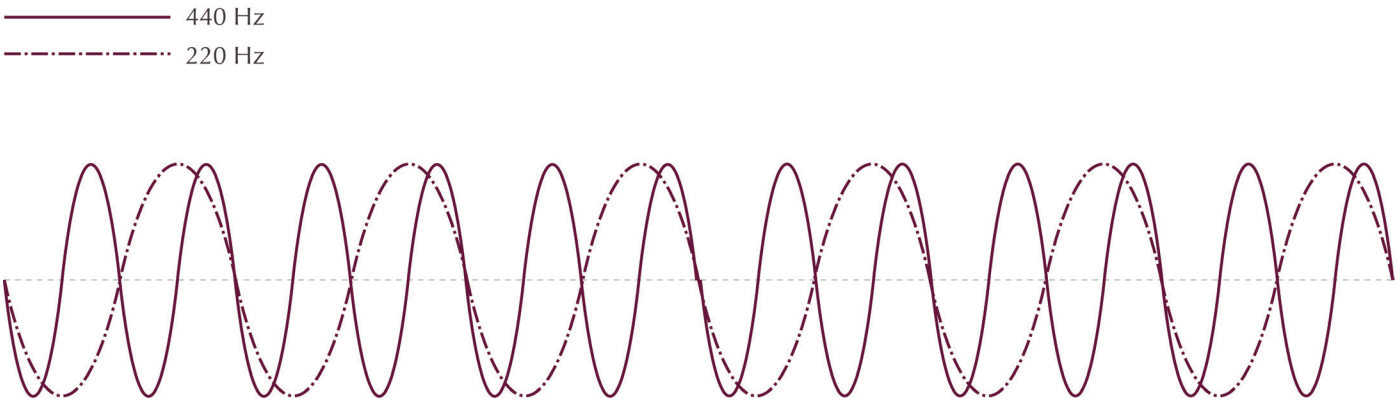
1. The Octave

The **octave** is a fundamental musical *interval*. It's the difference in *pitch* between a note of a given *frequency* and a note at twice that frequency.



The musical system subdivides the octave into twelve equal parts, called *semitones*; or six equal parts, called *tones.*

2. The Scale

A **scale** is a sequence of notes arranged in order of pitch that span an octave. The most common scale is arranged like so:

The major scale is a sequence of intervals **T-T-S-T-T-T-S**. Starting, for example, on the note C, it would look like this—notice the semitone between E & F, and between B & C:

3. Sharps & Flats

If you start on a different note, it's always necessary to alter the pitch of some notes to fit into the **T-T-S-T-T-T-S** sequence. Sharpen the note (♯) to raise it a semitone:

