Sevenths may be added to triads; they change the color – not the function. The diatonic major scale produces: $I^7$, $ii^7$, $iii^7$, $IV^7$, $V^7$, $vim^7$, $viim^7b5$.


The $V^7$ and $vii^o^7$ are widely used to replace the $V$ in minor keys. The other chords of the harmonic minor can be discarded for now, and the chords of the natural minor then contended with.

The figured bass symbols for 7ths are:

- **Root position:** $7$  \(\leftarrow\) Root in bass
- **1st inversion:** $6/5$ \(\leftarrow\) 3rd in bass
- **2nd inversion:** $4/3$ \(\leftarrow\) 5th in bass
- **3rd inversion:** $4/2$ or $2$ \(\leftarrow\) 7th in bass

The main 7th chord to learn how to use at first is the $V^7$ (dominant 7th). In authentic cadences, the $V^7$ usually is voiced with two roots, a 3rd, and 7th (no 5th). Examples:

Here are some important $V^7$'s with all 4 tones:

Notice the inversions ($6/4$).

Notice the passing tone $[o]$. 
Practice Comparable Exercises in Minor Keys
Here are some exercises with V\(^6/5\)’s:

V\(^7\) also connects well with vi:

When done at the end of a phrase, V – vi is known as a deceptive cadence. In minor it is V – VI.

V\(^6/5\)’s progress well to \(^6/4\)’s a scale step higher:

Second inversion (V\(^7^{4/3}\)):
Second inversions also progress well to $6/4$’s:

Third inversions ($4/2$ or $2$):

Key of F:

Key of Db:

Make up similar exercises to all those on this page in major and minor keys.
As you may know, there are many kinds of dominant 7th type chords which are used in jazz; but (as usual) they can be organized into groups according to similarities of sound. So which of these chords can take the dominant 7th scale? The secret lies in analyzing the chord tones of the dominant 7th scale, which are as follows:

1, 3, 5, b7, 9 (2), 11 (4), and 13 (6)

Important: Any chord containing some combination of any of (but only) these chord tones, can take the dominant 7th scale. Here is a list of the most commonly used of these chords:

**GROUP 1**

<table>
<thead>
<tr>
<th>Name</th>
<th>Formula</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant 7th</td>
<td>1, 3, 5, b7</td>
<td>7</td>
</tr>
<tr>
<td>Dominant 9th</td>
<td>1, 3, 5, b7, 9</td>
<td>9</td>
</tr>
<tr>
<td>Dominant 7/6th</td>
<td>1, 3, 5, 6, b7</td>
<td>7/6</td>
</tr>
<tr>
<td>(or 7/13)</td>
<td>1, 3, 5, b7, 13</td>
<td>(7/13)</td>
</tr>
<tr>
<td>Dominant 13th</td>
<td>1, 3, 5, b7, 9, 13</td>
<td>13</td>
</tr>
</tbody>
</table>

**GROUP 2**

<table>
<thead>
<tr>
<th>Name</th>
<th>Formula</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant 7th suspended 4th</td>
<td>1, 4, 5, b7</td>
<td>7sus</td>
</tr>
<tr>
<td>Dominant 9th suspended 4th</td>
<td>1, 4, 5, b7, 9</td>
<td>9sus</td>
</tr>
<tr>
<td>Dominant 11th</td>
<td>1, 5, b7, 9, 11</td>
<td>11</td>
</tr>
<tr>
<td>Dominant 7/6th suspended 4th</td>
<td>1, 4, 5, 6, b7</td>
<td>7/6sus</td>
</tr>
<tr>
<td>(7/13) or (7/6/11)</td>
<td>1, 4, 5, b7, 13</td>
<td>(7/13sus)</td>
</tr>
<tr>
<td>Dominant 13th suspended 4th</td>
<td>1, 4, 5, b7, 9, 13</td>
<td>13sus</td>
</tr>
<tr>
<td>Dominant 11/13th</td>
<td>1, 5, b7, 9, 11, 13</td>
<td>11/13</td>
</tr>
</tbody>
</table>

For the curious: the 11th and 3rd are not often played together in the same chord because they tend to clash to most ears.

