

Seventh Chords

Stack of Thirds

- Begin with a major or natural minor scale (use raised leading tone for chords based on $\hat{5}$ and $\hat{7}$)
- Build a four note stack of thirds on each note within the given key
- Identify the characteristic intervals of each of the seventh chords

The image displays two musical staves, each with seven measures. Each measure contains a stack of four notes (a triad plus a seventh) on a single pitch. The notes are represented by black dots on a five-line staff. Below each stack is a label identifying the chord type. The first staff shows: M/M7, m/m7, m/m7, M/M7, M/m7, m/m7, and d/m7. The second staff shows: m/m7, d/m7, M/M7, m/m7, M/m7, M/M7, and d/d7. The 'd' in d/m7 and d/d7 indicates a raised leading tone (tritone).

Seventh Chord Quality

- Five common seventh chord types in diatonic music:
 - * Major: Major Triad - Major 7th (M3 - m3 - M3)
 - * Dominant: Major Triad - minor 7th (M3 - m3 - m3)
 - * Minor: minor triad - minor 7th (m3 - M3 - m3)
 - * Half-Diminished: diminished triad - minor 3rd (m3 - m3 - M3)
 - * Diminished: diminished triad - diminished 7th (m3 - m3 - m3)
- In the Major Scale (all major scales!)
 - * Major 7th on scale degrees 1 & 4
 - * Minor 7th on scale degrees 2, 3, 6
 - * Dominant 7th on scale degree 5
 - * Half-Diminished 7th on scale degree 7
- In the Minor Scale (all minor scales!) with a raised leading tone for chords on $\hat{5}$ and $\hat{7}$
 - * Major 7th on scale degrees 3 & 6
 - * Minor 7th on scale degrees 1 & 4
 - * Dominant 7th on scale degree 5
 - * Half-Diminished 7th on scale degree 2
 - * Diminished 7th on scale degree 7

Using Roman Numerals for Triads

- Roman Numeral labels allow us to identify any seventh chord within a given key.
- A key signature label is **required** for a Roman Numeral to make sense.
- There are three parts to a seventh chord Roman Numeral label
 - * The number (I, II, III, IV, V, VI, VII) tells us what the scale degree is for the root of the seventh chord.
 - * Lowercase numerals (i, ii, iii) indicate minor or dim; Uppercase numerals (I, II, III) indicate major or dominant
 - * A fully diminished seventh chord will also include $^{\circ}$
 - * A half-diminished seventh chord will also include $^{\circ}$
 - * The chord indication will include either the number 7 or the seventh chord inversion

Lead Sheet Symbols

- Lead Sheet Symbols can be used without a key signature context and are listed above the staff.
- There are three possible parts to a seventh chord Lead Sheet chord label
 - * A letter indicating the root of the chord (i.e. E, B \flat , F \sharp)
 - * The seventh chord quality label (7, M7, m7, dim7, $^{\circ}$ 7, m7 \flat 5, $^{\circ}$ 7, etc.) - with only a 7, the chord is dominant
 - * An alternate bass note after a "/"

Dominant Seventh Chord

The Dominant Seventh Chord

- Appears automatically as a major triad with minor seventh (Mm7) in major keys
- Leading tone should be raised in minor keys to maintain the Mm7 quality of this dominant function chord
- Built on $\hat{5}$ and including $\hat{7}$, $\hat{2}$, and $\hat{4}$
- Strongest dominant function chord due to:
 - * Fifth relationship to I
 - * Leading tone half-step resolution to tonic
 - * Dissonant $\hat{4}$ which resolves down to $\hat{3}$
 - * Leading tone ($\hat{7}$) and $\hat{4}$ form tritone which resolves ideally to tonic chord
 - A4 resolves out to m6 (major) or M6 (minor)
 - d5 resolves in to M3 (major) or m3 (minor)
- Most often preceded by ii, IV, V, or Cadential 6/4 chord

Doubling Considerations

- A complete V7 chord does not include any doubled tones
- Only chord tone that may be omitted is the fifth ($\hat{2}$)
 - * root required to make it a V chord
 - * third required to give it a major quality
 - * seventh required to make it a 7th chord (instead of a triad)
- When fifth ($\hat{2}$) is omitted, the root will be doubled
 - * third and seventh are tendency tones so may not be doubled

Musical notation showing the Dominant Seventh Chord in C major and C minor. The first staff (treble clef) shows the chord in root position: C4, E4, G4, Bb4. The second staff (bass clef) shows the chord in root position: C3, E3, G3, Bb3. The notation is split into two measures: the first measure is in C major (one sharp) and the second measure is in C minor (two flats).

