

## Lesson EEE – The Dominant Seventh Chord

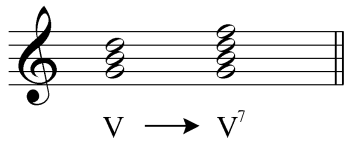
### Introduction:

In this lesson, you will learn about the dominant-seventh chord, its inversions, and how to handle its voice leading.

### Construction:

The dominant seventh chord is constructed by adding a diatonic seventh ( $\hat{4}$ ) to the dominant triad.

Example 1:



The following example shows a dominant seventh chord in C major in an SATB setting:

Example 2:

C: V<sup>7</sup>

The construction of the V<sup>7</sup> is the same in minor:

Example 3:

V → V<sup>7</sup>

As with Example 1, Example 3 shows the construction of the dominant seventh chord as a major triad on scale degree  $\hat{5}$  with an added diatonic seventh. Remember the necessary leading-tone adjustment for scale degree  $\hat{7}$  in dominant chords in minor keys (G to G# in this case). The following example shows a dominant seventh chord in A minor in SATB setting:

Example 4:

a: V<sup>7</sup>

## Activity 5.1:

Each of the following  $V^7$  chords is presented in SATB setting and is missing one note. Provide the missing note as directed for each of the exercises.

## Exercise 5.1a:

F:  $V^7$

What pitch in the alto voice will complete this  $V^7$  chord in F major?

[Answer: E. Response if correct: "Correct!" Response if incorrect: "Incorrect. Try again. (Hint: This  $V^7$  chord is missing scale degree  $\hat{7}$ .)"]

## Exercise 5.1b:

c:  $V^7$

What pitch in the soprano voice will complete this  $V^7$  chord in C minor?

[Answer: F. Response if correct: "Correct!" Response if incorrect: "Incorrect. Try again. (Hint: This  $V^7$  chord is missing scale degree  $\hat{4}$ .)"]

## Exercise 5.1c:

A:  $V^7$

What pitch in the bass voice will complete this  $V^7$  chord in A major?

[Answer: E. Response if correct: "Correct!" Response if incorrect: "Incorrect. Try again. (Hint: This  $V^7$  chord is missing scale degree  $\hat{5}$ .)"]

## Exercise 5.1d:

b:  $V^7$

What pitch in the tenor voice will complete this  $V^7$  chord in B minor?

[Answer: A<sup>#</sup>. Response if correct: “Correct!” Response if incorrect: “Incorrect. Try again. (Hint: This V<sup>7</sup> chord is missing scale degree  $\hat{7}$ .”]

### Activity 5.2:

In this activity you will build V<sup>7</sup> chords in various keys starting with the root.

#### Exercise 5.2a:



G: V<sup>7</sup>

What is the root of a V<sup>7</sup> chord in G major?

[Answer: D. Response if correct: “Correct!” Response if incorrect: “Try again. Remember, the root of a V<sup>7</sup> chord is scale degree  $\hat{5}$ .”]

[Follow-up question:] Complete the V<sup>7</sup> chord by adding the upper voices.

[Answers: F<sup>#</sup>, A, and C. Response if correct: “Correct!” Response if incorrect: “Try again. That pitch does not belong to V<sup>7</sup> in G major.”]

#### Exercise 5.2b:



g: V<sup>7</sup>

What is the root of a V<sup>7</sup> chord in G minor?

[Answer: D. Response if correct: “Correct!” Response if incorrect: “Try again. Remember, the root of a V<sup>7</sup> chord is scale degree  $\hat{5}$ .”]

[Follow-up question:] Complete the V<sup>7</sup> chord by adding the upper voices. (Remember to raise the leading tone in minor keys.)

[Answers: F<sup>#</sup>, A, and C. Response if correct: “Correct!” Response if incorrect: “Try again. That pitch does not belong to V<sup>7</sup> in G minor.”]