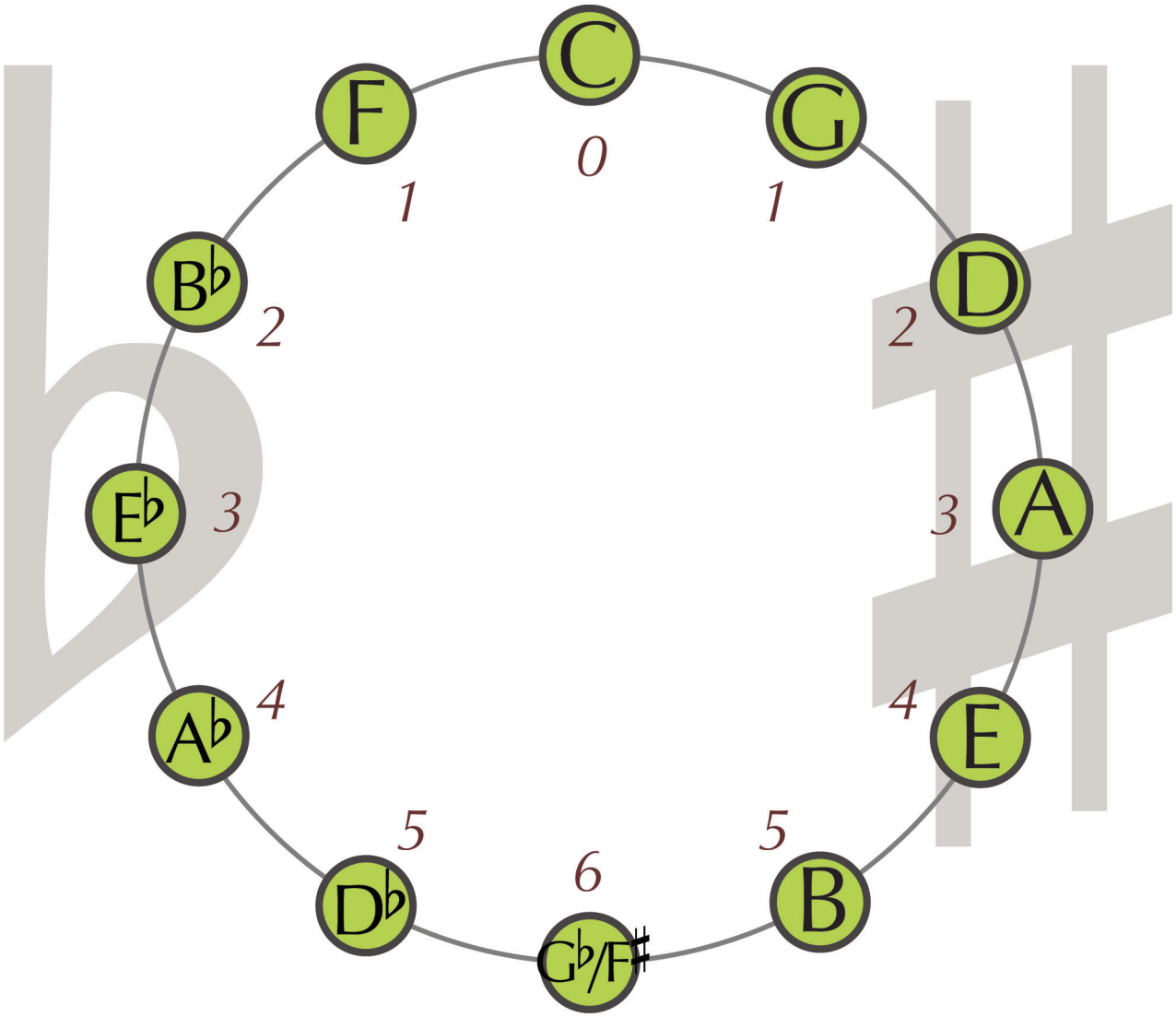
A Major Scale

Or flatten a note (♭) to lower it a semitone:

F Major Scale

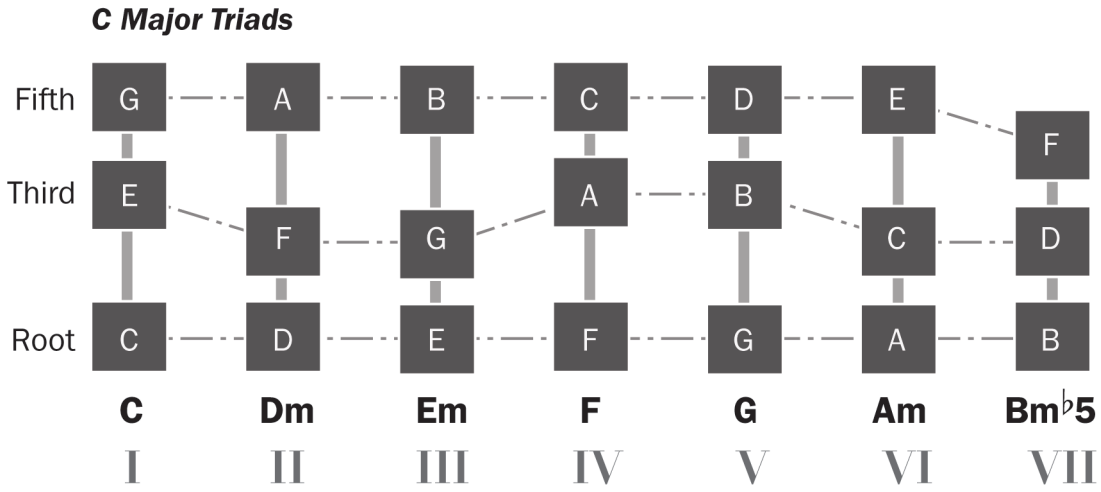
Every major scale requires a different number of sharps or flats to make it fit the **T-T-S-T-T-T-S** sequence.