Inversions of the Dominant Seventh Chord

- Any seventh chord has three possible inversions (plus root position)
- First inversion ($\frac{6}{5}$) places the third in the bass
- Second inversion ($\frac{4}{3}$) places the fifth in the bass
- Third inversion ($\frac{4}{2}$) places the seventh in the bass (can only resolve to I $\hat{6}$; chordal seventh resolves down by step)

Musical notation showing the inversions of the Dominant Seventh Chord in C major and C minor. The first staff (treble clef) shows the chord in root position: C4, E4, G4, Bb4. The second staff (bass clef) shows the chord in root position: C3, E3, G3, Bb3. The notation is split into two measures: the first measure is in C major (one sharp) and the second measure is in C minor (two flats). Below the notation, the chord symbols are listed: C: V $\frac{6}{5}$, V $\frac{4}{3}$, V $\frac{4}{2}$ and c: V $\frac{6}{5}$, V $\frac{4}{3}$, V $\frac{4}{2}$.

Resolving the Dominant Seventh Chord

Tendency Tones

- Most of the pitches in a dominant seventh chord either must or best resolve to a specific pitch in the tonic chord
- Root position to root position
 - * Bass note (^5) resolves to tonic root (^1)
 - * Leading tone (^7) resolves up by step to tonic (^1)
 - * Chordal seventh (^4) resolves down by step to ^3
 - * If the fifth (^2) is present
 - it typically resolve down to tonic (preferred) resulting in a tripled root and omitted fifth
 - it may resolve up to ^3 (if necessary) creating a doubled root and doubled third
 - * If the fifth is omitted and the root doubled (^5), it may hold over as a common tone (complete tonic chord)

Complete vs. Incomplete

- Resolving tendency tones correctly and avoiding voice leading errors typically requires an incomplete V7 or I
- A complete to complete resolution requires one of the following:
 - * Frustrated leading tone in an inner voice
 - leading tone (^7) in an inner voice may resolve down by skip to ^5
 - best if another voice above resolves to the targetted ^1 (voice exchange)
 - * Contrary motion (to bass) of ^2 to ^5 - not preferred because of contrary P5

Resolution of Inversions of the Dominant Seventh

- Tendency tones will continue to resolve as above
 - * Leading tone (^7) up by step to tonic (^1)
 - * Chordal seventh (^4) down by step to ^3
 - * Retain common tone (^5) if possible
- Third inversion dominant seventh (^4 in bass) may only properly resolve to I⁶

C: V₅⁶ I V₃⁴ I V₂² I⁶ c: V₅⁶ i V₃⁴ i V₂² i⁶

Approaching the Dominant Seventh Chord

Preceding Chords

- The dominant seventh chord is often preceded by a pre-dominant or other dominant function chord
 - * Predominant - ii or IV
 - * Dominant - V or Cadential 6/4
- Because the seventh is a dissonant tone, it should be approached carefully and should always resolve down by step
- In minor, care must also be taken to avoid approaching the raised $\hat{7}$ from $\hat{6}$ (creates +2)

From a Dominant Function Chord

- Voice-leading from V
 - * Resolve the doubled root to the chordal seventh
 - * Continue stepwise motion to $\hat{3}$ which treats the dissonant seventh like a passing tone
- Voice-leading from Cadential 6/4
 - * All voices resolve down by step, including the doubled $\hat{5}$ (8 - 6 - 4 becomes 7 - 5 - 3)
 - * Motion from a P5 to d5 is acceptable - the opposite (d5 to P5) is not
 - * The chordal seventh may also be added after the resolution of the cadential 6/4 to V (still from $\hat{5}$)
- Voice-leading variation from Cadential 6/4
 - * Seventh approached by step from the sixth above the bass ($\hat{3}$)
 - * Octave above the bass holds over as a common tone and fourth above the bass still resolves down
 - * Creates an incomplete V7 chord (doubled root; no fifth) - allows proper resolution to complete tonic chord