#### Exercise 5.2c:



E<sup>b</sup>: V<sup>7</sup>

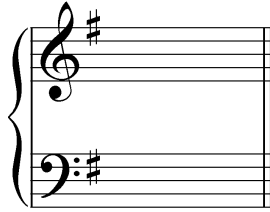
What is the root of a V<sup>7</sup> chord in E<sup>b</sup> major?

[Answer: B<sup>b</sup>. Response if correct: “Correct!” Response if incorrect: “Try again. Remember, the root of a V<sup>7</sup> chord is scale degree  $\hat{5}$ .”]

[Follow-up question:] Complete the V<sup>7</sup> chord by adding the upper voices.

[Answers: D, F, and A<sup>b</sup>. Response if correct: “Correct!” Response if incorrect: “Try again. That pitch does not belong to V<sup>7</sup> in E<sup>b</sup> major.”]

#### Exercise 5.2d:



e: V<sup>7</sup>

What is the root of a V<sup>7</sup> chord in E minor?

[Answer: B. Response if correct: “Correct!” Response if incorrect: “Try again. Remember, the root of a V<sup>7</sup> chord is scale degree  $\hat{5}$ .”]

[Follow-up question:] Complete the V<sup>7</sup> chord by adding the upper voices. (Remember to raise the leading tone in minor keys.)

[Answers: D<sup>#</sup>, F<sup>#</sup> and A. Response if correct: “Correct!” Response if incorrect: “Try again. That pitch does not belong to V<sup>7</sup> in E minor.”]

### Tendency tones:

Certain tones of the diatonic scale are more stable than others. Scale degrees  $\hat{1}$ ,  $\hat{3}$ , and  $\hat{5}$ —the pitches of the tonic triad—are the most stable. Other scale members form dissonances with these stable tones and are therefore less stable scale members. Because of this dissonance, those scale members pull strongly toward the stable tones. Unstable pitches that gravitate towards pitches of greater stability are referred to as *tendency tones*.

Scale degree  $\hat{7}$ , for example, forms a dissonant minor second with the tonic and tends to resolve to scale degree  $\hat{1}$ . Likewise, scale degree  $\hat{4}$  forms a minor second with scale degree  $\hat{3}$ , and therefore tends to resolve downwards by step. In the diatonic minor scale (see Lesson CCC), scale degree  $\hat{6}$  is a tendency tone that resolves to  $\hat{5}$  for the very same reason.

There are two tendency tones in the V<sup>7</sup> chord: scale degrees  $\hat{7}$  and  $\hat{4}$ . These two tendency tones form a tritone—a dissonance that requires resolution.

#### Example 5:



C: V<sup>7</sup>

#### Activity 5.3:

It is important that you be able to recognize the tendency tones present in a V<sup>7</sup> chord and treat them accordingly. In this activity you will identify the tendency tones and the interval they form.

#### Exercise 5.3a:

Identify the two tendency tones in the following V<sup>7</sup> chord (scale degrees  $\hat{7}$  and  $\hat{4}$ ):



A: V<sup>7</sup>

[Answers: G<sup>#</sup> and D. Response if correct: “Correct!” Response if partially correct: “That is partially correct. [X] is a tendency tone, but [Y] is not. Try again.” Response if incorrect: “Incorrect. Try again.”]

[Follow-up question:] What interval do these two tendency tones form?

[Answer: diminished fifth (d5). Response if correct: “Correct! G<sup>#</sup> and D form a diminished fifth.” Response if incorrect: “Incorrect. Try again.”]

Exercise 5.3b:

Identify the two tendency tones in the following V<sup>7</sup> chord (scale degrees  $\hat{7}$  and  $\hat{4}$ ):



B<sup>b</sup>: V<sup>7</sup>

[Answers: A and E<sup>b</sup>. Response if correct: “Correct!” Response if partially correct: “That is partially correct. [X] is a tendency tone, but [Y] is not. Try again.” Response if incorrect: “Incorrect. Try again.”]

[Follow-up question:] What interval do these two tendency tones form?