This diagram is known as the ***Circle of Fifths***. It shows the number of sharps or flats in each key:



4. Triads

Simple chords are built using **triads**. These are three-note chords built in *thirds*:



Because the notes combine in different ways, using larger *major* thirds and smaller *minor* thirds, the chords don't all sound the same.

Chord **I** is major; **II** & **III** are minor; the **IV** & **V** are major; **VI** is minor; and **VII**, made of two minor thirds, is minor, with a flattened fifth.

In any major key:

- **I**, **IV** and **V** are major chords;
- **II**, **III** and **VI** are minor chords;
- **VII** is generally avoided in simple chord sequences.

Many chord sequences just use **I**, **IV** and **V**.

For example:
In G—G, C and D.
In A—A, D and E.
In E♭—E♭, A♭ and B♭.
In B—B, E and F♯.

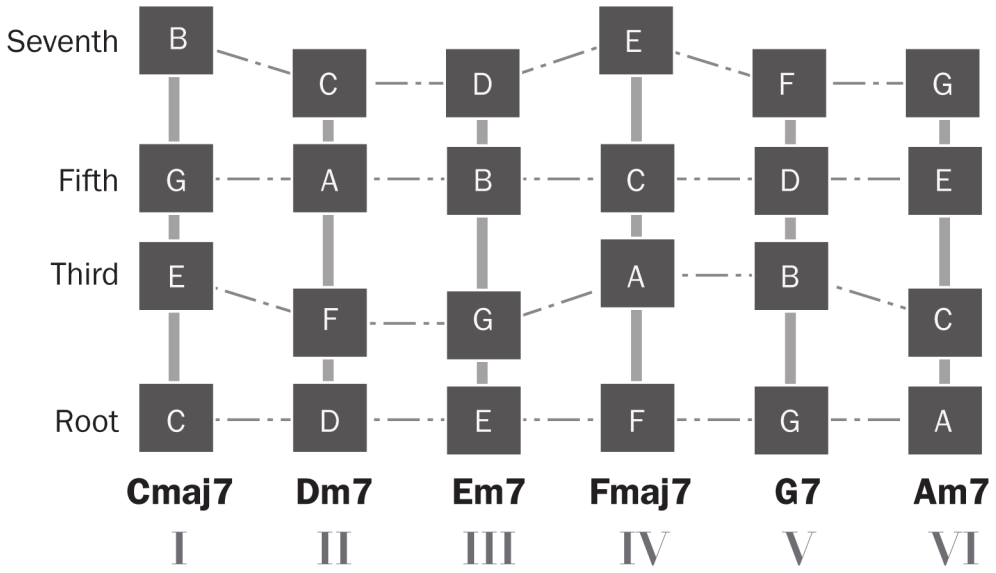
Look at the ***circle of fifths*** diagram on page 2. Find chord **I** for any key.
IV is one step counter-clockwise;
V is one step clockwise.

5. Sevenths

Adding another third on top of the triads creates chords with **sevenths**. There are two types:

Where the seventh is 10 semitones from the root (a tone short of an octave), it's known as a *flattened seventh*, written as **7**.
Where the seventh is 11 semitones from the root (just a semitone short of an octave, as in a major scale), it's known as a *major seventh*, written as **maj7**.

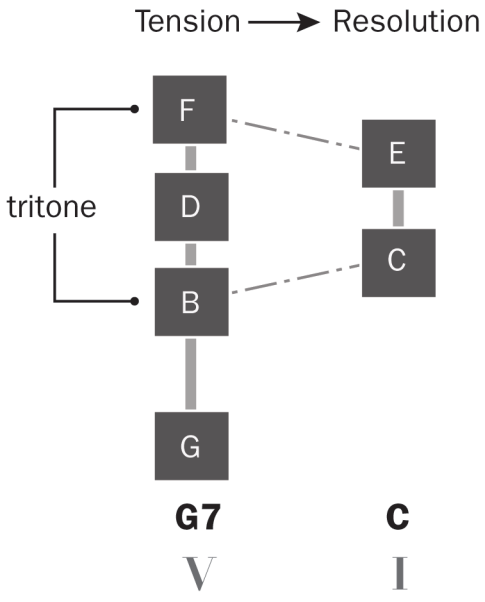
Seventh Chords in C



I and IV both have **maj7**. All the minor chords (II, III and VI) have **7**. V is unique. It is the only major chord with **7**.