F: V V7 I V $\frac{8}{4}$ V $\frac{7}{3}$ I V $\frac{6}{4}$ V $\frac{7}{3}$ I

From a Pre-Dominant Function Chord

- Voice-leading from IV
 - * Movement between adjacent root position chords requires all upper voices move in contrary motion to the bass
 - * The chordal seventh of V ($\hat{4}$) is part of the IV chord, so it may be held over (like a suspension)
 - * Creates a V7 with doubled root and no fifth (resolves to complete tonic chord)
- Voice-leading from ii or ii⁶
 - * The chordal seventh of V ($\hat{4}$) is part of the ii or ii⁶ chord, so it may be held over (suspension)
 - * The fifth of the ii chord can ascend stepwise ($\hat{6}$ - $\hat{7}$ - $\hat{8}$) or step down ($\hat{6}$ - $\hat{5}$) and hold as a common tone
 - * Root in ii⁶ (or doubled root in ii) must skip down to the LT if the fifth of the chord steps down
- Avoid +2 in minor (both pre-dominant chords contain $\hat{6}$; no stepwise motion to raised $\hat{7}$)

F: IV V7 I ii V7 I $^{\circ 6}$ ii 6 V7 I f: ii $^{\circ 6}$ V7 i

Leading-Tone Seventh Chords

General Considerations

- A complete seventh chord does not include any doubled tones
- The leading-tone seventh chord requires all four voices to be present to properly identify its quality
 - * root required to identify the chord
 - * third and fifth required to identify the triad quality as diminished
 - * seventh required to make it a 7th chord (instead of a triad)
- The chordal seventh should always resolve downward by step
- The leading tone should always resolve up to tonic
- Seventh chord inversions remain the same as discussed for the dominant seventh chord
 - * root position (7) * 1st inversion ($\overset{6}{5}$) * 2nd inversion ($\overset{4}{3}$) * 3rd inversion ($\overset{2}{1}$)

The Leading-Tone Seventh Chords

- Appears as a half-diminished seventh chord (dm7) in major keys ($\text{vii}^{\circ 7}$)
- Appears as a fully-diminished seventh chord (dd7) in minor keys ($\text{vii}^{\circ 7}$)
- Built on $\wedge 7$ and including $\wedge 2$, $\wedge 4$, and $\wedge 6$
- Shares three common tones with V^7
- Dominant function chord, which typically:
 - * functions as a prolongational chord
 - * resolves to tonic, or
 - * moves to V^7
- The fully-diminished seventh (dd7) is a symmetrical chord (like the augmented triad)
 - * can be spelled with any pitch as the root
 - * will resolve differently dependent on which chord tone is treated as the root

The image shows two musical systems. The first system is in G major (one sharp) and contains four chords: $\text{vii}^{\circ 7}$, $\text{vii}^{\circ 6}_5$, $\text{vii}^{\circ 4}_3$, and $\text{vii}^{\circ 2}_2$. The second system is in C minor (three flats) and contains four chords: $\text{vii}^{\circ 7}$, $\text{vii}^{\circ 6}_5$, $\text{vii}^{\circ 4}_3$, and $\text{vii}^{\circ 2}_2$. Each chord is shown in a grand staff with treble and bass clefs.

Leading-Tone Seventh as Dominant Substitute

- The leading-tone seventh and dominant seventh share three common tones
- Both chords often appear together with the leading-tone seventh being heard as an elaboration of the dominant
 - $\wedge 6$ is heard as an embellishing tone from or to $\wedge 5$

The image shows two musical systems in 4/4 time. The first system is in G major and contains three chords: $\text{vii}^{\circ 7}$, V^6_5 , and I. The second system is in G minor and contains three chords: V^4_3 , $\text{vii}^{\circ 6}_5$, and i6. Each chord is shown in a grand staff with treble and bass clefs.

