scale degrees.

Example 1-32



From the previous example, we see that a minor scale is like a major scale with a lowered third, a lowered sixth, and a lowered seventh. The subsequent example demonstrates the triads produced when we harmonize the minor scale.

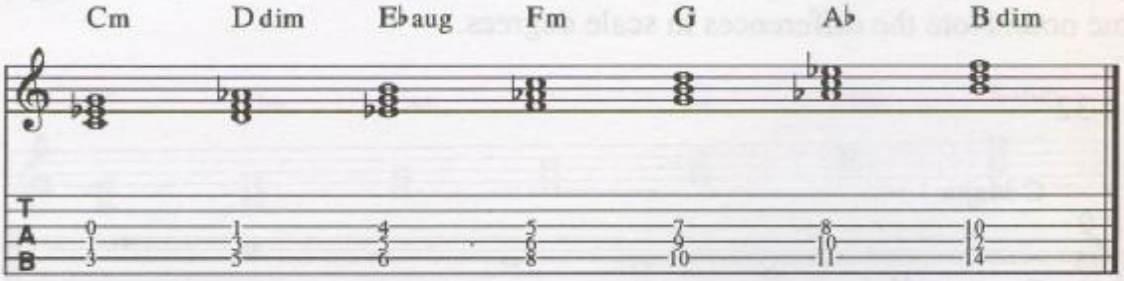
Example 1-33



In example 1-32, the differences between a major scale and a minor scale were shown. It should be noted that the distance between the seventh and eighth scale degrees in a major scale is a half step. Because the seventh tends to predict its motion towards the eighth, the seventh is referred to as the leading tone. When this tone is found in certain chords, the chords themselves tend to predict their motion, or have a need to resolve.

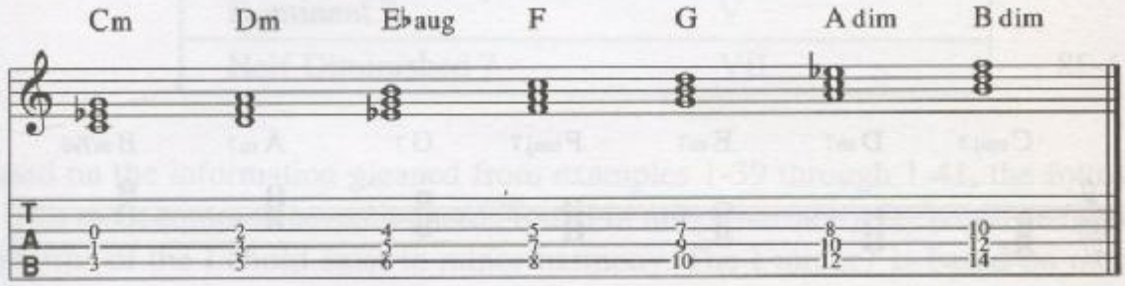
Because the minor scale has a lowered seventh or lacks a leading tone, another scale was created by raising the lowered seventh in the minor scale, or by adding a leading tone, thereby improving tension and resolution between chords. This scale is commonly known as the harmonic minor scale and is the basis for minor key harmony. The next example illustrates the harmonic minor scale harmonized in thirds.

Example 1-34



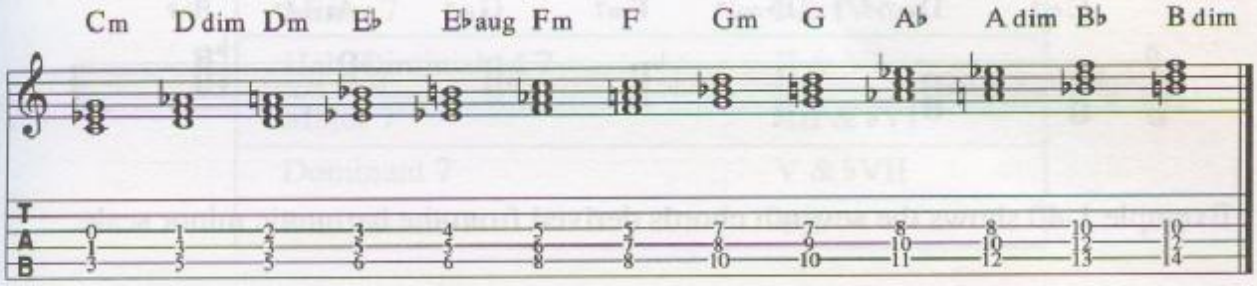
Although the harmonic minor solved the leading tone issue, this scale created an awkward interval between the lowered sixth and raised seventh degrees (an augmented second). Therefore, another scale was formed, which raised the sixth as well as the seventh degrees. This scale is commonly referred to as the melodic minor scale. The following illustration shows the melodic minor scale harmonized in thirds.

Example 1-35



From the preceding examples, a composite minor scale can be created which includes all possible triads for minor key harmony. See the following:

Example 1-36



Although these combined scales in the minor mode create thirteen different chords or possibilities, some chords are used more frequently than others. The following table will diagram the more common triad types and list their location within a minor key. This table should be memorized.

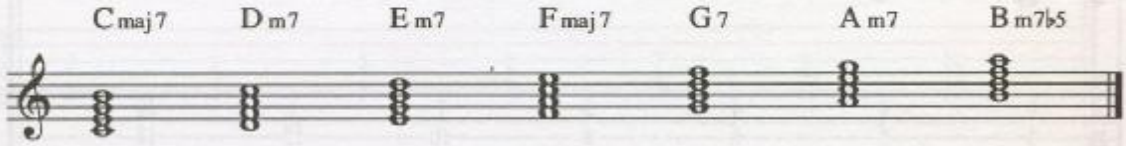
Example 1-37

Triad Type	Location in Minor
Major	♭III, V, ♭VI, & ♭VII
Minor	I & IV
Augmented	None
Diminished	II, VI, & VII

Seventh Chords

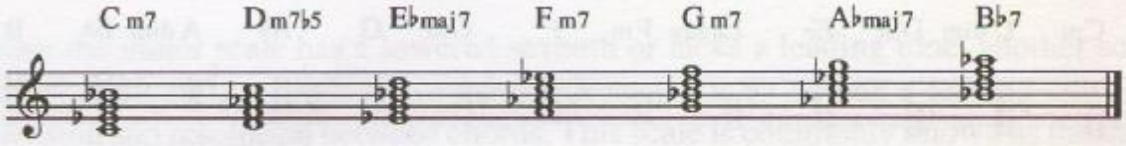
By adding an additional third above each of the triads in major and minor, seventh chords are created. These chords are referred to as sevenths because this new factor, which we are adding to the triad, is a seventh higher than the root of the chord. With regard to intervals, the seventh may be a major seventh or a minor seventh. Consult the next example that diagrams the seventh chords found in major harmony:

Example 1-38



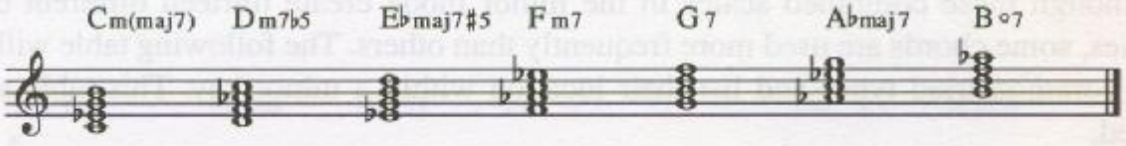
Example 1-39 illustrates the seventh chords derived from the natural minor scale.

Example 1-39



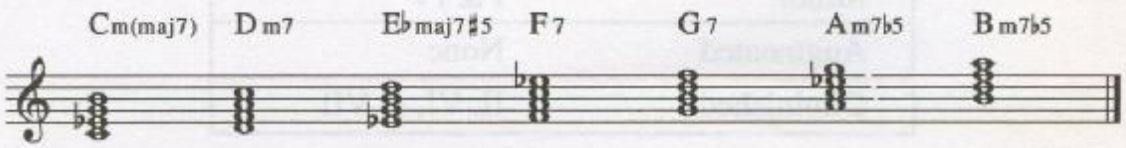
Example 1-40 shows the seventh chords derived from the harmonic minor scale.

Example 1-40



Example 1-41 illustrates the seventh chords derived from the melodic minor scale.

Example 1-41



Based on the information contained in example 1-38, the following table diagrams the seventh chords found in major harmony.

Example 1-42

Seventh Chord Type	Location in Major
Major 7	I & IV
Minor 7	II, III, & VI
Dominant 7	V
Half-Diminished 7	VII

Based on the information gleaned from examples 1-39 through 1-41, the following table illustrates the most common seventh chords found in minor harmony. It should be noted that two common forms of the I chord exist in minor harmony. The I minor7 is based on natural minor harmonization, and the I minor/major7 is based on melodic minor or harmonic minor harmonization.

Example 1-43

Seventh Chord Type	Location in Minor
Minor/Major 7	I
Minor 7	I & IV
Half-Diminished 7	II & VI
Major 7	♭III & ♭VI
Dominant 7	V & ♭VII
Diminished 7	VII

Chord Function

Although seven triads and seven seventh-chords were generated from major harmony, and thirteen triads and fifteen seventh-chords were generated from minor harmony, these chords all typically function in one of three ways within a key. The three principal chords in major or minor are the I, the IV, and the V, and are referred to as the tonic, sub-dominant, and dominant chords respectfully. For the sake of harmonic variety, the other chords within a key may be used as substitutes for the originals without changing the function.

For example, with regard to triads, two other chords contain at least two out of the three tones of the tonic chord. These chords are the III and the VI. Based on common tone substitution, these chords are said to be tonic functioning chords. When the triads are extended to include sevenths, three out of four tones are found in common with the tonic chord and its tonic functioning substitutes. The basic feeling of the tonic chords is finality or rest.

The dominant triad is the V chord and has as its substitute the VII chord. Based on common tone substitution, the VII chord is a dominant functioning chord and contains two out of the three tones of the dominant triad. When the triads are extended to include sevenths, three out of four tones are in common between the dominant chord and its substitute. The overall feeling of dominant chords is tension, which should be resolved to the tonic chord.

The sub-dominant triad is the IV chord and has as its substitute the II chord. Based on common tone substitution, the II chord is a sub-dominant functioning chord and contains two out of the three tones of the sub-dominant triad. When the triads are extended to include sevenths, three out of four tones are found in common between the sub-dominant chord and its substitute. The basic feeling of sub-dominant chords is neither complete tension as with dominant functioning chords, nor complete resolution as with tonic functioning chords, but rather a state of rest, albeit not as final as the tonic functioning chords. In jazz harmony the IV chord is most often replaced by the II chord as this chord offers root movement of a descending fifth between the sub-dominant and the dominant chord, after which the dominant chord resolves down to the tonic chord a fifth below, creating root movements of descending fifths between the three chord types.

The following example will diagram chord function as it applies to major harmonization.

Example 1-44
Major Harmony

Chord Function	Location in Key	Example in C
Tonic	I, III, & VI	Cmaj7, Em7, & Am7
Sub-Dominant	IV & II	Fmaj7 & Dm7
Dominant	V & VII	G7 & Bm7♭5

This next example will illustrate chord function as it applies to minor scale harmonization. The following information is taken from the natural, harmonic, and melodic minor scales.

Example 1-45
Minor Harmony

Chord Function	Location in Key	Example in C
Tonic	I, ♭III, ♭VI, & VI	Cm7, Cm(maj7), E♭maj7, E♭maj7♯5, A♭maj7, & Am7♭5
Sub-Dominant	IV & II	Fm7, F7, Dm7♭5, & Dm7
Dominant	V, ♭VII, & VII	Gm7, G7, Bb7, Bdim7, & Bm7♭5

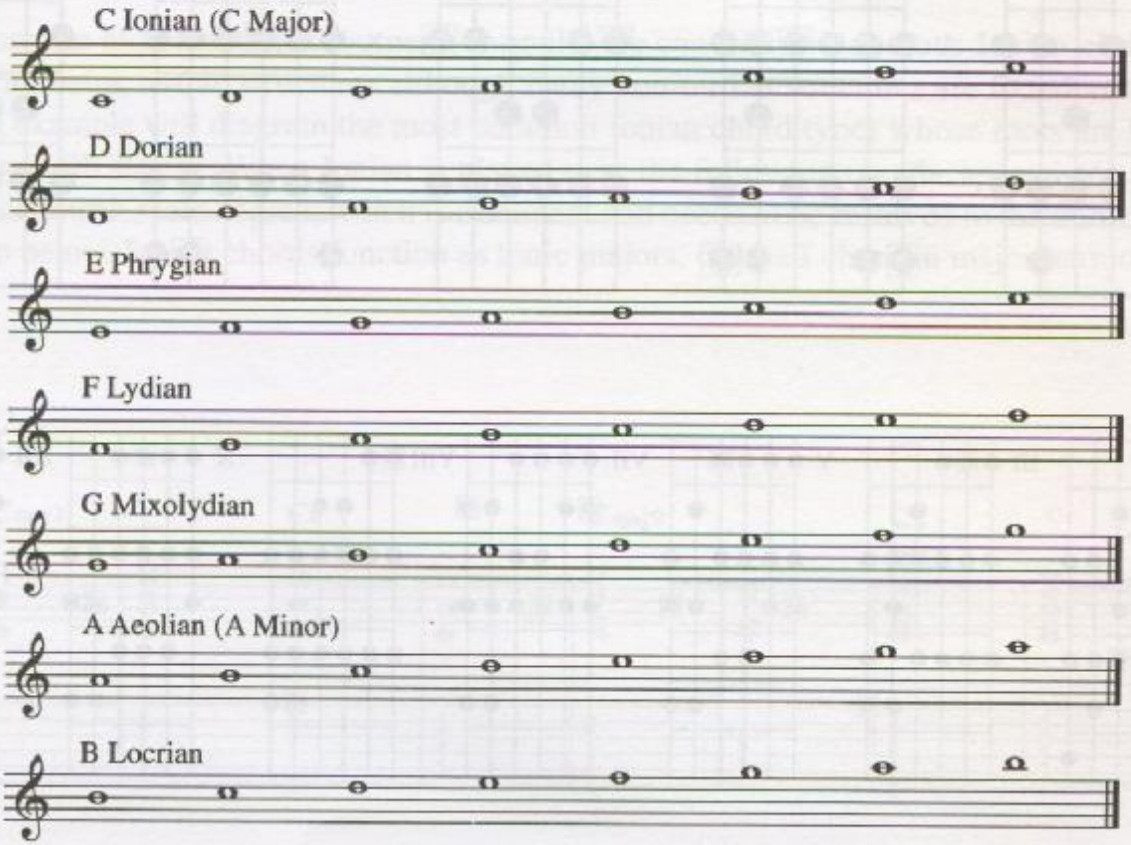
Chapter 2
Scales and Modes

In this chapter, we will explore scales and modes used in contemporary music. By definition, a scale is a series of tones, ascending or descending, proceeding through a set order of intervals and pitches. Most conventional scales are between five and eight tones, although others exist as well. The most common and most useful scales in usage (not including the pentatonic and blues scales) are as follows:

1) The Major Scale
2) The Melodic Minor Scale
3) The Harmonic Minor Scale
4) The Diminished Scale
5) The Whole-Tone Scale

Each of these scales can be considered and referred to as parent scales, or the scale from which subsequent modes or inversions of the scale are derived. Modes by definition contain the exact notes of a parent scale except they begin on a different degree of the scale other than the root, or first note. The next example shows the seven modes produced from the major scale and the names by which they are known.

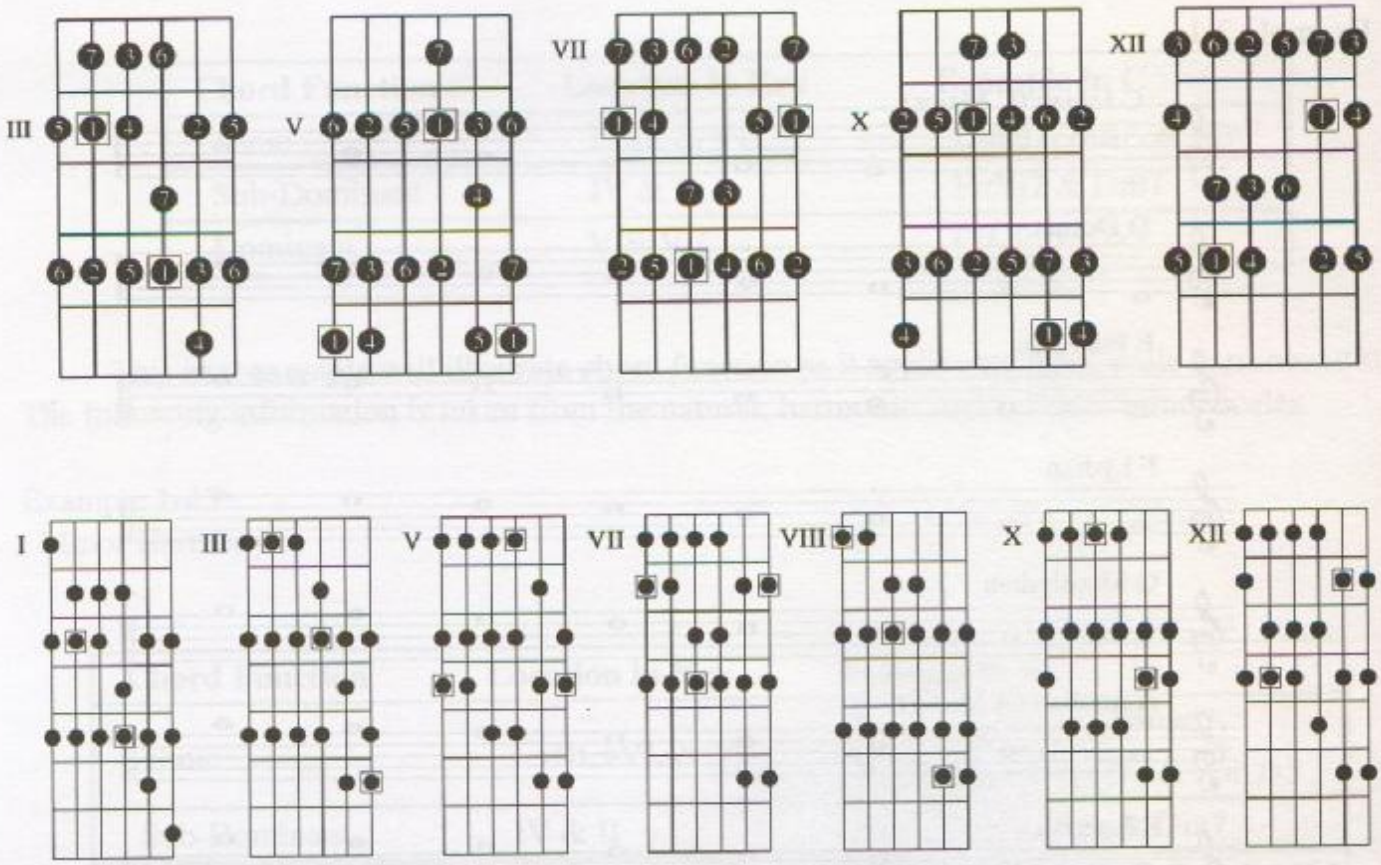
Example 2-1



Major Harmony

In order to gain an understanding of modes, a few points should be made. First, every major scale produces seven different modes or tonalities. Second, each mode begins on a different degree of the major scale but contains the same notes as the parent scale or key signature. Third, what makes modes sound unique is the chord or chords over which they are played. The ensuing pages will be devoted to breaking down each mode in the major scale with their related chords and the most common function of each in a major or minor tonality. Before this is undertaken, it is advised that the student becomes familiar with the modes of the major scale presented in two of the more common fingering schemes, the five conventional scale shape system and the three-note-per-string system. It should be noted that with regard to the conventional system, numbers are found within the notes on the fingerboard. These numbers represent scale degrees as they relate unto the parent scale. No numbers are given within the seven fingerings of the three-note-per-string system, as these shapes all begin on the second note of the previous shape. The following examples are in C major and proceed from the lowest shape on the neck through the highest with roman numerals representing fret location. The fingerings for all other major scales can be located in the appendix of this book.

Example 2-2



Modes of the Major Scale

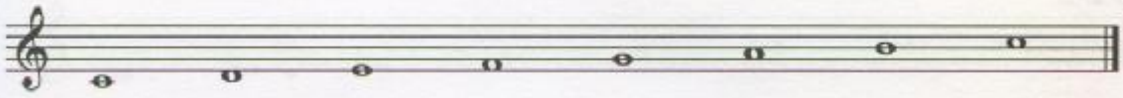
Ionian Mode

The first mode in a major scale, Ionian mode, is synonymous with the major scale itself. To determine a numeric formula for this or any mode, we must compare Ionian to the scale to which all scales are compared, the major scale. Since Ionian is the same as a major scale, it generates the following formula:

1-2-3-4-5-6-7

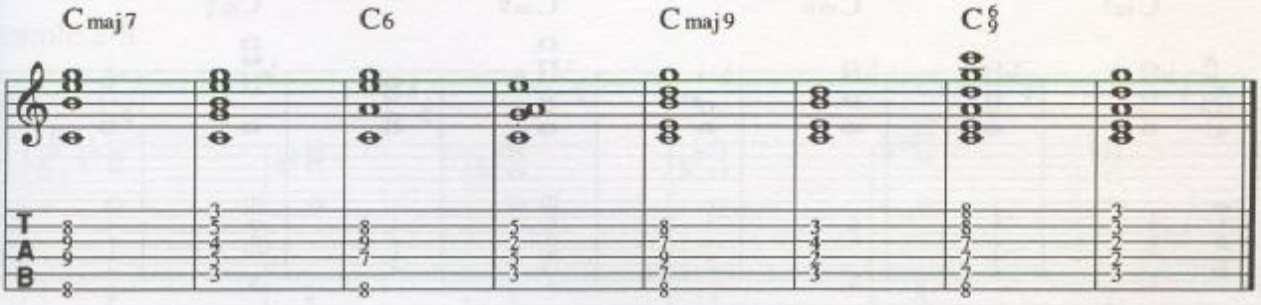
The next example diagrams mode one in major, Ionian, above the note C.

Example 2-3



From the aforementioned numeric formula, we can derive numerous Ionian chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Ionian chord types whose roots are found on the sixth or fifth strings. When Ionian is played over the following chords, special care must be given to the fourth scale degree, which is dissonant and needs to be resolved to the third, which is a half step below. Ionian chords function as tonic majors, or as a I chord in major harmony.

Example 2-4



Modes of the Major Scale

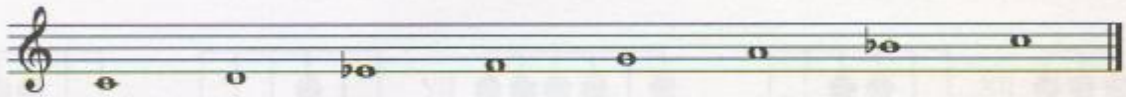
Dorian Mode

The second mode in the major scale is known as Dorian. This mode contains the same notes as a major scale down a major second, or a whole step. To determine a numeric formula for this mode, we must compare Dorian to the scale to which all scales are compared, the major scale. Since Dorian is the same as a major scale a major second below, C Dorian would be mode two in B♭ major. When we compare Dorian mode unto a parallel major scale, we get the following formula:

1-2-♭3-4-5-6-♭7

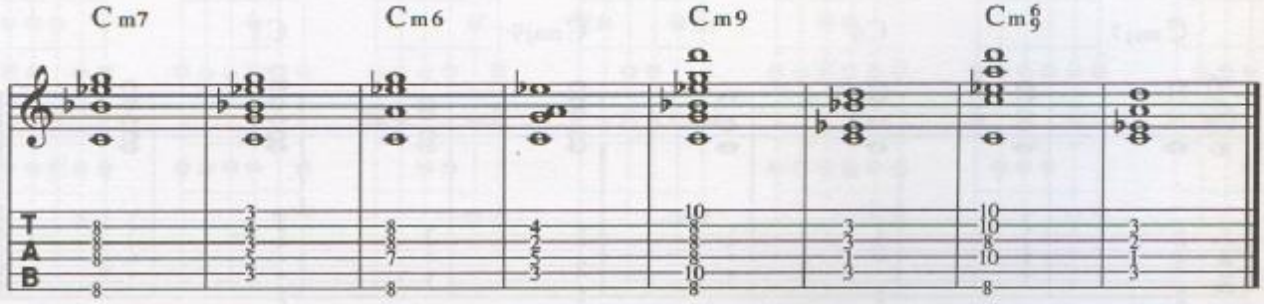
The next example diagrams mode two in major, Dorian, above the note C.

Example 2-5



From the aforementioned numeric formula, we can derive numerous Dorian chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Dorian chord types whose roots are found on the sixth or fifth strings. Dorian chords function as either a II minor (sub-dominant function) in a major key, or as a tonic minor chord.

Example 2-6



Modes of the Major Scale

Phrygian Mode

The third mode in the major scale is known as Phrygian. This mode contains the same notes as a major scale down a major third, or two whole steps. To determine a numeric formula for this mode, we must compare Phrygian to the scale to which all scales are compared, the major scale. Since Phrygian is the same as a major scale a major third below, C Phrygian would be mode three in A♭ major. When we compare Phrygian mode unto a parallel major scale, we get the following formula:

1-♭2-♭3-4-5-♭6-♭7

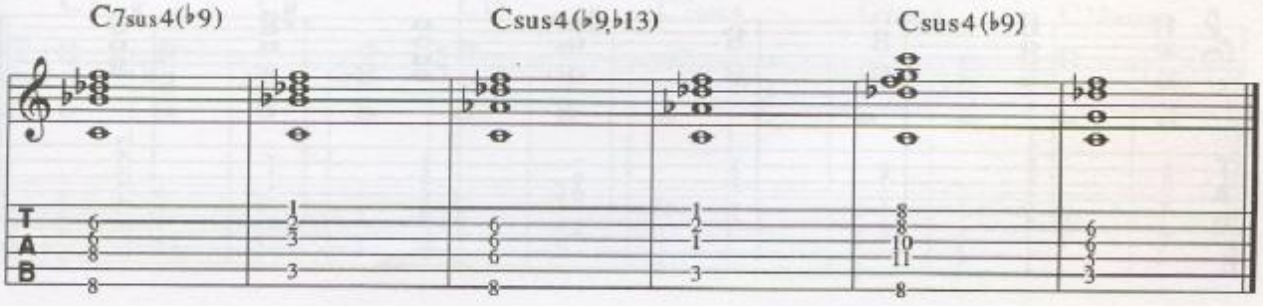
The next example diagrams mode three in major, Phrygian, above the note C.

Example 2-7

From the aforementioned numeric formula, we can derive numerous Phrygian chord types, the majority being non-tertian structures as many of the tertian structures contain unwanted dissonances, resulting in impractical chord types. Example 2-8 will diagram the most common Phrygian chord types whose roots are found on the sixth or fifth strings.

A few things should be stated about Phrygian chords. When a III minor triad or a IIIm7 chord appears in a progression, it is a substitute (tonic function) for the I chord, which is usually a maj6 or maj7 chord. When Phrygian is played over the III minor or IIIm7 chord, the second and sixth scale degrees sound dissonant and need to be resolved to the root and the fifth, respectively. When used in a functional setting, Phrygian is usually played over a dominant chord with a suspended fourth and a flatted ninth (with a possible flatted thirteenth). When utilized in this capacity it no longer functions as a tonic chord, but rather as a dominant altered chord type, which can resolve down a fifth (up a fourth) to a I chord in major or minor harmony.

Example 2-8



Modes of the Major Scale

Lydian Mode

The fourth mode in the major scale is known as Lydian. This mode contains the same notes as a major scale down a perfect fourth or up a perfect fifth. To determine a numeric formula for this mode, we must compare Lydian to the scale to which all scales are compared, the major scale. Since Lydian is the same as a major scale a perfect fourth below, C Lydian would be mode four in G major. When we compare Lydian mode unto a parallel major scale, we get the following formula:

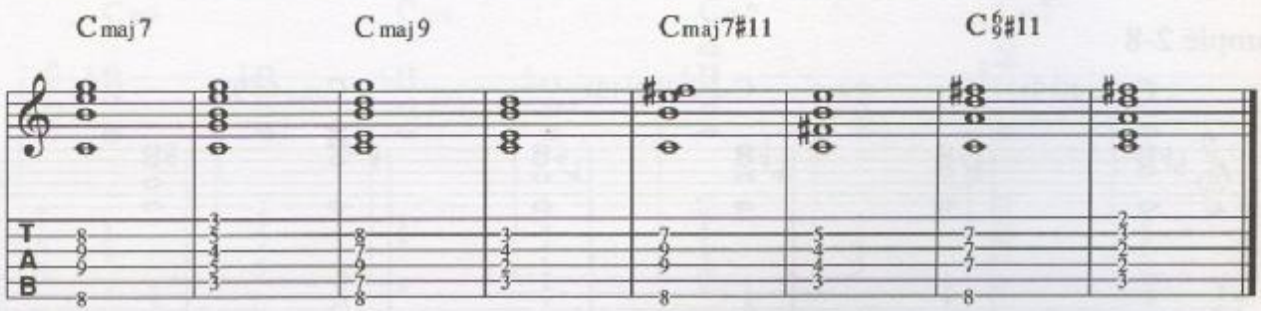
1-2-3-♯4-5-6-7

The next example diagrams mode four in major, Lydian, above the note C.

Example 2-9

From the aforementioned numeric formula, we can derive numerous Lydian chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Lydian chord types whose roots are found on the sixth or fifth strings. Lydian chords can function as a IV chord in a major key but are usually used as a substitute for tonic major chords, as Lydian offers the raised fourth instead of the natural fourth found in Ionian mode.

Example 2-10



Modes of the Major Scale

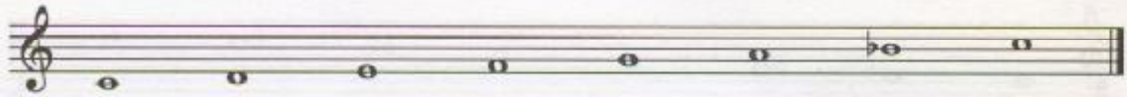
Mixolydian Mode

The fifth mode in the major scale is known as Mixolydian. This mode is also referred to as the Dominant Seventh scale or simply, the Dominant scale. This mode contains the same notes as a major scale down a perfect fifth or up a perfect fourth. To determine a numeric formula for this mode, we must compare Mixolydian to the scale to which all scales are compared, the major scale. Since Mixolydian is the same as a major scale a perfect fifth below, C Mixolydian would be mode five in F major. When we compare Mixolydian mode unto a parallel major scale, we get the following formula:

1-2-3-4-5-6-♭7

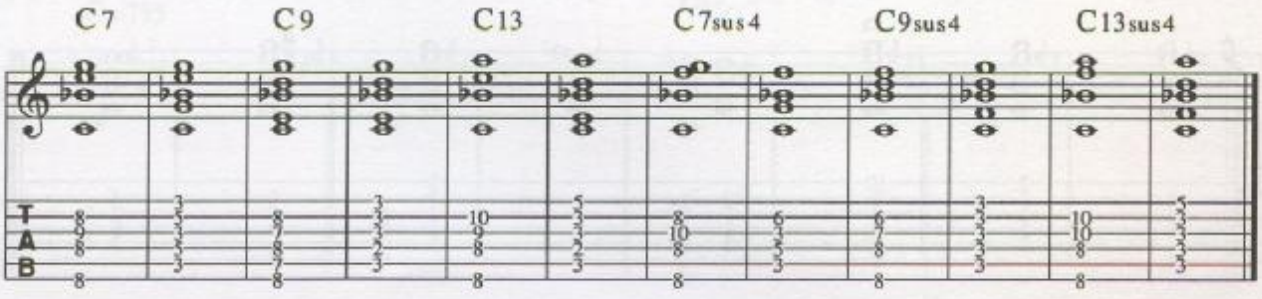
The next example diagrams mode five in major, Mixolydian, above the note C.