[Answer: diminished fifth (d5). Response if correct: “Correct! A and E<sup>b</sup> form a diminished fifth.” Response if incorrect: “Incorrect. Try again.”]

Exercise 5.3c:

Identify the two tendency tones in the following V<sup>7</sup> chord (scale degrees  $\hat{7}$  and  $\hat{4}$ ):



f<sup>#</sup>: V<sup>7</sup>

[Answers: E<sup>#</sup> and B. Response if correct: “Correct!” Response if partially correct: “That is partially correct. [X] is a tendency tone, but [Y] is not. Try again.” Response if incorrect: “Incorrect. Try again.”]

[Follow-up question:] What interval do these two tendency tones form?

[Answer: augmented fourth (A4). Response if correct: “Correct! E<sup>#</sup> and B form an augmented fourth.” Response if incorrect: “Incorrect. Try again.”]

Exercise 5.3d:

Identify the two tendency tones in the following V<sup>7</sup> chord (scale degrees  $\hat{7}$  and  $\hat{4}$ ):

g: V<sup>7</sup>

[Answers: F<sup>#</sup> and C. Response if correct: “Correct!” Response if partially correct: “That is partially correct. [X] is a tendency tone, but [Y] is not. Try again.” Response if incorrect: “Incorrect. Try again.”]

[Follow-up question:] What interval do these two tendency tones form?

[Answer: diminished fifth (d5). Response if correct: “Correct! F<sup>#</sup> and C form a diminished fifth.” Response if incorrect: “Incorrect. Try again.”]

Scale degree  $\hat{7}$ , the leading tone, pulls strongly upward toward scale degree  $\hat{1}$ , which is only a half step away. (Despite this strong pull, the voice containing the leading tone does not always resolve directly to the tonic. These exceptional cases are discussed below.) Scale degree  $\hat{4}$ , the other tendency tone, pulls strongly downward to  $\hat{3}$ , its half-step neighbor. These dual tendencies create an urgent need for resolution of a dominant seventh chord. The following example demonstrates the proper resolutions of tendency tones  $\hat{4}$  and  $\hat{7}$  to  $\hat{3}$  and  $\hat{8}$ :

Example 6:

C: V<sup>7</sup>

In this case the augmented fourth formed by  $\hat{4}$  and  $\hat{7}$  resolves outward to a sixth. (You may wish to refer back to Lesson FFF where the tritone interval progressions are explored in greater depth. This particular example uses the progression from Example 4 in Lesson FFF.)

Activity 5.4:

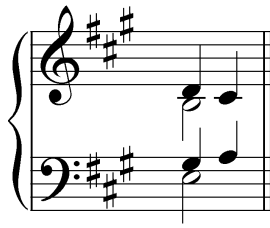
In this activity, you will resolve the tendency tones from the V<sup>7</sup> chords of the previous lesson.

Exercise 5.4a:

Resolve the two tendency tones in the following V<sup>7</sup> chord:

A: V<sup>7</sup>

[Answer:



A: V<sup>7</sup>

Response if correct: "Correct!" Response if incorrect: "Incorrect. Remember, scale degree  $\hat{7}$  tends to resolve to  $\hat{1}$  and scale degree  $\hat{4}$  tends to resolve to  $\hat{3}$ . Try again."]

Exercise 5.4b:

Resolve the two tendency tones in the following V<sup>7</sup> chord:



Bb: V<sup>7</sup>

[Answer:



Bb: V<sup>7</sup>

Response if correct: "Correct!" Response if incorrect: "Incorrect. Remember, scale degree  $\hat{7}$  tends to resolve to  $\hat{1}$  and scale degree  $\hat{4}$  tends to resolve to  $\hat{3}$ . Try again."]

Exercise 5.4c:

Resolve the two tendency tones in the following V<sup>7</sup> chord:



f#: V<sup>7</sup>

[Answer:

Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, scale degree  $\hat{7}$  tends to resolve to  $\hat{1}$  and scale degree  $\hat{4}$  tends to resolve to  $\hat{3}$ . Try again.”]

