

Learn the fundamentals of harmony by furthering your music theory background.

When you can read basic music notation and recognize common scales, as presented in the first book of this series, *Berklee Music Theory 1*, you'll be ready to learn the fundamentals of harmony.

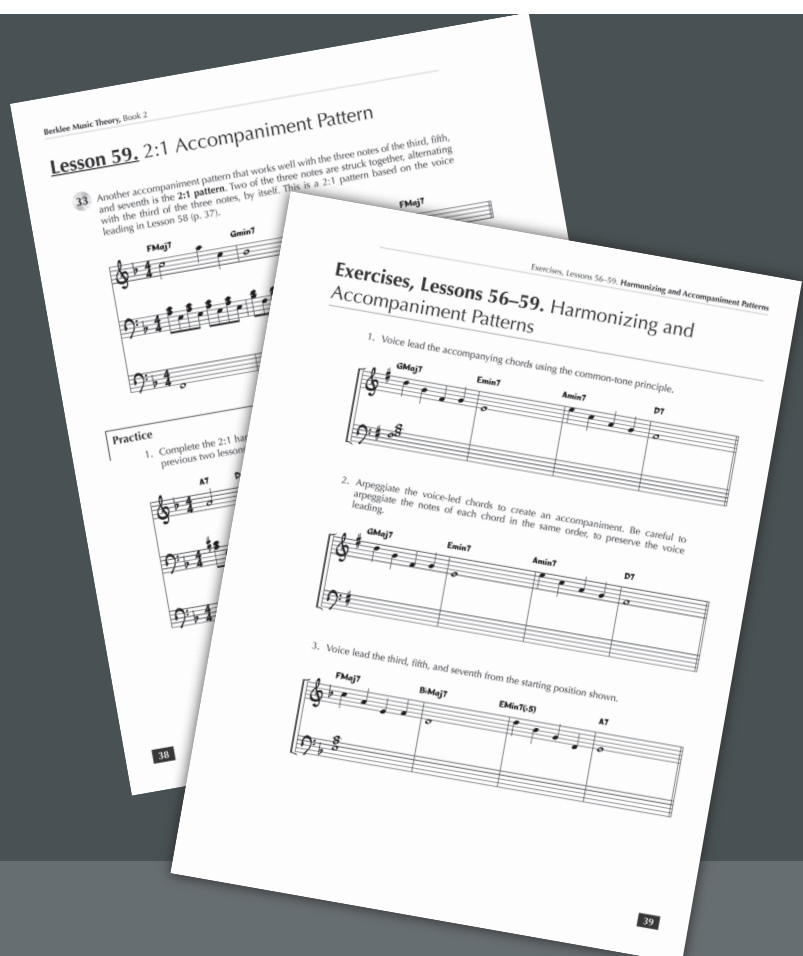
Berklee Music Theory 2 features hands-on exercises and ear-training activities to help you use chords effectively. You will learn basic triads and seventh chords, inversions, voice-leading, how to use chords to accompany melodies, and how to create melodies that grow out of chord progressions.

Learn to:

- Interpret chord symbols so that you can create grooves, melodies, and accompaniments
- Understand the harmonic building blocks of contemporary harmony, as used in contemporary, jazz, and popular music styles
- Train your ear to distinguish between different chord types
- Use different voicings to create professional-sounding harmonic progressions
- Create singable, memorable melodies

The *Berklee Music Theory* series is essential for anyone who wants to play better, learn how to read, write and understand the elements of music, and create their own songs and arrangements. It is based on contemporary, jazz, and popular music styles.

PAUL SCHMELING, Chair Emeritus of the Piano Department at Berklee College of Music, is a master pianist, interpreter, improviser, and arranger. He has inspired countless students, and has performed or recorded with such jazz greats as George Coleman, Herb Pomeroy, and Slide Hampton. He is the co-author of *Instant Keyboard* and the *Berklee Practice Method: Keyboard*.



"If you've been looking for a basic music theory book, your search is over. Berklee Music Theory is the 'go to' volume — clear, concise, and complete. Paul Schmeling's explanations of the fundamentals of music provide a strong foundation for the aspiring musician, and is a valuable resource for teachers as well. Berklee Music Theory effectively integrates examples with exercises and ear training. This essential volume should be required reading in music schools and universities. Highly recommended!"

—Andy LaVerne, Jazz Pianist, Composer, Author, Educator, Keyboard magazine contributor

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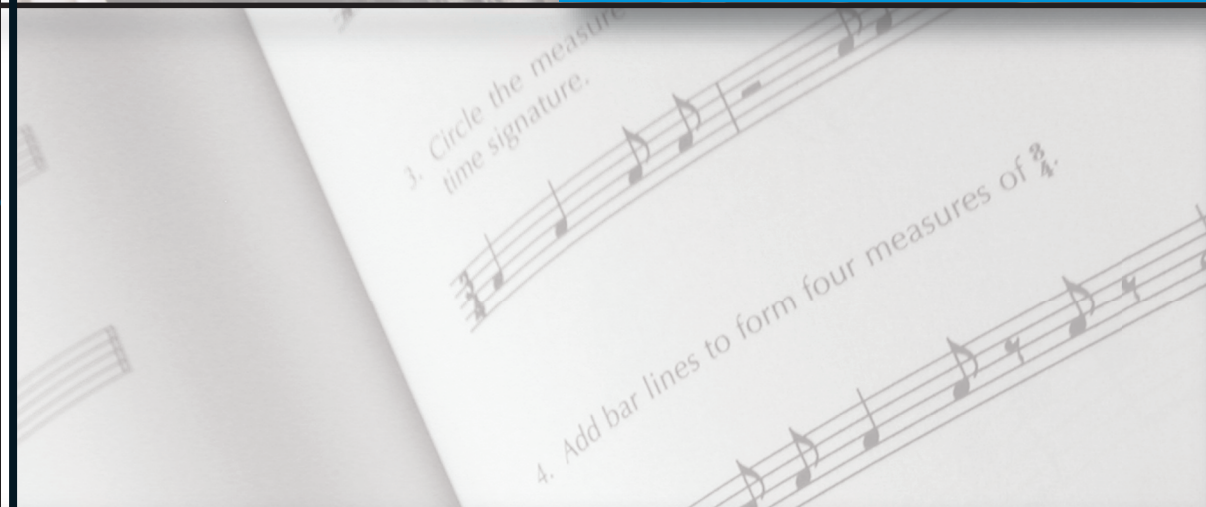


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BERKLEE MUSIC THEORY BOOK 2 PAUL SCHMELING