Example 2-11



From the aforementioned numeric formula, we can derive numerous Mixolydian chord types, the majority being tertian structures although many non-tertian structures are found as well. Mixolydian chords are usually dominant 7th or dominant 7sus4 structures. The following example will diagram the most common Mixolydian chord types whose roots are found on the sixth or fifth strings. When Mixolydian is played over dominant 7th chord structures, which contain a major third, special care must be given to the fourth scale degree, which is dissonant and needs to be resolved to the third, which is a half step below. Mixolydian chords usually function as a V chord in a major key but are also found serving as a I (tonic function) and IV (sub-dominant function) in a blues-type progression, etc.

Example 2-12



Modes of the Major Scale

Aeolian Mode

The sixth mode in the major scale is known as Aeolian. This mode is also referred to as the natural, relative, or pure minor scale. This mode contains the same notes as a major scale up a minor third, or one and one-half steps. To determine a numeric formula for this mode, we must compare Aeolian to the scale to which all scales are compared, the major scale. Since Aeolian is the same as a major scale a minor third above, C Aeolian would be mode six in E♭ major. When we compare Aeolian mode unto a parallel major scale, we get the following formula:

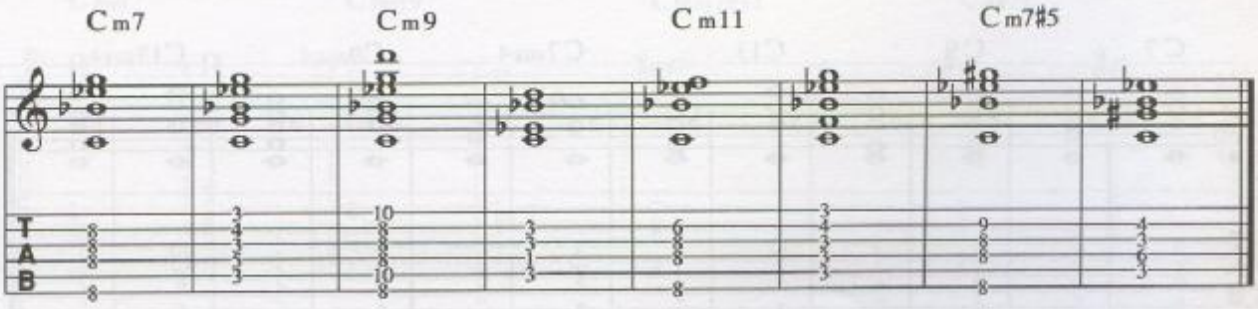
1-2-♭3-4-5-♭6-♭7

The next example diagrams mode six in major, Aeolian, above the note C.

Example 2-13

From the aforementioned numeric formula, we can derive numerous Aeolian chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Aeolian chord types whose roots are found on the sixth or fifth strings. When Aeolian is played over minor chord structures which contain a perfect fifth, special care must be given to the sixth scale degree which is dissonant and needs to be resolved to the fifth, a half step below. Aeolian chords function as either a VI minor (tonic function) in a major key, or as a tonic minor chord.

Example 2-14



Modes of the Major Scale

Locrian Mode

The seventh mode in the major scale is known as Locrian. This mode is also referred to as the half-diminished scale. This mode contains the same notes as a major scale up a minor second, or one half step. To determine a numeric formula for this mode, we must compare Locrian to the scale to which all scales are compared, the major scale. Since Locrian is the same as a major scale a minor second above, C Locrian would be mode seven in D♭ major. When we compare Locrian mode unto a parallel major scale, we get the following formula:

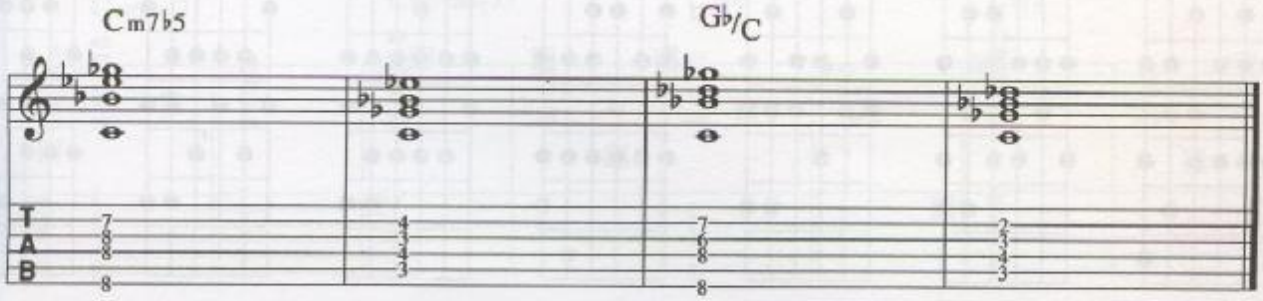
1-♭2-♭3-4-♭5-♭6-♭7

The next example diagrams mode seven in major, Locrian, above the note C.

Example 2-15

From the aforementioned numeric formula we can derive Locrian chord types, the most common being the minor7♭5, or half-diminished chord. The following example will diagram the most common Locrian chord types whose roots are found on the sixth or fifth strings. When Locrian is played over the following chord structures special care must be given to the second scale degree, which is dissonant and needs to be resolved to the root, a half step below. Locrian chords function as a VII minor7♭5/half-diminished (dominant function) in a major key.

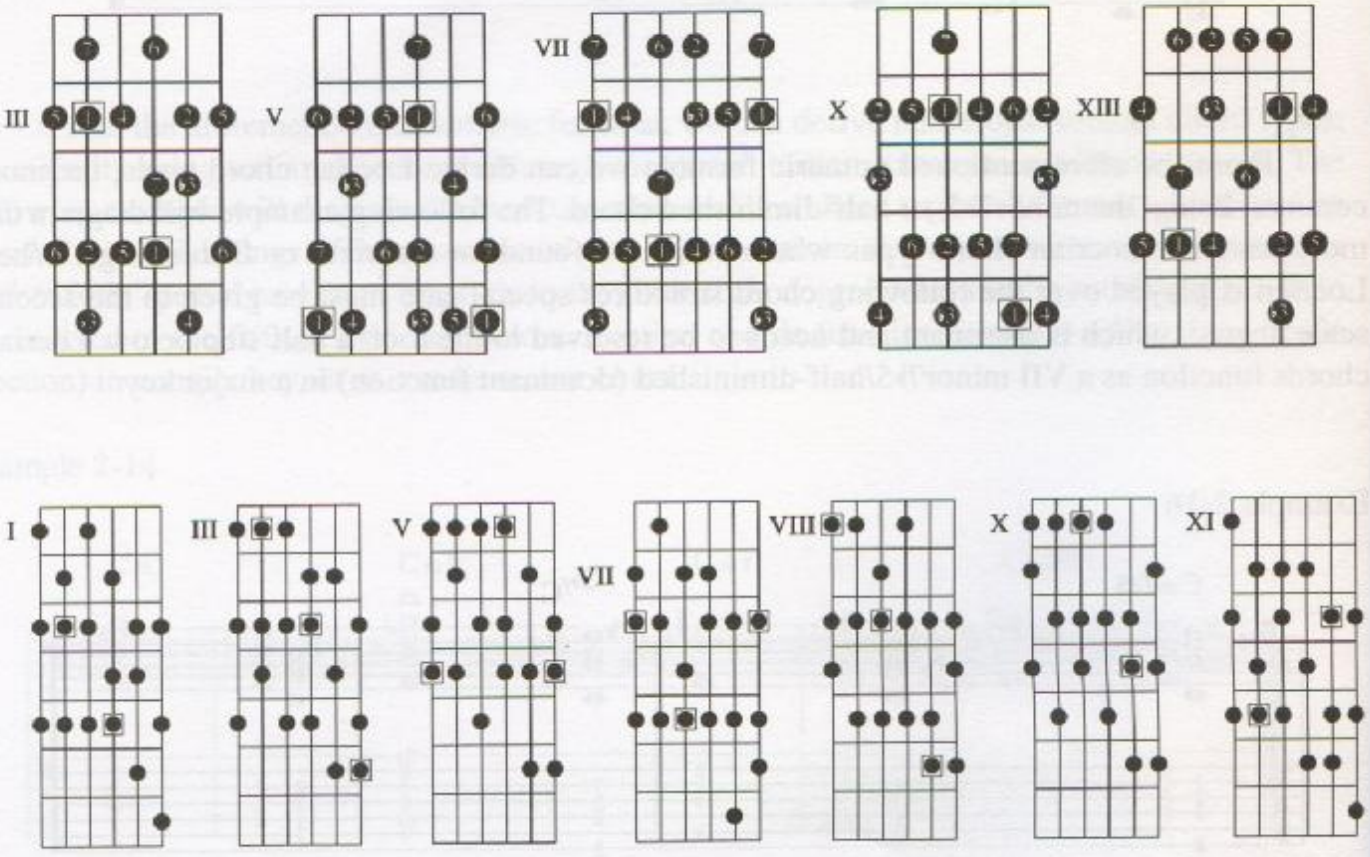
Example 2-16



Melodic Minor Harmony

In order to gain an understanding of the melodic minor modes, a few points should be made. First, every melodic minor scale produces seven different modes or tonalities. Second, each mode begins on a different degree of the melodic minor scale but contains the same notes as the parent scale. Third, what makes modes sound unique is the chord or chords over which they are played. The ensuing pages will be devoted to breaking down each mode in the melodic minor scale, with their related chords and the most common function of each in a major or minor tonality. Before this is undertaken, it is advised that the student becomes familiar with the modes of the melodic minor scale presented in two of the more common fingering schemes, the five conventional scale shape system and the three-note-per-string system. It should be noted that with regard to the conventional system, numbers are found within the notes on the fingerboard. These numbers represent scale degrees as they relate unto the parent scale. No numbers are given within the seven fingerings of the three-note-per-string system, as these shapes all begin on the second note of the previous shape. The following examples are in C melodic minor and proceed from the lowest shape on the neck through the highest with roman numerals representing fret location. The fingerings for all other melodic minor scales can be located in the appendix of this book.

Example 2-17



Modes of the Melodic Minor Scale

Melodic Minor

Ascending Melodic Minor, Jazz Melodic Minor, Real Melodic Minor, Jazz Minor, Jazz Melodic, Melodic, Tonic Minor, Minor-Major, Ionian Minor, Ionian ♭3, Dorian ♯7, Dorian ♮7, etc...

The first mode in the melodic minor scale is known by many names. In this book it will be referred to as melodic minor. To determine a numeric formula for this mode, we must compare melodic minor to the scale to which all scales are compared, the major scale. When we compare melodic minor unto a parallel major scale, we get the following formula:

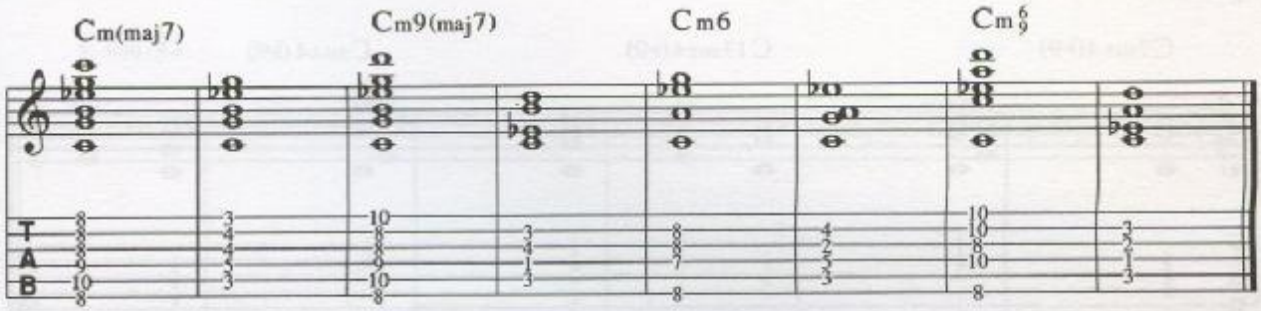
1-2-♭3-4-5-6-7

The next example diagrams mode one in melodic minor above the note C.

Example 2-18

From the aforementioned numeric formula we can derive numerous melodic minor chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common melodic minor chord types whose roots are found on the sixth or fifth strings. Melodic minor chords function as tonic minors, or as a I chord in minor harmony.

Example 2-19



Modes of the Melodic Minor Scale

Phygian ♮6

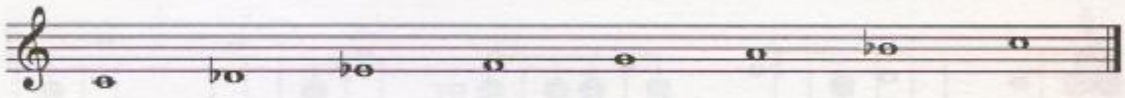
Phrygian ♯6, Dorian ♭2, etc...

The second mode in the melodic minor scale is known by a few different names. In this book it will be referred to as Phrygian ♮6. This mode contains the same notes as a melodic minor scale down a major second, or a whole step. To determine a numeric formula for this mode, we must compare Phrygian ♮6 to the scale to which all scales are compared, the major scale. Since Phrygian ♮6 is the same as a melodic minor scale a major second below, C Phrygian ♮6 would be mode two in B♭ melodic minor. When we compare Phrygian ♮6 unto a parallel major scale, we get the following formula:

1-♭2-♭3-4-5-6-♭7

The next example diagrams mode two in melodic minor, Phrygian ♮6, above the note C.

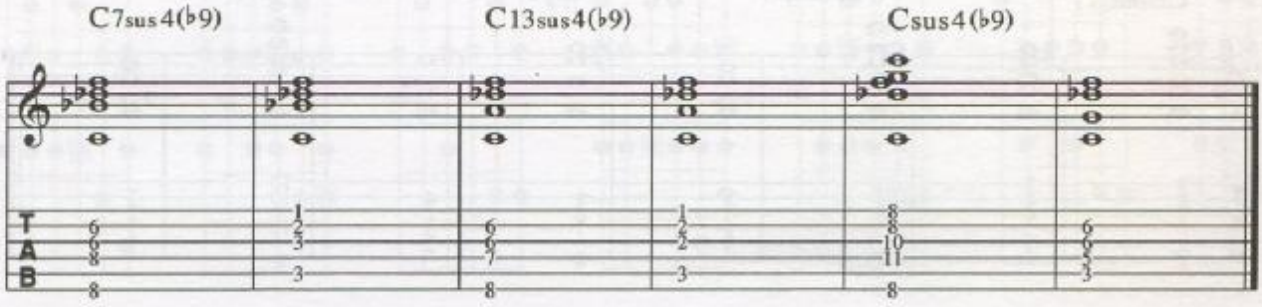
Example 2-20



From the aforementioned numeric formula we can derive numerous Phrygian ♮6 chord types, the majority being non-tertian structures as many of the tertian structures contain unwanted dissonances, resulting in impractical chord types. The following example will diagram the most common Phrygian ♮6 chord types whose roots are found on the sixth or fifth strings.

When used in a functional setting, Phrygian ♮6 is usually played over a dominant chord with a suspended fourth and a flatted ninth (with a possible natural thirteenth), not a minor or minor 7th as traditional theory would suggest. Phrygian ♮6 chords function as dominant altered chord types, which can resolve down a fifth (up a fourth) to a I chord in major or minor harmony.

Example 2-21



Modes of the Melodic Minor Scale

Lydian Augmented

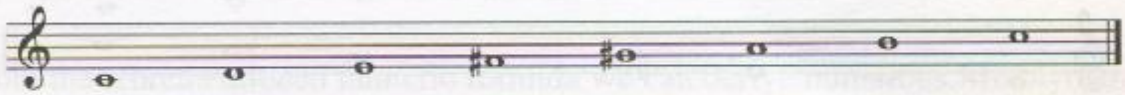
Lydian ♯5, Phrygian ♭1, etc...

The third mode in the melodic minor scale is known by a few different names. In this book it will be referred to as Lydian augmented. This mode contains the same notes as a melodic minor scale down a minor third, or one and one-half steps. To determine a numeric formula for this mode, we must compare Lydian augmented to the scale to which all scales are compared, the major scale. Since Lydian augmented is the same as a melodic minor scale a minor third below, C Lydian Augmented would be mode three in A melodic minor. When we compare Lydian augmented unto a parallel major scale, we get the following formula:

1-2-3-♯4-♯5-6-7

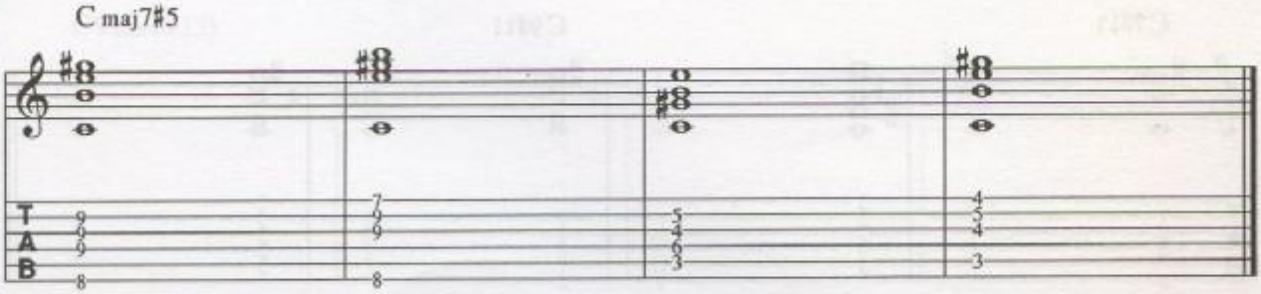
The next example diagrams mode three in melodic minor, Lydian augmented, above the note C.

Example 2-22



From the aforementioned numeric formula we can derive Lydian augmented chord types, the most common being the major7♯5. The following example will diagram the most common Lydian augmented chord types whose roots are found on the sixth or fifth strings. When Lydian augmented is played over the following chord structures special care must be given to the sixth scale degree which is dissonant and needs to be resolved to the fifth, which is a half step below. Like Lydian mode (mode three in major), Lydian augmented chords are also used as a substitute for tonic major chords.

Example 2-23



Modes of the Melodic Minor Scale

Lydian Dominant

Lydian ♭7, Mixolydian ♯4, Overtone Scale, etc...

The fourth mode in the melodic minor scale is known by a few different names. In this book it will be referred to as Lydian dominant. This mode contains the same notes as a melodic minor scale down a perfect fourth, or up a perfect fifth. To determine a numeric formula for this mode, we must compare Lydian dominant to the scale to which all scales are compared, the major scale. Since Lydian dominant is the same as a melodic minor scale a perfect fourth below, C Lydian dominant would be mode four in G melodic minor. When we compare Lydian dominant unto a parallel major scale, we get the following formula:

1-2-3-♯4-5-6-♭7

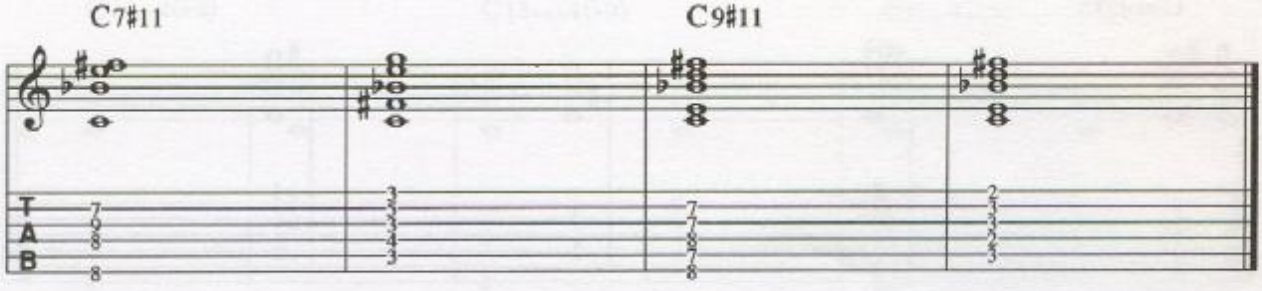
The next example diagrams mode four in melodic minor, Lydian dominant, above the note C.

Example 2-24

From the aforementioned numeric formula we can derive numerous Lydian dominant chord types, the majority being tertian structures although many non-tertian structures are found as well. Example 2-25 will diagram the most common Lydian dominant chord types whose roots are found on the sixth or fifth strings. Lydian dominant chords typically resolve to chords whose roots lie one half step below, a perfect fourth below, or one whole step above. Lydian dominant chords are most often found in the following positions:

I7, ♭II7, II7, ♭III7, IV7, & ♭VII7

Example 2-25



Modes of the Melodic Minor Scale

Mixolydian ♭6

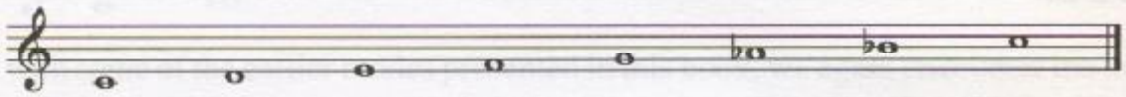
Hindu, Aeolian Major, Aeolian ♯3, Aeolian ♮3, etc...

The fifth mode in the melodic minor scale is known by a few different names. In this book it will be referred to as Mixolydian ♭6. This mode contains the same notes as a melodic minor scale down a perfect fifth, or up a perfect fourth. To determine a numeric formula for this mode, we must compare Mixolydian ♭6 to the scale to which all scales are compared, the major scale. Since Mixolydian ♭6 is the same as a melodic minor scale a perfect fifth below, C Mixolydian ♭6 would be mode five in F melodic minor. When we compare Mixolydian ♭6 unto a parallel major scale, we get the following formula:

1-2-3-4-5-♭6-♭7

The next example diagrams mode five in melodic minor, Mixolydian ♭6, above the note C.

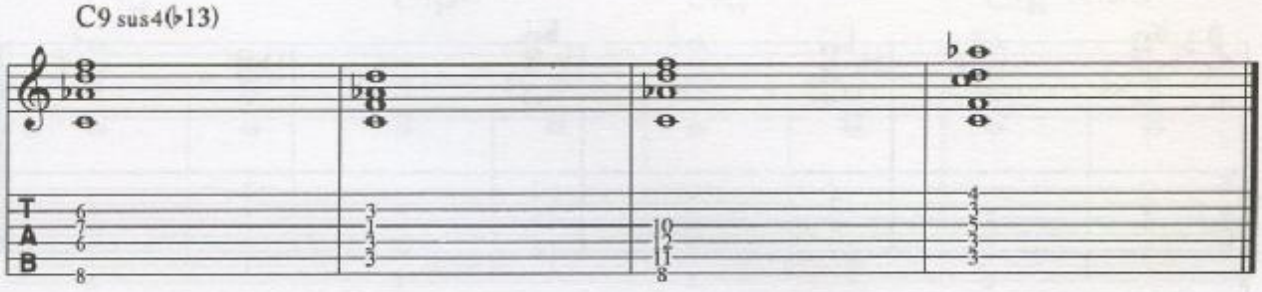
Example 2-26



From the aforementioned numeric formula we can derive numerous Mixolydian ♭6 chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Mixolydian ♭6 chord types whose roots are found on the sixth or fifth strings. Mixolydian ♭6 chords are usually dominant 7th or dominant 7sus4 structures.

When Mixolydian ♭6 is played over dominant 7th chord structures that contain a major third and a perfect fifth, special care must be given to the fourth and sixth scale degrees, which are dissonant and need to be resolved to the third and fifth, respectively. The dominant 9 sus4(♭13) chord, which can replace a dom7sus4, is sometimes interpreted as a minor 6(2nd inversion or a minor 7♭5/3rd inversion), and is often found serving as a IV min. 6 in a major key.

Example 2-27



Modes of the Melodic Minor Scale

Locrian ♮2

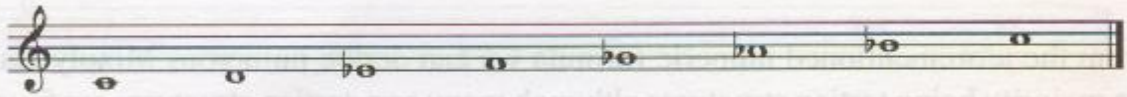
Aeolian ♭5, Half-Diminished ♯2, Locrian ♯2, etc...

The sixth mode in the melodic minor scale is known by a few different names. In this book it will be referred to as Locrian ♮2. This mode contains the same notes as a melodic minor scale up a minor third, or one and one-half steps. To determine a numeric formula for this mode, we must compare Locrian ♮2 to the scale to which all scales are compared, the major scale. Since Locrian ♮2 is the same as a melodic minor scale a minor third above, C Locrian ♮2 would be mode six in E♭ melodic minor. When we compare Locrian ♮2 unto a parallel major scale, we get the following formula:

1-2-♭3-4-♭5-♭6-♭7

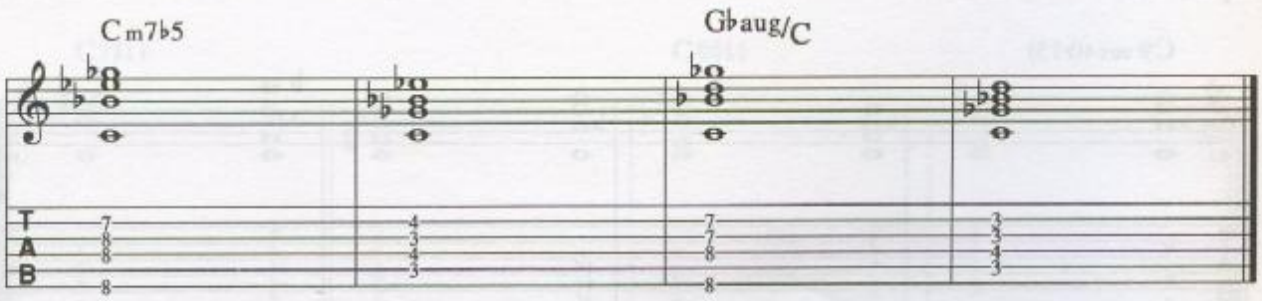
The next example diagrams mode six in melodic minor, Locrian ♮2, above the note C.

Example 2-28



From the aforementioned numeric formula we can derive numerous Locrian ♮2 chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Locrian ♮2 chord types whose roots are found on the sixth or fifth strings. Locrian ♮2 chords typically function as either a II minor 7♭5/half-diminished (sub-dominant function) or a VI minor 7♭5/half-diminished (tonic function) in a minor tonality, but can perhaps also replace Locrian chords.

Example 2-29



Modes of the Melodic Minor Scale

Altered

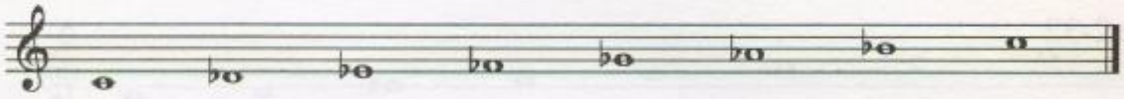
Diminished Whole-Tone, Super Locrian, Altered Dominant, Pomeroy, Ravel, Locrian ♭4, Ionian ♯1, etc...

The seventh mode in the melodic minor scale is known by many names. In this book it will be referred to as the altered scale. This mode contains the same notes as a melodic minor scale up a minor second, or one half step. To determine a numeric formula for this mode, we must compare altered to the scale to which all scales are compared, the major scale. Since altered is the same as a melodic minor scale a minor second above, C altered would be mode seven in D♭/C♯ melodic minor. When we compare altered unto a parallel major scale, we get the following formula:

1-♭2-♭3-♭4-♭5-♭6-♭7

The next example diagrams mode seven in melodic minor, altered, above the note C.