Take a look at the distance between the third and seventh in chord V. It is six semitones, or three tones—exactly half an octave, also known as a *tritone*. This interval is very dissonant.

When this chord is played, it creates a tension, which our ears want to resolve. This is usually achieved by following V with I.

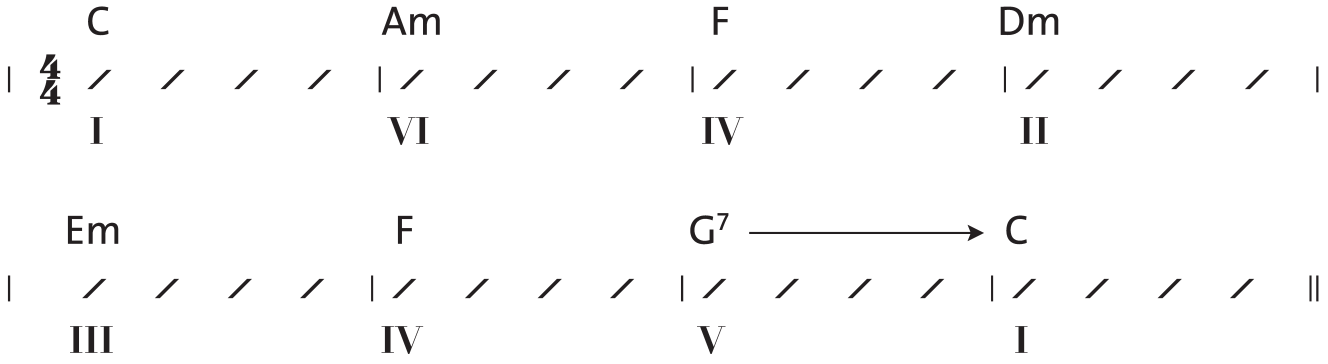


6. Creating Simple Chord Sequences

The tension-and-resolution process seen in **V-I** provides motion in a simple chord progression. It creates a sense of destination, marking chord **I** as the 'home' chord.

Even if you don't put sevenths on the other chords of the key, get used to playing **V** with a **7**.

Here's a sample chord sequence, using just the chords from one key, that uses **V-I** to give structure to the sequence:

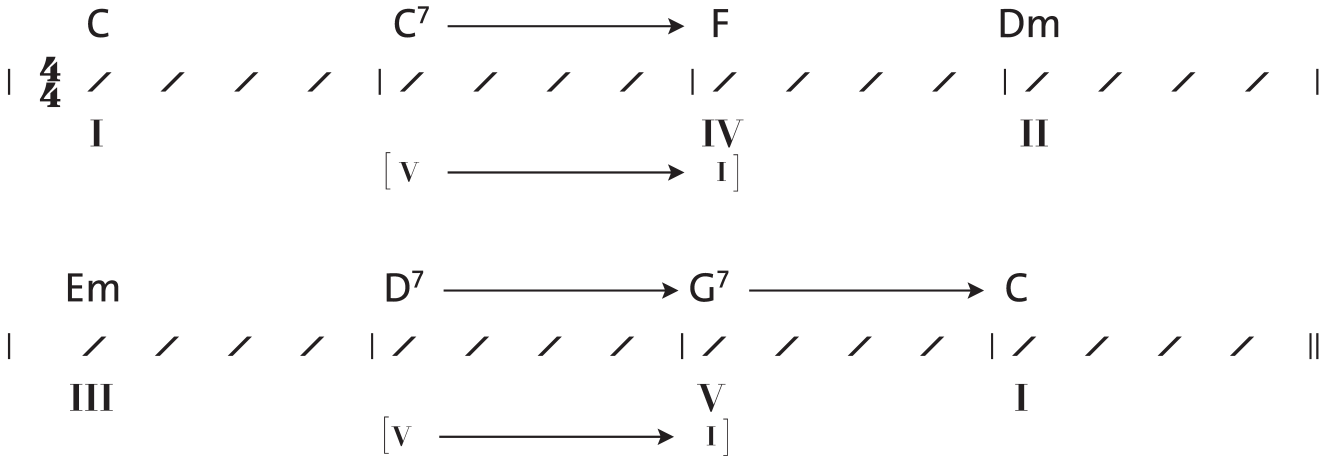


7. More With Chord V: Secondary Dominants

The power of chord **V** to create a sense of destination is very useful in structuring a chord sequence. Look again at the ***circle of fifths*** diagram on page 2, and see how the circle moves from **V** to **I** in a counter-clockwise direction.