BERKLEE MUSIC THEORY



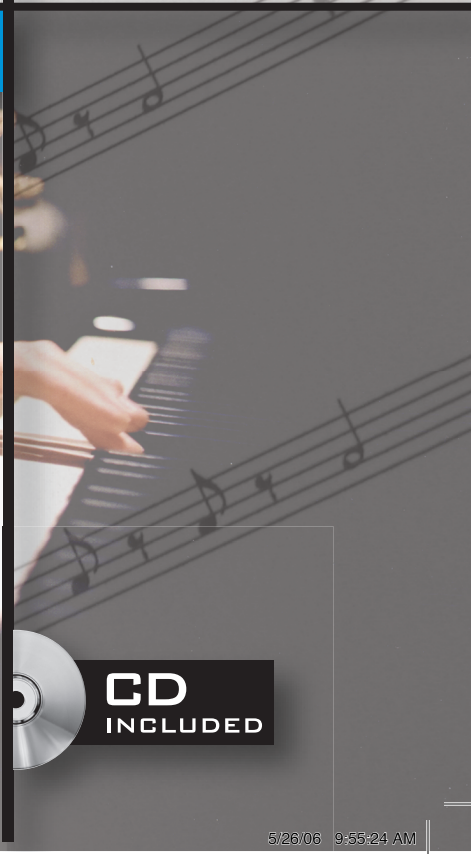
BOOK

2

FUNDAMENTALS OF HARMONY



PAUL SCHMELING



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Introduction

Berklee Music Theory Book 2: Fundamentals of Harmony focuses on harmony, including triads, seventh chords, inversions, and voice leading, using an approach I've developed through more than forty years of teaching at Berklee College of Music. Unlike most books on music theory, this book teaches the chords and inversions that you will encounter in jazz, blues, and popular music, and then gives you the tools you need to be able to create effective harmonic accompaniment from a lead sheet. We'll finish up by writing our own melodies.

Whether you are a beginner or a more experienced musician who wants to learn more, you'll develop harmonic and melodic listening, reading, and writing skills through exercises and ear training practice. I encourage you to work with a real keyboard.

By the end of the book, you'll be able to create accompaniments from a lead sheet and write your own melody based on any common chord progression.

Paul Schmeling
Chair Emeritus, Piano Department
Berklee College of Music

Lesson 37. Major Triads

1 A **chord** is a set of three or more notes sounded simultaneously. If the notes are played one after the other, it is called an **arpeggio**.

Triads are three-note chords. They are built upwards in thirds from a fundamental note called a **root**. The major triad includes the tonic (root), third, and fifth notes of the major scale built on the triad's root.

A musical staff in treble clef showing the C major scale (C4-D4-E4-F4-G4-A4-B4-C5), followed by the C major arpeggio (C4-E4-G4), and finally the C major chord (C4-E4-G4).

A musical staff in treble clef showing the G major scale (G4-A4-B4-C5-D5-E5-F#5-G6), followed by the G major arpeggio (G4-B4-D5), and finally the G major chord (G4-B4-D5).

A musical staff in treble clef showing the F major scale (F4-G4-A4-Bb4-C5-D5-E5-F6), followed by the F major arpeggio (F4-A4-C5), and finally the F major chord (F4-A4-C5).

Each of these notes is described by a number corresponding to the scale degree above the root. These numbers are “functions,” as in, “E functions as the third of a C major triad.”

A musical staff in treble clef showing the three notes of a C major triad: C4 (labeled Root (1)), E4 (labeled 3rd), and G4 (labeled 5th).

Another way to think of triads is in terms of intervals. From the root, the major triad has a major third and a perfect fifth. It can also be seen as a major third (C to E) below a minor third (E to G).

A musical staff in treble clef showing the intervals of a C major triad: C4 to E4 (labeled M3), E4 to G4 (labeled m3), and C4 to G4 (labeled P5).

Practice

1. Build a major triad on each of the following notes.



2. Each of these notes is the third of what major triad?

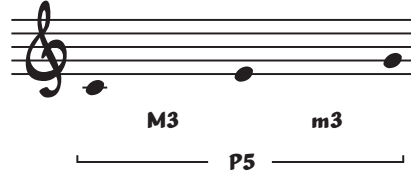
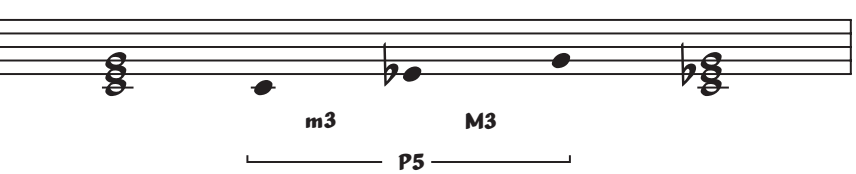
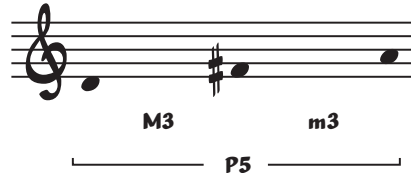
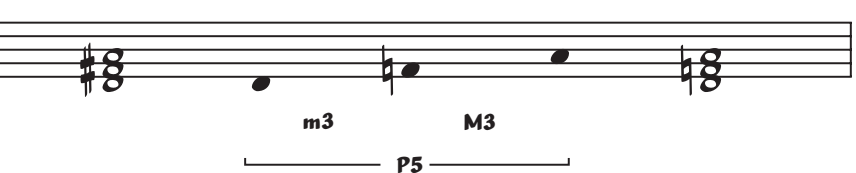
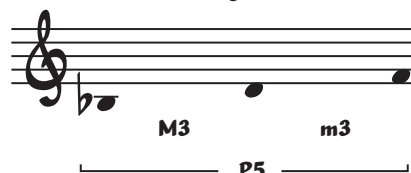



3. Each of these notes is the fifth of what major triad?



Lesson 38. Minor Triads

- 2 **Minor triads** can be formed by lowering the third of a major triad by a half step. From the root, the intervals are a minor third and a perfect fifth, or a minor third below a major third.

<p>C Major Triad</p> 	<p>C Minor Triad</p> 
<p>D Major Triad</p> 	<p>D Minor Triad</p> 
<p>Bb Major Triad</p> 	<p>Bb Minor Triad</p> 

Practice

1. Make minor triads out of the following major triads. The first one is done for you.

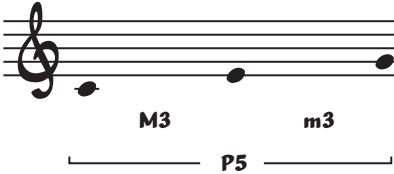
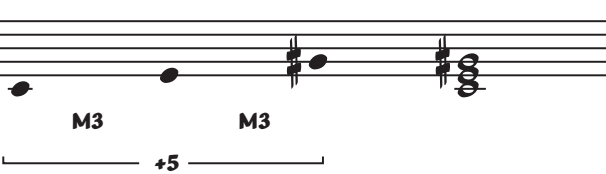
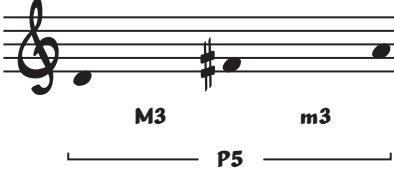
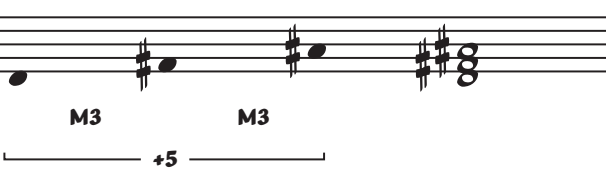
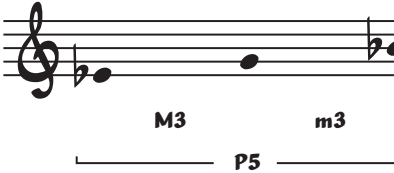
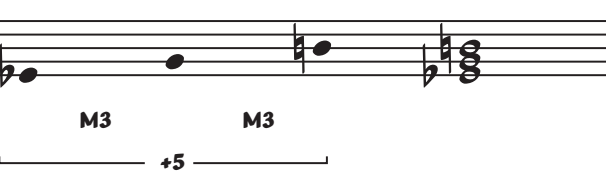



2. Each of the following notes is the third of what minor triad?



Lesson 39. Augmented Triads

3 **Augmented triads** can be formed by raising the fifth of a major triad by a half step. From the root, the intervals are a major third and an augmented fifth, or one major third beneath another.