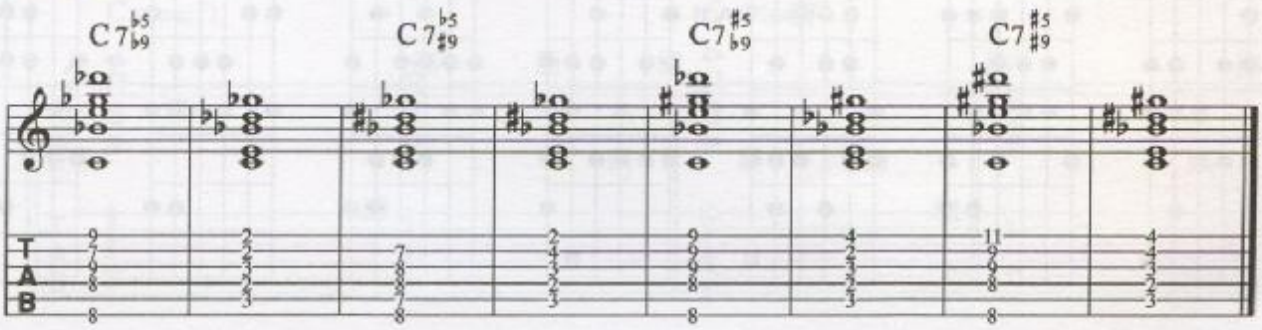
Example 2-30



As with some of the earlier modes presented in this book, we again encounter the limitations of traditional theory. If we construct chords from this scale entirely based on thirds, we arrive at a fully extended minor 7♭5 chord with a ♭9th, a ♭11th, and a ♭13th. The ♭11th in this scale is really the same enharmonically as a major third. When a mode has two thirds, such as a major third and a minor third, the major third is considered the true third while the minor third is interpreted as a sharped (augmented) ninth. When reordered, this scale creates a dominant 7th chord structure with a ♭5/♯11, a ♯5/♭13, a ♭9, and a ♯9. Since every conceivable alteration is found within this scale, the altered scale is an appropriate title for this mode. The following example will diagram a few of the many altered chord types whose roots are found on the sixth or fifth strings. Altered dominant chords typically resolve to chords whose roots lie a perfect fifth below, one half step above, or a major third below. Although it is most commonly found functioning as a V7 in major or minor harmony, it can be found in other positions as well. Six common positions are as follows:

III7, ♭V7, V7, ♭VI7, VI7, & VII7

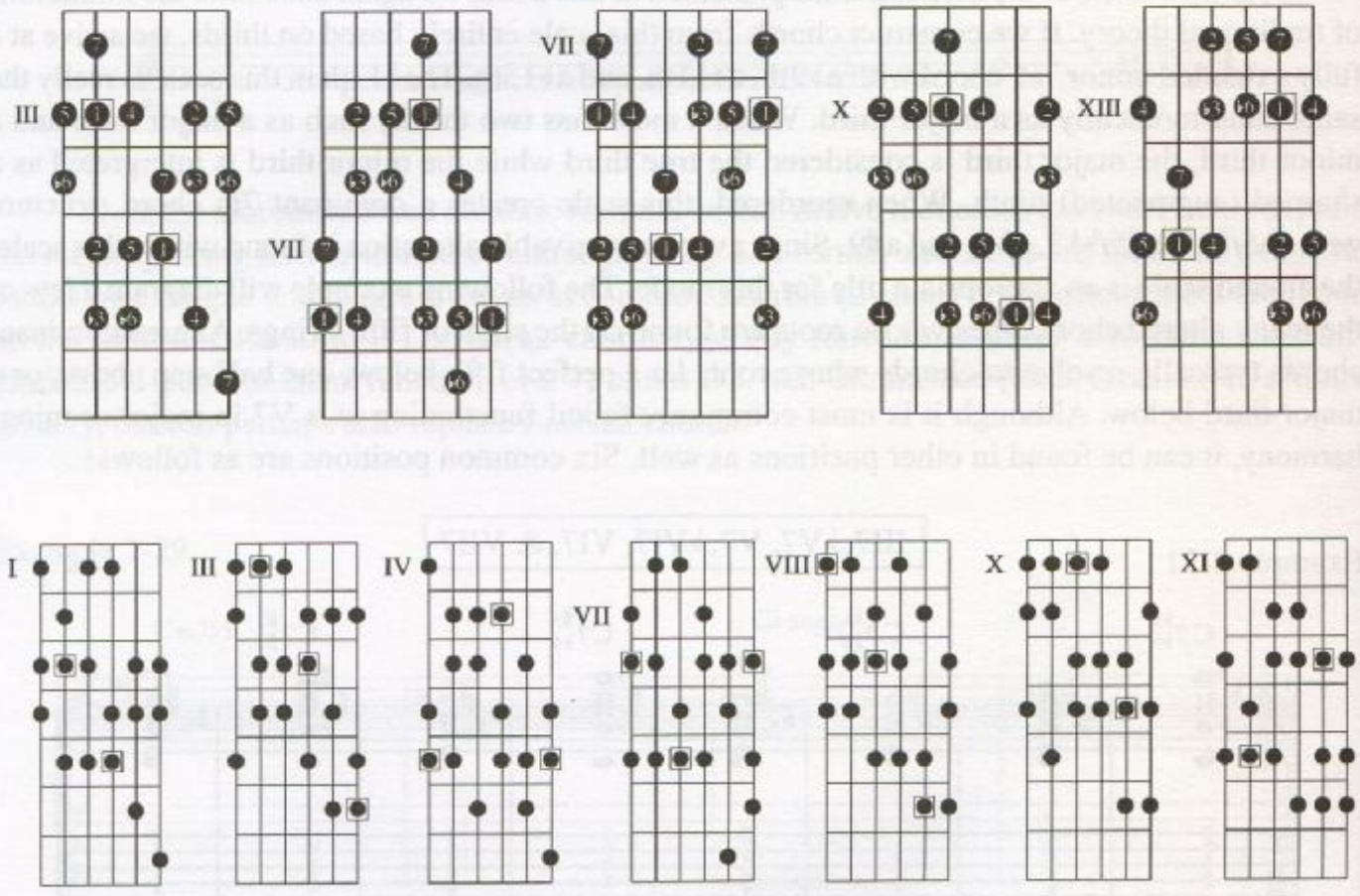
Example 2-31



Harmonic Minor Harmony

In order to gain an understanding of the harmonic minor modes, a few points should be made. First, every harmonic minor scale produces seven different modes or tonalities. Second, each mode begins on a different degree of the harmonic minor scale but contains the same notes as the parent scale. Third, what makes modes sound unique is the chord or chords over which they are played. The ensuing pages will be devoted to breaking down each mode in the harmonic minor scale, with their related chords and the most common function of each in a major or minor tonality. Before this is undertaken, it is advised that the student becomes familiar with the modes of the harmonic minor scale presented in two of the more common fingering schemes, the five conventional scale shape system and the three-note-per-string system. It should be noted that with regard to the conventional system, numbers are found within the notes on the fingerboard. These numbers represent scale degrees as they relate unto the parent scale. No numbers are given within the seven fingerings of the three-note-per-string system, as these shapes all begin on the second note of the previous shape. The following examples are in C harmonic minor and proceed from the lowest shape on the neck through the highest with roman numerals representing fret location. The fingerings for all other harmonic minor scales can be located in the appendix of this book.

Example 2-32



Modes of the Harmonic Minor Scale

Harmonic Minor

Harmonic Minor Mode I, Harmonic, Aeolian ♯7, Aeolian ♮7, etc...

The first mode in the harmonic minor scale is known by a few different names. In this book it will be referred to as harmonic minor. To determine a numeric formula for this mode, we must compare harmonic minor to the scale to which all scales are compared, the major scale. When we compare harmonic minor unto a parallel major scale, we get the following formula:

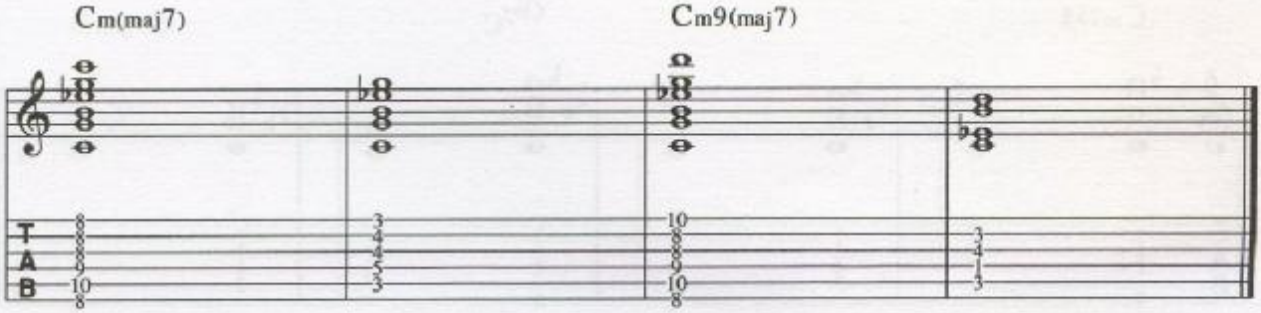
1-2-♭3-4-5-♭6-7

The next example diagrams mode one in harmonic minor above the note C.

Example 2-33

From the aforementioned numeric formula we can derive numerous harmonic minor chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common harmonic minor chord types whose roots are found on the sixth or fifth strings. When harmonic minor is played over the following chords, special care must be given to the sixth scale degree which is dissonant and needs to be resolved to the fifth, which is a half step below. It should be noted that only two modes generate the minor (major7) chord type, melodic minor (mode I) and harmonic minor (mode I). Harmonic minor is less common than melodic minor when improvising over this chord type. Harmonic minor chords function as tonic minors, or as a I chord in minor harmony.

Example 2-34



Modes of the Harmonic Minor Scale

Locrian ♮6

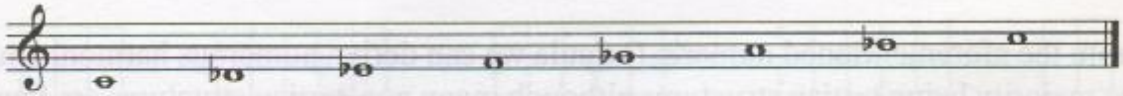
Harmonic Minor Mode II, Locrian ♯6, etc...

The second mode in the harmonic minor scale is known by a few different names. In this book it will be referred to as Locrian ♮6. This mode contains the same notes as a harmonic minor scale down a major second, or a whole step. To determine a numeric formula for this mode, we must compare Locrian ♮6 to the scale to which all scales are compared, the major scale. Since Locrian ♮6 is the same as a harmonic minor scale a major second below, C Locrian ♮6 would be mode two in B♭ harmonic minor. When we compare Locrian ♮6 unto a parallel major scale, we get the following formula:

1-♭2-♭3-4-♭5-6-♭7

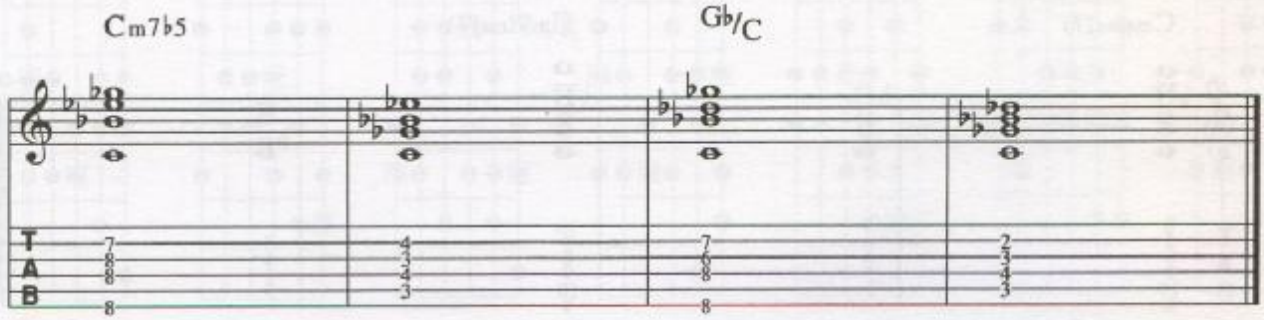
The next example diagrams mode two in harmonic minor, Locrian ♮6, above the note C.

Example 2-35



From the aforementioned numeric formula we can derive Locrian ♮6 chord types, the most common being the minor 7♭5, or half-diminished chord. The following example will diagram the most common Locrian ♮6 chord types whose roots are found on the sixth or fifth strings. When Locrian ♮6 is played over the following chord structures special care must be given to the second scale degree which is dissonant and needs to be resolved to the root, which is a half step below. It should be noted that this mode is the least common of the three half-diminished modes (Locrian, Locrian ♮2, and Locrian ♮6) used in improvisation.

Example 2-36



Modes of the Harmonic Minor Scale

Ionian ♯5

Harmonic Minor Mode III, Ionian Augmented, etc...

The third mode in the harmonic minor scale is known by a few different names. In this book it will be referred to as Ionian ♯5. This mode contains the same notes as a harmonic minor scale down a minor third, or one and one-half steps. To determine a numeric formula for this mode, we must compare Ionian ♯5 to the scale to, which all scales are compared, the major scale. Since Ionian ♯5 is the same as a harmonic minor scale a minor third below, C Ionian ♯5 would be mode three in A harmonic minor. When we compare Ionian ♯5 unto a parallel major scale, we get the following formula:

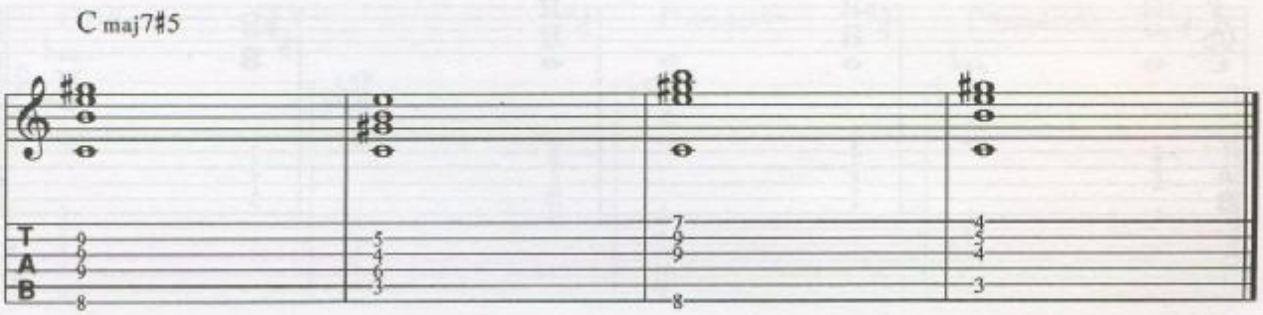
1-2-3-4-♯5-6-7

The next example diagrams mode three in harmonic minor, Ionian ♯5, above the note C.

Example 2-37

From the aforementioned numeric formula we can derive numerous Ionian ♯5 chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Ionian ♯5 chord types whose roots are found on the sixth or fifth strings. When Ionian ♯5 is played over the following chord structures special care must be given to the fourth and sixth scale degrees, which are dissonant and need to be resolved to the third and fifth, respectively. Although Ionian ♯5 chords are rare, they can be used as a substitute for Ionian chord types, or tonic majors.

Example 2-38



Modes of the Harmonic Minor Scale

Dorian ♯4

Harmonic Minor Mode IV, Overtone Minor, etc...

The fourth mode in the harmonic minor scale is known by a few different names. In this book it will be referred to as Dorian ♯4. This mode contains the same notes as a harmonic minor scale down a perfect fourth, or up a perfect fifth. To determine a numeric formula for this mode, we must compare Dorian ♯4 to the scale to which all scales are compared, the major scale. Since Dorian ♯4 is the same as a harmonic minor scale a perfect fourth below, C Dorian ♯4 would be mode four in G harmonic minor. When we compare Dorian ♯4 unto a parallel major scale, we get the following formula:

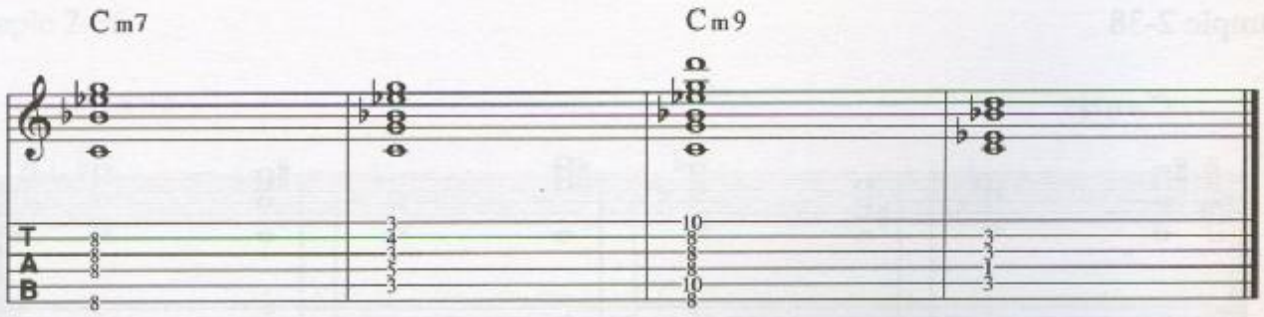
1-2-♭3-♯4-5-6-♭7

The next example diagrams mode four in harmonic minor, Dorian ♯4, above the note C.

Example 2-39

From the aforementioned numeric formula we can derive numerous Dorian ♯4 chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Dorian ♯4 chord types whose roots are found on the sixth or fifth strings. Although Dorian ♯4 chords are rare, they can be used as a substitute for Dorian chord types, which are typically found in positions of a II in major, or a I in minor.

Example 2-40



Modes of the Harmonic Minor Scale

Phrygian ♮3

Harmonic Minor Mode V, Phrygian Major, Phrygian Dominant, Spanish Phrygian, Spanish, Jewish, Phrygian ♯3, etc...

The fifth mode in the harmonic minor scale is known by many names. In this book it will be referred to as Phrygian ♮3. This mode contains the same notes as a harmonic minor scale down a perfect fifth, or up a perfect fourth. To determine a numeric formula for this mode, we must compare Phrygian ♮3 to the scale to which all scales are compared, the major scale. Since Phrygian ♮3 is the same as a harmonic minor scale a perfect fifth below, C Phrygian ♮3 would be mode five in F harmonic minor. When we compare Phrygian ♮3 unto a parallel major scale, we get the following formula:

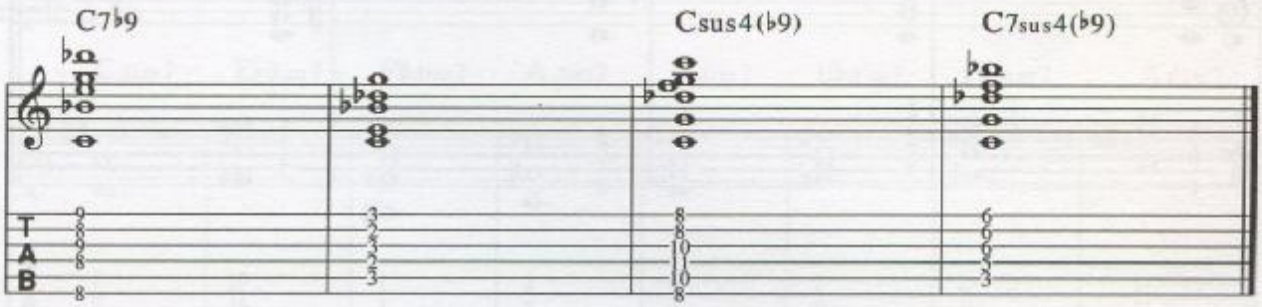
1-♭2-3-4-5-♭6-♭7

The next example diagrams mode five in harmonic minor, Phrygian ♮3, above the note C.

Example 2-41

From the aforementioned numeric formula we can derive numerous Phrygian ♮3 chord types, the majority being tertian structures although many non-tertian structures are found as well. Phrygian ♮3 chords are usually dominant 7th or dominant 7sus4 (♭9) structures. When played over tertian structures, special care must be given to the second, fourth, and sixth scale degrees, which are dissonant and need to be resolved to the root, third, and fifth, respectively. The following example will diagram the most common Phrygian ♮3 chord types whose roots are found on the sixth or fifth strings. Phrygian ♮3 chords function as dominant altered chord types, which can resolve down a fifth (up a fourth) to a I chord in major or minor harmony.

Example 2-42



Modes of the Harmonic Minor Scale

Lydian ♯2

Harmonic Minor Mode VI, Lydian ♯9, etc...

The sixth mode in the harmonic minor scale is known by a few different names. In this book it will be referred to as Lydian ♯2. This mode contains the same notes as a harmonic minor scale up a major third, or two whole steps. To determine a numeric formula for this mode, we must compare Lydian ♯2 to the scale to which all scales are compared, the major scale. Since Lydian ♯2 is the same as a harmonic minor scale a major third above, C Lydian ♯2 would be mode six in E harmonic minor. When we compare Lydian ♯2 unto a parallel major scale, we get the following formula:

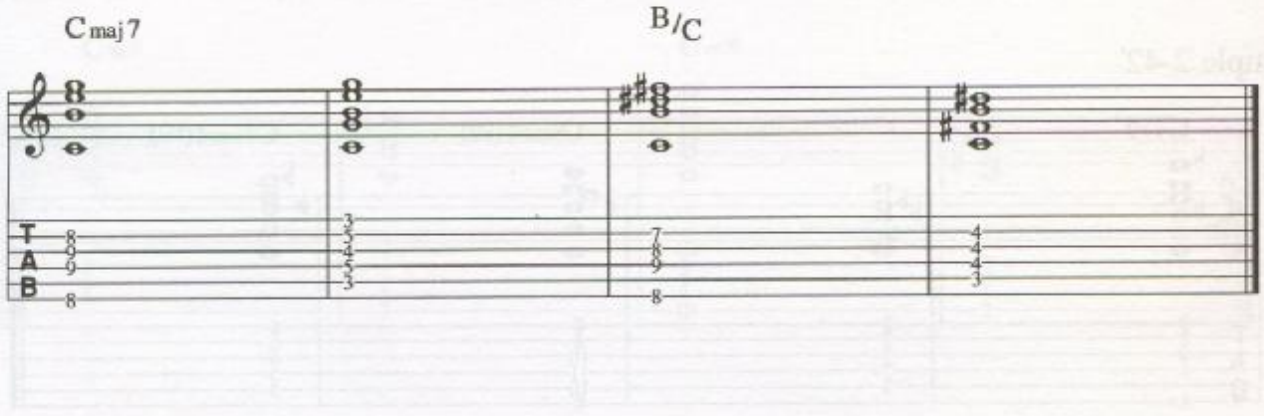
1-♯2-3-♯4-5-6-7

The next example diagrams mode six in harmonic minor, Lydian ♯2, above the note C.

Example 2-43

From the aforementioned numeric formula we can derive numerous Lydian ♯2 chord types, the majority being tertian structures although many non-tertian structures are found as well. The following example will diagram the most common Lydian ♯2 chord types whose roots are found on the sixth or fifth strings. Although Lydian ♯2 chords are rare, they can be used as a substitute for Lydian chord types, or tonic major chords.

Example 2-44



Modes of the Harmonic Minor Scale

Altered ♭♭7

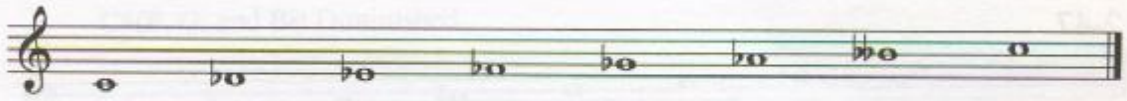
Harmonic Minor Mode VII, Altered Dominant ♭♭7, Altered Dominant ♮6, Altered ♮6, Super Locrian ♭♭7, Super Locrian ♮6, etc...

The seventh mode in the harmonic minor scale is known by many names. In this book it will be referred to as altered ♭♭7. This mode contains the same notes as a harmonic minor scale up a minor second, or one half step. To determine a numeric formula for this mode, we must compare altered ♭♭7 to the scale to which all scales are compared, the major scale. Since altered ♭♭7 is the same as a harmonic minor scale a minor second above, C altered ♭♭7 would be mode seven in D♭/C♯ harmonic minor. When we compare altered ♭♭7 unto a parallel major scale, we get the following formula:

1-♭2-♭3-♭4-♭5-♭6-♭♭7

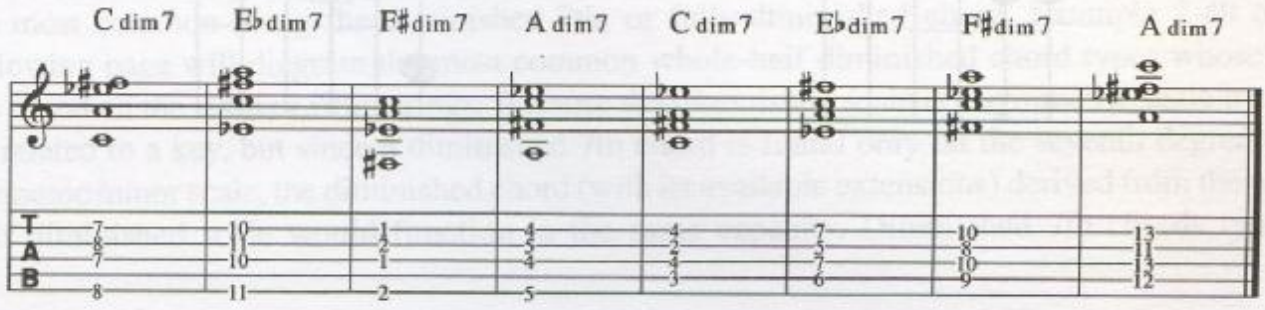
The next example diagrams mode seven in harmonic minor, altered ♭♭7, above the note C.

Example 2-45



From the aforementioned numeric formula we can derive altered ♭♭7 chord types, the most common being the diminished 7th, or fully-diminished chord. When altered ♭♭7 is played over the following chord structures special care must be given to the second and fourth scale degrees. They are dissonant and need to be resolved to the root and third, respectively. Since the dim. 7th chord is built on the seventh degree (leading tone) of a harmonic minor scale it has a dominant function typically resolving to a chord whose root is located a half step above, in either a major or minor tonality. It should be noted that due to its symmetric chord makeup, any one of the tones in the dim. 7th can serve as the root (leading tone) of the chord, thereby allowing this chord to have various resolutions. The most common function of the dim. 7th chord is to substitute for a dominant 7♭9 chord whose root lies a major third below.

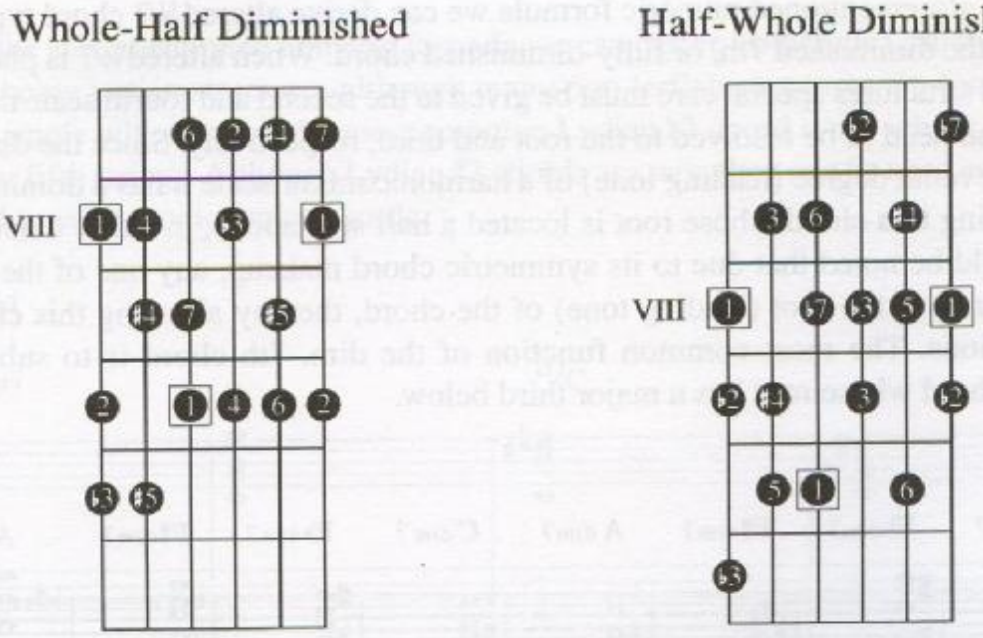
Example 2-46



Diminished Scale Harmony

In order to gain an understanding of the diminished scale(s), a few points should be made. First, every diminished scale is symmetric and therefore does not produce modes or tonalities as did the major, melodic minor, and harmonic minor scales. Second, diminished scales contain eight tones. Third, because of its internal symmetry every diminished scale contains the same notes as three other diminished scales, resulting in a total of only three different sounding diminished scales versus twelve of each of the major, melodic minor, and harmonic minor scales. Fourth, there are only two forms of the diminished scale, one alternating whole steps and half steps, and another alternating half steps and whole steps. The ensuing pages will be devoted to breaking down both forms of the diminished scale with their related chords with their most common function in contemporary music. Before this is undertaken, it is advised that the student becomes familiar with the fingerings of the diminished scale presented in the three-note-per-string system. It should be noted that numbers are found within the notes on the fingerboard. These numbers represent scale degrees of the diminished scale as they relate unto a parallel major scale. The following example shows the whole-half diminished and half-whole diminished scales starting on C. The fingerings for all other diminished scales can be located in the appendix of this book.

Example 2-47

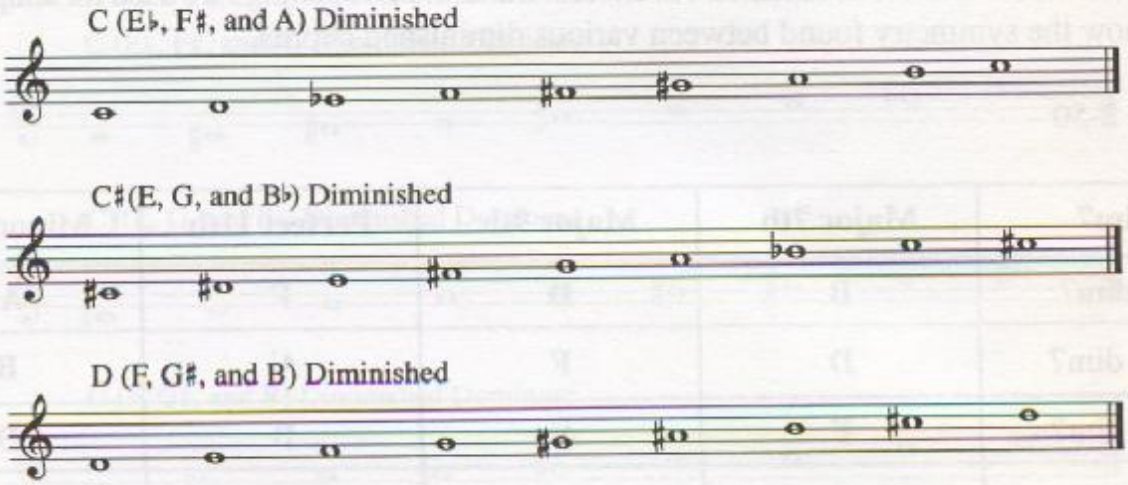


Diminished Scale Harmony

Whole-Half Diminished Scale

The diminished scale, also called the whole-half diminished scale, is a symmetric scale built upon the following pattern: whole step, half step, whole step, half step, whole step, half step, whole step, half step. The construction of the diminished scale can be seen as the combination of two fully-diminished seventh chords a whole step apart. Because of the regularity within the scale, every diminished is identical aurally to three other diminished scales, all separated by the interval of a minor third. It should be noted that because each scale has eight tones, not seven like the asymmetric parent scales (major, melodic, and harmonic), each diminished scale requires the repeating of one of the seven letters in the musical alphabet to arrive at an eight-tone scale. Because of this irregularity, several numeric formulas are possible. Consult the following example that illustrates the three different diminished scales along with their enharmonic equivalents:

Example 2-48



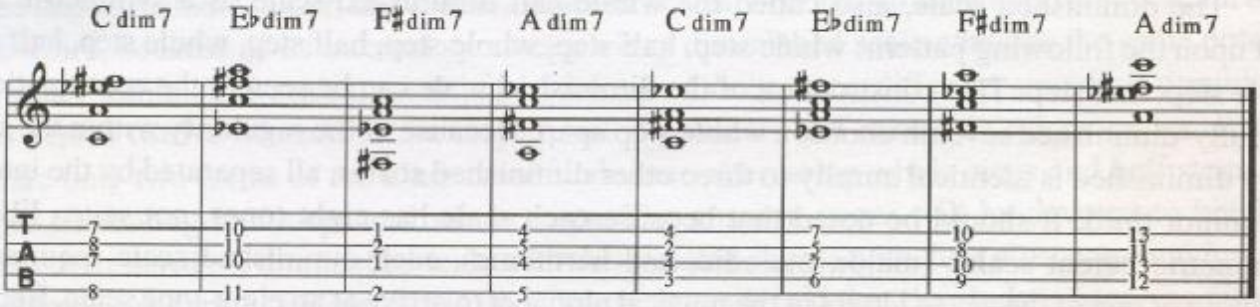
To determine a numeric formula for this scale, we must compare the whole-half diminished to the scale to which all scales are compared, the major scale. When we compare whole-half diminished unto a parallel major scale, we get the following formula:

1-2-♭3-4-♯4-♯5-6-7

From the aforementioned numeric formula we can derive whole-half diminished chord types, the most common being the diminished 7th, or fully-diminished chord. Example 2-49 on the following page will diagram the most common whole-half diminished chord types whose roots are found on the sixth or fifth strings. Because the diminished scale is a symmetric scale it cannot be related to a key, but since a diminished 7th chord is found only on the seventh degree of the harmonic minor scale, the diminished chord (with its available extensions) derived from the whole-half diminished scale would function in the same capacity. Diminished 7th chords typically

function as rootless dominant chords resolving to a chord whose root is located a half step above, in either a major or minor tonality.