Leading-Tone Seventh Chords continued

Voice Leading to Tonic

- All leading tone seventh chords contain two sets of fifths (or fourths)
 - * fully diminished seventh contains two d5 (or +4)
 - * half-diminished seventh contains one P5 (P4) and one d5 (+4)
- Take care to resolve the fifths correctly - especially in outer voices
 - * Parallel 5ths are not permitted and unequal 5ths (d5 to P5) are highly discouraged
 - * Parallel 4ths are acceptable and unequal 4ths (+4 to P4) are permitted
- Resolution will often create a tonic triad with a doubled third
 - * 1st and 2nd inversion leading-tone seventh chords best resolve to I⁶
 - * 3rd inversion leading-tone seventh chords resolve to a 2nd inversion tonic
 - as a cadential 6/4 chord, this properly resolves to V
 - as a passing 6/4 chord, typically to IV
 - take care to voice the 3rd inversion leading-tone seventh chord in 4ths (not 5ths)
- Remember to resolve the leading-tone to tonic and the chordal seventh down by step!

G: vii[°]7 I vii[°]₅⁶ I⁶ vii[°]₃⁴ I⁶ vii[°]₂⁴ I⁶₄ V vii[°]₂⁴ I⁶₄ IV

f: vii[°]7 i vii[°]₅⁶ i⁶ vii[°]₃⁴ i⁶ vii[°]₂⁴ i⁶₄ V vii[°]₂⁴ i⁶₄ iv

Approaching the Leading-tone Seventh Chord

- The chordal seventh should always be handled in similar fashion to a non-chord tone
- Since the chordal seventh resolves down, acceptable treatment includes:
 - * suspension, descending passing tone, upper neighbor tone, or appoggiatura (skip up, step down)

Passing Tone
Suspension
Neighbor Tone
Appoggiatura

A: V7 vii[°]7 I IV vii[°]₅⁶ I⁶ g: i vii[°]₃⁴ i⁶ iv⁶ vii[°]₅⁶ I⁶

Supertonic Seventh Chord

General Considerations

- A complete seventh chord does not include any doubled tones
- The chordal seventh should always resolve downward by step
- Seventh chord inversions remain the same as discussed for the dominant seventh chord
 - * root position (7) * 1st inversion ($\overset{6}{5}$) * 2nd inversion ($\overset{4}{3}$) * 3rd inversion ($\overset{4}{2}$)

The Supertonic Seventh Chord

- Appears as a minor seventh chord (mm7) in major keys (ii7)
- Appears as a half-diminished seventh chord (dm7) in minor keys (ii^o7)
- In major keys, the fifth of the chord may be omitted and the root (or third) doubled
- In minor keys, the supertonic seventh chord requires all four voices to be present to properly identify its quality
 - * root required to identify the chord
 - * third and fifth required to identify the triad quality as diminished
 - * seventh required to make it a 7th chord (instead of a triad)
- Built on $\overset{\wedge}{2}$ and including $\overset{\wedge}{4}$, $\overset{\wedge}{6}$, and $\overset{\wedge}{1}$
- Shares three common tones with ii and IV
- Predominant function chord which typically resolves to V
- Most often found in first inversion
 - * strong melodic bass motion ($\overset{\wedge}{4}$ - $\overset{\wedge}{5}$)
 - * dissonant 2nd ($\overset{6}{5}$ above the bass)

The image shows a musical score in D major, 3/4 time, illustrating the supertonic seventh chord (ii7) and its resolutions. The score is written for piano with a grand staff (treble and bass clefs). The key signature has two sharps (F# and C#). The time signature is 3/4. The score is divided into four measures, each containing a chord. The chords are labeled below the staff: D: IV, ii7, V7, I, ii⁶₅, V, I, ii⁴₃, V, I, ii⁴₂, V⁶₅. The first measure shows the supertonic seventh chord in root position (ii7). The second measure shows the supertonic seventh chord in first inversion (ii⁶₅). The third measure shows the supertonic seventh chord in second inversion (ii⁴₃). The fourth measure shows the supertonic seventh chord in third inversion (ii⁴₂). The chords are resolved to the dominant seventh chord (V7) in the first measure, to the tonic (I) in the second measure, to the dominant (V) in the third measure, and to the tonic (I) in the fourth measure.