You can harness the power of **V-I** by choosing different chords as the destination. Create 'local' **V-I**s by treating any chord as temporary chord **I**, approaching it by it's own **V**. Remember, **V** is always a major chord with a flattened seventh.

In the progression below, the chord in bar 3 (F) is approached by its own **V** chord, C7. The chord in bar 7 (G7) is also approached by its own **V** chord, D7.

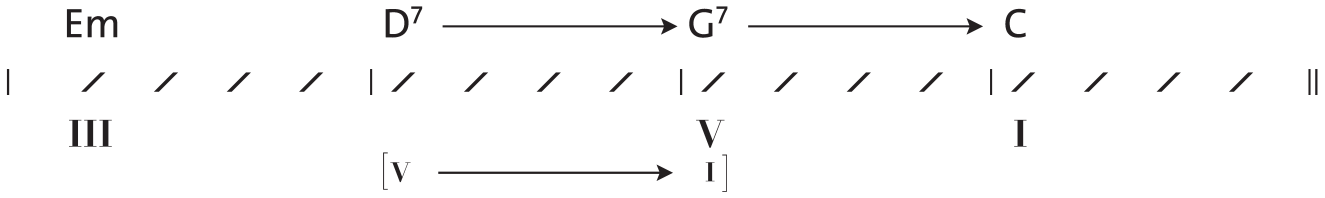


These extra **V** chords that lead to chords within the key are known as ***secondary dominants***.

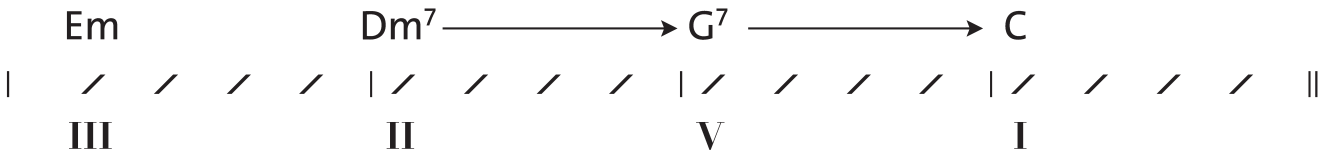
8. Circle-of-Fifths Progressions

Secondary dominants are effective, but they can sound clunky. Whenever you use a secondary dominant, you're using notes that are outside the original key. You can acheive a similar effect by using the equivalent chord within the key.

In the previous example, a secondary dominant was used to lead to the chord in bar 7, which then resolved to chord one:



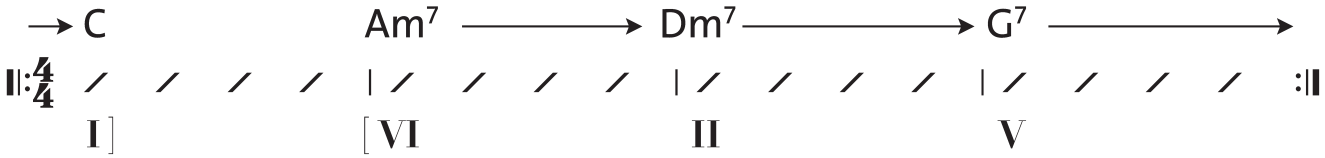
We can replace D7 with a equivalent chord within the key, which is Dm7. This creates a smoother sound.



Notice how these three final chords, Dm7-G7-C follow the circle of fifths (page 2). We can refer to them as as **II-V-I**.

In fact you can use any number of chords within a key in a circle-of-fifths sequence.

If you put all of them in, you'd have **VII-III-VI-II-V-I-IV**. It's very uncommon to see all of the chords in a key arranged in this way, but you very often see segments, like this:



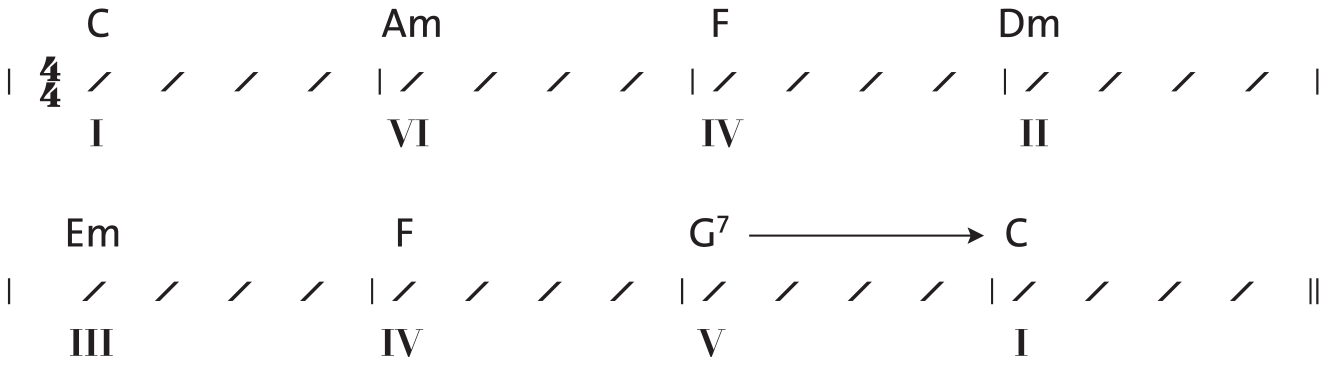
The sequence shown above, **VI-II-V-I**, is the most common chord progression in popular music. Notice how the music begins with **I**; then the sequence starts, ending as the music repeats to the beginning again.

This is how **VI-II-V-I** is usually used, with **I** placed at the start of a new section, so it's generally called a **I-VI-II-V** progression.

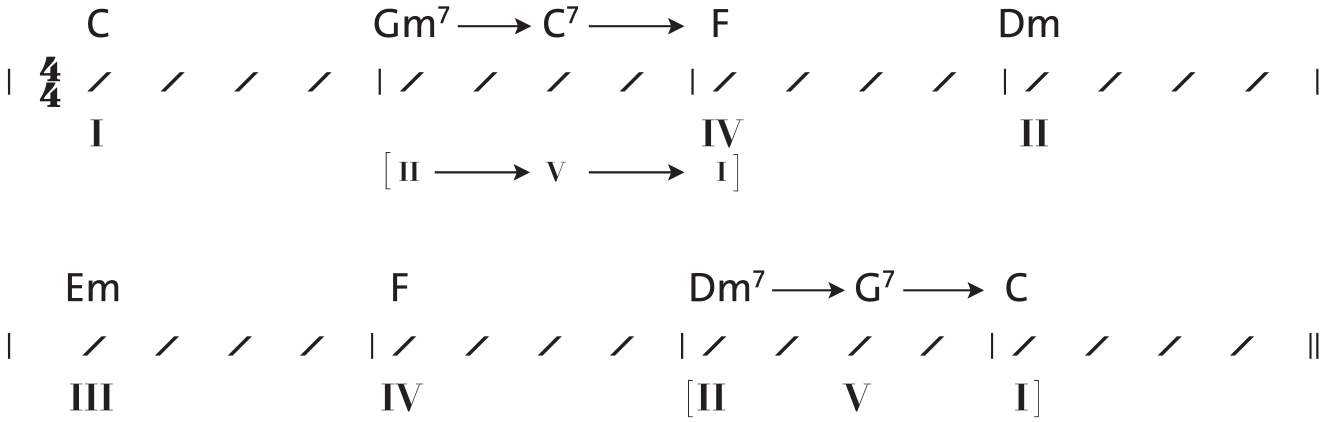
9. Using 'Local' II-V-Is

We can extend the idea of secondary dominants (page 5) by creating secondary **II-V** progressions within a standard chord sequence.