Example 2-49



Diminished 7th chords are often extended to include one or more of the non-chord tones from the diminished scale. When these chords appear in printed form, they are often written as "add" chords, such as C dim7(add maj7), or C dim7(add D), etc. The following table will diagram the available extensions for diminished 7th chords. Enharmonic spellings are used for simplification and to show the symmetry found between various diminished chords.

Example 2-50

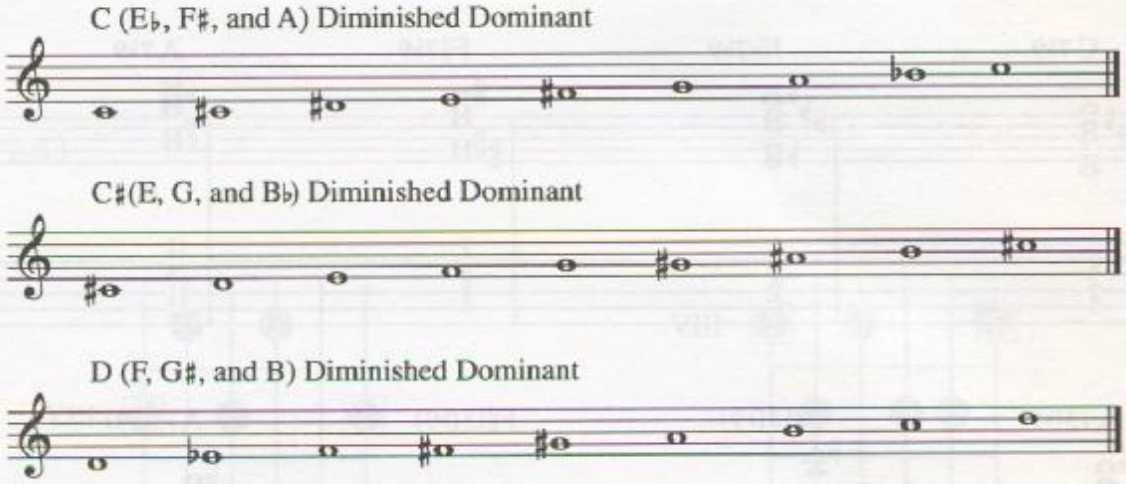
Dim7	Major 7th	Major 9th	Perfect 11th	Minor 13th
C dim7	B	D	F	A♭
E♭ dim7	D	F	A♭	B
F♯ dim7	F	A♭	B	D
A dim7	A♭	B	D	F
C♯ dim7	C	E♭	G♭	A
E dim7	E♭	G♭	A	C
G dim7	G♭	A	C	E♭
B♭ dim7	A	C	E♭	G♭
D dim7	C♯	E	G	B♭
F dim7	E	G	B♭	C♯
A♭ dim7	G	B♭	C♯	E
B dim7	B♭	C♯	E	G

Diminished Scale Harmony

Half-Whole Diminished Scale

The half-whole diminished scale, also called the diminished dominant scale, is a symmetric scale built upon the following pattern: half step, whole step, half step, whole step, half step, whole step, half step, whole step. The construction of the half-whole diminished scale can be seen as the combination of two fully-diminished seventh chords a half step apart. Because of the regularity within the scale, every half-whole diminished scale is identical aurally to three other half-whole diminished scales, all separated by the interval of a minor third. It should be noted that because each scale has eight tones, not seven like the asymmetric parent scales (major, melodic, and harmonic), each half-whole diminished scale requires the repeating of one of the seven letters in the musical alphabet to arrive at an eight-tone scale. Because of this irregularity, several numeric formulas are possible. Consult the following example which illustrates the three different diminished dominant scales along with their enharmonic equivalents:

Example 2-51



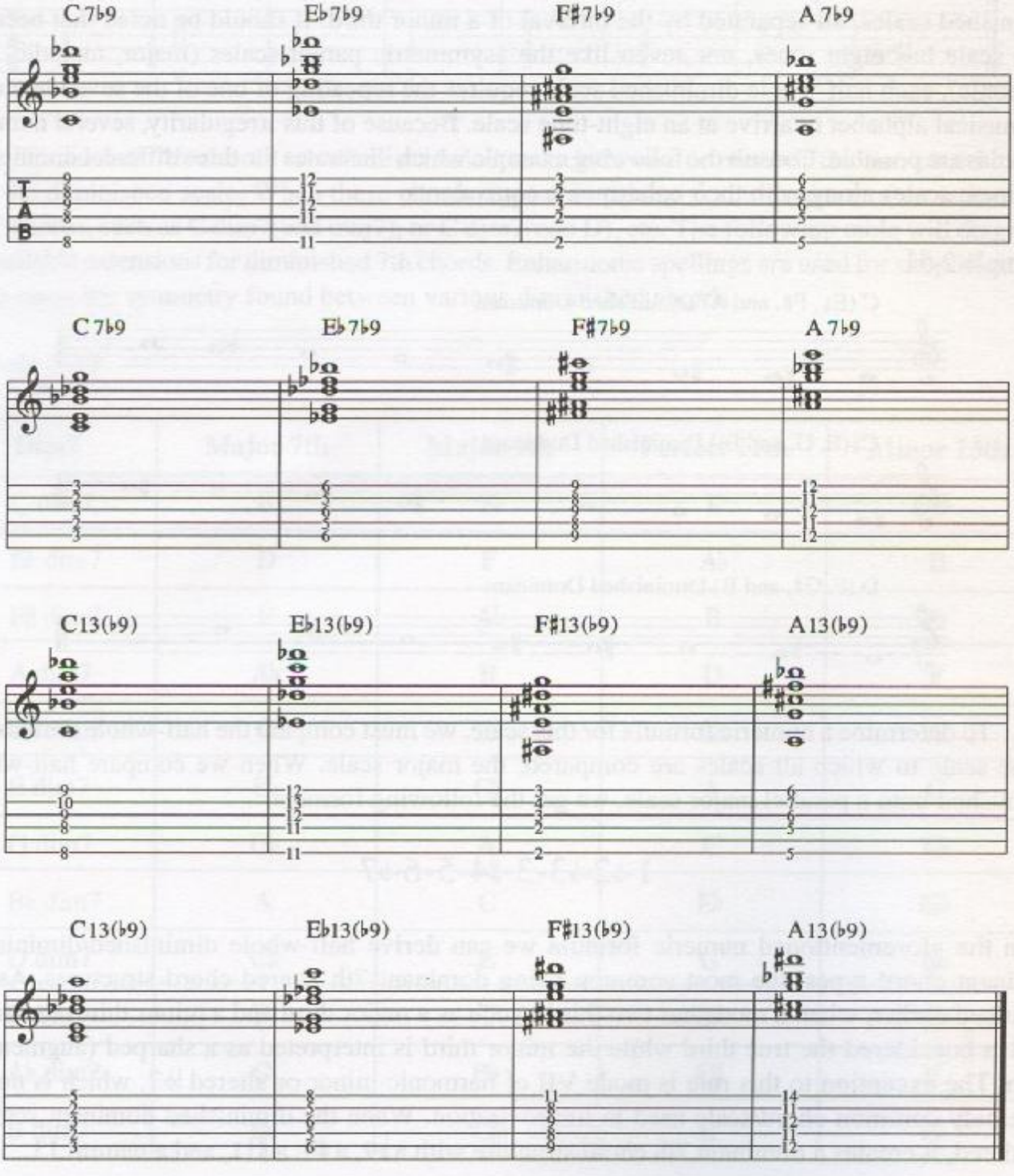
To determine a numeric formula for this scale, we must compare the half-whole diminished to the scale to which all scales are compared, the major scale. When we compare half-whole diminished unto a parallel major scale, we get the following formula:

1-♭2-♭3-3-♯4-5-6-♭7

From the aforementioned numeric formula we can derive half-whole diminished/diminished dominant chord types, the most common being dominant 7th altered chord structures. As we discussed earlier, when a mode has two thirds, such as a major third and a minor third, the major third is considered the true third while the minor third is interpreted as a sharped (augmented) ninth. The exception to this rule is mode VII of harmonic minor or altered ♭♭7, which is not an extremely common chord/scale used in improvisation. When the diminished dominant scale is reordered, it creates a dominant 7th chord structure with a ♭9, a ♯9, a ♯11, and a natural 13.

Just as we found with diminished 7th chords, diminished dominant chords are built upon the principles of symmetry, and therefore are interchangeable. Example 2-52 will diagram a few of the many half-whole diminished/diminished dominant chord types whose roots are found on the sixth or fifth strings. Diminished dominant/half-whole diminished chords typically resolve to chords whose roots lie a perfect fifth below. Consult example 2-52.

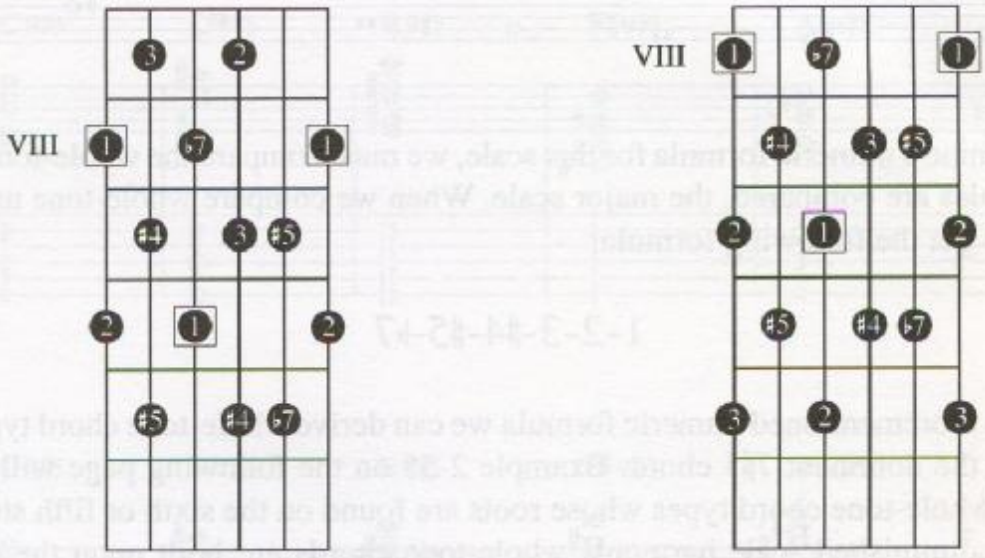
Example 2-52



Whole-Tone Scale Harmony

In order to gain an understanding of the whole-tone scale(s), a few points should be made. First, every whole-tone scale is symmetric and therefore does not produce modes or tonalities as did the major, melodic minor, and harmonic minor scales. Second, whole-tone scales contain six tones. Third, because of its internal symmetry every whole-tone scale contains the same notes as five other whole-tone scales, resulting in a total of only two different sounding whole-tone scales versus twelve of each of the major, melodic minor, and harmonic minor scales. Fourth, there is only one form of the whole-tone scale, which is an arrangement of six consecutive whole steps. The ensuing pages will be devoted to breaking down the whole-tone scale with its related chords along with their most common function in contemporary music. Before this is undertaken, it is advised that the student becomes familiar with the fingerings of the whole-tone scale presented in the two conventional scale forms as shown in example 2-53. It should be noted that numbers are found within the notes on the fingerboard. These numbers represent scale degrees of the whole-tone scale as they relate unto a parallel major scale. The following examples are in C whole-tone. The fingerings for all other whole-tone scales can be located in the appendix of this book.

Example 2-53

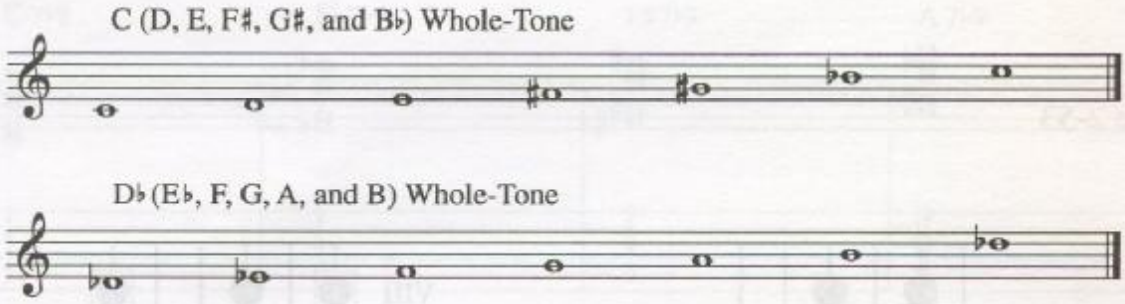


Whole-Tone Scale Harmony

The Whole-Tone Scale

The Whole-Tone scale is a symmetric scale built upon the following pattern: whole step, whole step, whole step, whole step, whole step, whole step. The construction of the whole-tone scale can be seen as the combination of two augmented triads a whole step apart. Because of regularity within the scale, every whole-tone scale is identical aurally to five other whole-tone scales, all separated by the interval of a whole step. It should be noted that because each scale has six tones, not seven like the asymmetric parent scales (major, melodic, and harmonic), each whole-tone scale requires the exclusion of one of the seven letters in the musical alphabet to arrive at a six-tone scale. Because of this irregularity, several numeric formulas are possible. Consult the following example that illustrates the two different whole-tone scales along with their enharmonic equivalents:

Example 2-54

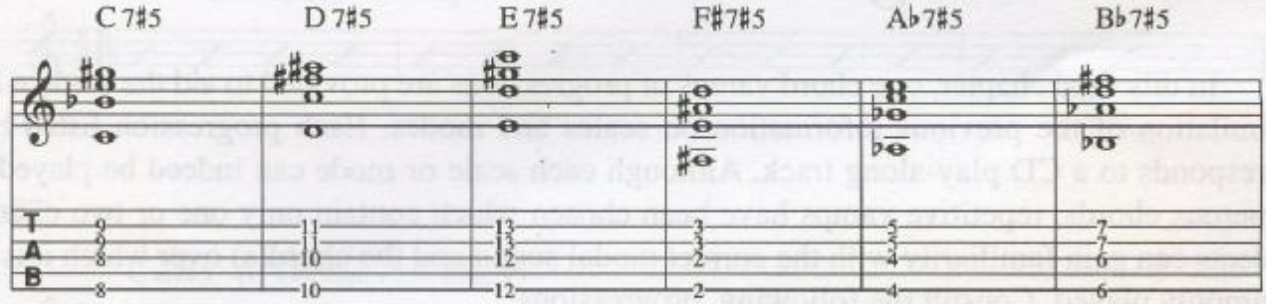


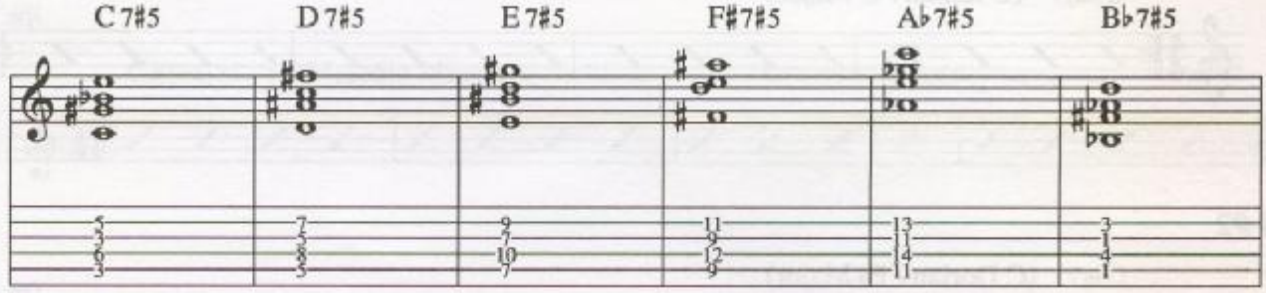
To determine a numeric formula for this scale, we must compare the whole-tone to the scale to which all scales are compared, the major scale. When we compare whole-tone unto a parallel major scale, we get the following formula:

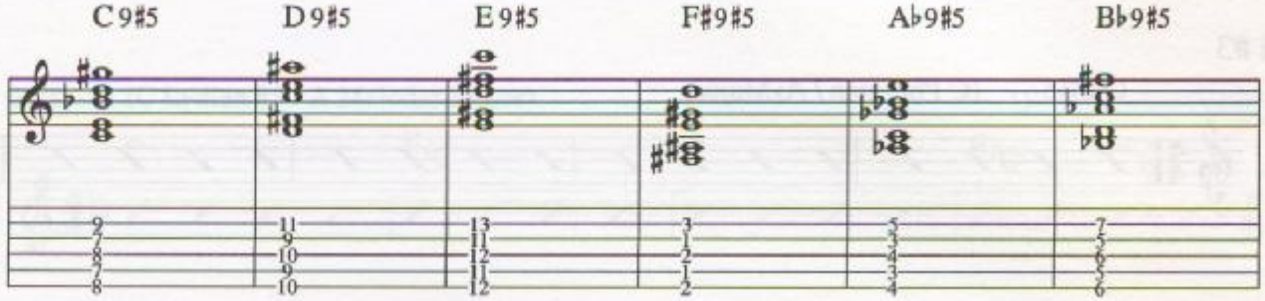
1-2-3-♯4-♯5-♭7

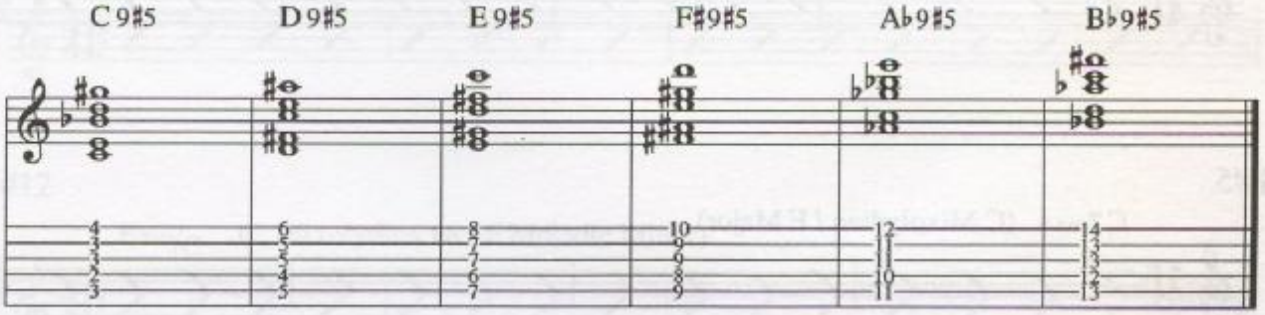
From the aforementioned numeric formula we can derive whole-tone chord types, the most common being the dominant 7♯5 chord. Example 2-55 on the following page will diagram the most common whole-tone chord types whose roots are found on the sixth or fifth strings. Just as we found with diminished scale harmony, whole-tone chords are built upon the principles of symmetry, and therefore are interchangeable. Because the whole-tone scale is a symmetric scale it cannot be related to a key, but since altered dominant chords typically resolve to chords whose roots are located a fifth below, whole-tone chords function in the same capacity. Consult example 2-55.

Example 2-55


C7♯5
D7♯5
E7♯5
F♯7♯5
A♭7♯5
B♭7♯5
T
A
B


C7♯5
D7♯5
E7♯5
F♯7♯5
A♭7♯5
B♭7♯5

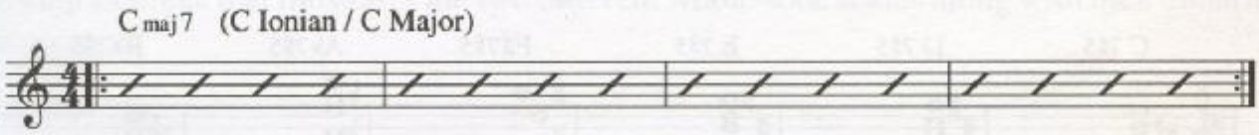

C9♯5
D9♯5
E9♯5
F♯9♯5
A♭9♯5
B♭9♯5


C9♯5
D9♯5
E9♯5
F♯9♯5
A♭9♯5
B♭9♯5

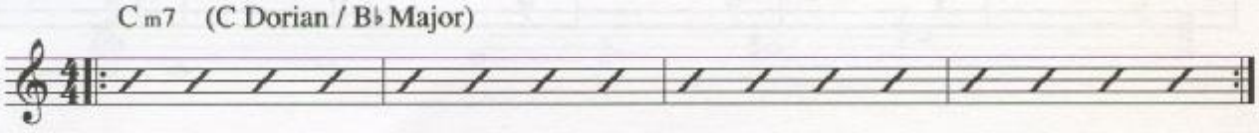
Chapter 3
Progressions for Practice

In this final chapter, one chord vamps or progressions are provided to aid the student in the assimilation of the previous information on scales and modes. Each progression listed below corresponds to a CD play-along track. Although each scale or mode can indeed be played over numerous chords, repetitive vamps have been chosen which contain only one or two chords so students can gain familiarity with the correct modal sound and the chord(s) over which it is most commonly played. Consult the following progressions:

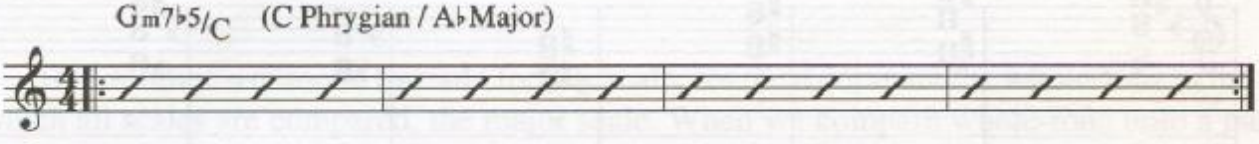
#1



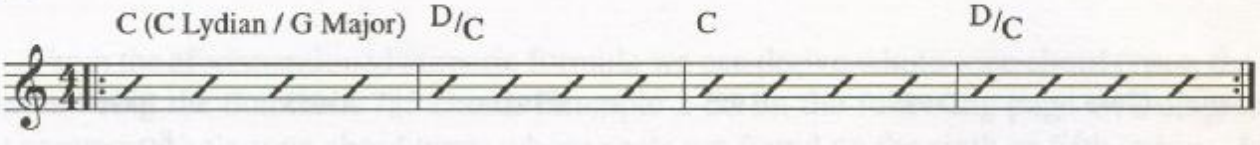
#2



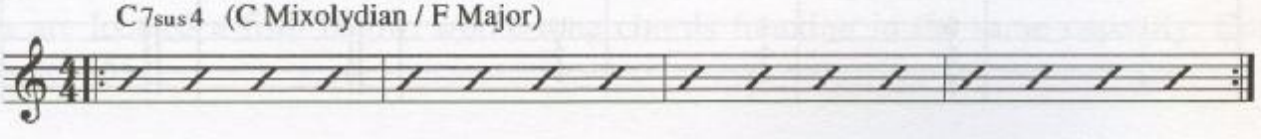
#3



#4

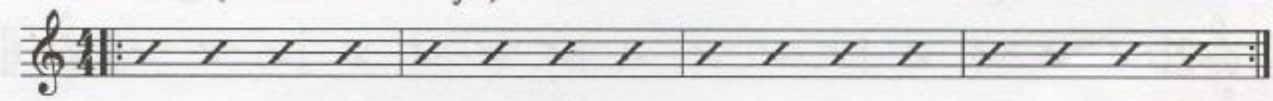


#5



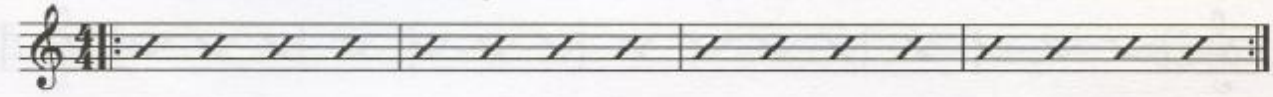
#6

Cm7 (C Aeolian / E♭ Major)



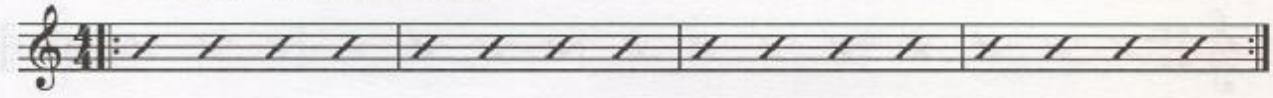
#7

Cm7♭5 (C Locrian / D♭ Major)



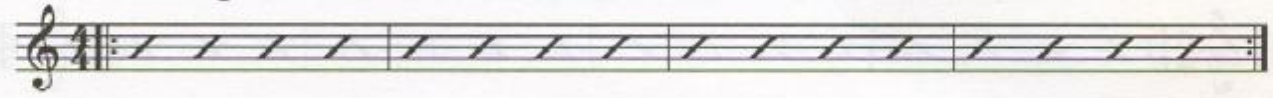
#8

Cm(maj7) (C Melodic Minor)



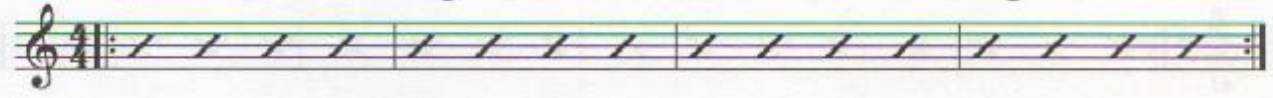
#9

D♭aug/C (C Phrygian ♮6 / B♭ Melodic Minor)



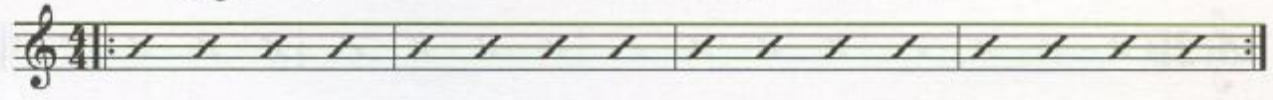
#10 (C Lydian ♯5 / A Melodic Minor)

C E/C C E/C



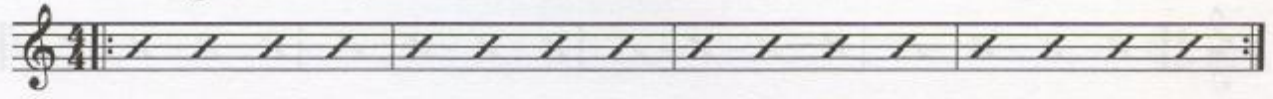
#11

B♭aug/C (C Lydian Dominant / G Melodic Minor)



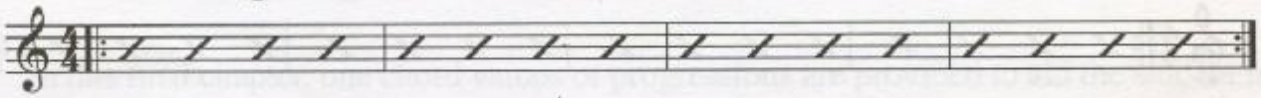
#12

Fm6/C (C Mixolydian ♭6 / F Melodic Minor)



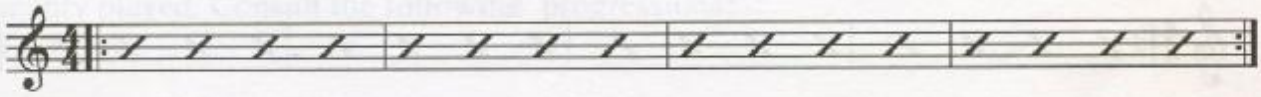
#13

E♭m(maj7)/C (C Locrian ♮2 / E♭ Melodic Minor)



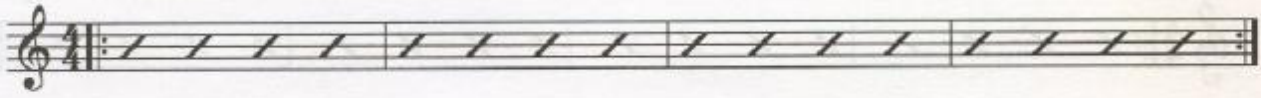
#14

C7♯9 (C Altered / D♭ Melodic Minor)



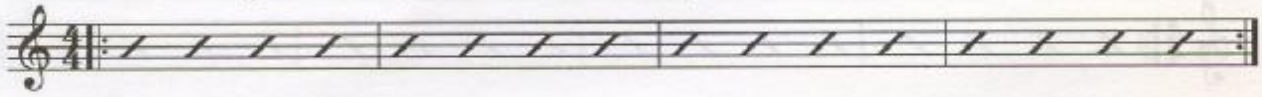
#15

Cm(maj7) (C Harmonic Minor)



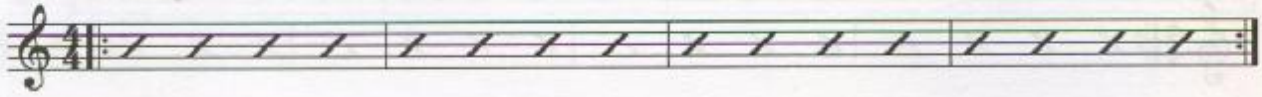
#16

Cm7♭5 (C Locrian ♮6 / B♭ Harmonic Minor)



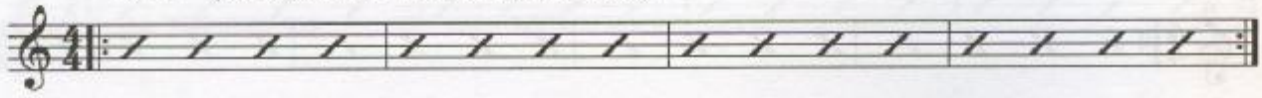
#17 (C Ionian ♯5 / A Harmonic Minor)

Caug E/C Caug E/C



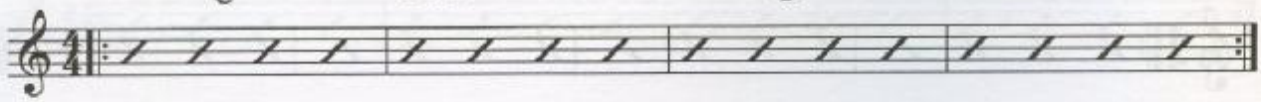
#18

Cm7 (C Dorian ♯4 / G Harmonic Minor)



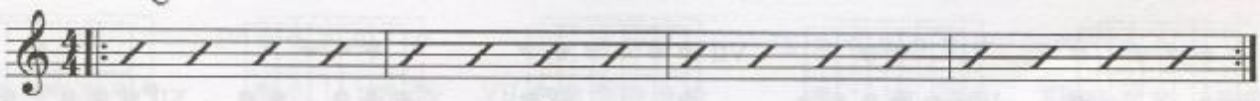
#19 (C Phrygian ♮3 / F Harmonic Minor)

Gm7♭5/C C7♭9 Gm7♭5/C C7♭9



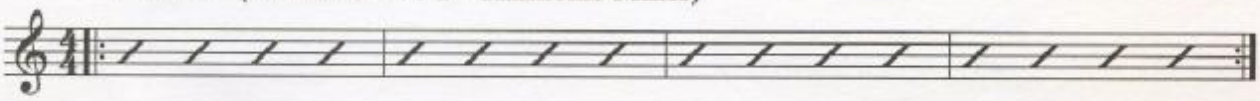
#20

B/C (C Lydian ♯2 / E Harmonic Minor)