#### Exercise 5.4d:

Resolve the two tendency tones in the following  $V^7$  chord:

[Answer:

Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, scale degree  $\hat{7}$  tends to resolve to  $\hat{1}$  and scale degree  $\hat{4}$  tends to resolve to  $\hat{3}$ . Try again.”]

There remain, however, two other notes in the  $V^7$  chord: the root ( $\hat{5}$ ) and the fifth ( $\hat{2}$ ). These two voices, forming a fifth in the  $V^7$  chord, usually resolve in similar motion to an octave. This “5 - 8” motion is one of the basic interval progressions outlined in Lesson AAA. The following example shows the basic interval progressions in the upper and lower voice pairs:

#### Example 7:

As you’ll recall from Lesson AAA, four-part harmony is an extension of three-part harmony which, in turn, is built from combinations of basic interval progressions. The voice leading in Example 7 can be



explained in this manner. The outer voices form the primary interval progression of a third expanding to an octave. The tenor, then, supports the soprano with a “6 - 8” progression. Finally, the alto harmonizes with the tenor in parallel thirds (“3 - 3”). Looking at the progression this way, we can see that the augmented fourth between the alto and soprano is a resultant interval.

In the example above, you might have noticed that the resolution chord has three roots, a third, and no fifth. This voicing of the I chord is common at cadences. This type of voice leading, with both chords in root position, provides a strong sense of repose and, thus, closure.

Examples 5-7 show the resolution of a V7 chord in C major. The same rules apply to dominant seventh chords in minor keys. Example 8 shows a V7 chord in C minor resolving to the tonic harmony:

Example 8

c: V<sup>7</sup> i

Note that all the same voice leading patterns appear: the augmented fourth (tritone) formed by F and B $\flat$  resolves outward to a sixth (a major sixth in minor, because scale degree  $\hat{4}$  must now resolve a whole-step down to  $\hat{3}$ ),  $\hat{2}$  resolves stepwise to  $\hat{1}$ , and  $\hat{5}$  leaps down to  $\hat{1}$ .

#### Activity 5.5:

In this exercise, you will complete the resolution of the previous activities to the I chord.

#### Exercise 5.5a:

Taking your answer from the previous activity, complete the resolution to the I chord by providing pitches for the bass and alto:

A: V<sup>7</sup> I

[Answer:

A: V<sup>7</sup> I

(allow for bass to be up an octave). Response if correct: “Correct!”

Response if incorrect: “Incorrect. Remember, both scale degrees  $\hat{2}$  and  $\hat{5}$  will resolve to  $\hat{1}$  as V<sup>7</sup> moves to I. Try again.”]

## Exercise 5.5a:

Taking your answer from the previous activity, complete the resolution to the I chord by providing pitches for the bass and soprano:

B $\flat$ : V<sup>7</sup> I

## [Answer:

B $\flat$ : V<sup>7</sup> I

(allow for bass to be up an octave). Response if correct: “Correct!”

Response if incorrect: “Incorrect. Remember, both scale degrees  $\hat{2}$  and  $\hat{5}$  will resolve to  $\hat{1}$  as V<sup>7</sup> moves to I. Try again.”]

## Exercise 5.5a:

Taking your answer from the previous activity, complete the resolution to the I chord by providing pitches for the bass and tenor:

f#: V<sup>7</sup> I

## [Answer:

f#: V<sup>7</sup> I

(allow for bass to be up an octave). Response if correct: “Correct!”

Response if incorrect: “Incorrect. Remember, both scale degrees  $\hat{2}$  and  $\hat{5}$  will resolve to  $\hat{1}$  as V<sup>7</sup> moves to I. Try again.”]

## Exercise 5.5a:

Taking your answer from the previous activity, complete the resolution to the I chord by providing pitches for the bass and tenor:

g: V<sup>7</sup> I

[Answer:

g: V<sup>7</sup> I

(allow for bass to be up an octave). Response if correct: "Correct!"