<p>C Major Triad</p> 	<p>C Augmented Triad</p> 
<p>D Major Triad</p> 	<p>D Augmented Triad</p> 
<p>E♭ Major Triad</p> 	<p>E♭ Augmented Triad</p> 

Practice

1. Make augmented triads out of the following major triads by using the appropriate accidental to raise the fifth by a half step.

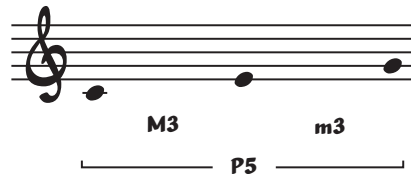
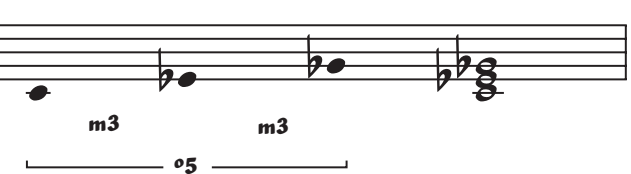
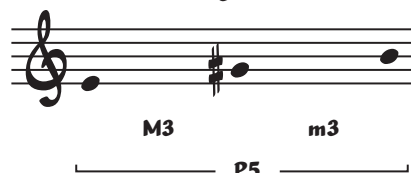





2. Each of the following notes is the fifth of what augmented triad?



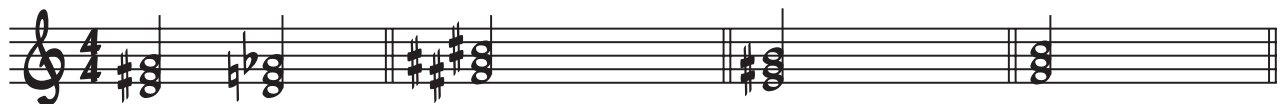
Lesson 40. Diminished Triads

- 4 The **diminished triad** can be formed by lowering the third and fifth of a major triad by a half step. The intervals are a minor third and a diminished fifth, or one minor third below another.

<p>C Major Triad</p> 	<p>C Diminished Triad</p> 
<p>E Major Triad</p> 	<p>E Diminished Triad</p> 
<p>B Major Triad</p> 	<p>B Diminished Triad</p> 

Practice

1. Make diminished triads out of the following major triads by lowering the third and fifth by a half step. The first one is done for you.




2. Each of the following notes is the fifth of what diminished triad?



B _____ _____ _____ _____ _____ _____ _____

Lesson 41. Chord Symbols

Chords are often expressed with **chord symbols**. Chord symbols are usually made up of a letter that indicates the note that the chord is built on, and other symbols that indicate additional notes in the chord. If there is no other symbol, the chord is major. In chord symbols, min is for minor, o is for dim, and + is augmented. (Chord symbols may be written many different ways. For example, C major may also be written as CM or Cmaj, and C minor as C-, Cm, or Cmi.)

A musical staff in treble clef showing four triads. Above each triad is a chord symbol: **C**, **Cmin**, **C°**, and **C+**. The triads are: C major (C-E-G), C minor (C-Eb-G), C diminished (C-Eb-Gb), and C augmented (C-E-G#).

Practice

- Write the following triads. The first one is done for you.

A musical staff in treble clef for practice. The first triad is **Amin** (A-C-E) and is filled in. The other three triads are empty: **Bb+**, **E**, and **G°**.

A musical staff in bass clef for practice. The first triad is **Bbmin** (Bb-D-F) and is filled in. The other three triads are empty: **B°**, **F+**, and **Ab**.

- Analyze each triad by writing its chord symbol.

A musical staff in treble clef for practice. The first triad is **Eb** (Eb-G-Bb) and is filled in. The other three triads are empty: **G**, **F**, and **A#**.

A musical staff in bass clef for practice. The first triad is **Bb** (Bb-D-F) and is filled in. The other three triads are empty: **G**, **A**, and **B#**.

Exercises, Lessons 37–41. Triads and Chord Symbols

1. Write the following triads.

D_b **E_{min}** **F⁺** **G[°]**

A **F_{min}** **B_b⁺** **B[°]**

2. Analyze each triad with its chord symbol name. Write the chord symbol above the chord.

Ear Training

- 5 1. Listen to the major and minor triad. Then, identify each example as either a major or minor triad.
- major minor
 - major minor
 - major minor
 - major minor
- 6 2. Listen to the minor and diminished triad. Then, identify each example as either a minor or diminished triad.
- minor diminished
 - minor diminished
 - minor diminished
 - minor diminished

- 7 3. Listen to the major and augmented triad. Then, identify each example as either a major or augmented triad.
- a. major augmented
 - b. major augmented
 - c. major augmented
 - d. major augmented
- 8 4. Listen to each triad. Then, identify each example as a major, minor, diminished, or augmented triad.
- a. major minor diminished augmented
 - b. major minor diminished augmented
 - c. major minor diminished augmented
 - d. major minor diminished augmented
 - e. major minor diminished augmented
 - f. major minor diminished augmented
 - g. major minor diminished augmented
 - h. major minor diminished augmented

Lesson 42. Triad Inversions

- 9 Triads built upwards in thirds from the root are said to be in **root position**. The individual notes of a triad can be rearranged (*inverted*) so that the third or fifth is on the bottom.

Root position:
Root (1) on bottom

1st inversion:
3rd on bottom

2nd inversion:
5th on bottom

Practice

1. Write the following triads in their first and second inversions.

Cmin **B \flat +** **D $^{\circ}$**

1st inv. 2nd inv. 1st inv. 2nd inv. 1st inv. 2nd inv.

2. Complete each of the inverted chords on the staff below by building upwards from the given note.

E \flat **Emin** **A \flat +** **Bmin**

A **F \sharp min** **F+** **C \sharp $^{\circ}$**

3. Analyze each chord with chord symbols for each of the inverted triads. The first one is done for you.

Fmin _____ _____ _____

_____ _____ _____ _____

Lesson 43. Bass/Chord Theory

- 10 Complete harmony includes a **bass note** (bottom note) in addition to the three notes of the triad. It is usually the lowest note of the harmony and is usually the triad's root. In harmony, a chord is considered to be in root position as long as the root is the bass, regardless of the positioning of the rest of the notes in the chord. The bass is usually notated in bass clef.