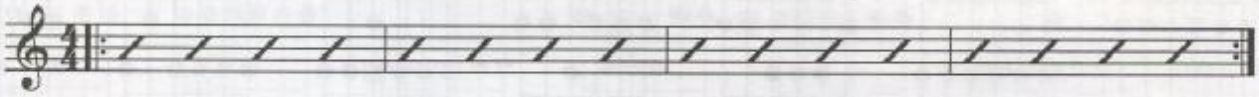
#21

C dim 7 (C Altered ♭♭7 / D♭ Harmonic Minor)



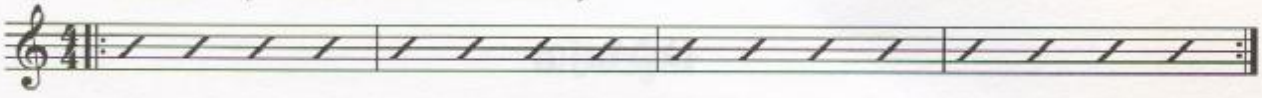
#22

C 7♭9 (C Half-Whole Diminished / Diminished Dominant)



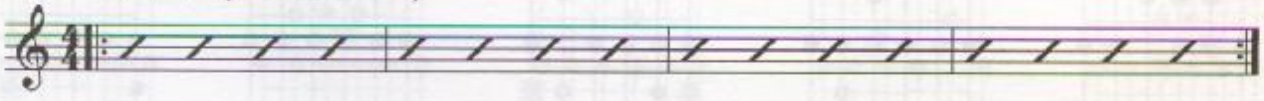
#23

C dim 7 (C Whole-Half Diminished)



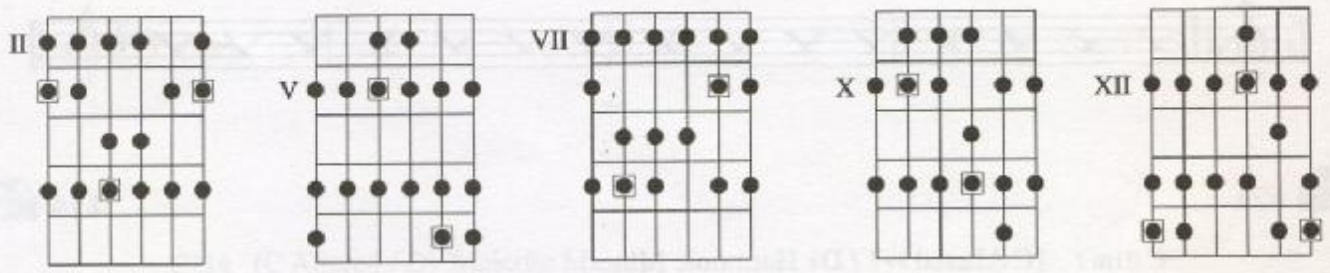
#24

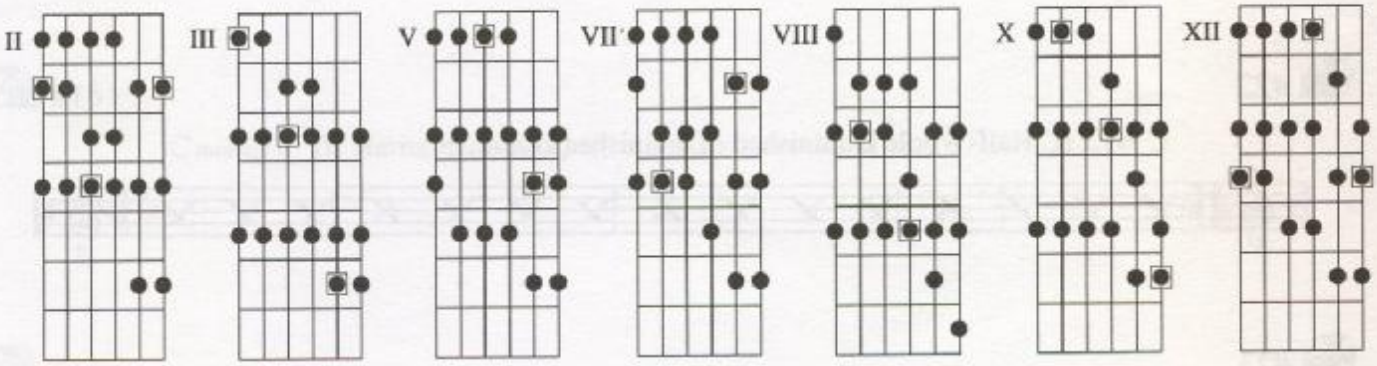
C 7♯5 (C Whole-Tone)