Notice that the above chords are divided into two groups. Also notice that for every chord in the group on the left [Group 1] there is, in the group on the right [Group 2], a corresponding chord which has the exact same formula except for one thing: the 3rd has been replaced by the 4th or 11th. Check this out….

The two groups will be referred to as Group 1 and Group 2 dominants. In case you are wondering about the names of these chord, specifically about words like “dominant” and “suspended,” the explanations are long and unfortunately not too logical, so for now it is in your best interests to just accept these terms as something you have to put up with, at least in the sense of knowing what chords these words stand for. We’ll take a pass on this subject here. It’s better left for a book on Harmony.

You will recall that in the section on Major chords, a discussion of chord tones was presented. There will be a similar discussion pertaining to the Group 1 and 2 dominant chord tones, but it will be after the soon-to-be-given musical examples.

In this section, as in the Major section, there will be chord forms and arpeggios given for each position (of the dominant 7th sounds); and as before, you will want to learn these — one group of chords and arpeggios at a time to fit each position as you encounter them as you progress through this section.
You will also find it in your best interest to learn the scale fingerings given for the different positions of the runs, as many of the runs are derived from just freely mixing up the notes of the dominant 7th scale.

Remember to *visualize* the notes on the fingerboard as explained earlier, especially for any runs that you like enough to memorize.

And as before, if you want to (and know what this means) try phrasing all runs as “jazz” 8ths and “straight” 8ths. If you’re still having some difficulties in making the runs you have learned so far sound like jazz, it is probably the time to try to find a good teacher to take at least one lesson in the “feel” of the music. (Just a suggestion: take a tape recorder to your lesson if you can, because we humans aren’t blessed with the memories of elephants or recording tapes.)

Naturally, you will want to learn your favorite sounds out of all this material in more than one key. I have found certain orders of keys that sound very good to my ears, so I would like to share them with you if you care to try them:

1) For the 1st three positions (which star in the key of Bb7) try the following order of keys for each arpeggio and run (and the scale diagrams too):
   - Bb7, (F7), D7, B7, Ab7, Eb7, C7, A7, (G7), E7, Db7, Bb7
   ( ) = optional

2) For the last position that starts n Bb7 (7th-8th fret), try the following key order:
   - Bb7, G7, E7, C7, A7, F#7, Eb7, B7, Ab7, F7, D7

3) For the position that is given as G7 (on the 7th fret), try the following key orders:
   - G7, E7, Db7, F7, A7, F#7, Eb7, Bb7, G7
   or    G7, E7, Db7, A7, F#7, Eb7, C7, Ab7, F7, D7, B7

4) For the two positions that are given in the key of E7, try the following key orders:
   - E7, Db7, F7, D7, F#7, Eb7, G7, B7, Ab7, (F7)

You may have noticed that most of the intervals between all these keys are ascending or descending 3rds. It just seems to sound good to me this way.
7ths in Major Keys:

When another 3rd interval is added on top of a triad, the sound that results is called a 7th chord.

An important thing to remember is that 7th change the color of triads but not the function. For instance, a I₇ is still a Tonic chord, just like a I. To put it another way, you may replace a triad with its related 7th chord (according to personal taste) without changing the essence of a chord or progression.

Compare:

To learn the 7th chord fingerings on guitar you should study the page on 7th Chord Voicings in various keys.

The most important 7th chord is the V7, having been used by composers much more than the others. One reason for this is that the V7 – I progression clearly defines a key. Look at it this way: when you play a G chord to a C chord, no key is clearly established yet. It could be I – IV [in the key] of G, or V – I [in the key] of C. But G7 to C by itself indicates only the key of C.