Approaching the Supertonic Seventh Chord

- The chordal seventh should always be handled in similar fashion to a non-chord tone
- Since the chordal seventh resolves down, acceptable treatment includes:
 - * suspension, descending passing tone, upper neighbor tone, or appoggiatura (skip up, step down)

Other Diatonic Seventh Chords

General Considerations

- A complete seventh chord does not include any doubled tones
- The chordal seventh should always resolve downward by step
- Seventh chord inversions remain the same as discussed for the dominant seventh chord
 - * root position (7) * 1st inversion ($\overset{6}{5}$) * 2nd inversion ($\overset{4}{3}$) * 3rd inversion ($\overset{4}{2}$)

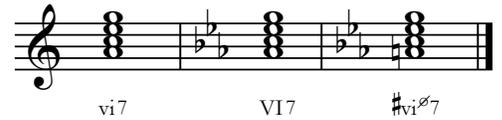
The Subdominant Seventh Chord

- Appears as a major seventh chord (MM7) in major keys (IV7)
- Appears as a minor seventh chord (mm7) in minor keys (iv7)
- Built on \wedge^4 and including \wedge^6 , \wedge^1 , and \wedge^3
- Predominant function chord which typically resolves to V
- More often found in popular or jazz music (i.e. blues progression) than common practice art music



The Submediant Seventh Chord

- Appears as a minor seventh chord (mm7) in major keys (vi7)
- Appears as a major seventh chord (MM7) in minor keys (VI7)
- Built on \wedge^6 and including \wedge^1 , \wedge^3 , and \wedge^5
- Tonic substitute function chord which typically leads to a subdominant or supertonic chord
- In minor, may appear as a half-diminished seventh chord (dm7) built on the raised \wedge^6 ($\#vi^{\circ}7$)



The Tonic Seventh Chord

- Appears as a major seventh chord (MM7) in major keys (I7)
- Appears as a minor seventh chord (mm7) in minor keys (i7)
- Built on \wedge^1 and including \wedge^3 , \wedge^5 , and \wedge^7
- Tonic function chord without the normal stability of a tonic triad - typically moves to IV, ii, or vi
- More often found in popular or jazz music (i.e. blues progression) than common practice art music



The Mediant Seventh Chord

- Appears as a minor seventh chord (mm7) in major keys (iii7)
- Appears as a major seventh chord (MM7) in minor keys (III7)
- Built on \wedge^3 and including \wedge^5 , \wedge^7 , and \wedge^2
- Tonic substitute function chord which typically leads to vi or IV
- Rarely found apart from a diatonic seventh chord circle of fifths



The Subtonic Seventh Chord

- Appears as a dominant seventh chord (Mm7) in minor keys (VII7)
- Built on the lowered \wedge^7 and including \wedge^2 , \wedge^4 , and the lowered \wedge^6
- Dominant sounding chord which typically leads to III in a diatonic seventh chord circle of fifths



Diatonic Seventh Chord Circle of Fifths

General Considerations

- Chain of diatonic seventh chords based on a descending fifth sequence
- Root position chords:
 - * best voice leading results in alternating complete and incomplete (no 5th) seventh chords
- Chords in inversion:
 - * alternating between root position and 2nd inversion
 - * alternating between 1st inversion and 3rd inversion
- Voice-leading is typical of harmonic sequences
 - * non-traditional resolution of some scale degrees and intervals
 - * sequence segment of two chords repeated down a step
 - * may appear as complete circle of fifths or partial sequence
- For all upper voices, notes remain as common tones or descend by step until the final V⁷ - I resolution.

D: I IV⁷ vii^{ø7} iii⁷ vi⁷ ii⁷ V⁷ I

d: i iv⁷ VII⁷ III⁷ VI⁷ ii^{ø7} V⁷ i

G: I IV⁶₃ vii^{ø4}₃ iii⁶₅ vi⁴₂ ii⁶₅ V⁴₂ I⁶

g: i iv⁴₃ VII⁷ III⁴₃ VI⁷ ii^{ø4}₃ V⁷ i