Response if incorrect: "Incorrect. Remember, both scale degrees  $\hat{2}$  and  $\hat{5}$  will resolve to  $\hat{1}$  as  $V^7$  moves to I. Try again."]

### Inversions:

The  $V^7$  chord often appears in inversion. While the preferred resolutions of the tendency tones generally remain the same regardless of the position of  $V^7$ , the resolution of  $\hat{5}$  and  $\hat{2}$  vary somewhat, depending on context. Consider the following example, where a dominant seventh chord in first inversion resolves to the tonic triad:

Example 9:

C: V<sub>5</sub><sup>6</sup> I

In this example, both tendency tones resolve as expected:  $\hat{7}$  to  $\hat{1}$  in the bass and  $\hat{4}$  to  $\hat{3}$  in the soprano. As in Example 7,  $\hat{2}$  resolves to  $\hat{1}$ . In this case, however, because the root of the  $V^7$  chord ( $\hat{5}$ ) is not in the bass, we sustain it as a common tone between the V and I chords. Because of its smoothness, this is the preferred voice-leading.

The resolution of the dominant seventh in second inversion follows the same voice-leading patterns as Example 9:  $\hat{2}$  resolves to  $\hat{1}$  in the bass,  $\hat{5}$  is held in the tenor as a common tone, and the tendency tones resolve normatively in the alto and soprano:

Example 10:

C:  $V_3^4$  I

Example 11 shows the resolution of the remaining position of the dominant seventh chord:

Example 11:

C:  $V_2^4$   $I^6$

The third inversion of the dominant seventh chord is a special case. In a  $V_2^4$ , the chordal seventh is exposed in the bass. This makes it very audible and therefore powerful. Consequently, it is generally reserved for circumstances where heightened musical expression is appropriate. Because of the tendency of  $\hat{4}$  to resolve to  $\hat{3}$ , the chord of resolution is necessarily in first inversion ( $I^6$ ). It should be noted that this formation of the  $V^7$  to I cadence is the least stable and requires further motion.

Popup Box: Rules for resolving  $V^7$ :

- The tendency tones must be resolved properly:  $\hat{7}$  resolves to  $\hat{1}$  and  $\hat{4}$  resolves to  $\hat{3}$ .
- $\hat{2}$  resolves to  $\hat{1}$ .
- $\hat{5}$  should be held to promote smooth voice-leading. This is possible in every inversion of the dominant seventh, but not in root position where the bass must leap from  $\hat{5}$  to  $\hat{1}$ .

Activity 5.6:

So far in this lesson, the activities have focused on resolving dominant seventh chords in root position. Dominant seventh chords frequently appear in inversion, however, and it is important that you be able to resolve these chords as well. In this activity you will resolve an inverted dominant seventh chord according to the guidelines outlined above.

Exercise 5.6a:

Identify the leading tone in the following  $V_5^6$  chord:

E $\flat$ :  $V_5^6$  I

[Answer: D (bass). Response if correct: "Correct!" Response if incorrect: "Incorrect. That is not the leading tone. Try again."]

[Follow-up question:] Resolve the leading tone according to the guidelines outlined above.

[Answer:

Eb:  $V_5^6$  I

. Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, the leading tone tends to resolve to the tonic. Try again.”]

Exercise 5.6b:

Now identify the tendency tone (scale degree  $\hat{4}$ ):

Eb:  $V_5^6$  I

[Answer: A (tenor). Response if correct: “Correct!” Response if incorrect: “Incorrect. That is not scale degree  $\hat{4}$ . Try again.”]

[Follow-up question:] Resolve scale degree  $\hat{4}$  according to the guidelines outlined above.

[Answer:

Eb:  $V_5^6$  I

. Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, scale degree  $\hat{4}$  tends to scale degree  $\hat{3}$ . Try again.”]