If you were to make other experiments using just two chords, trying to define a key, you would see that vii⁰₇ – I gives a similar effect to V7 – I; this is logical because, as you know, vii⁰ is dominant in its function. Anyway, separate sheets will be passed out on the progression V7 – I, and you should figure out similar examples of vii⁰₇ – I after you have learned the V7 – I’s.

An easy way to convert V7 into vii⁰₇ is to raise the root of a complete V7, one whole step. Important: vii⁰₇ = V9.
Naturally, like triads, 7th chords can be inverted. Because there are 4 notes in a 7th chord, there are 3 inversions. The figured bass symbols are as follows:

Root position: \[ 7 \]
1st inversion: \[ 6/5 \]
2nd inversion: \[ 4/3 \]
3rd inversion: \[ 2 \text{ (or } 4/2 \text{) } \]

An easy way to memorize these symbols is to notice that the numbers, coincidentally, go in order: 7, 6/5, 4/3, 2.

You will find a list of exercises using all types of the 7th chords on the same page that has the 2nd inversion triad exercises. Practice these (with decoration, suspensions, etc., optional) patiently, and the world of 7th chords will open up to you.

**Sidelight:** In the “old” days, the 7th in a chord was considered a dissonance, and consequently, people thought it too harsh to have the 7th tone enter without suitable “preparation.” The rules governing preparation of the 7th were: 1) it could enter as a suspension or repeated note from a previous chord, or 2) it could be approached step-wise from a previously heard tone.

Notice the prepared 7ths in the above examples near the top of the page. While modern ears definitely do not require the preparation of 7ths, it is good practice to do this once in a while to know how to create the old, authentic sounds.

**Irregular Resolution of V7 or vii\(^{o7}\):** For variety’s sake, composers would sometimes avoid I after V7 or vii\(^{o7}\), instead progressing to some other chord. Some of the most common of these chords are IV, vi, iii, and iii\(^{7}\) (and other chords to be discussed later). This concept includes all inversions of all chords involved.

**7ths in Minor Keys:**

The diatonic 7th chords in minor keys are as follows:

**Natural minor:** \( i^7, ii^{o7}, [b]III\Delta 7, iv7, v7, [b]VI\Delta 7, [b]VII7 \)

**Harmonic minor:** \( i\Delta 7, ii^{o7}, [b]III\Delta 7^+, iv7, V7, [b]VI\Delta 7, Rvii^{o7} \quad [R \text{ = raised}] \)

**Melodic minor:** \( i\Delta 7, ii7, [b]III\Delta 7^+, IV7, V7, Rvi^{o7}, Rvii^{o7} \)

Of all these 7th chords only some have been commonly used by Baroque composers:

**Common:** \( i7, ii^{o7}, [b]III\Delta 7, iv7, V7, [b]VI\Delta 7, Rvii^{o7}, [b]VII7, Rvii^{o7} \)

**Less common:** \( ii7, IV7, v7 \)

**Rare:** \( i\Delta 7, [b]III\Delta 7^+, Rvii^{o7} \)

The ii7, IV7, Rvi\(^{o7}\) are used according to the normal use of the melodic minor (to avoid the augmented 2nd interval). Otherwise the above chords are used just like in major keys. Naturally, inversion are not only possible, but welcome.

Rvii\(^{o7}\) is used to replace V7 quite often in minor keys, so it is a good idea to take the V7 – I resolutions and convert them to Rvii\(^{o7}\) – I by raising the root of any complete V7, one 1/2 step.

Important: \( Rvii^{o7} = V7^{b9} \).
Seventh Chords

Sevenths may be added to triads; they change the color of the function. The diatonic major scale produces: I7, ii7, iii7, IV7, V7, vi7, vii7. The natural minor scale produces: iIM7, iiIM7, iii7, IV7, V7, vi7, vii7. The harmonic minor scale produces: iIM7, iiIM7, iii7, IV7, V7, vi7, vii7. The I7, iv7, vi7, vii7, the G7 and E777 are widely used to replace the ii7 in minor keys. The other chords of the bar minor can be discarded for now and the chords of the natural minor then continued with.