C Fmin

Chord

Bass

- 11 Chord members (excluding the bass) spread out over more than one octave are said to be in **open position**. Chord members within the same octave are said to be in **close position**. Again, chords are considered to be in root position as long as the root is in the bass. All of these chords, whether close or open, are in root position.

C

Close Open Close Open Close Open

Practice

1. Complete the harmony by adding the root of each chord in the bass.

2. Rewrite the following close-position chords in open position by reversing the top and bottom notes. Notate all three notes on the treble staff.

Exercise 2: Rewrite the following close-position chords in open position by reversing the top and bottom notes. Notate all three notes on the treble staff.

Chords: **Fmin**, **G+**, **B**, **B°**

3. Rewrite the following open-position chords in close position by reversing the top and bottom notes.

Exercise 3: Rewrite the following open-position chords in close position by reversing the top and bottom notes.

Chords: **Fmin**, **G+**, **B**, **B°**

4. Add the bass to complete the harmony of these open-position chords.

Exercise 4: Add the bass to complete the harmony of these open-position chords.

Lesson 44. Voice Leading

12 **Voice leading** refers to the way that individual voices (notes of the chord) move in a series of chords (**chord progression**). The goal of voice leading is to have each voice move as little as possible in a melodically interesting way from chord to chord. To voice lead a chord progression, first look for the **common tone**—a note found in two successive chords. Keeping common tones in the same voice is referred to as **common-tone voice leading**. Common tones are highlighted here:

Exercise 12 shows a chord progression: C, F, B \flat , C, F, B \flat . The top staff is in treble clef, and the bottom staff is in bass clef. The bass line plays the root of each chord. The upper voices are shown as chords. Dashed lines indicate common tones between adjacent chords: C4 and G4 between C and F; F4 and B \flat 4 between F and B \flat ; C4 and G4 between C and F; F4 and B \flat 4 between F and B \flat .

13 Note that different inversions of each chord are used to make this movement smooth, melodic, and linear. The bass plays the root of the chord, and moves independently of the upper voices.

Exercise 13 shows the same chord progression: C, F, B \flat , C, F, B \flat . The top staff is in treble clef, and the bottom staff is in bass clef. The bass line plays the root of each chord. The upper voices are shown as chords with fingerings (1, 2, 3). The progression is divided into two sections: "Not voice led" (C, F, B \flat) and "Voice led" (C, F, B \flat). The "Voice led" section shows the top voice moving from C4 to B \flat 4, then to C4, then to B \flat 4, and finally to C4.


Starting in root position, the top voice (voice 1) would move as illustrated to the left (below) if the chords were not voice-led, and as illustrated to the right (below) if voice-led.

Exercise 13 shows the top voice (voice 1) moving from C4 to B \flat 4, then to C4, then to B \flat 4, and finally to C4. The progression is divided into two sections: "If not voice led:" and "If voice led:". The "If not voice led" section shows the top voice moving from C4 to B \flat 4, then to C4, then to B \flat 4, and finally to C4. The "If voice led" section shows the top voice moving from C4 to B \flat 4, then to C4, then to B \flat 4, and finally to C4.

Practice

1. Write out the movement of the middle voice (voice 2) from the voice-leading example on page 12, both voice-led and not voice-led.


C
F
B \flat
C
F
B \flat



Not voice led:
Voice led:

2. Write out the movement of the bottom voice (voice 3), both voice-led and not voice-led.

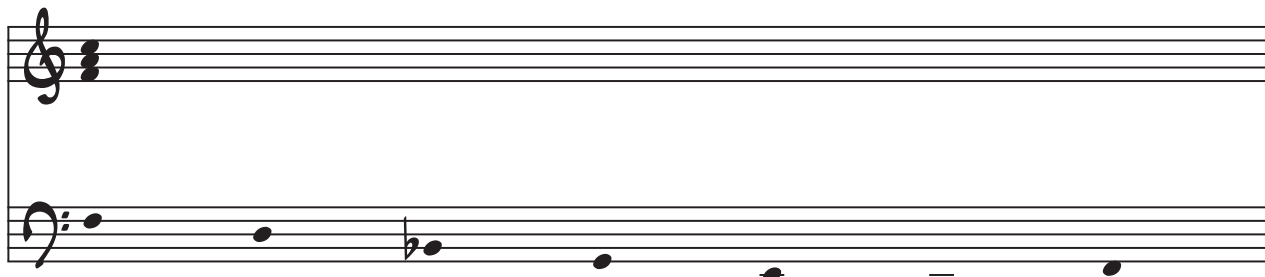
C
F
B \flat
C
F
B \flat



Not voice led:
Voice led:

3. Voice lead the following chords, observing the common-tone principle.

F
Dmin
B \flat
Gmin
E $^\circ$
C
F



Lesson 45. Open-Position Voice Leading and Chorale Notation

Chords are sometimes notated in **chorale notation**, which places the two higher voices in the treble clef and the two lower voices in the bass clef. To easily distinguish the voices, the stems of the higher voices in each clef go upward and the stems of the lower voices go downward.

Practice

1. Rewrite these chords in chorale notation.

2. Voice leading open-position chords works the same way as close-position: find the common tone, and keep it in the same voice. Voice lead the following open-position chords, observing the common-tone principle. Use chorale notation.

Lesson 46. Contrary/Parallel Motion Voice Leading

- 14 When successive chords do not have a common tone, such as an F major triad moving to a G major triad, traditional voice-leading technique dictates that chord voices should move in the opposite direction as the bass. This movement is known as **contrary motion**. A more contemporary sound, as found in pop and jazz, is **parallel motion**, in which voices move in the same direction as the bass. Either way, each voice should move to the next closest position.

Contrary Motion:
Upper voices move down,
bass moves up

Parallel Motion:
Upper voices and
bass move in same direction

Practice

1. Move the upper voices as indicated. Each example moves from an F major to a G major triad.

Contrary
F G

Parallel
F G

Contrary
F G

Parallel
F G

2. Voice lead the following chords. Use the common-tone principle when available, and contrary or parallel as indicated, when not.

Contrary
C F G

Parallel
C C F G C

3. Voice lead the following chords, first in parallel motion to the bass, then in contrary motion.

Parallel **Contrary**
B^b **Amin** **Gmin** **F** **B^b** **Amin** **Gmin** **F**

Exercises, Lessons 42–46. Inversions and Voice Leading

1. Voice lead this progression of triads from the starting position shown. Follow the common-tone principle, but use contrary motion if there is no common tone between chords.

E^b C^{min} A^b B^b E^b E^b C^{min} A^b B^b E^b E^b C^{min} A^b B^b E^b

2. Voice lead this progression of triads using chorale notation from the starting position shown. Follow the common-tone principle, but use contrary motion if there is no common tone between chords.

D B^{min} G A D D B^{min} G A D D B^{min} G A D

3. Analyze each chord with its chord symbol name.

Ear Training

- 15 1. Listen to the demonstration triads. Then, identify each example as a major, minor, diminished, or augmented triad.

