



TOPICS IN MUSIC THEORY

Three-Part Harmony

Triads

Figure 19–1 shows a harmonized C major scale. Each stack of three notes is called a triad. The low notes in each group form the C major scale, from root C to C one octave higher. The middle note of each triad is a third above the scale note. The highest note of each triad is a 3rd above the middle note, and at the same time, a 5th above the low note.

There are two ways to name the chords in Figure 19–1:

1. Locate the notes of each triad on the major scale named by the lowest note. For example, the first chord, C—E—G, is a C major triad because C, E, and G are the root, 3rd, and 5th of the C scale. The notes of the second chord, D—F—A, are the root, flat 3rd, and 5th of the D major scale, or a D minor triad.
2. Look at the intervals between the notes of each triad. A major triad is a minor third above a major third. A minor triad is a major third above a minor third.

Chords of the Key

The chords in Figure 19–1 are the chords of the key of C. The pattern of chord types produced by harmonization of the C major scale applies to all major scales.

Knowing the pattern of chords of the key is useful for songwriters who need to harmonize a melody, for players and arrangers who use chord substitutions, for improvisers who solo over chord changes, and for guitarists who learn songs by ear.

Figure 19–2a shows the chords of the key of C. Line *b* shows the formula for the chords of the key for all major scales. The roman numerals correspond to the scale degrees. The chord type associated with each scale degree is the same for every key. Line *c* shows the chords of the key of G. The roots of the chords are the notes of the G major scale.

The Minor Seventh Flat Five Chord

The chord constructed on the seventh degree of the major scale is a minor chord with a flatted fifth degree ($m7\flat 5$), or diminished triad. The VII diminished triad is best understood as the dominant seventh built on

Triads: C Major Harmonized in Thirds

C Dm Em F G Am Bm^b5 C

The figure shows a musical staff with a treble clef and a key signature of one flat (B-flat). Above the staff are the chord names: C, Dm, Em, F, G, Am, Bm^b5, and C. Below the staff are the corresponding guitar fretboard diagrams for each chord, with fingerings indicated by numbers 1-5 and 0 for the open string. The diagrams are as follows:

- C:** 0 2 3 3
- Dm:** 2 3 5
- Em:** 0 2 2
- F:** 1 2 3
- G:** 3 4 5
- Am:** 0 1 2
- Bm^b5:** 1 3 4
- C:** 0 2 3 3

Figure 19-1

Chords of the Key

(a) C Dm Em F G Am Bm^b5 C

(b) I IIm IIIIm IV V VIIm VIIIm⁷b5 VIII

(c) G Am Bm C D E F[#]m^b5 G

The figure shows three musical staves, each with a treble clef and a key signature of one flat (B-flat). Each staff contains a sequence of chords marked with a diagonal slash, indicating they are diatonic triads in the key.

- (a)** C Dm Em F G Am Bm^b5 C
- (b)** I IIm IIIIm IV V VIIm VIIIm⁷b5 VIII
- (c)** G Am Bm C D E F[#]m^b5 G

Figure 19-2

the fifth degree (V7), voiced with no root. The notes of the B diminished triad, B—D—F, are the 3rd, 5th, and flat 7th of G.

The chords of the key contain three majors (I, IV, and V), three minors (II^m, III^m, VI^m) and one dominant seventh chord, V7, disguised as the VII diminished chord.

Inversions

Every interval has an inversion. The inversion of an interval is formed by raising the lower note an octave so that it sounds above the higher note. Understanding inversions helps the guitarist to organize and understand chord construction, voicings, shapes, and fingerings. The study of inversions also helps the guitarists locate patterns of intervals on the guitar. Knowing patterns of intervals is useful for improvising and arranging.

Inversions of Major Scale Intervals

C to E is a major 3rd. Raising the pitch of C an octave yields the inversion E to C, as shown in Figure 19-3. The interval from E to C is a minor 6th. The intervals C to E (major third) and E to C (minor sixth) are inversions of each other.

An Interval and Its Inversion

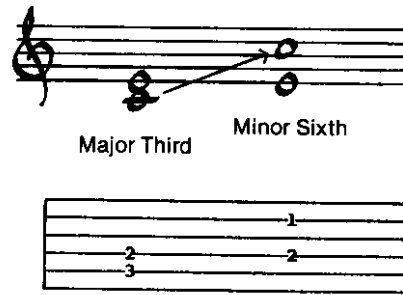


Figure 19-3

The following are the rules of inversions:

1. An interval plus its inversion adds up to nine. For example, the inversion of a 3rd is a 6th (3+6=9). The inversion of a 4th is a 5th (4+5=9).
2. When intervals are inverted, major intervals become minor and minor intervals become major. Augmented and diminished intervals likewise trade places, and perfect intervals remain perfect.