7th s are → Root Position: 7th ROOT IN BASS
First Inversion: 23rd " "
Second Inversion: 23rd " "
Third Inversion: 23rd " "

The main chord to learn how to use first is the I7 (Dominant 7th).

Ah, authorize all 4 tones.

Examples:

Notice the inversions (64):

Notice the inversions (64):

Practice comparable exercises in minor keys.

Here are some exercises:

The I7 also connects well with:

VI7: A7
E7: G7

Which 7th at the end of a phrase? VI 7 is known as a deceptive cadence.

In minor, it is: II7

2nd inversions also progress well to 45:

Make up similar exercises to all those on this page in major and minor keys.
As you may know, there are many kinds of dominant 7th type chords which are used in jazz, but (usually) they can be organized into groups, according to similarities of sound. So which of these chords can take the Dominant 7th scale? The secret lies in analyzing the chord tones of the Dominant 7th scale, which are as follows:

- 1, 3, 5, 6, 7, 9, 11, and 13
- Important: Any chord containing some combination of any (but only) these chord tones can take the Dominant 7th scale. Here is a list of the most commonly used of these chords:

<table>
<thead>
<tr>
<th>GROUP 1</th>
<th>GROUP 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>FORMULA</td>
</tr>
<tr>
<td>Dominant 7th</td>
<td>1, 3, 5, 6, 7</td>
</tr>
<tr>
<td>Dominant 9th</td>
<td>1, 3, 5, 6, 7, 9</td>
</tr>
<tr>
<td>Dominant 7/6th</td>
<td>1, 3, 5, 6, 7, 13</td>
</tr>
<tr>
<td>(or 7/13)</td>
<td>(13/7/13)</td>
</tr>
<tr>
<td>Dominant 13th</td>
<td>1, 3, 5, 6, 7, 9, 13</td>
</tr>
<tr>
<td>or Dominant 11/13th</td>
<td>1, 3, 5, 6, 7, 9, 11, 13</td>
</tr>
</tbody>
</table>

For the curious, the 4th and 3rd are most often played together in the same chord because they tend to clash if not used. Notice that for every chord on the left there is, in the group on the right, a corresponding chord which has the exact same formula except for one thing: the 3rd has been replaced by the 4th or 11th. Check this out:

The 2 groups will be referred to as the group 1 and group 2 dominants. In case you are wondering about the names of these chords, the explanation unfortunately is no longer of any importance (at least for our course). We have used these names so that you have to find these words in the same sense of what should have been revealed.

You will recall that in the section on modulation, a discussion of chord tone was presented. There will be a similar discussion pertaining to the group 1 and 2 dominant chord tones but it will be left to the student to fill in the blanks. Here are some examples:
In this section, as in the major section, there will be chord forms and arpeggios given for each position (of the Dm 7b5 sound). And as before, you will want to learn these one group of chords and arpeggios at a time to fit each position as you encounter them as you progress through this section. You will also find it in your best interest to learn the scale fingerings given for the different positions of the runs, as many of the runs are derived from just freely mixing up the notes of the Dm 7b5 scale.

Remember to VISUALIZE the notes on the fingerboard as explained earlier, especially for any runs that you like enough to memorize.

And as before, if you want to (and know what this means), try phrasing all runs as "jazzy" 8ths and "straight" 8ths. If you're still having some difficulties in making the runs you have learned so far sound like jazzy, it is probably the time to try to find a good teacher to take at least 1 lesson in the "feel" of this music (just a suggestion: Take a tape to your lesson, if you can, because we human aren't blessed with the memories of elephants or recording tape).