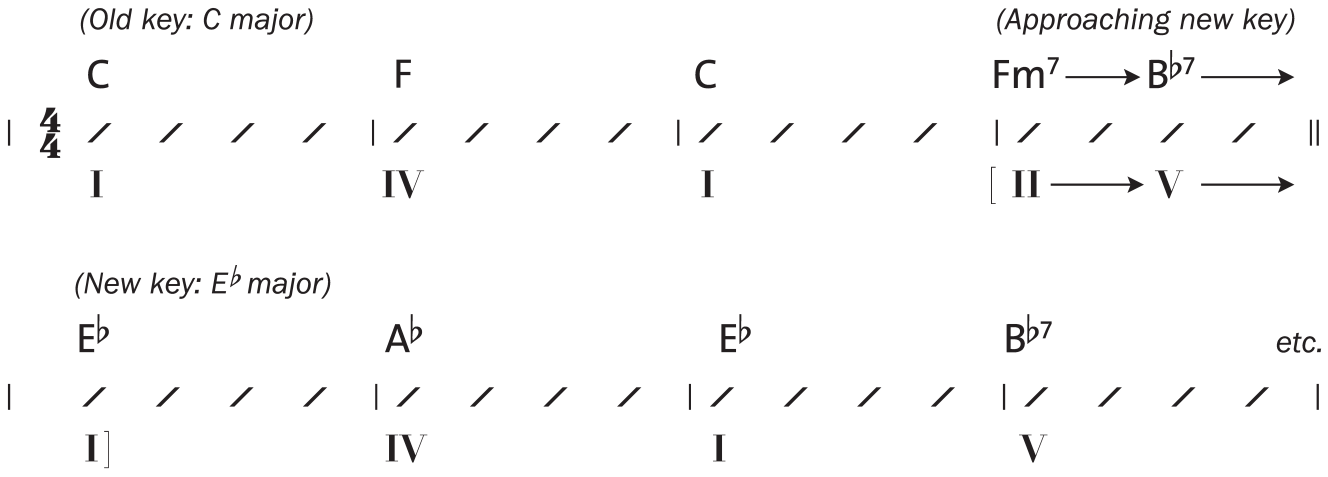
Here's the first sequence we looked at.



Let's target the chords in bar 3 (F) and bar 7 (G7) with their own **II-V**:



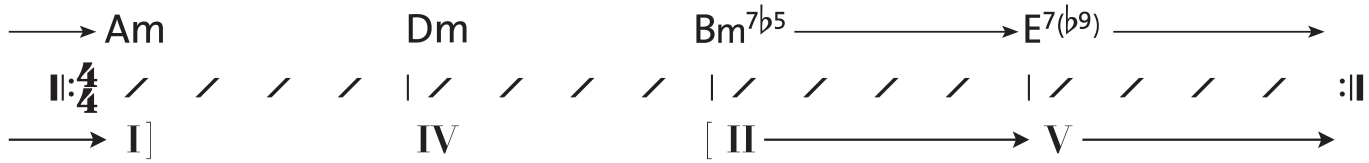
Using **II-V**s is very common in pop ballads, jazz and Latin styles. It's very useful for changing key. Begin a new section with chord **I** of the new key, and approach it at the end of the previous section with **II-V** of the new key.



10. Chords in Minor Keys

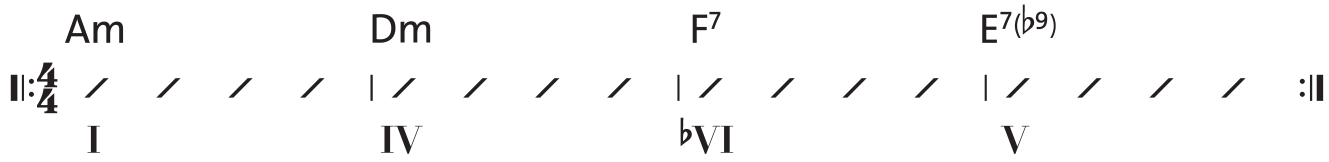
Modify **II-V** in minor keys like so: **II** has a flattened fifth (♭5); and **V** has an optional flattened ninth (♭9). With these alterations, the **II-V** targets a minor chord **I** more convincingly.

Here's a sample progression in A minor:



Notice also that **IV** is minor—this is common in minor keys, but sometimes you'll see major **IV** in minor keys.

In certain styles, **V** is often preceded by a similar chord a semitone higher. This can create an effective bluesy sound:



11. Minor Modes

In modal writing, minor keys just use chords borrowed from the *relative major* key.

The minor key is said to be the *relative minor* of the major key, located on the sixth step of the major scale:

C major → A minor; G major → E minor; B♭ major → G minor, etc.

This example is in A minor, but uses chords from C major. The placing of the chords creates the belief that Am is **I**.

Avoid using G7, as this will immediately put the music into C major. Play G without a 7. Notice also that in modal minor playing, **V** is minor (in this case, Em). Therefore **V-I** doesn't function as it does in major keys. The chord of G (♭**VII**) takes over this function.