Inversions of Chords

A chord is inverted by raising its lowest note to a higher octave. Figure 19-4 shows three inversions of a C major triad. The chord in

Inversions of C Major Triad

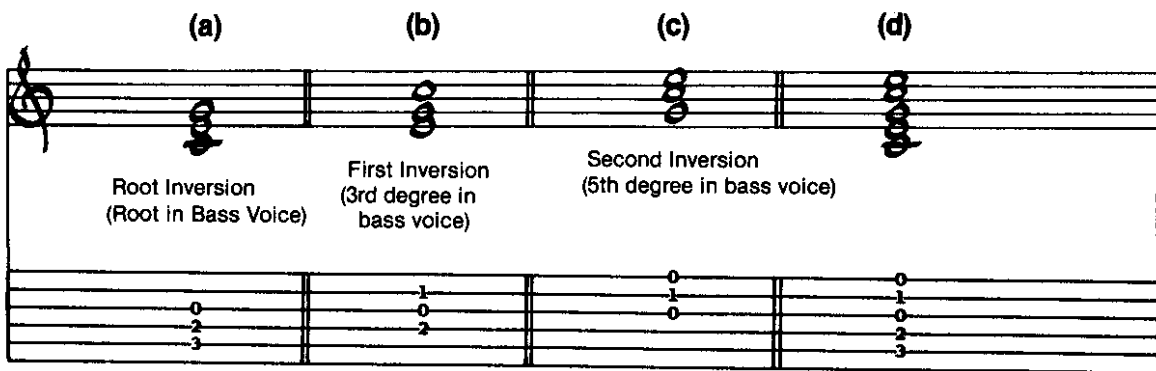


Figure 19-4

Figure 19–4d is a common C major chord in first position, a combination of the three inversions in *a*, *b*, and *c*.

Learning the inversions of the chords of the key expands chord vocabulary, develops left hand dexterity, improves the ear, and educates the mind. Figure 19–5 shows first and second inversion of the chords of C major. Each inversion is shown on one set of strings. Other shapes are possible.

The chords in Figure 19–5 are examples of *close voicing*. A close voicing of a chord is a structure made up of notes which are close together in pitch. An *open voicing*

of a chord is made up of notes which are farther apart.

Four-part Harmony

Harmonizing scales in four parts produces the *diatonic seventh chords*, shown in Figure 19–6. The sequence of four-part chord types created by harmonizing the C major scale holds true for all major scales.

Figure 19–7 shows an open voicing and practical fingering of diatonic seventh chords in C major.

First and Second Inversions of Chords of Key in C

(a) First Inversion

Figure 19-5(a) shows the first inversion of chords in the key of C major. The chords are C, Dm, Em, F, G, Am, Bm5, and C. Each chord is represented by a treble clef staff with a chord symbol above it and a guitar fretboard diagram below it. The fretboard diagrams show the string numbers (1-6) and fret numbers (0-14) for each chord.

1	3	5	6	8	10	12	13
0	2	4	5	7	9	10	12
2	3	5	7	9	10	12	14

(b) Second Inversion

Figure 19-5(b) shows the second inversion of chords in the key of C major. The chords are C, Dm, Em, F, G, Am, Bm5, and C. Each chord is represented by a treble clef staff with a chord symbol above it and a guitar fretboard diagram below it. The fretboard diagrams show the string numbers (1-6) and fret numbers (0-14) for each chord.

0	1	3	5	7	8	10	12
1	3	5	6	8	10	12	13
0	2	4	5	7	9	10	12

Figure 19-5

Four Part Harmonization of C Major

CM7 Dm7 Em7 FM7 G7 Am7 Bm7b5 CM7

0	1	3	0	1	3	5	7
1	2	4	2	3	5	6	8
2	3	5	3	4	5	7	9
3	5	7	5	5	7	9	10

Figure 19-6

Diatonic Seventh Chords

CM7 Dm7 Em7 FM7 G7 Am7 B^o CM7

5	6	8	5	7	8	10	12
4	5	7	5	6	8	10	12
5	7	9	3	5	7	9	10
3	5	7	3	5	7	9	10

Figure 19-7

Chord Substitution

Each of the chords of the key shares notes with other chords in the progression. For example, CMaj7, spelled C—E—G—B, has three notes in common with Em7, spelled E—G—B—D, and three notes in common with Am7, spelled A—C—E—G. The IMaj7, IIIIm7, and VIIm7 chords (CMaj7, Em7, and Am7) sound similar to each other because they share notes. These chords can sometimes substitute for each other in chord progressions.

Diatonic sevenths have one of three sounds: *tonic*, *sub-dominant*, and *dominant*. The tonic chords are IMaj7, IIIIm7, and VIIm7. Sub-dominant chords are the IIIm7 and IVMaj7. The dominant chords are V7, VIIIm7^b5, and IIIIm7. Chords which are in the

same sound grouping can substitute for each other in chord progressions. Other substitutions are also possible.

Exercises and Projects

1. Write out and play at least one octave of root inversion chords of the key for all twelve keys. Similarly, play first and second inversions.
2. Verify that the chord types for diatonic seventh chords shown in Figure 19-7 are correct. Memorize the pattern of chord types.
3. Play diatonic sevenths in all twelve keys.