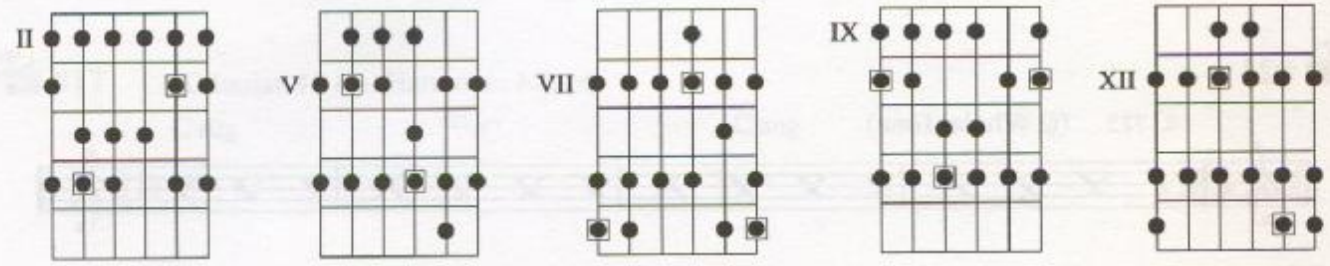
Appendix

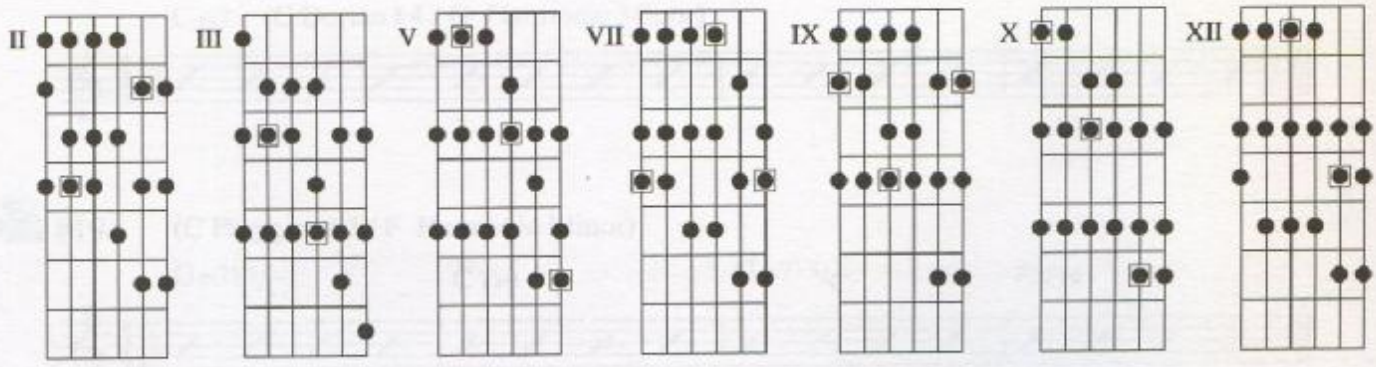
G Major



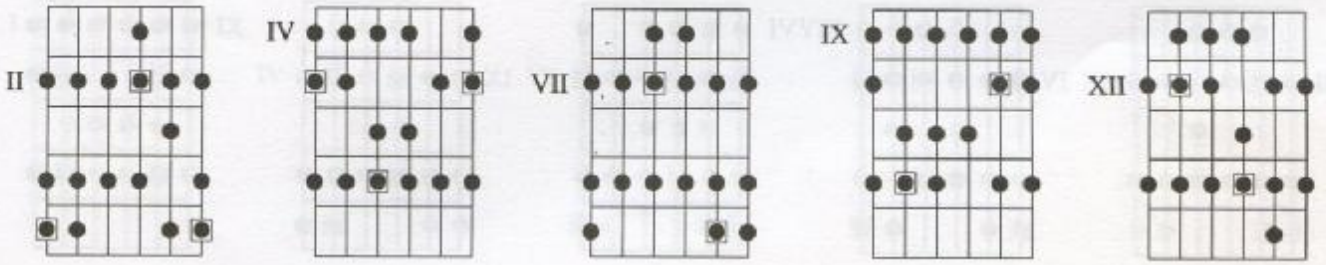


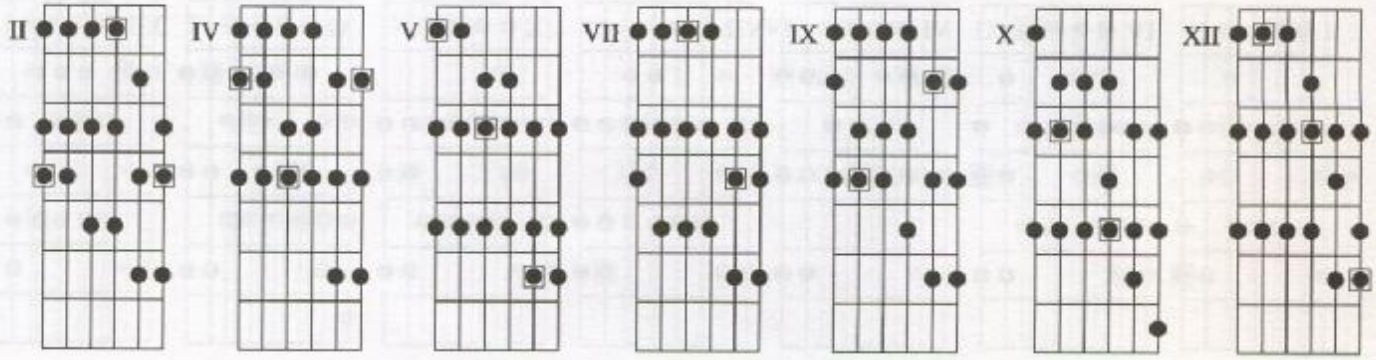
D Major



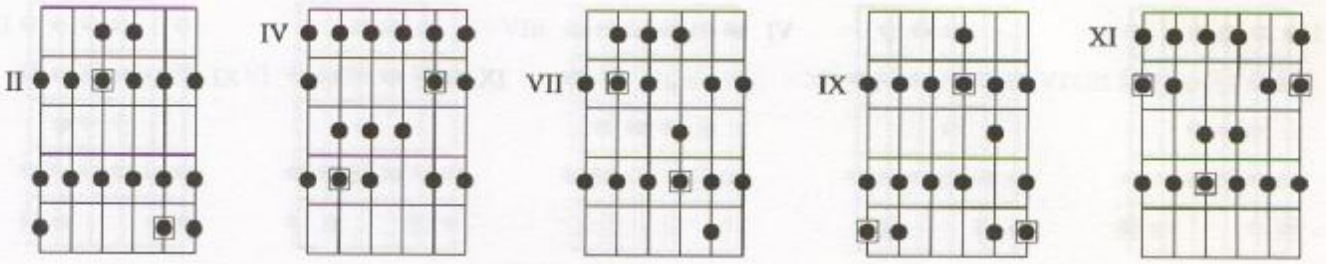


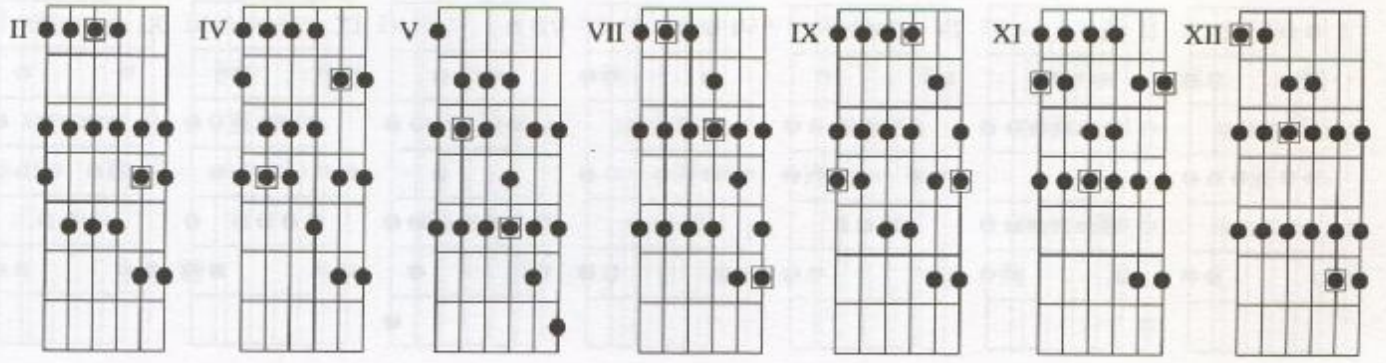
A Major



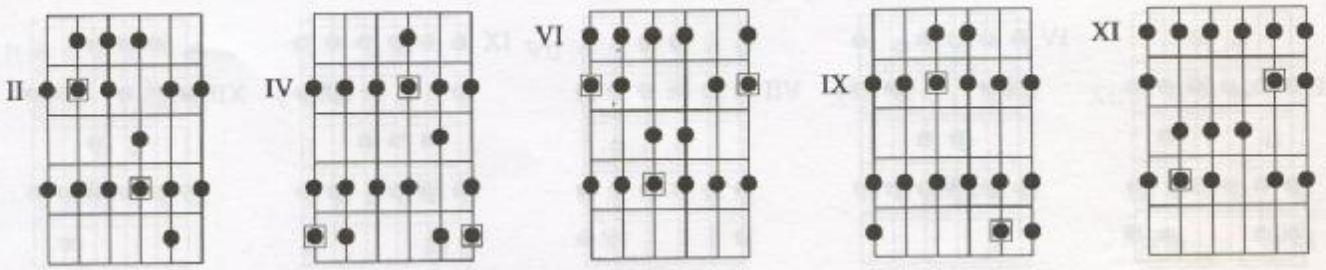


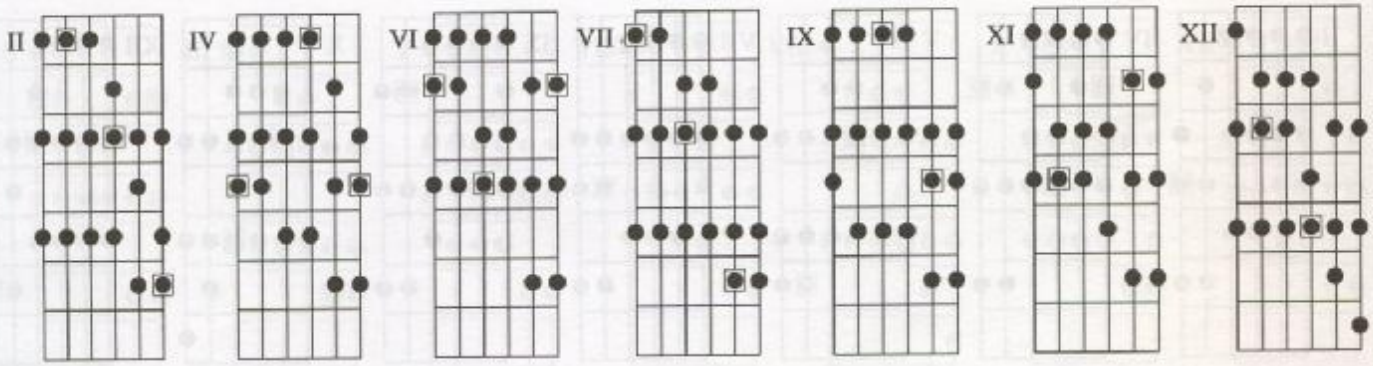
E Major



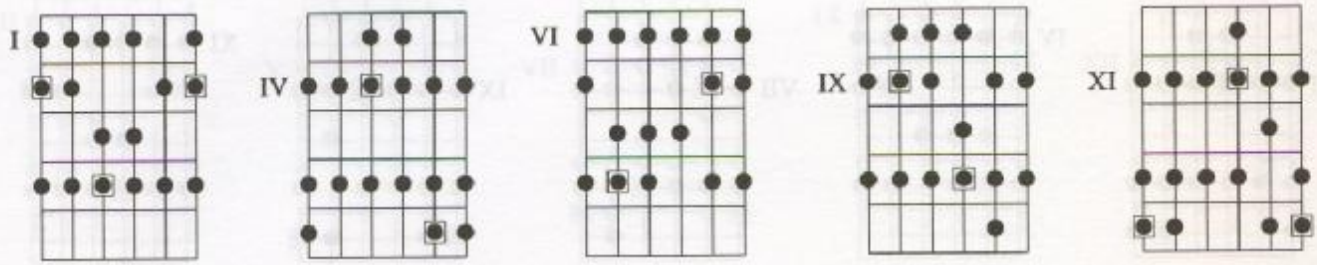


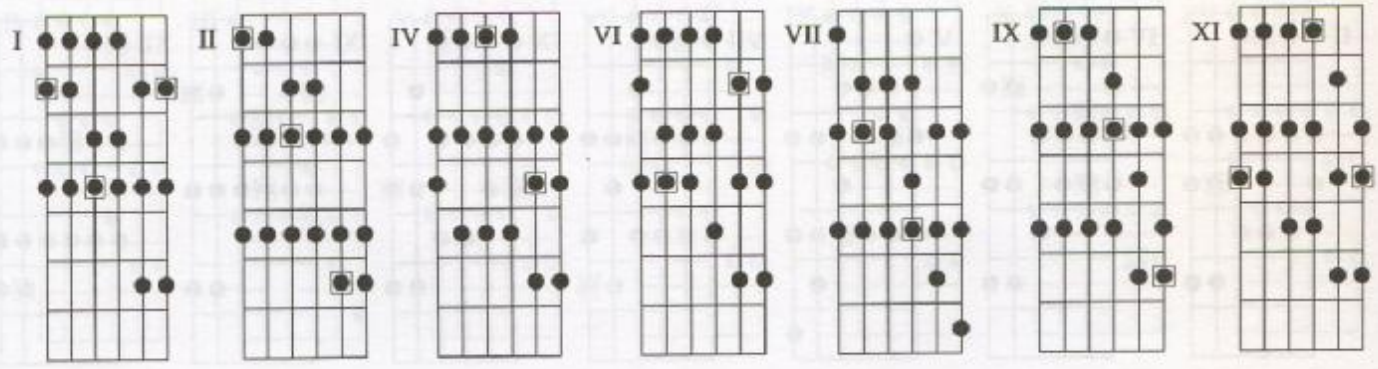
B / C♭ Major



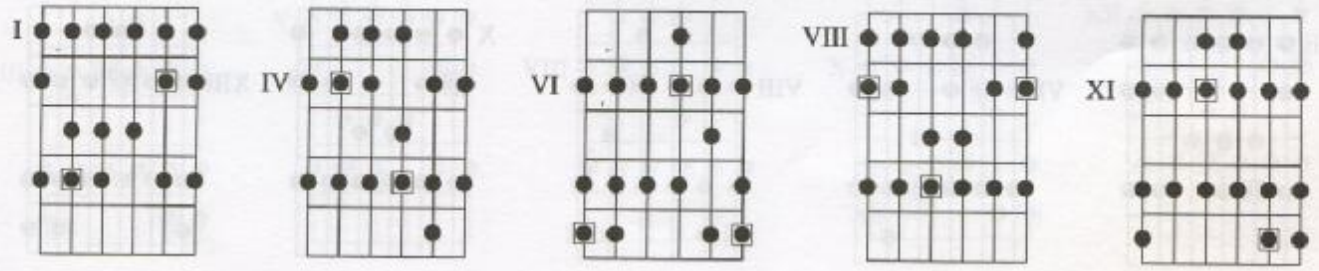


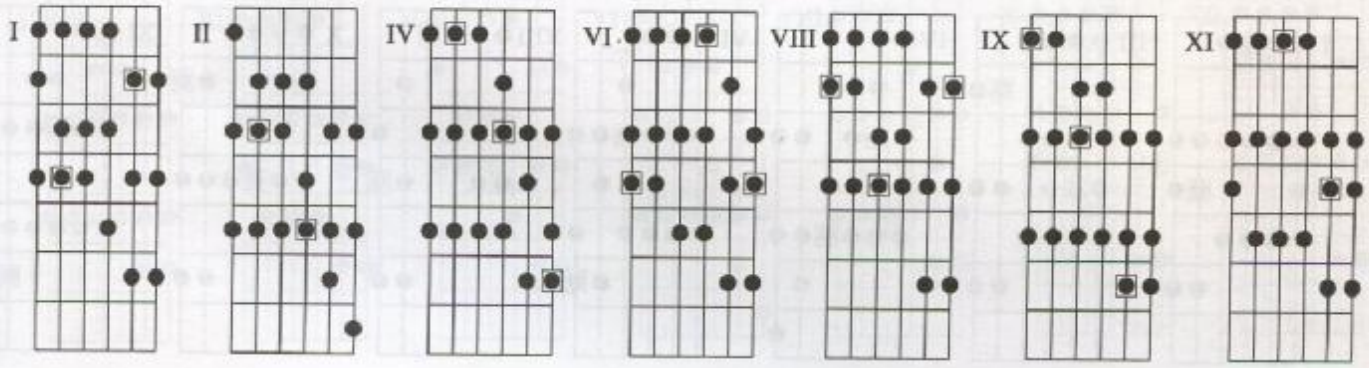
F♯ / G♭ Major



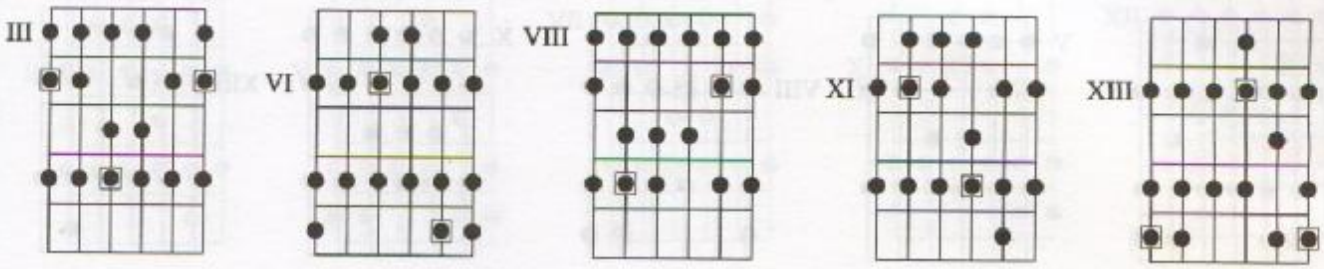


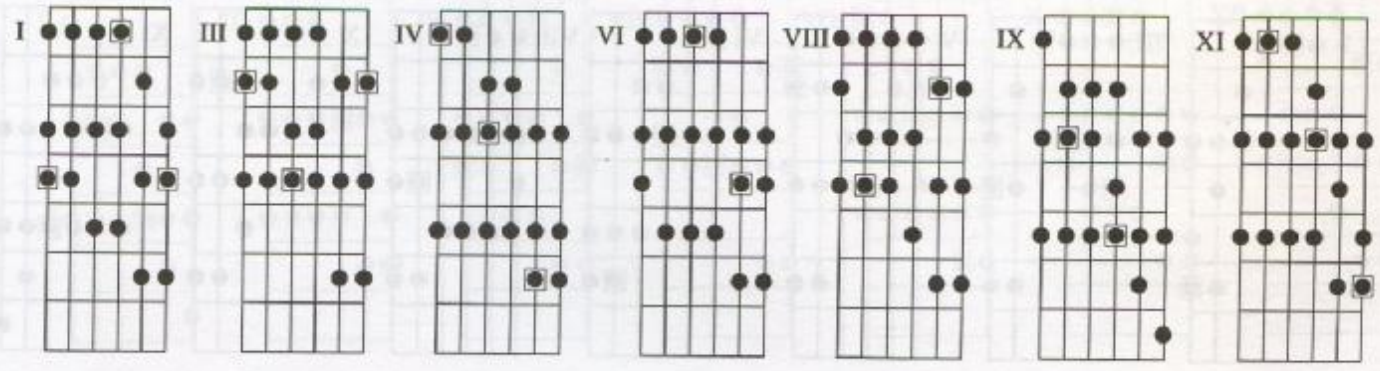
C♯ / D♭ Major



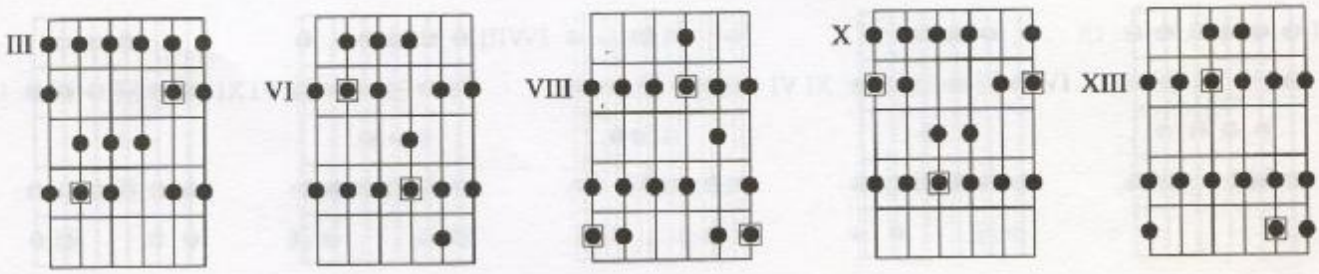


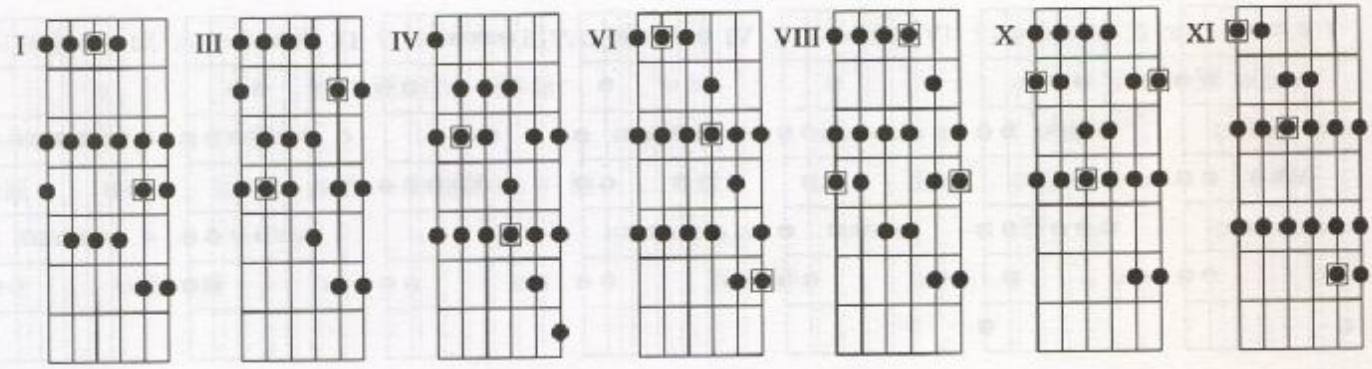
A♭ Major



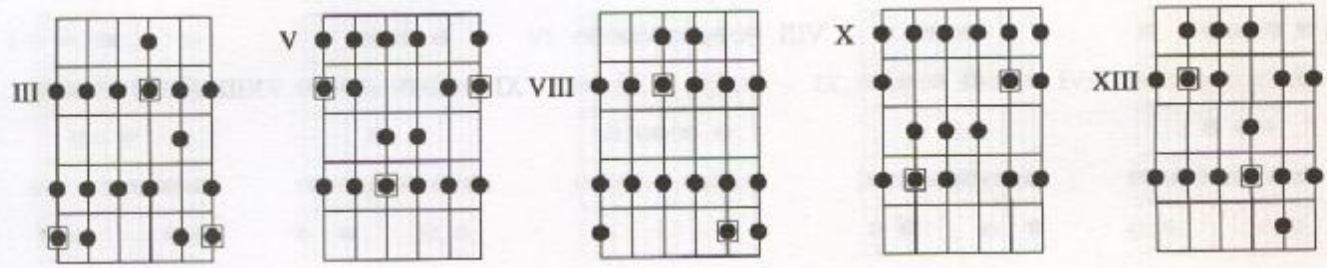


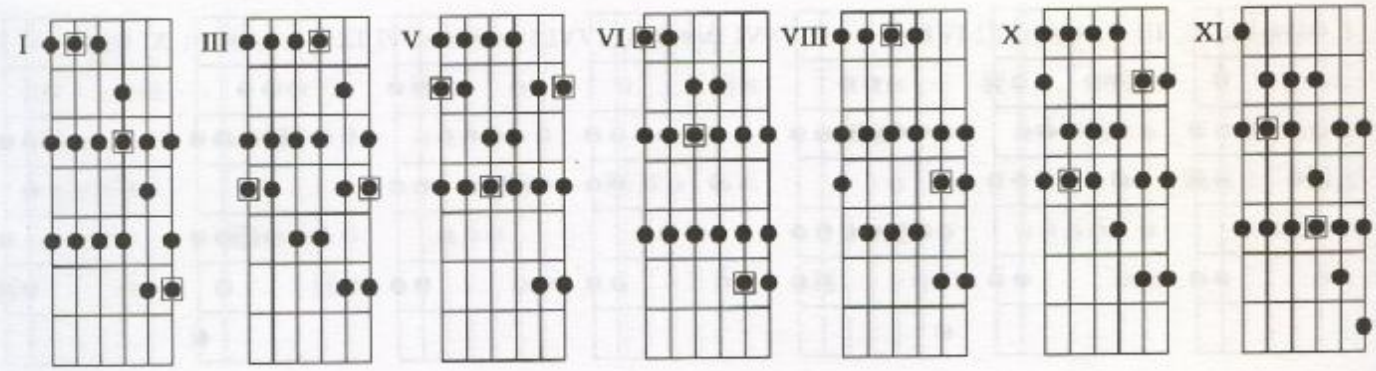
E♭ Major



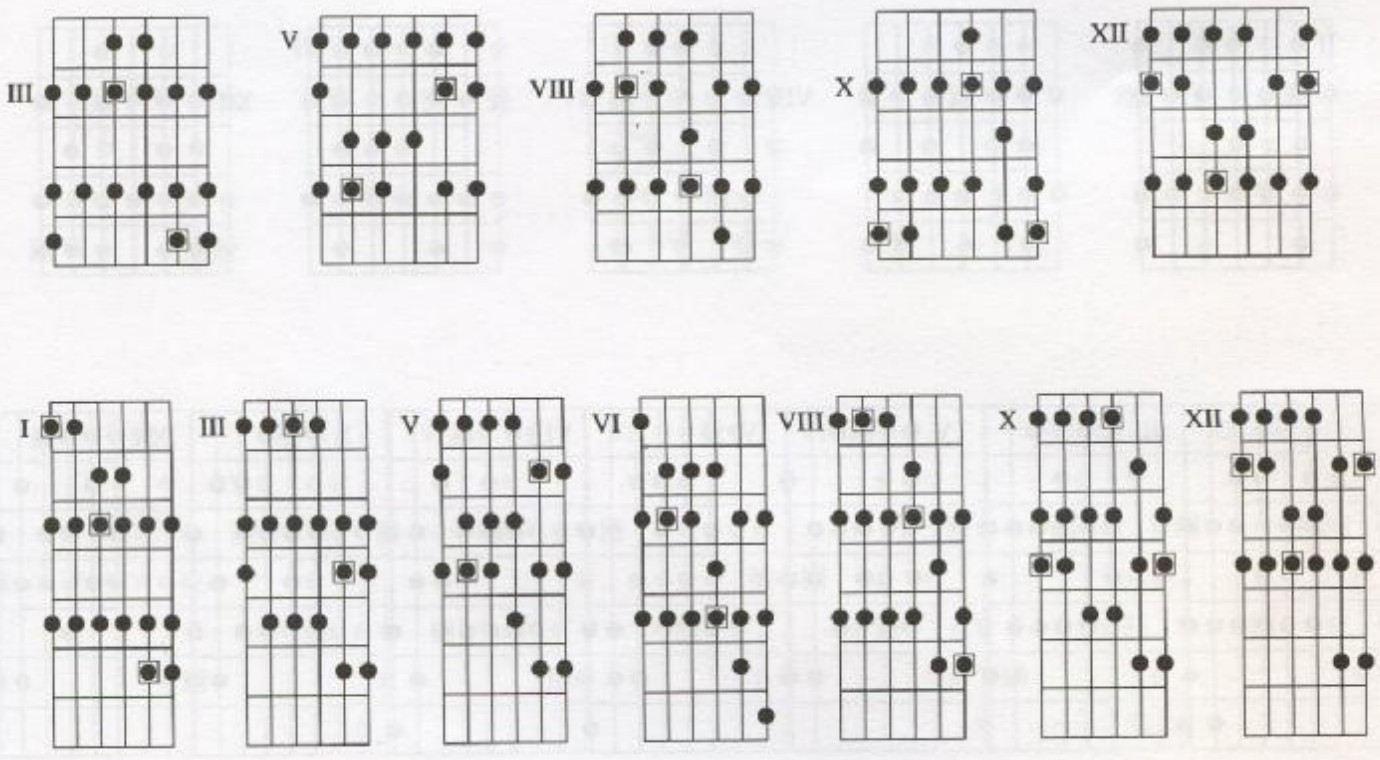


B♭ Major

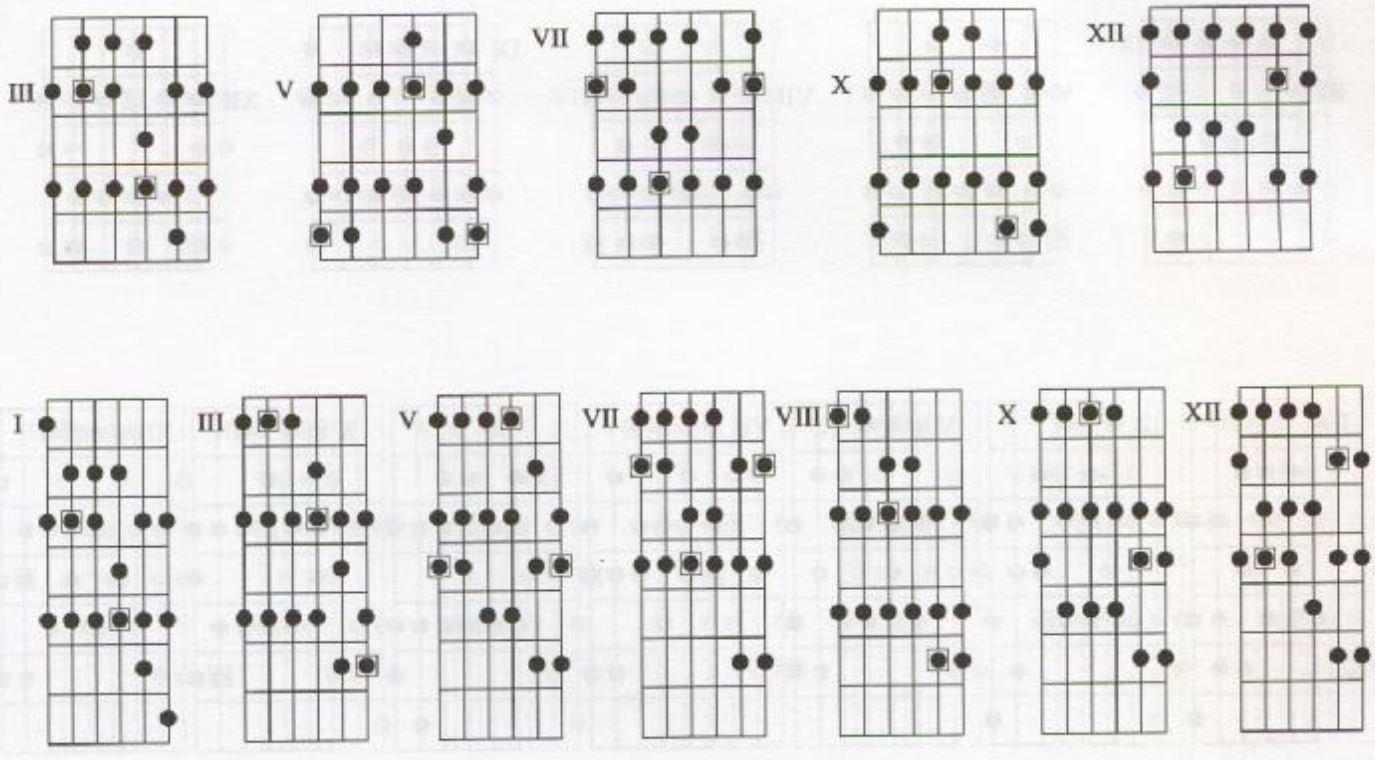




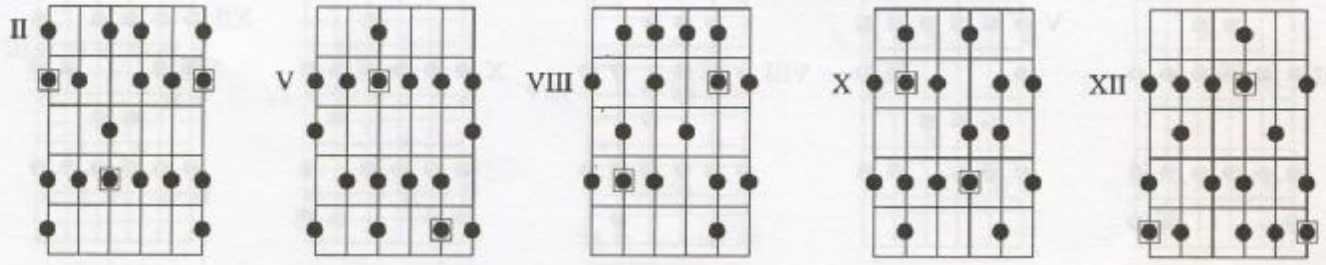
F Major

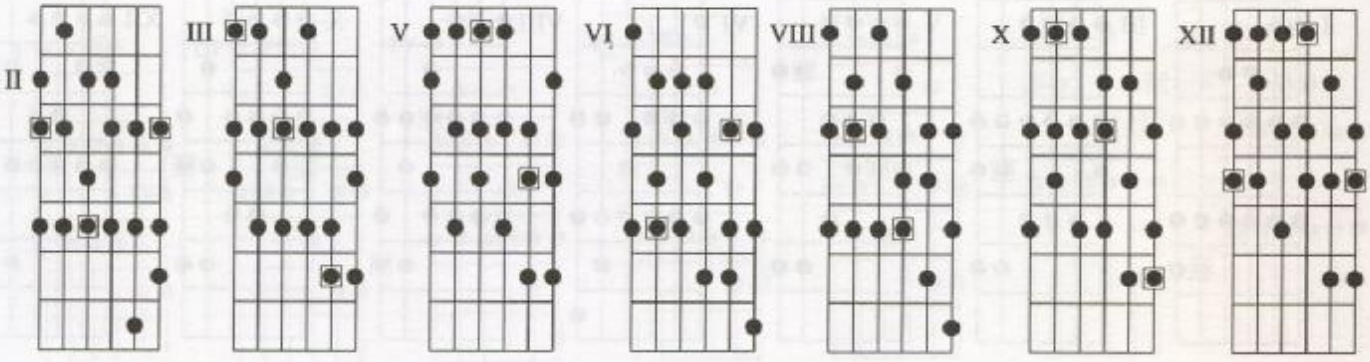


C Major

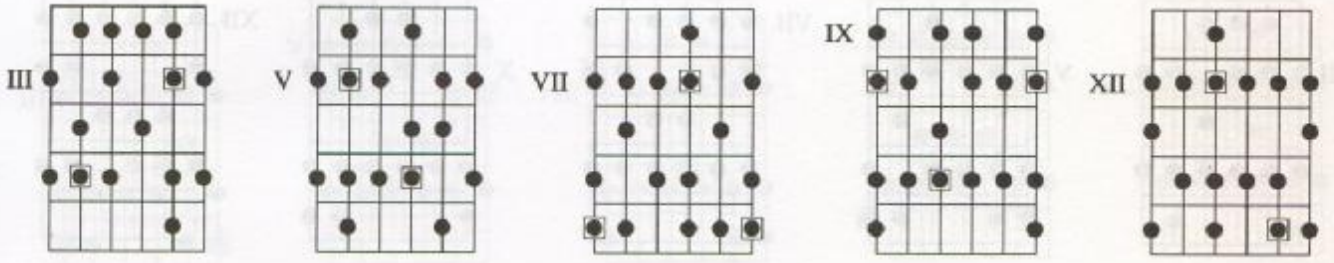


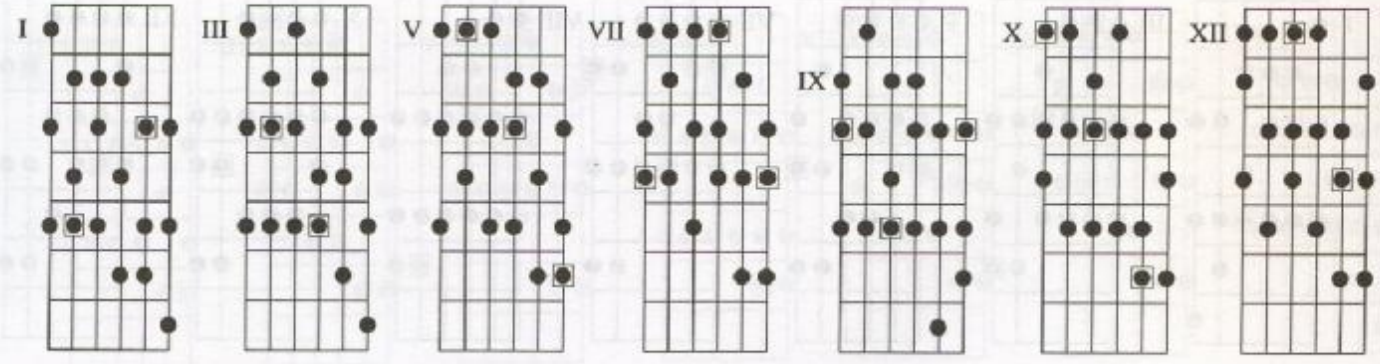
G Melodic Minor



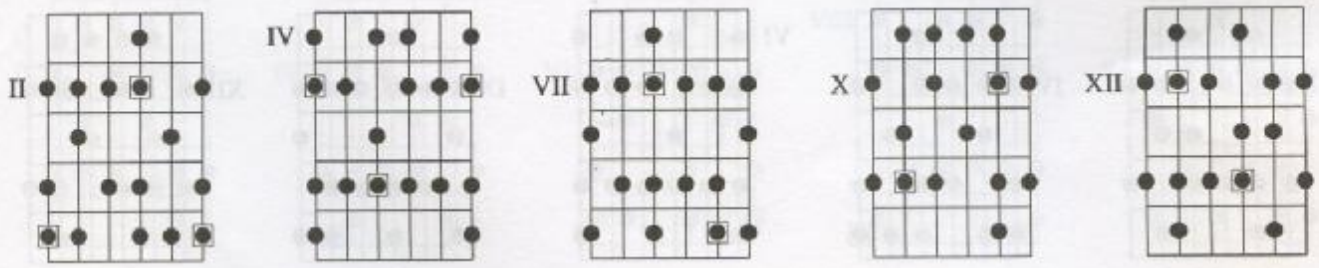


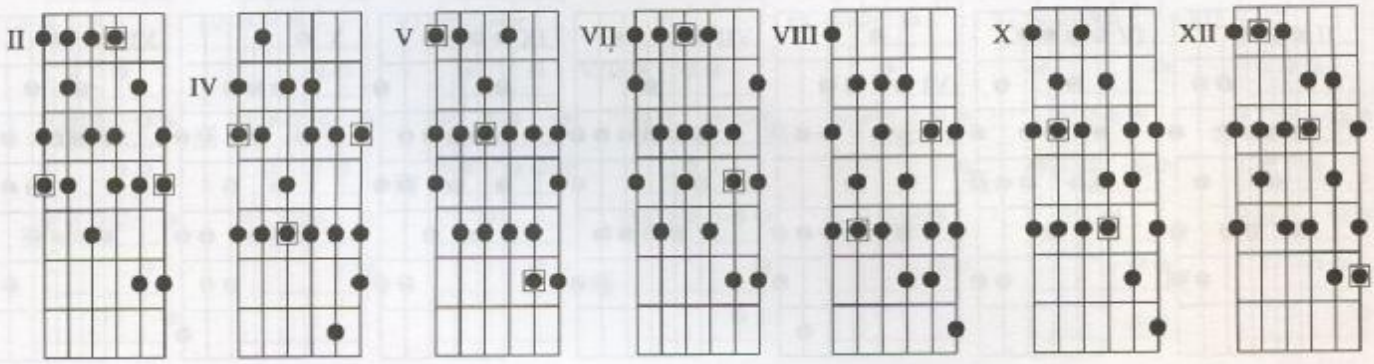
D Melodic Minor