The musical notation for exercise 15 consists of two staves (treble and bass clef) with six measures. Each measure contains a triad. The labels below the notes are: Major, Augmented, Major, Minor, Diminished, and Major.

- a. major minor diminished augmented
- b. major minor diminished augmented
- c. major minor diminished augmented
- d. major minor diminished augmented
- e. major minor diminished augmented
- f. major minor diminished augmented
- g. major minor diminished augmented
- h. major minor diminished augmented

- 16 2. Listen to the demonstration triads. Then, identify each example as a major, minor, diminished, or augmented triad.

The musical notation for exercise 16 consists of two staves (treble and bass clef) with six measures. Each measure contains a triad. The labels below the notes are: Major, Augmented, Major, Minor, Diminished, and Major.

- a. major minor diminished augmented
- b. major minor diminished augmented
- c. major minor diminished augmented
- d. major minor diminished augmented
- e. major minor diminished augmented
- f. major minor diminished augmented
- g. major minor diminished augmented
- h. major minor diminished augmented

Lesson 47. Major 7 Chords

- 17** **Seventh (7) chords** are four-part chords built upwards in thirds from a root. The major 7 (Maj7) chord includes the root, third, fifth, and seventh of a major scale. Each note functions as described by its corresponding scale degrees: root, 3, 5, 7.

CMaj7

1 3rd 5th 7th M3 P5 M7

Practice

- Build a major 7 chord upwards from each given note.

- Analyze each chord with a chord symbol.

Lesson 48. Dominant 7 Chords

18 The **dominant 7** (7) chord can be formed by lowering the seventh of the major 7 chord by a half step.

The diagram shows two musical staves. The first staff is for CMaj7, with notes C, E, G, and B \flat . Below the notes are the intervals M3, P5, and M7. The second staff is for C7, with notes C, E \flat , G, and B \flat . Below the notes are the intervals M3, P5, and m7.

Practice

1. Build a dominant 7 chord upwards from each given note.

Exercise 1 consists of two staves. The top staff (treble clef) has four measures with notes C4, E4, G4, and B \flat 4. The bottom staff (bass clef) has four measures with notes C3, E \flat 3, G3, and B \flat 3.

2. Analyze each chord with a chord symbol. Hint: Some are major 7, some are dominant 7.

Exercise 2 consists of two staves. The top staff (treble clef) has four measures with chords: B \flat 7, C \sharp 7, E \flat 7, and B \flat 7. The bottom staff (bass clef) has four measures with chords: B \flat 7, C \sharp 7, E \flat 7, and B \flat 7.

Lesson 49. Minor 7 Chords

- 19 The **minor 7** chord (min7) can be formed by lowering the third of the dominant 7 by a half step.

The diagram shows two musical staves. The first staff is for the C7 chord, with notes G4, Bb4, D5, and F5. The intervals between the notes are labeled as M3 (between G and Bb), P5 (between G and F), and m7 (between Bb and F). The second staff is for the Cmin7 chord, with notes G4, Bb4, Bb4, and F5. The intervals are labeled as m3 (between G and Bb), P5 (between G and F), and m7 (between Bb and F).

Practice

1. Build a minor 7 chord upwards from each given note.

Exercise 1 consists of two staves. The top staff (treble clef) contains four notes: C4, E4, G4, and Bb4. The bottom staff (bass clef) contains four notes: C3, E3, G3, and Bb3.

2. Analyze each chord with a chord symbol. Hint: Some are minor 7, some are dominant 7.

Exercise 2 consists of two staves. The top staff (treble clef) shows four chords: C7, Eb7, G7, and Bb7. The bottom staff (bass clef) shows four chords: C#7, D#7, E7, and F7.

Lesson 50. Minor 7(♭5) Chords

- 20 The **minor 7(♭5)** chord [symbol $\text{min7}(\flat 5)$], also known as the half-diminished, can be formed by lowering the fifth of the minor 7 chord by a half step.

The diagram shows two musical staves. The first staff is labeled **Cmin7** and contains four chords: a triad C-E♭-G, a dyad C-E♭, a dyad G-B♭, and a full chord C-E♭-G-B♭. The intervals between the root and the other notes are labeled as **m3**, **P5**, and **m7**. The second staff is labeled **Cmin7(♭5)** and contains four chords: a triad C-E♭-F, a dyad C-E♭, a dyad F-B♭, and a full chord C-E♭-F-B♭. The intervals between the root and the other notes are labeled as **m3**, **°5**, and **m7**.

Practice

1. Build a $\text{min7}(\flat 5)$ chord upwards from each given note.

A single musical staff in treble clef with a key signature of one flat. It contains four starting notes: C (middle C), E♭ (one flat), G (second line), and B♭ (second space).

A single musical staff in bass clef with a key signature of one sharp. It contains four starting notes: C (one line), E (second space), G (second space), and B (second space).

2. Analyze each chord with a chord symbol. Some are minor 7, some are $\text{min7}(\flat 5)$.

A single musical staff in treble clef with a key signature of one flat. It contains four chords, each with a blank line above it for a chord symbol: C-E♭-G-B♭, C-E♭-F-B♭, C-E♭-G-B♭, and C-E♭-F-B♭.

A single musical staff in bass clef with a key signature of one sharp. It contains four chords, each with a blank line above it for a chord symbol: C#-E-F-G, C#-E-F-A, C-E♭-G-B♭, and C-E♭-F-B♭.

Lesson 51. Diminished 7 Chords

- 21 The **diminished 7 chord** ($^{\circ}7$) is formed by lowering the seventh of a $\text{min}7(\flat 5)$ chord by a half step.

Cmin7($\flat 5$) **C $^{\circ}7$**

m3 °5 m7 m3 °5 °7

Compared to the major 7, the seventh of the diminished 7 chord has been lowered twice, each time by a half step. The enharmonic equivalent is frequently used to avoid the double-flat. For example, the B $\flat\flat$ (double-flat) in the example above may also be expressed as an A, since A is two half steps below B.

M7 m7 °7 °7 M6

Practice

1. Build diminished 7 ($^{\circ}7$) chords upwards from each given note.

(use enharmonic 7th)

2. Analyze each chord with a chord symbol. Some are $\text{min}7(\flat 5)$, some are diminished 7.

Exercises, Lessons 47–51. Seventh Chord Types and Symbols

1. Write out each of the following chords from the chord symbols.

E7 **Cmin7(♭5)** **DMaj7** **Gmin7** **Bmin7(♭5)**

A♭Maj7 **E°7** **Amin7** **B♭7** **B°7**

2. Analyze each chord with a chord symbol.

Ear Training

- 22** 1. Listen to each demonstration chord. Then, identify each example as either a major 7 or dominant 7 chord.
- a. major 7 dominant 7
 - b. major 7 dominant 7
 - c. major 7 dominant 7
 - d. major 7 dominant 7
- 23** 2. Listen to each demonstration chord. Then, identify each example as either dominant 7 or minor 7.
- a. dominant 7 minor 7
 - b. dominant 7 minor 7
 - c. dominant 7 minor 7
 - d. dominant 7 minor 7

- 24** 3. Listen to each demonstration chord. Then, identify each example as either minor 7 or min7(♭5).
- a. minor 7 min7(♭5)
 - b. minor 7 min7(♭5)
 - c. minor 7 min7(♭5)
 - d. minor 7 min7(♭5)
- 25** 4. Listen to each demonstration chord. Then, identify each example as either min7(♭5) or diminished 7.
- a. min7(♭5) diminished 7
 - b. min7(♭5) diminished 7
 - c. min7(♭5) diminished 7
 - d. min7(♭5) diminished 7

Lesson 52. Inversions of Seventh Chords

26 Like triads, seventh chords can be inverted. There are three inversions possible with seventh chords. The first inversion has the third on the bottom; second inversion has the fifth on the bottom; third inversion has the seventh on the bottom.