Naturally, you will want to learn your favorite sounds out of all this material in more than 1 key. I have found certain orders of keys that sound very good to my ears, so I would like to share them with you. If you care to try them:

1. In the 1st 3 positions (which start in the key of Bb7) try the following order of keys for each arpeggio and run (see diagram): Bb7, F7, D7, B7, Ab7, E67, C7, A7, G7, E7, Db7, Bb7.

   (Optional)

2. For the 1st position in Bb7 (7481/4th fret), try the following key order: Bb7, G7, E7, C7, A7, F#7, E67, B7, Ab7, F7, D7

3. For the 2nd position that is given as F7 (the 7th fret), try the following key orders: G7, E7, Db7, F7, A7, F#7, E67, Bb7, G7, or F7, D7, A7, F#7, E67, C7, Ab7, F7, D7, B7

4. For the 2nd positions that are given in the key of E7, try the following key orders: E7, Db7, F7, D7, F#7, E67, G7, B7, Ab7 (F7)

   You may have noticed that most of the intervals between all these keys are ascending or descending Bb7.

   It just seems to sound good this way.
SEVENTH CHORDS

When another 3rd INTERVAL is added on top of a triad, the sound that results is called a 7th CHORD.

An important thing to remember is that this change the COLOR of the chord, but not the FUNCTION; for instance, a I is still a TONIC chord, just like a I.

So put it another way, you may replace a 7th with its related 7th chord (according to personal taste) without changing the function of a chord progression.

To learn the 7th chord fingerings, you should study the page in 7th chord voicings in various keys.

The most important 7th chord is the V7, having been used by composers much more than the others. One reason for this is that the V7 to I progression clearly defines a key. Look at it this way: when you play a G chord to a C chord, no key is clearly established yet; it could be I, II, or V of C. But if you try to use 7th chords, trying to define a key, you would see that V7 to I gives a similar effect to V7 to I; this is logical because, as you know, V7 is dominant in its function.

Naturally, like triads, 7th chords can be inverted, because there are three notes in a 7th chord; there are 6 inversions, the figured bass symbols are as follows:

- 7: An easy way to memorize these symbols is to notice that the numerals coincide, i.e., in order: 7, 65, 413, 2.

You will find a list of exercises using all types of 7th chords on the same page that has the 2nd inversion, chord exercises, practice these (with embellishment, suspension, etc. optional).

Invert: A and B, the whole 7th chord will open up to you.

SIDELIGHT: In the old days, the 7th chord was considered a dissonance and consequently was often paired to have the 7th tone enter without suitable "preparation." The rules governing preparation of the 7th chord:

1. It could enter as a suspension or repeated note from a preceding chord or
2. It could be approached stepwise from a previously heard tone.

Notice the preceeding the in the above examples means the top of the page.

While modern arrangements do not require the preparation of 7ths, it is good practice to do this once in awhile to know how to create the old, authentic sounds.

IRREGULAR RESOLUTION OF 7THs: For variety's sake, composers would sometimes avoid:

- I after V7: VII7 instead progressing to some other chord. Some of the most common are V7, VI, IV, and I7; This concept includes all inversions of all chords involved.

MINOR KEYS: The distance in 7th chord keys are as follows:

- NATURAL MINOR: I7, II7, III7, IV, V, VI, VII7
- HARMONIC MINOR: I7, II7, III7, IV, V, VI, VII7
- MELodic MINORS: I7, II7, III7, IV, V, VI, VII7

Of all these 7th chords only some have been commonly used by baroque composers:

- COMMON: I7, II7, III7, IV, V, VI, VII7
- LESS COMMON: II7, III7, V
- RARE: I7, III7, VII7

The I7, II7, V7 are used according to the normal use of the melodic minor (to avoid the Aug. 2nd interval). Otherwise, the other chords are used just like in major keys, naturally, inversions are not only possible but welcome.

VII7 is used to replace I7 (but often in minor keys as it is a good idea to take the I7-I7 resolutions and connect them to VII7-I.) By raising the root of any complete I7, one can:

IMPROVISE: VII7 = V7