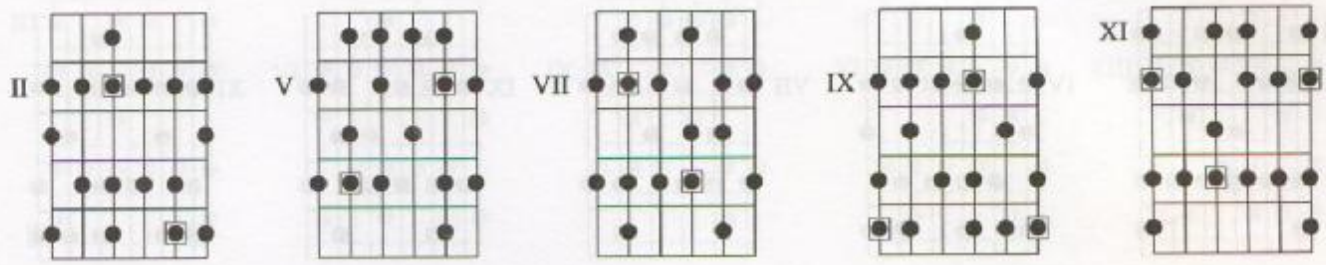


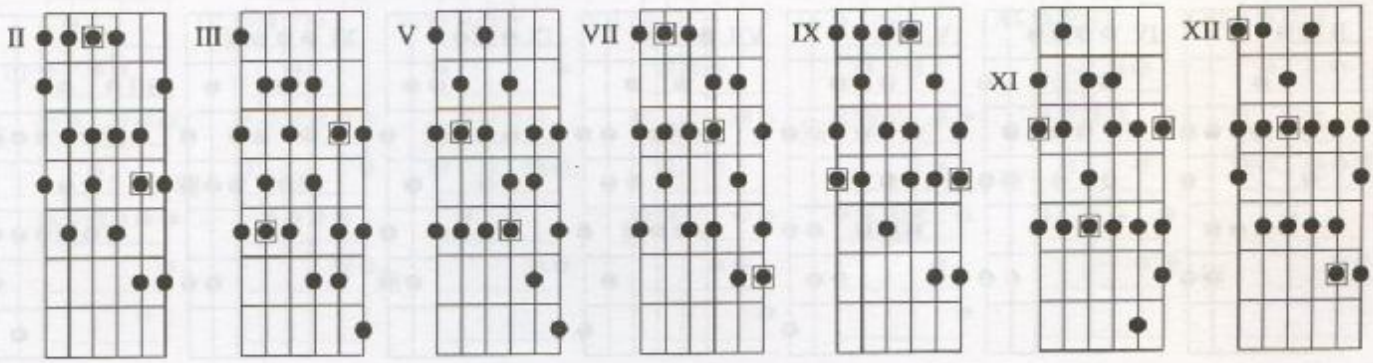
A Melodic Minor



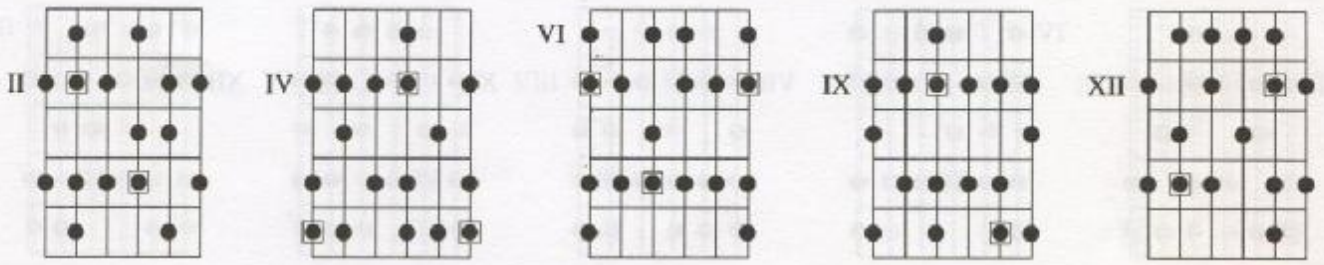


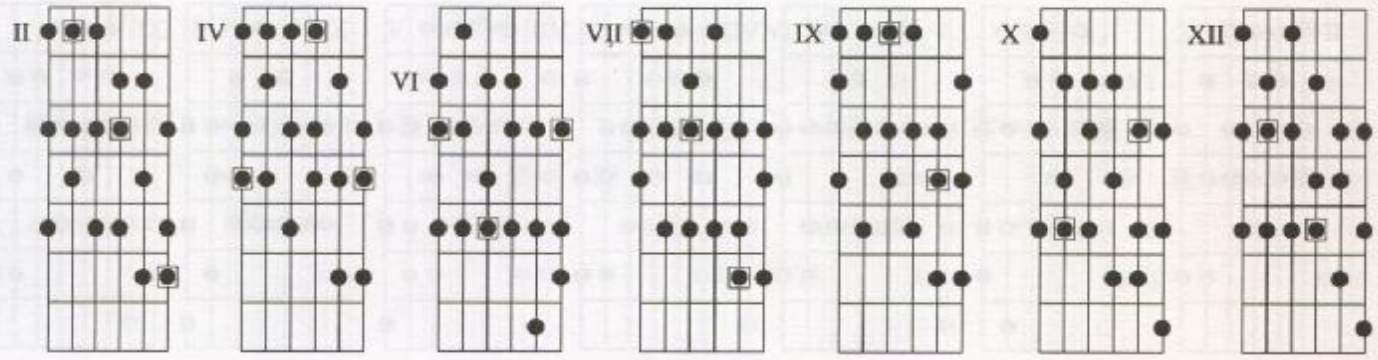
E Melodic Minor



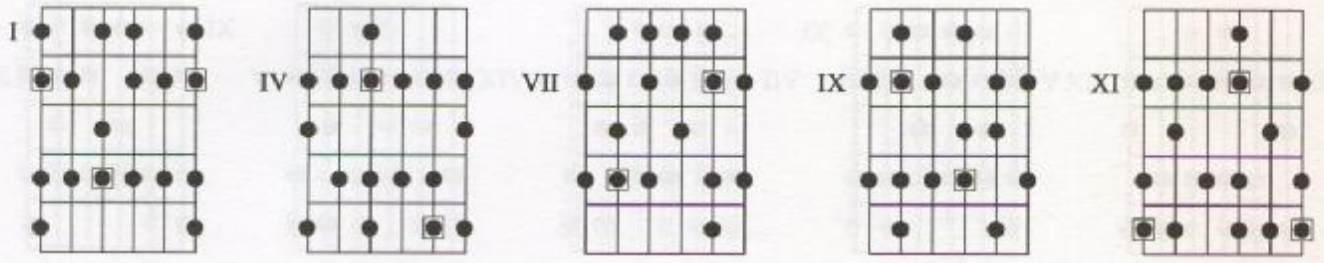


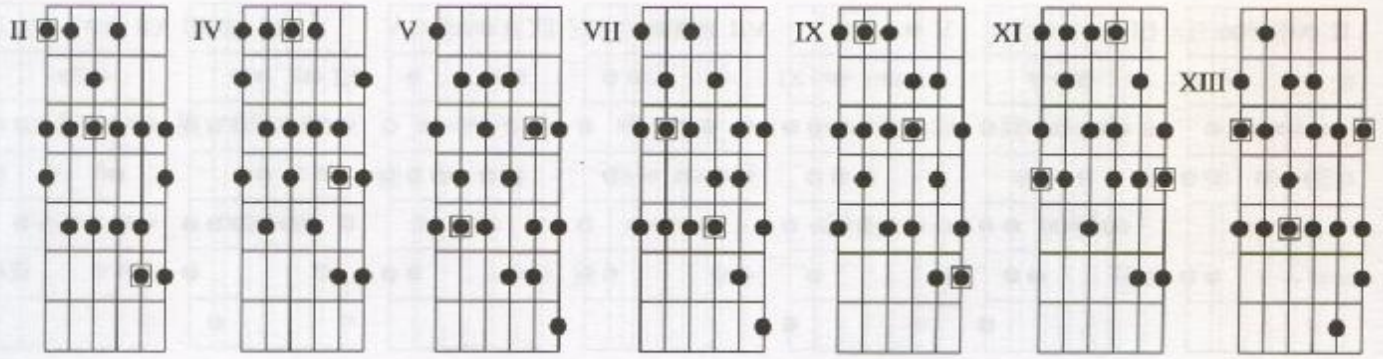
B Melodic Minor



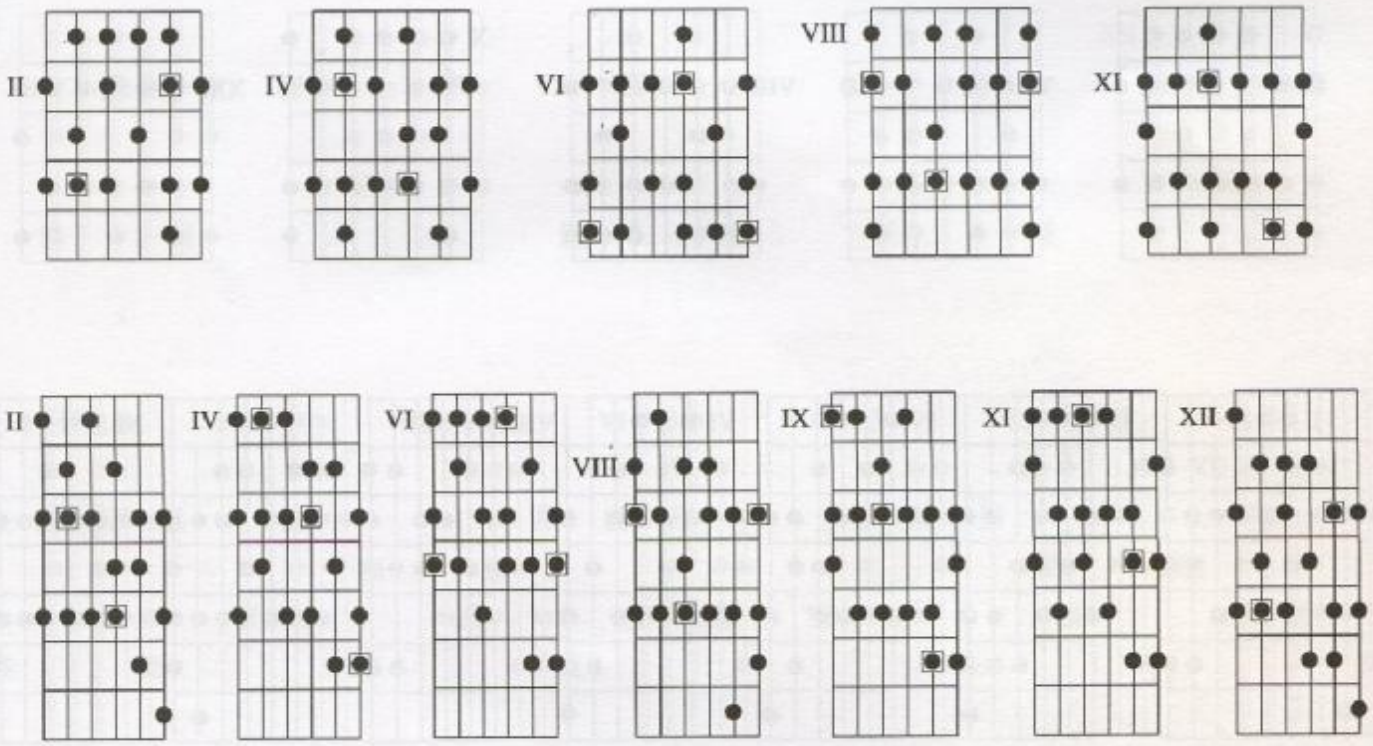


F♯ Melodic Minor

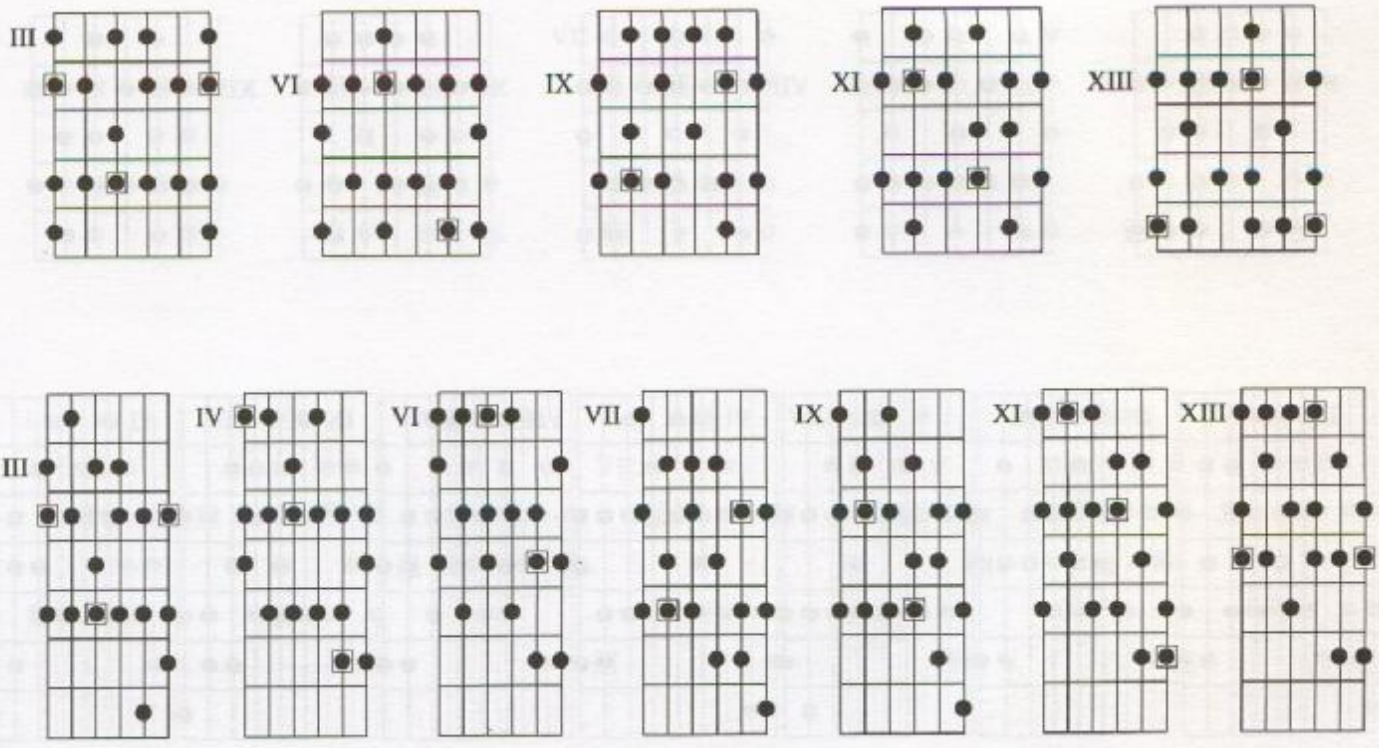




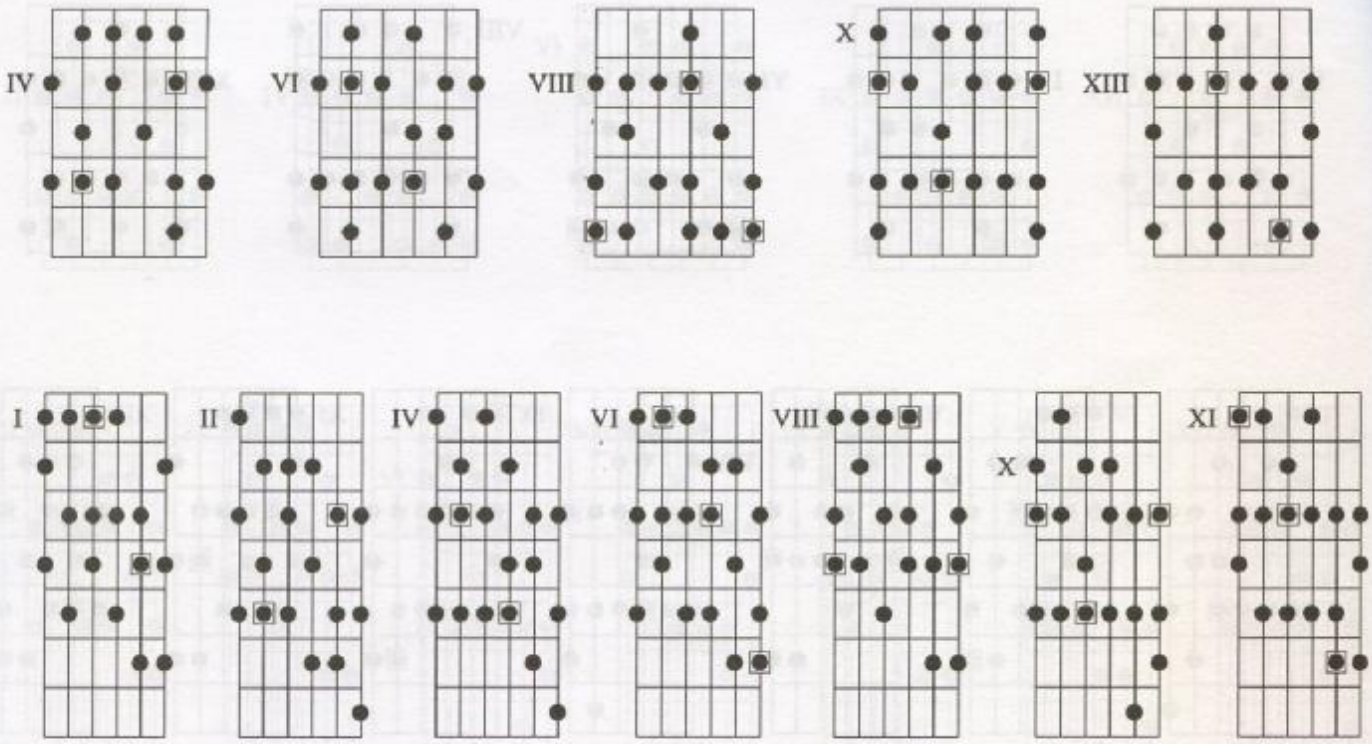
C♯ Melodic Minor



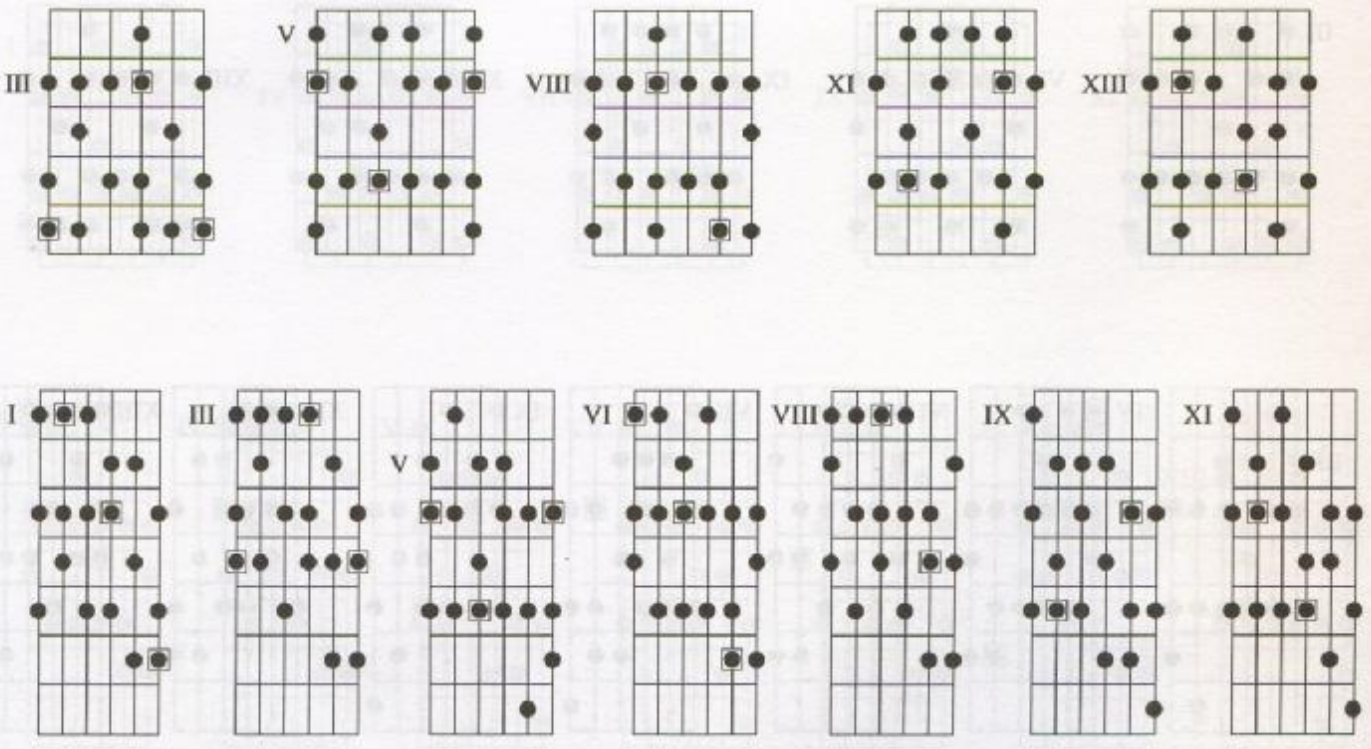
G♯ / A♭ Melodic Minor



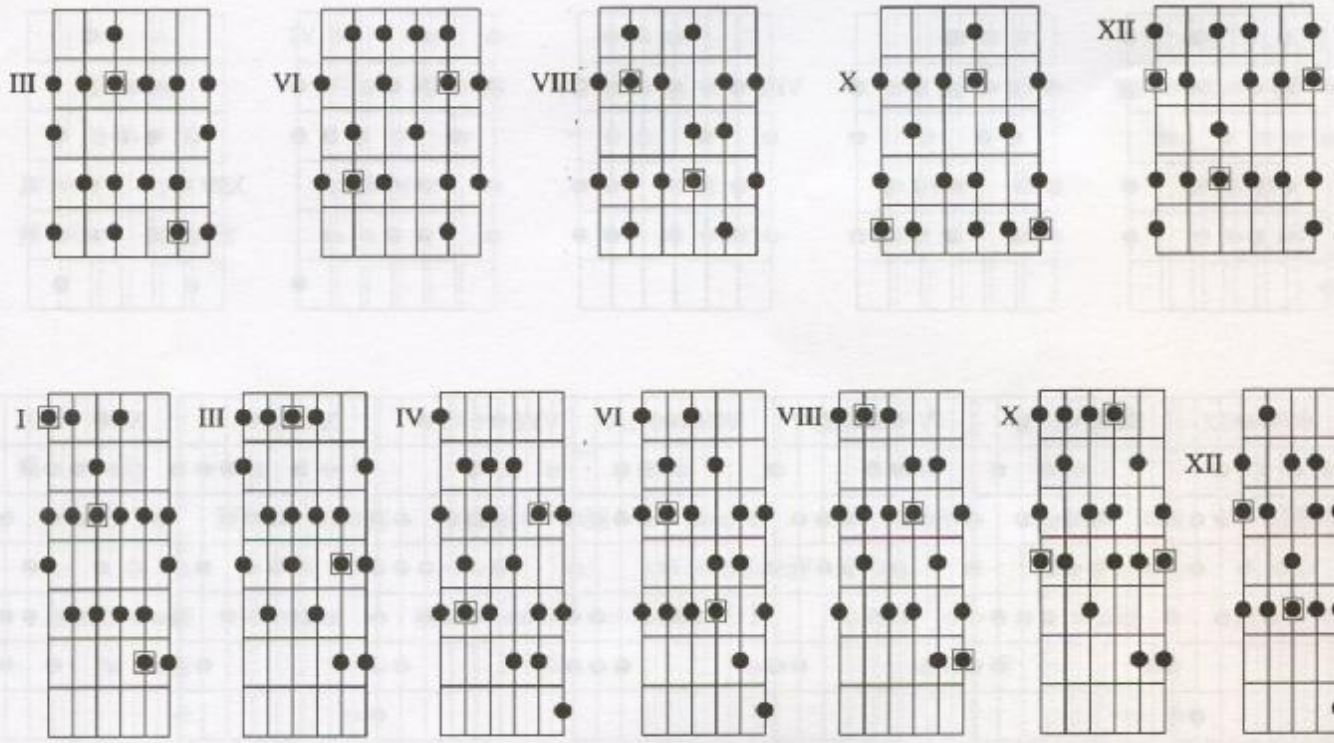
D♯ / E♭ Melodic Minor



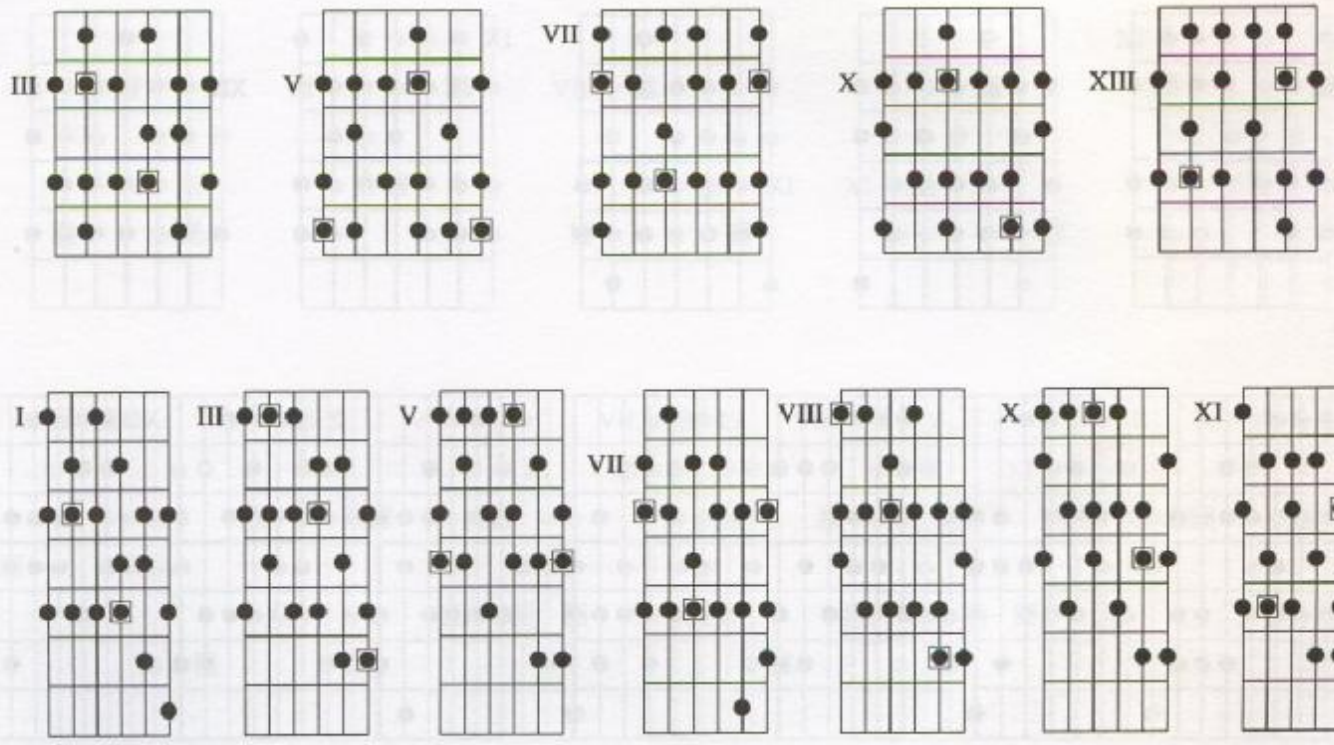
A♯ / B♭ Melodic Minor



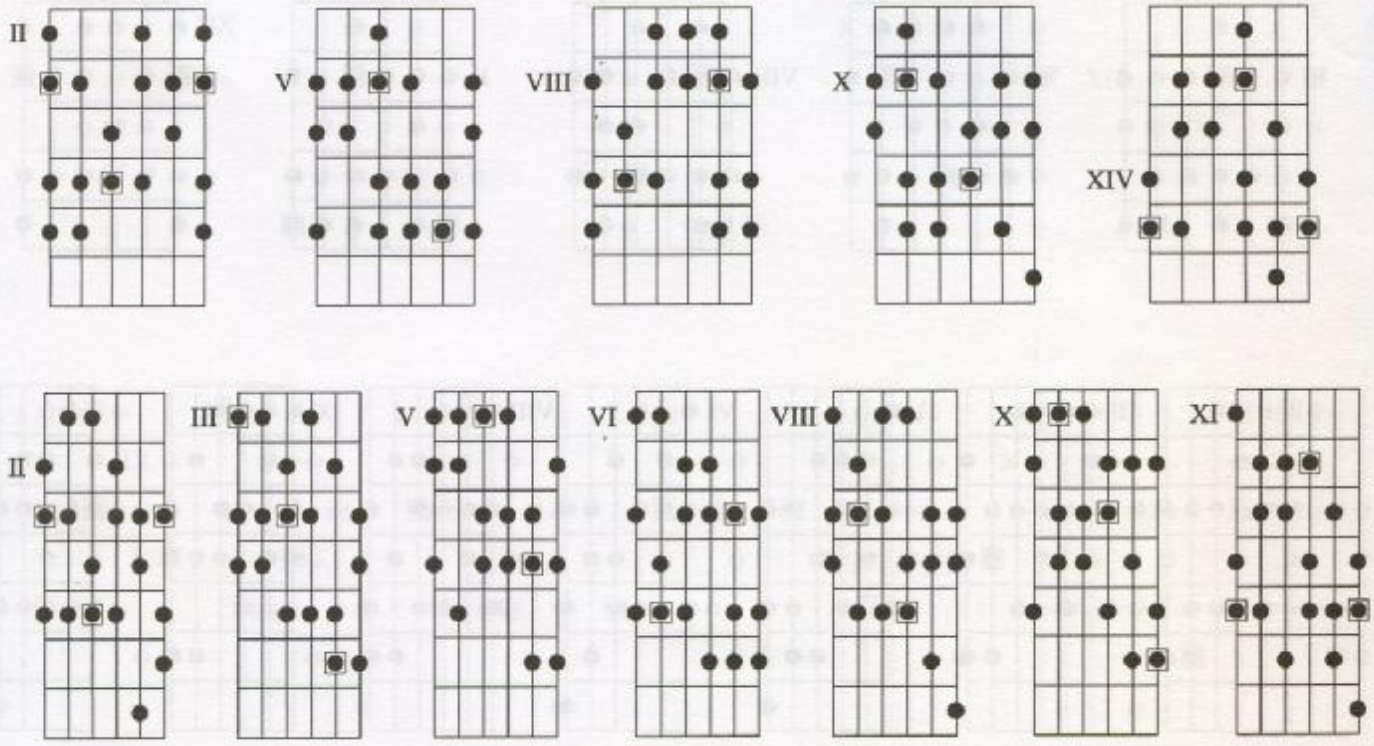
F Melodic Minor



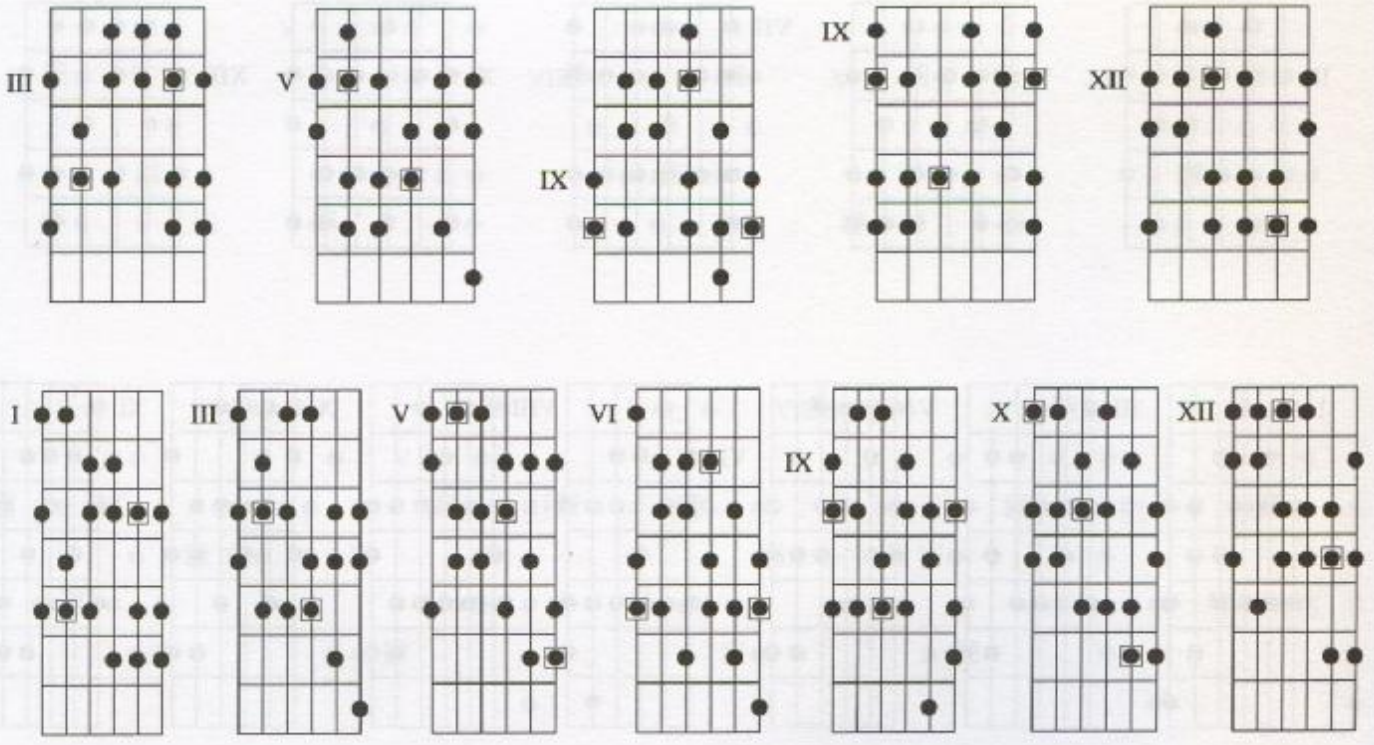
C Melodic Minor



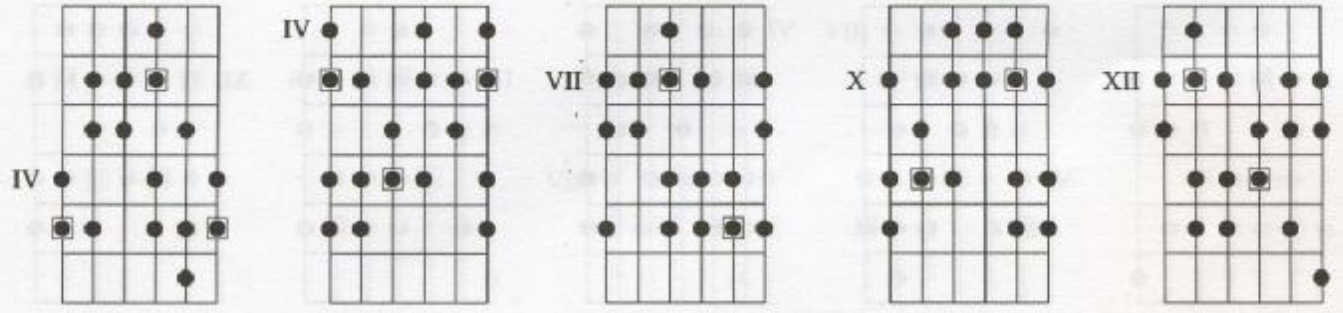
G Harmonic Minor

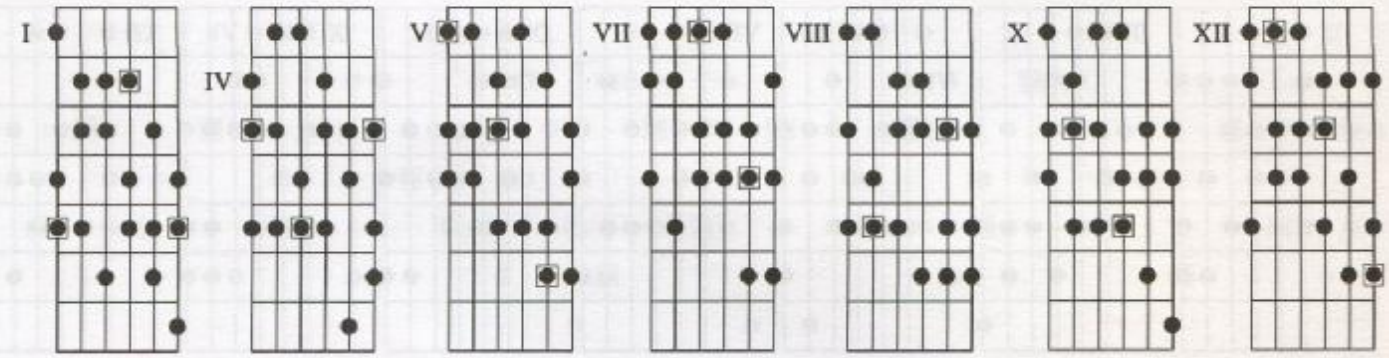


D Harmonic Minor

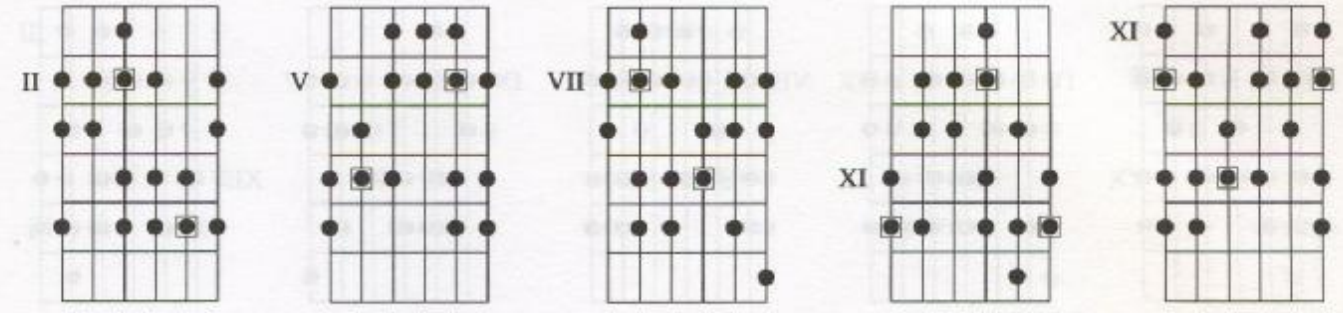


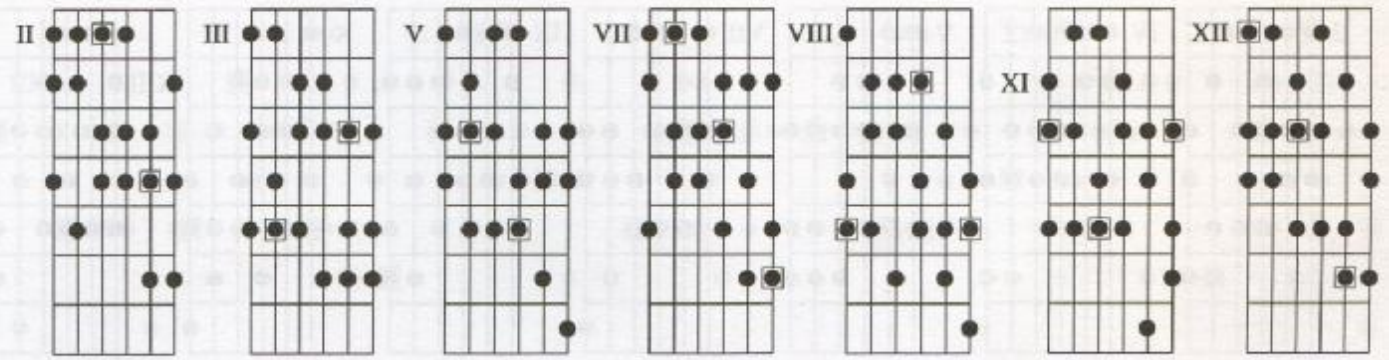
A Harmonic Minor



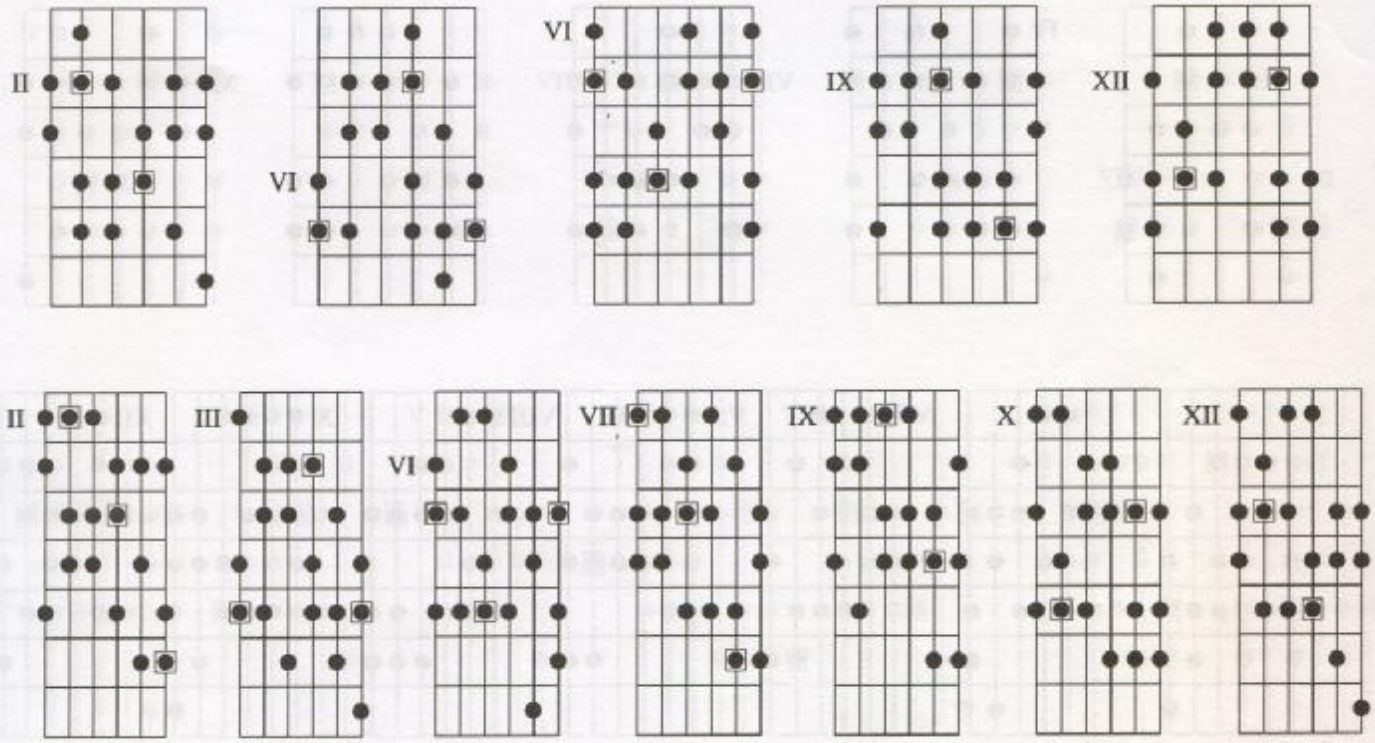


E Harmonic Minor

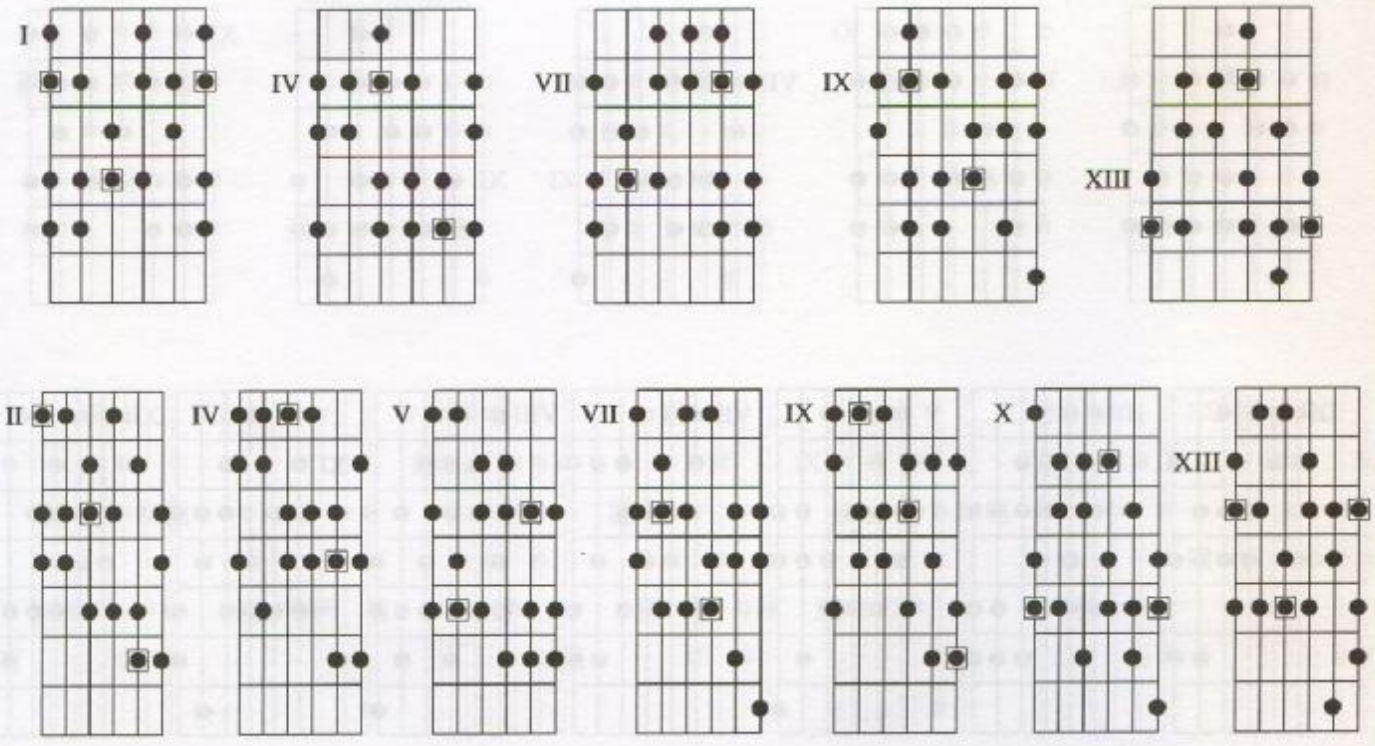




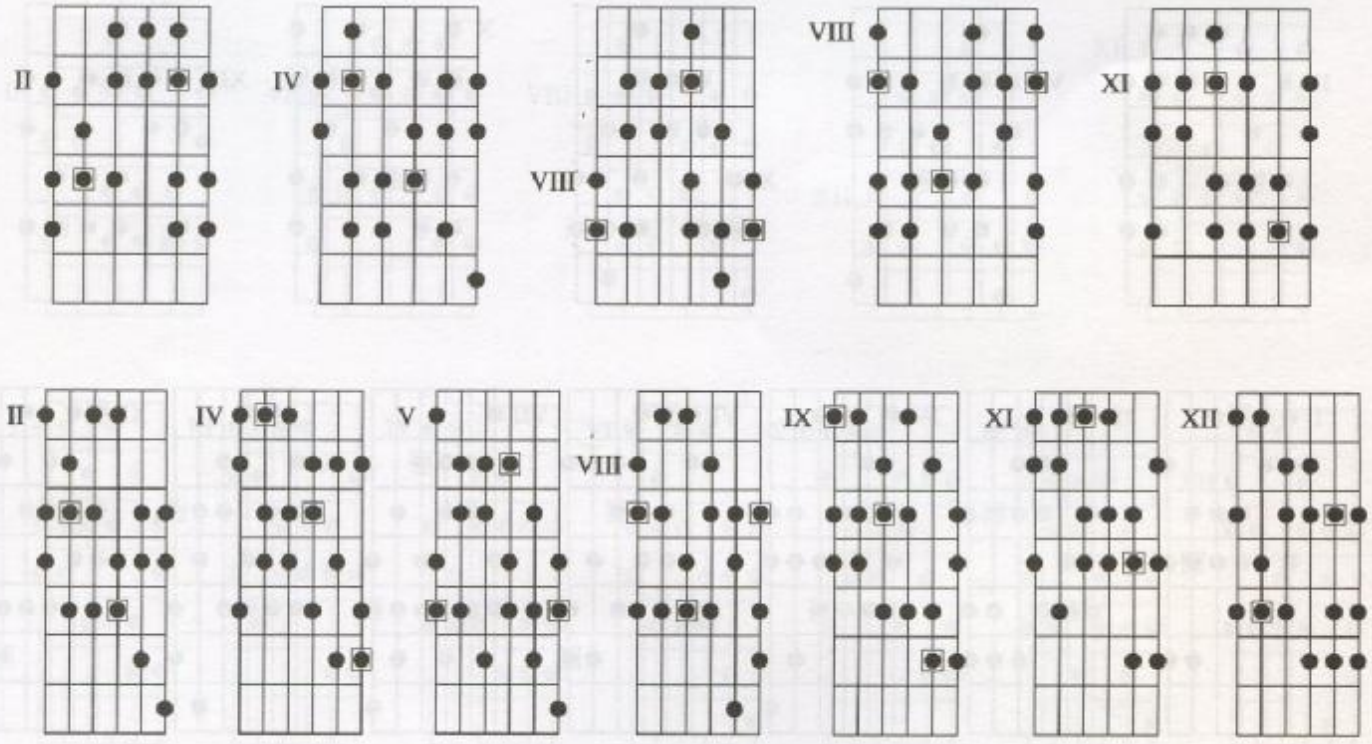
B Harmonic Minor



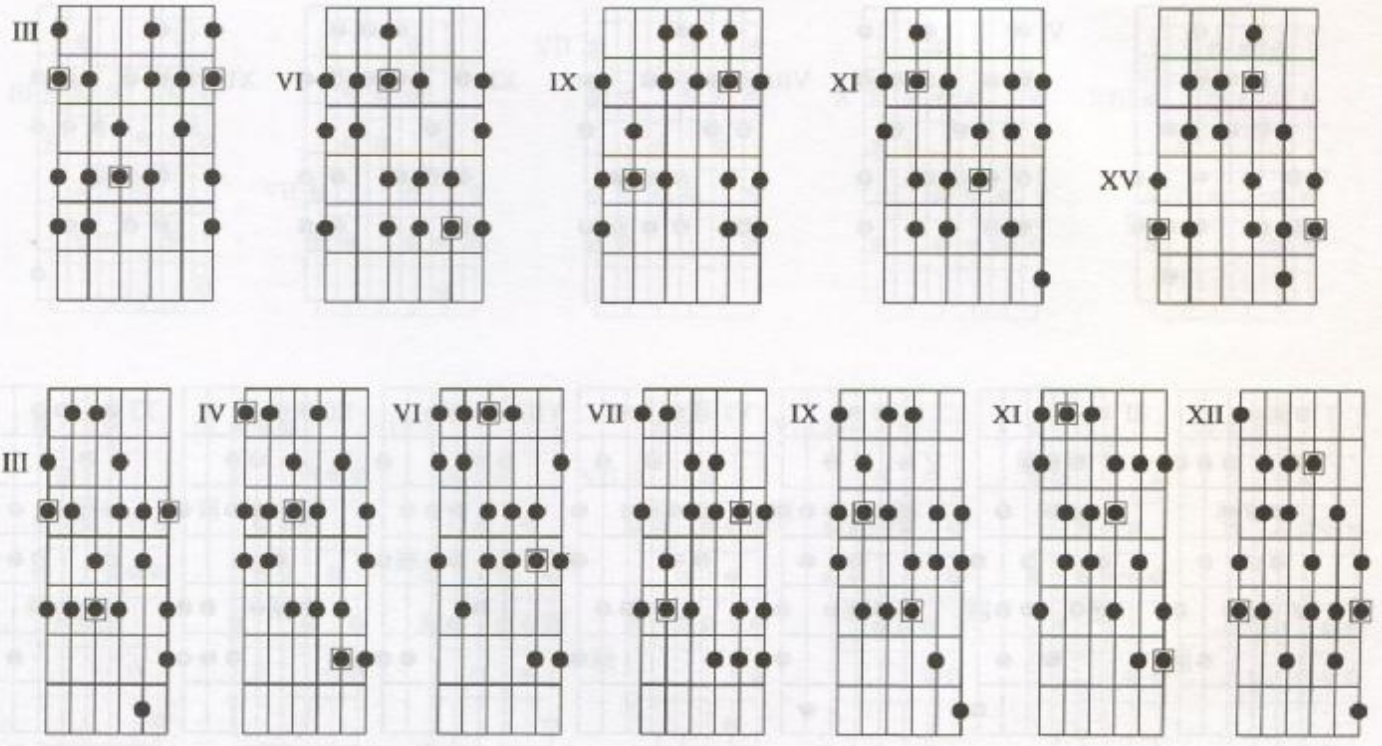
F♯ Harmonic Minor



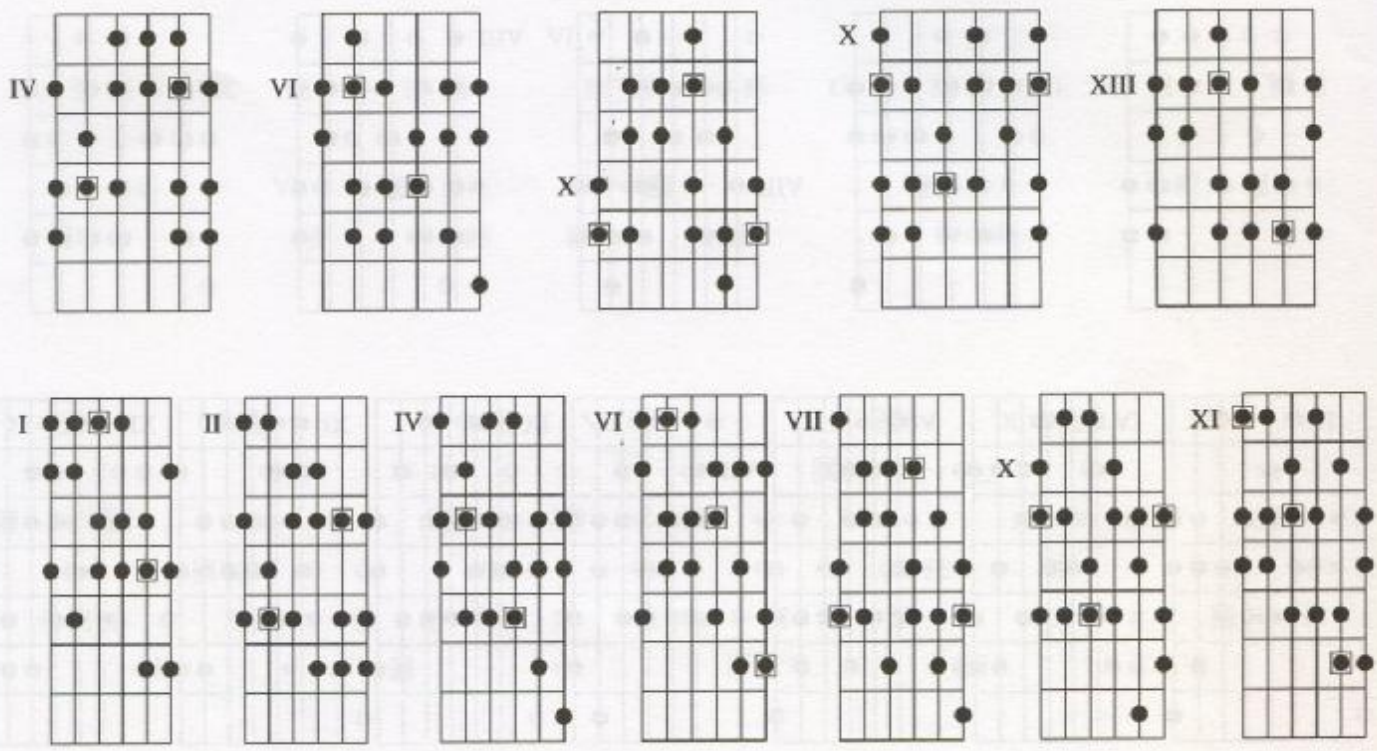