The diagram illustrates the four positions of a seventh chord on a treble clef staff. From left to right: **Root Position** (root on the bottom line), **1st Inversion** (third on the bottom line), **2nd Inversion** (fifth on the bottom line), and **3rd Inversion** (seventh on the bottom line).

Practice

1. Write the three inversions of the following seventh chords.

This section provides musical notation for writing the three inversions of eight seventh chords. The chords are arranged in two rows of four. The first row contains **B \flat Maj7**, **B7**, **Cmin7**, and **C \sharp 7**. The second row contains **Dmin7(\flat 5)**, **EMaj7**, **F \sharp min7**, and **A \flat 7**. Each chord is shown in its root position on a staff, with labels for its **1st**, **2nd**, and **3rd** inversions written below it.

2. Identify each inverted seventh chord with a chord symbol.

This section provides musical notation for identifying inverted seventh chords. It consists of two staves in 4/4 time. The first staff is in treble clef and starts with an **F7** chord in root position. The second staff is in bass clef. Each staff contains four measures of music, each with a seventh chord in a different inversion. The first measure of each staff has a chord symbol above it, while the other three measures have blank lines for identification.

Lesson 53. Voice Leading Seventh Chords

As with triads, seventh chords can be voice led following the common-tone principle. In these examples, each voice moves smoothly, as the common tone is observed.

FMaj7 B \flat Maj7 E \flat Maj7 A \flat Maj7 F7 B \flat 7 E \flat 7 A \flat 7

Practice

1. Complete the voice leading from the starting position.

FMaj7 B \flat Maj7 E \flat Maj7 A \flat Maj7 F7 B \flat 7 E \flat 7 A \flat 7

2. Complete the voice leading from the starting position.

Amin7 Dmin7 Gmin7 Cmin7 Amin7(\flat 5) Dmin7(\flat 5) Gmin7(\flat 5) Cmin7(\flat 5)

3. Complete the voice leading from the starting position. Hint: There will be no common tones. Voice lead moving each voice down by half-step motion.

F[°]7 B[°]7 E[°]7 A[°]7

The image shows a musical exercise on two staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It contains a whole chord for F#7. The bottom staff is in bass clef with a key signature of one sharp (F#) and a 3/4 time signature. It contains a whole note chord for F#7, followed by three half notes: E, D, and C, each moving down by a half step from the previous note.

Lesson 54. Contrary and Parallel Voice Leading of Seventh Chords

- 27 As with triads, seventh chords with no common tones may be voice led in either contrary or parallel motion.

The diagram illustrates voice leading for two sets of seventh chords: G^{Maj}7, F^{Maj}7, E^{Maj}7, D^{Maj}7. The first set is labeled "Contrary Motion" and shows the upper voice moving down and the lower voice moving up. The second set is labeled "Parallel Motion" and shows both voices moving in the same direction.

Practice

- Voice lead the following progression using first contrary, then parallel motion.

The diagram shows two parts of a practice exercise. The first part, labeled "Contrary", shows the progression F^{Maj}7, G^{Maj}7, A^{Maj}7. The second part, labeled "Parallel", shows the same progression: F^{Maj}7, G^{Maj}7, A^{Maj}7.

- Voice lead using contrary and parallel motion.

The diagram shows two parts of a practice exercise. The first part, labeled "Contrary", shows the progression C^{Maj}7, B^bMaj7, A^bMaj7. The second part, labeled "Parallel", shows the same progression: C^{Maj}7, B^bMaj7, A^bMaj7.

Lesson 55. Third, Fifth, and Seventh over the Bass

28 Frequently, seventh chords contain the third, fifth, and seventh in the chord, and the root in the bass, making a total of four voices. This sound is especially common in pop music.

CMaj7 Fmin7 C7

5th 7th
3rd

3rd
7th
5th

5th
3rd
7th

Root Root Root

Voice leading the third, fifth, and seventh works the same as voice leading regular triads.

GMaj7 CMaj7 FMaj7 B \flat Maj7 GMaj7 Amin7 GMaj7 Amin7

Common tone Contrary Parallel

Practice

- Write the following seventh chords with the third, fifth, and seventh over the root.

Amin7 DMaj7 Cmin7(♭5) E7

The exercise consists of a grand staff with two staves (treble and bass clef). Above the staff, four chord symbols are listed: Amin7, DMaj7, Cmin7(♭5), and E7. Each chord symbol is centered over one of the four measures of the staff. The staves are currently empty, intended for the student to write the notes for each chord.

- Voice lead the following seventh chords with the third, fifth, and seventh over the root, using the common-tone principle.

FMaj7 Dmin7 B♭Maj7 Gmin7 E♭Maj7

The exercise shows a grand staff with two staves. The top staff (treble clef) contains five vertical chord symbols: FMaj7, Dmin7, B♭Maj7, Gmin7, and E♭Maj7. The bottom staff (bass clef) shows a sequence of notes: F, D, B♭, G, E♭. These notes represent the roots of the chords above. The exercise is designed to practice voice leading between these chords using the common-tone principle.

- Voice lead the third, fifth, and seventh, using contrary, then parallel motion.

FMaj7 Gmin7 Amin7 B♭Maj7 FMaj7 Gmin7 Amin7 B♭Maj7

The exercise shows a grand staff with two staves. The top staff (treble clef) contains two groups of four vertical chord symbols: FMaj7, Gmin7, Amin7, B♭Maj7, followed by FMaj7, Gmin7, Amin7, B♭Maj7. The bottom staff (bass clef) shows a sequence of notes: F, G, A, B♭, F, G, A, B♭. The first group of chords is labeled "Contrary" and the second group is labeled "Parallel". The exercise is designed to practice voice leading for the third, fifth, and seventh of these chords using contrary and parallel motion.

Exercises, Lessons 52–55. Seventh-Chord Inversions and Voice Leading

1. Voice lead this progression of seventh chords using the common-tone principle.

B♭Maj7 Gmin7 Cmin7 F7 B♭Maj7 B♭Maj7 Gmin7 Cmin7 F7 B♭Maj7

AMaj7 F#min7 Bmin7 E7 AMaj7 AMaj7 F#min7 Bmin7 E7 AMaj7

2. Voice lead the same progression using the common tone principle with the third, fifth, and seventh over the root in the bass.