Exercise 5.6c:

Because this dominant seventh chord is in inversion, we can retain the root as a common tone as we resolve to I. Identify the root of the following  $V_5^6$  chord:

Eb:  $V_5^6$  I

[Answer: B<sup>b</sup> (soprano). Response if correct: “Correct!” Response if incorrect: “Incorrect. That is not the root. Try again.”]

[Follow-up question:] Hold the root as a common tone into the I chord.

[Answer:

Eb:  $V_5^6$  I

. Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, because the dominant seventh chord is in inversion, we can retain the root as a common tone into the I chord. Try again.”]

Exercise 5.6d:

Now there is only one voice to be resolved. Resolve scale degree  $\hat{2}$  according to the guidelines outlined above.

Eb:  $V_5^6$  I

[Answer:

Eb:  $V_5^6$  I

. Response if correct: “Correct!” Response if incorrect: “Incorrect. Remember, scale degree  $\hat{2}$  tends to resolve to the tonic. Try again.”]

### Other leading tone resolutions:

Despite the strong upwards pull on the leading tone, there are occasions where it does not resolve to scale degree  $\hat{1}$ . Consider the following resolution of  $V^7$  to I:

Example 12:

C:  $V^7$  I

In this case, the alto has  $\hat{7}$  in the  $V^7$  chord. Instead of moving as expected to  $\hat{1}$ , the alto skips down to  $\hat{5}$ . This is permissible for two reasons. Most importantly, the soprano begins on  $\hat{2}$ , just above the leading

tone in the alto. When the soprano resolves downward from  $\hat{2}$  to  $\hat{1}$ , we hear the alto's leading tone as if resolving to the same  $\hat{1}$ . With the soprano acting as a surrogate resolution for the leading tone, the alto is free to skip to  $\hat{5}$ .

The result of this  $\hat{7}$  to  $\hat{5}$  motion is a complete triad in the resolution. While in Example 7, the dominant seventh resolved to a I with three roots, a third, and no fifth, Example 12 illustrates resolution to a fuller sonority.

Occasionally, as in the following two examples, the leading tone leaps to a pitch other than scale degree  $\hat{1}$  *without* another voice fulfilling the surrogate duty:

Example 13, Bach BWV 41.6s, "Jesu, nun sei gepreiset," mm. 7-8:

Example 14, Bach BWV 248(5).53, "Gott des Himmels und der Erden," m. 4:

In Example 13, the tenor has the leading tone (B) at the cadence. Instead of resolving upwards to scale degree  $\hat{1}$  (C), the tenor leaps down to scale degree  $\hat{5}$  (G). This is very similar to Example 12 but in this case, the voice immediately above (the alto) is not acting as a surrogate resolution to  $\hat{1}$ . Instead, the soprano resolves to the necessary C, but an octave higher! In Example 14, the tenor has the leading tone ( $G^\sharp$ ). In this case, the leading tone jumps up to scale degree 3 ( $C^\sharp$ ). As in Example 13, the missing tonic appears an octave higher in the soprano. In either case, the unresolved leading tone appears in an inner voice where it is not so easily noticed.

Popup Box: Typically, the tendency tone  $\hat{7}$  is required to resolve to  $\hat{1}$  in a  $V^7$  chord. Occasionally, however, the voice singing  $\hat{7}$  may leap to  $\hat{3}$  or  $\hat{5}$ . Sometimes, as in Example 12, another voice can act as a surrogate resolution. However, as Examples 13 and 14 illustrate, this surrogate resolution need not always be in the correct register.

## Conclusion:

In this lesson we have discussed the various configurations of one of the most important harmonic progressions and cadential idioms in tonal music:  $V^7$  to I. The voice leading of these various configurations is determined primarily by the presence of tendency tones  $\hat{7}$  and  $\hat{4}$ , as well as a preference

for smoothness in voice leading to the resolution. The dominant seventh chord may appear in any of its four positions, each of which leads to characteristic resolutions. While the conventions for resolution have been given here as simplified rules, it is important to remember that basic interval progressions and dissonance treatments are still the guiding criteria of voice leading.