C♯ Harmonic Minor



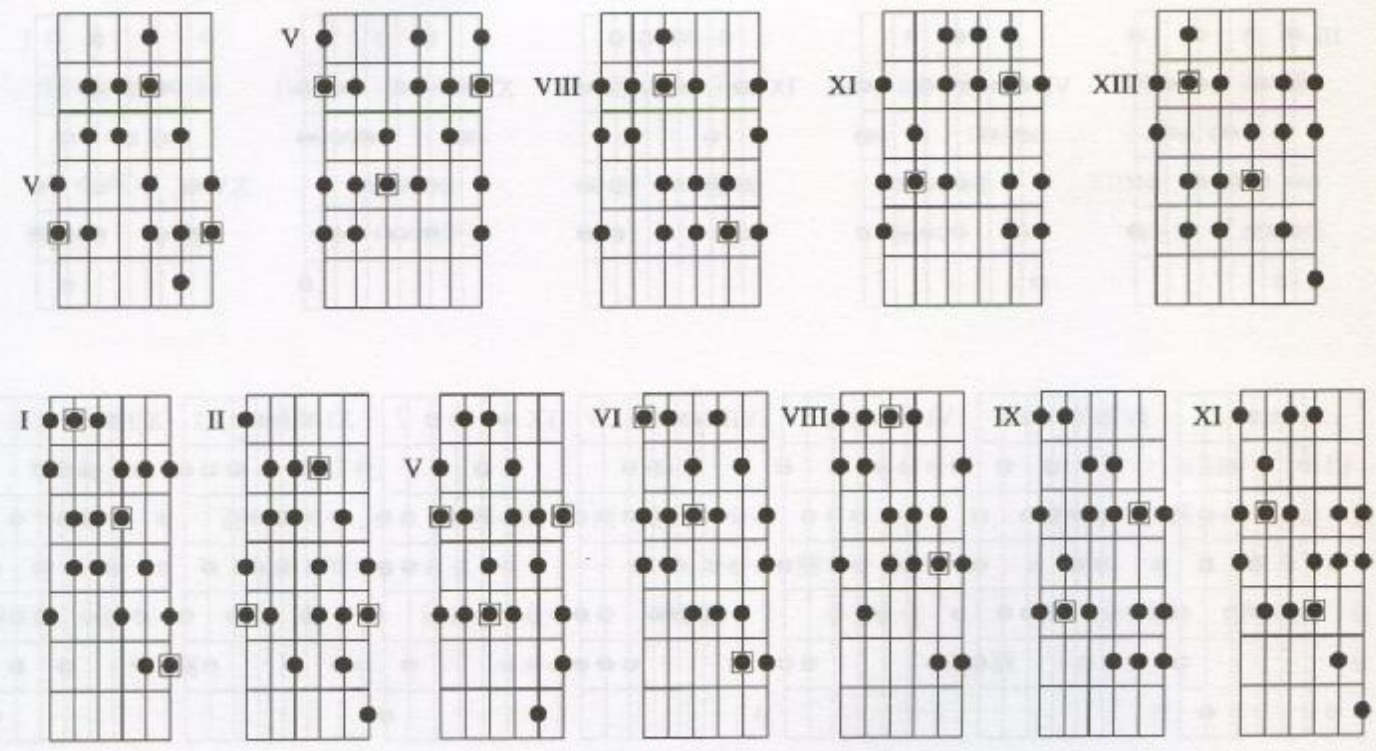
G♯ / A♭ Harmonic Minor



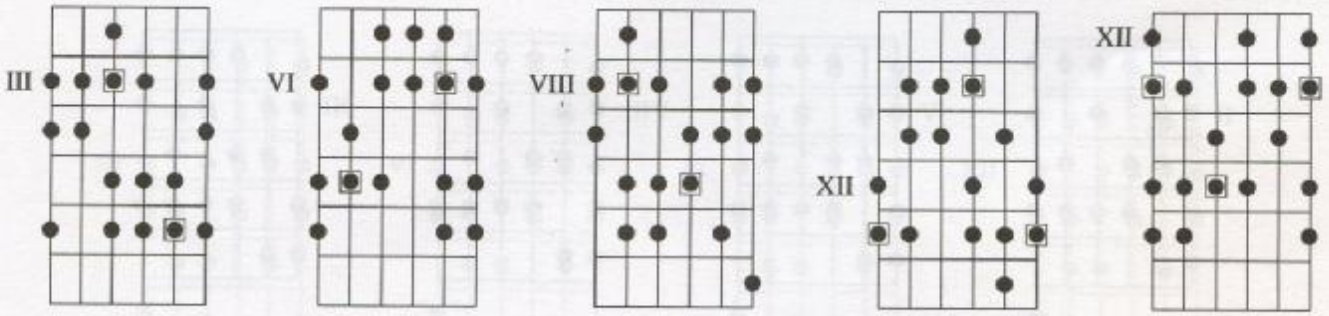
D♯ / E♭ Harmonic Minor

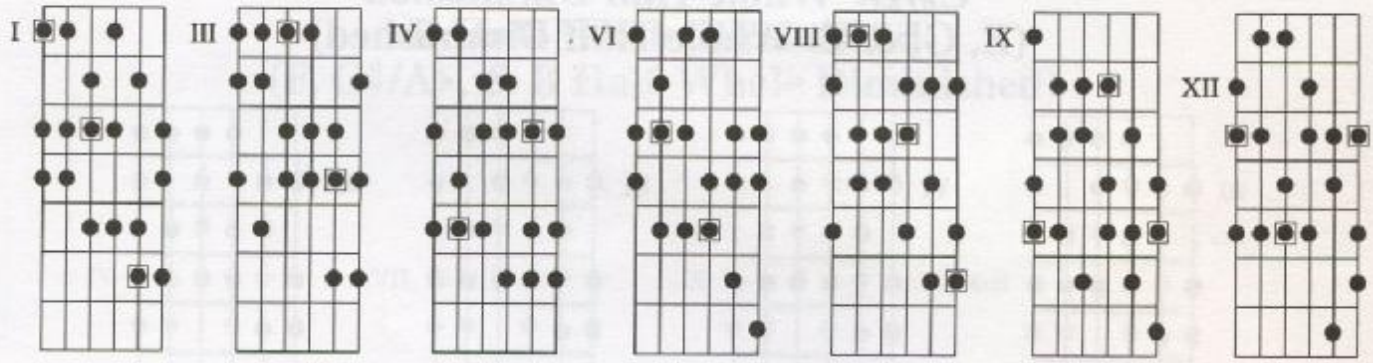


A♯ / B♭ Harmonic Minor

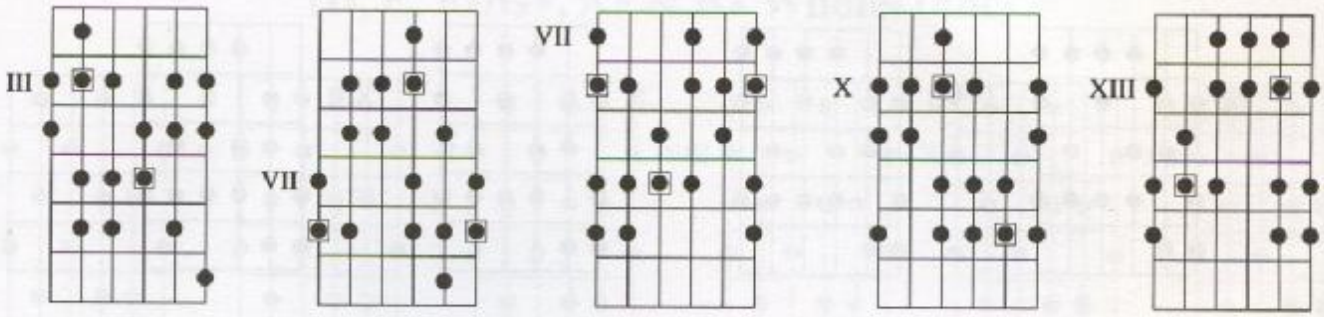


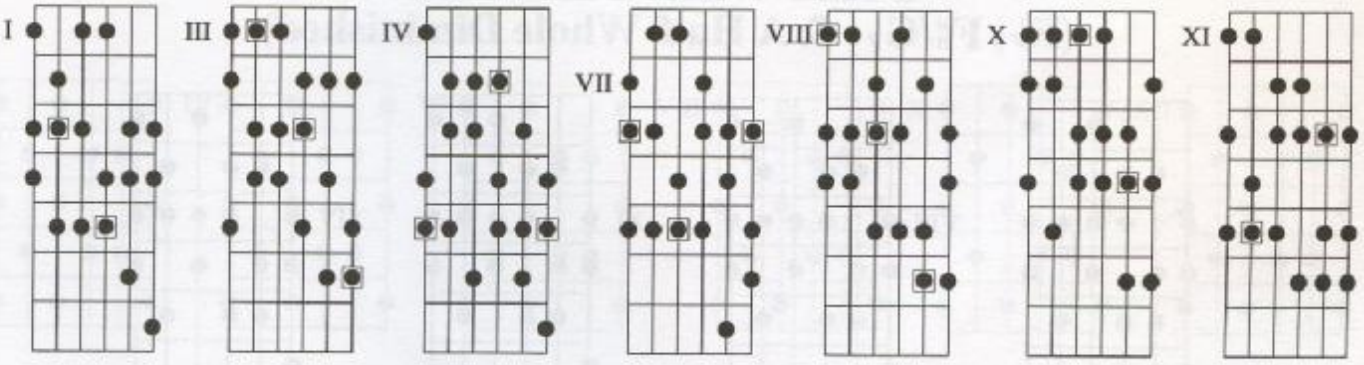
F Harmonic Minor



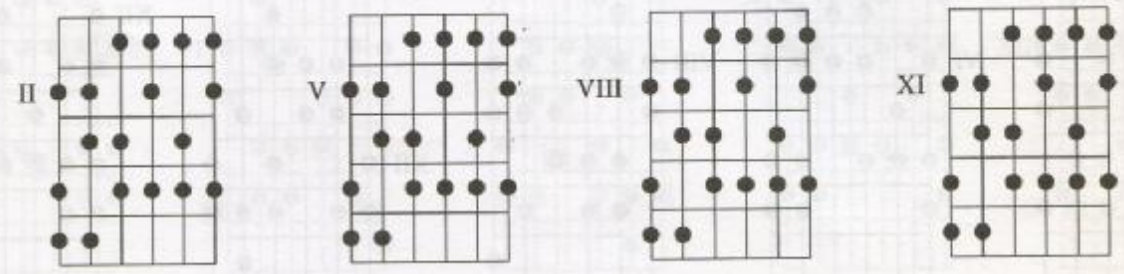


C Harmonic Minor

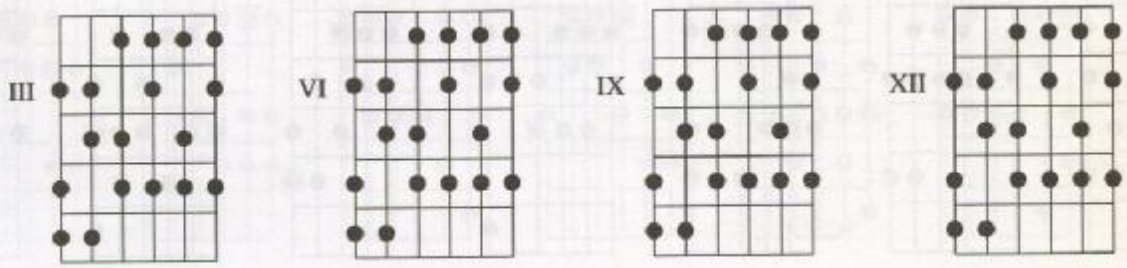




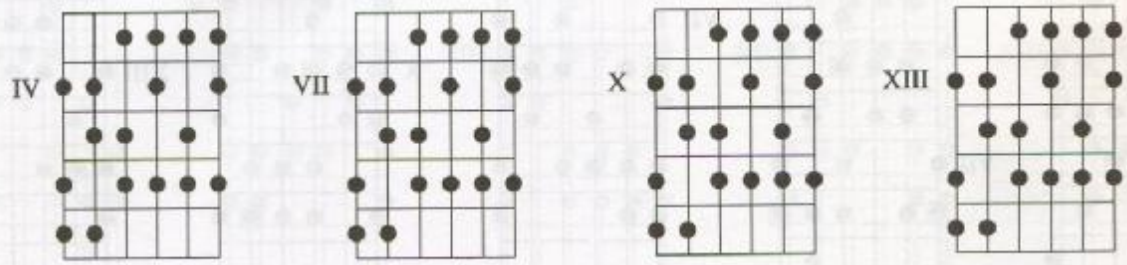
C Whole-Half Diminished
(E♭, F♯/G♭, & A Whole-Half Diminished)



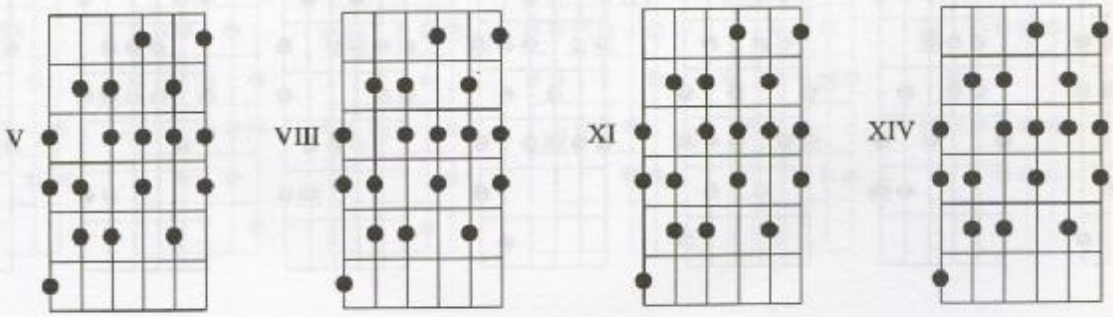
C♯/D♭ Whole-Half Diminished
(E, G, & B♭ Whole-Half Diminished)



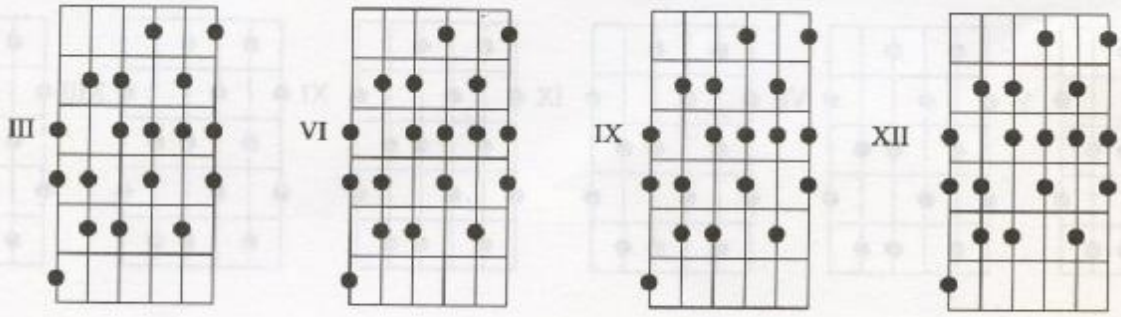
D Whole-Half Diminished
(F, G♯/A♭, & B Whole-Half Diminished)



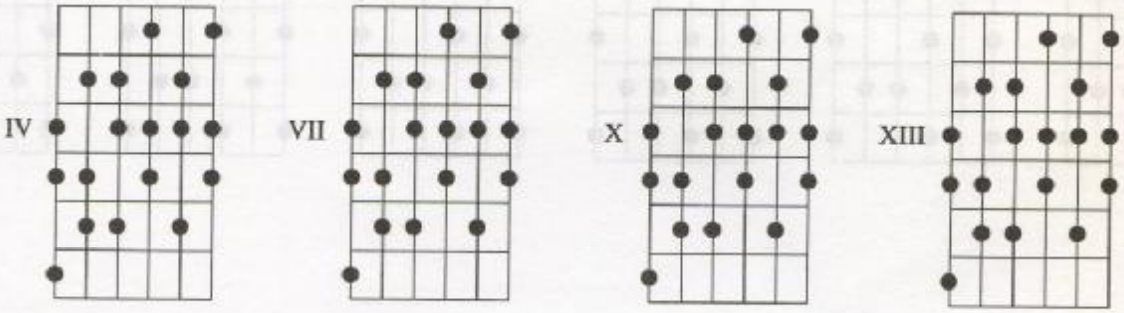
C Half-Whole Diminished
(E♭, F♯/G♭, & A Half-Whole Diminished)



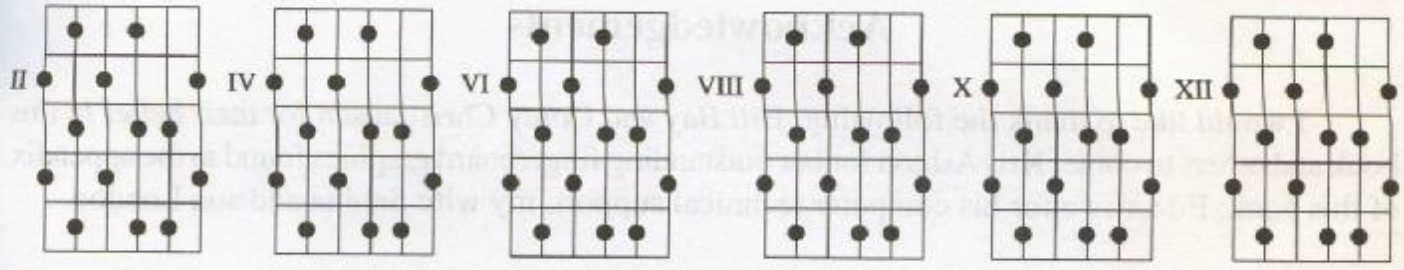
C♯/D♭ Half-Whole Diminished
(E, G, & B♭ Half-Whole Diminished)

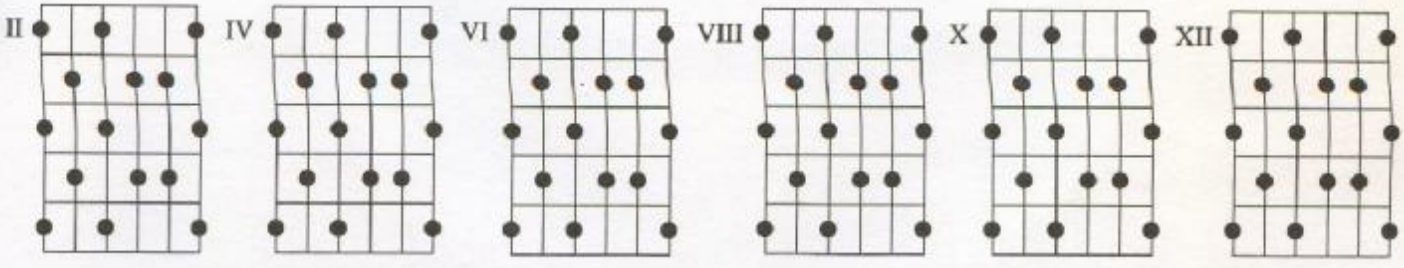


D Half-Whole Diminished
(F, G♯/A♭, & B Half-Whole Diminished)

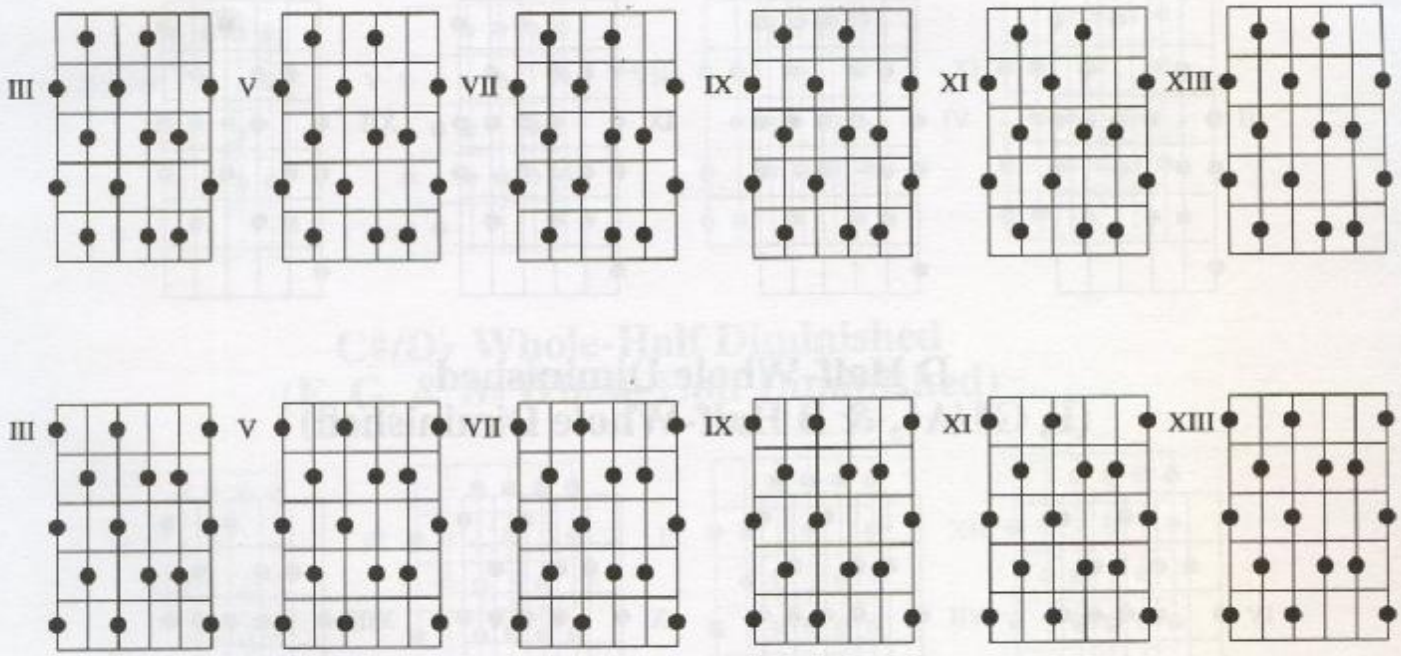


C Whole-Tone
(D, E, F♯/G♭, A♭ & B♭ Whole-Tone)





D♭ Whole-Tone
(E♭, F, G, A, & B Whole-Tone)



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