B♭Maj7 Gmin7 Cmin7 F7 B♭Maj7 AMaj7 F#min7 Bmin7 E7 AMaj7

Ear Training

- 29** 1. Listen to the major 7, dominant 7, and minor 7 chords in root position. Then, identify each example as major 7, dominant 7, or minor 7.
- a. major 7 dominant 7 minor 7
 - b. major 7 dominant 7 minor 7
 - c. major 7 dominant 7 minor 7
 - d. major 7 dominant 7 minor 7
 - e. major 7 dominant 7 minor 7
 - f. major 7 dominant 7 minor 7
 - g. major 7 dominant 7 minor 7
 - h. major 7 dominant 7 minor 7

Lesson 56. Harmonic Accompaniment from a Lead Sheet

In popular music and jazz, musicians frequently work with a **lead sheet**, rather than a complete score. The lead sheet includes the melody and the chords expressed in chord symbols, whereas the score contains all notes, written out. Accompanists use the lead sheet as a guideline to create their own parts from the chord symbol information.

A musical staff in 4/4 time with a key signature of one flat (Bb). The melody consists of the following notes: F4 (quarter), G4 (quarter), A4 (quarter), Bb4 (quarter), C5 (quarter), Bb4 (quarter), A4 (quarter), G4 (quarter), F4 (quarter). Above the staff, the chord symbols FMaj7, Gmin7, C7, and FMaj7 are placed above the first, second, third, and fourth measures respectively.

The first step to creating harmonic **accompaniment** (support for the melody, devised from the chord symbols) is to voice lead the chords in the range of notes illustrated below, where they will sound rich and full, but not so low as to sound muddy. The melody is played separately above the chords.

A diagram illustrating voice leading. It shows two staves: a bass clef staff below and a treble clef staff above. A note is shown in the bass clef staff, and an arrow points from it to a note in the treble clef staff, indicating the movement of a voice part from a lower register to a higher register.

30

A musical score in 4/4 time with a key signature of one flat (Bb). The melody is the same as in the first example. The bass line consists of four measures, each containing a chord voicing: FMaj7, Gmin7, C7, and FMaj7. The notes are placed in the bass clef staff, with some notes beamed together to show the chord structure.

Practice

1. Voice lead the chords from the first position shown. Watch out for the key signature!

The image shows a musical exercise in 4/4 time with a key signature of one flat (B-flat). The exercise is divided into six measures, each corresponding to a specific chord. The first measure shows the chord A7 with a voice lead starting on G4. The second measure shows Dmin7 with a voice lead starting on D4. The third measure shows G7 with a voice lead starting on G4. The fourth measure shows Gmin7 with a voice lead starting on G4. The fifth measure shows C7 with a voice lead starting on C4. The sixth measure shows FMaj7 with a voice lead starting on F4. The bass line starts with a G#2 chord in the first measure and remains static for the rest of the exercise.

A7 **Dmin7** **G7** **Gmin7** **C7** **FMaj7**

Lesson 57. Arpeggiating Accompaniment Chords

31 **Arpeggiating** chords—playing each note of the chord separately, rather than all at the same time—is a common way to create harmonic accompaniment. Notice that the notes of each chord are arpeggiated in the same order, starting with the lowest note to the highest note and back again—while the original voice leading from the previous lesson remains intact (Lesson 56, p. 34).

Practice

1. Complete the arpeggiated accompaniment. When there are two chords in the same measure, use the first chord for the first two beats of the pattern, and the second chord for the last two beats. Follow the voice leading set up in the previous lesson (Lesson 56, p. 35).

Lesson 58. Using the Third, Fifth, and Seventh over the Root as Accompaniment Chords

- 32 Accompaniments created from seventh chords can use the third, fifth, and seventh only with the root of the chord in the bass.

Melody

Chord

Bass

FMaj7 Gmin7 C7 FMaj7

Practice

1. Voice lead the following chords from the starting position shown, using only the third, fifth, and seventh of each seventh chord.

A7 Dmin7 G7 Gmin7 C7 FMaj7

Lesson 59. 2:1 Accompaniment Pattern

33 Another accompaniment pattern that works well with the three notes of the third, fifth, and seventh is the **2:1 pattern**. Two of the three notes are struck together, alternating with the third of the three notes, by itself. This is a 2:1 pattern based on the voice leading in Lesson 58 (p. 37).

FMaj7 Gmin7 C7 FMaj7

Practice

1. Complete the 2:1 harmonic accompaniment using the same voice leading as the previous two lessons (Lessons 57 and 58, p. 36–37).

A7 Dmin7 G7 Gmin7 C7 FMaj7

Exercises, Lessons 56–59. Harmonizing and Accompaniment Patterns

1. Voice lead the accompanying chords using the common-tone principle.

GMaj7 Emin7 Amin7 D7

2. Arpeggiate the voice-led chords to create an accompaniment. Be careful to arpeggiate the notes of each chord in the same order, to preserve the voice leading.

GMaj7 Emin7 Amin7 D7

3. Voice lead the third, fifth, and seventh from the starting position shown.

FMaj7 BbMaj7 Emin7(b5) A7

4. Create a 2:1 pattern, using the third, fifth, and seventh to create an accompaniment.

Ear Training

- 34** 1. Listen to the following arpeggiated chords, and identify them as major 7, dominant 7, or minor 7.
- | | | |
|------------|------------|---------|
| a. major 7 | dominant 7 | minor 7 |
| b. major 7 | dominant 7 | minor 7 |
| c. major 7 | dominant 7 | minor 7 |
| d. major 7 | dominant 7 | minor 7 |
| e. major 7 | dominant 7 | minor 7 |
| f. major 7 | dominant 7 | minor 7 |
| g. major 7 | dominant 7 | minor 7 |
- 35** 2. Listen to the following 2:1 accompaniment patterns, and identify chords as major 7, dominant 7, or minor 7.
- | | | |
|------------|------------|---------|
| a. major 7 | dominant 7 | minor 7 |
| b. major 7 | dominant 7 | minor 7 |
| c. major 7 | dominant 7 | minor 7 |
| d. major 7 | dominant 7 | minor 7 |
| e. major 7 | dominant 7 | minor 7 |
| f. major 7 | dominant 7 | minor 7 |
| g. major 7 | dominant 7 | minor 7 |

Lesson 60. Melodic Motion

The notes of a melody move by step or by leap. A **step** is a major or minor second, and a **leap** is any interval larger.



Steps (S) and leaps (L) are analyzed as this melody moves from one note to the next.



Practice

1. Analyze the motion between the notes of the following melody by using either S or L.



Lesson 61. Writing a Chord-Tone Melody

36 The notes that make up a chord are called **chord tones**. A **chord-tone melody** is one that uses only notes of the current chord, in any order. Notes may be used in different octaves, and some may be used more than once before others are used.

Dmin

1 3 5 5 5 1 5 3 1 1 3 5 3 1 5 3 1

Practice

1. Adjust the notes of this melody to fit the chords. Label the chord tones using numerals, as above.
 - a. D \flat

- b. Bmin7

2. Write a 4-measure chord-tone melody on the following chords.

F \sharp Maj7

F \sharp min7

Exercises, Lessons 60–61. Melody

Ear Training

- 37 1. Listen to a C7 chord. You will hear it arpeggiated over more than one octave. Then, transcribe this 4-measure melody.



- 38 2. Listen to a Cmin7 chord. Then, transcribe this 4-measure melody.



- 39 3. Listen to a CMaj7 chord. Then, transcribe this 4-measure melody.



Lesson 62. Melodic Motion over Change of Harmony

40 In looking at melodic motion over a change of harmony, we pay attention to how the last note of one chord resolves into the first note of the next chord. If the last note of a chord is also a chord tone of the next chord, it may be described as a common tone (CT). In these cases, a leap into the first note of the next chord is possible. If the last note of a chord is not a chord tone of the next chord (known as a non-common-tone, or NC), a stepwise resolution into the first note of the next chord is called for.

The first example shows a melodic line in 4/4 time. It starts with an FMaj7 chord (F4, A4, C5, E5) and moves to a BbMaj7 chord (Bb4, D5, F5, Ab5). The note B4 is a common tone (CT) between the two chords. The second example shows the same chord progression, but the last note of the FMaj7 chord is C5, which is not a chord tone of BbMaj7 (NC). It resolves stepwise to Bb4.

Practice

- Write a short, simple melody on this 2-chord progression. Use each of the four Cmin7 notes as the last note of the first measure, and resolve that note into the next chord by leap if it's a common tone, or resolve by step if it's a non-chord-tone.

The practice section consists of two identical musical staves. Each staff is in 4/4 time and is divided into four measures. The first two measures are for a Cmin7 chord (C4, Eb4, F4, Gb4) and the last two measures are for an Fmin7 chord (F4, Ab4, C5, Eb5). The staves are empty, intended for the student to write a melody.

Lesson 63. Repeating a Melodic Phrase on Different Chords

- 41 A **phrase** is the natural division of a melody into groups of notes that belong together, just as sentences are groups of words that belong together. Listen to this melody. It is made up of two phrases, as indicated by the phrase markings:

- 42 Notice that the rhythmic and melodic shapes of the two phrases are similar. If the chords in measures 3 and 4 were different, the melody notes would have to be adjusted to accommodate the new chords.

Practice

- Complete these 4-measure melodies by repeating the first 2-measure phrase on the chords given. Try playing your melody with the chords.

- Write your own melody in the first two measures, with a repeat of that melody in the second two measures. Practice playing it with the chords.

Lesson 64. The Melodic Sequence

43 A **melodic sequence** is a series of at least three repeats of melodic phrases. Commonly, the third one is varied in order to add variety and avoid excessive repetition, and the fourth one is often completely different to bring things to a conclusion.

The first example shows a melodic sequence in 3/4 time. The first phrase is C^{min}7, the second is F7, the third is D^{min}7 (labeled "Repeated"), and the fourth is G7 (labeled "Completely Different").

The second example shows a melodic sequence in 3/4 time. The first phrase is E^{min}7 (labeled "Varied"), the second is A7, the third is D7, and the fourth is G7 (labeled "Completely Different").

Practice

1. Complete these melodic sequences, using the melodic material and chords given.

The first exercise shows a melodic sequence in 4/4 time. The first phrase is G^{min}7, the second is C7, the third is F^{Maj}7 (labeled "Repeat:"), and the fourth is B^bMaj7.

The second exercise shows a melodic sequence in 4/4 time. The first phrase is E^{min}7(b5), the second is A7, and the third is D^{Maj}7 (labeled "Conclude:").

2. Complete these melodic sequences, using the melodic material and chords given.

The first exercise shows a melodic sequence in 3/4 time. The first phrase is E^{min}7, the second is A7, the third is D^{min}7 (labeled "Repeat:"), and the fourth is G7.

The second exercise shows a melodic sequence in 4/4 time. The first phrase is C^{min}7 (labeled "Vary:"), the second is F7, and the third is B^bMaj7 (labeled "Conclude:").

Exercises, Lessons 62–64. Melody Writing

A frequently used song form uses a 4-measure phrase, which repeats in the first section, then a shorter 2-measure phrase is repeated sequentially for the second section. Notice the double barline after measure 8 separating the two sections.

4-measure phrase

CMaj7 Fmin7 B♭7

Phrase repeated

CMaj7 Bmin7 E7 Double Barline

2-measure phrase

AMaj7 B♭min7 A♭Maj7 Amin7 D7

Phrase repeated

Phrase varied

GMaj7 Dmin7 G7 CMaj7 Dmin7 G7

Conclusion

1. Try your own melody writing on this same chord progression. Repeat your first 4-measure phrase in the second four measures, then use a 2-measure phrase repeated sequentially for the last eight measures.

CMaj7 **Fmin7** **B \flat 7**

CMaj7 **Bmin7** **E7**

AMaj7 **B \flat min7** **E \flat 7** **A \flat Maj7** **Amin7** **D7**

GMaj7 **Dmin7** **G7** **CMaj7** **Dmin7** **G7**

Ear Training

- 44 1. Listen to the CMaj7 and FMaj7 chords. Then, transcribe this 4-measure melody.

CMaj7 **FMaj7**

- 45 2. Listen to the Dmin7 and G7 chords. Then, transcribe this 4-measure melody.

Dmin7 **G7**

- 46 3. Listen to the Dmin7, G7, and CMaj7 chords. Then, transcribe this 4-measure melody.

Dmin7 **G7** **CMaj7**

What's Next?

Congratulations on finishing *Berklee Music Theory, Book 2*. Now you have a basic understanding of chords and chord types, including major, minor, diminished, and augmented triads and seventh chords. You've practiced voice leading, connecting notes from chord to chord in a way that sounds smooth and musical. You've explored harmonic accompaniment on piano, and have even written melodies of your own.

Continue working with this material as much as you possibly can. Write out and play the chords of songs from a lead sheet; practice voice leading and devising accompaniment patterns based on the chords; try writing your own melody on those same chords. All of these activities will help to reinforce and even further the theoretical knowledge gained in this course.

Until then—keep practicing, and continue to build your knowledge of music theory. It will make you a better musician.

About the Author

Paul Schmeling, Chair Emeritus of the Piano Department at Berklee College of Music, is a master pianist, interpreter, improviser, and arranger. He has inspired countless students since he began teaching at Berklee in 1961. He has performed or recorded with jazz greats such as Clark Terry, Rebecca Parris, George Coleman, Carol Sloane, Frank Foster, Art Farmer, Herb Pomeroy, Phil Wilson, Dick Johnson, and Slide Hampton. In the 1990s, the Paul Schmeling Trio released two inventive and critically acclaimed albums, interpreting the music of Hoagy Carmichael and songs associated with Frank Sinatra. He is the co-author of the *Berklee Practice Method: Keyboard* (Berklee Press 2001) and *Berklee Instant Keyboard* (Berklee Press 2002). He is also the author and instructor of three online courses on Berkleemusic.com, *Music Theory 101*, *Music Theory 201*, and *Berklee Keyboard Method*.