The following principles concerning diminished 7th chords are pretty complicated and take quite awhile to absorb, unfortunately. While it is quite possible that part of the fault lies with the choice of words (and I apologize if this is so), much must be said if the chords are to be *thoroughly* understood and used with knowledge, and not just with a hope and a prayer.

A good idea might be to wait until you play a song that contains a diminished 7th chord before tackling the subject so you will have some place to relate it to. This way you will *gradually* absorb the material instead of trying to do a crash course which would probably slip away pretty quickly without application.

**Diminished 7th Chords**

Certain progressions using O7 chords appear very often, especially in major keys, so naturally you want to be familiar with them. The O7 chord is an amazing chord in that *any note in the chord can be called the root.* Example: a C O7 chord contains the notes C, Eb, Gb, Bbb (A); an Eb O7 contains the notes Eb, Gb, Bbb (A), Db (C); an F# O7 (Gb O7) contains F# (Gb), A, C, Eb; and an A O7 contains A, C, Eb, Gb.

All 4 chords contain the same notes. They are called SYNONYMS (or Homonyms). This makes for problems when trying to name the chord; many people prefer to name the chord according to the bass note. Others prefer to group them into 3 categories, each containing 4 members (more on this soon). And there are many cases where a O7 chord can be renamed as a 7b9 chord (more on this also will follow).

Here is a chart of the O7 chords, grouped according to which ones are the same:

- **iO7 Family:**
  - iO7 = biii O7 = #iv O7 = vii O7
  - C O7  =  Eb O7  =  F# O7  =  A O7

- **ivO7 Family:**
  - iv O7 = #v O7 = vii O7 = ii O7
  - F O7  =  G# O7  =  B O7  =  D O7

- **vO7 Family:**
  - v O7 = bvii O7 = #i O7 = iii O7
  - G O7  =  Bb O7  =  C# O7  =  E O7

This chart will be important for certain types of MODULATION (key changing) techniques later, but for now it is just here for *reference* (you don’t have to memorize it now).

Here are some common progression using O7 chords, with the O7 chords named according to the bass note; try them out.

1) C/E  Eb O7/Eb  Dm7/D  G9/G
2) C7/C  C# O7/C#  Dm7/D  G7/G
3) F/F  F# O7/F#  C/G

**bass note**

4) C/C  C# O7/C#  Dm7/D  Eb O7/Eb  C/E  Fm6/F  F# O7/F#  C7/G
5) G/B  Bb O7/Bb  F/A  Ab O7/Ab  Em/G  G O7/G  D/F#  F O7/F  C/E  Eb O7/Eb  Dm7/D  G7/G  Cadd9/C

Notice that *1st* (and occasionally a 2nd) Inversions of **Triads** pop up all over the place in these progressions. Even though you were advised that triads are not used too much in modern harmony tunes, as you get more used to creating rich chordal effects, you will be able to hear how to tastefully use triads without making everything sound too plain or too much like Renaissance and Baroque music (nothing wrong with these types of music—they are great—but we are dealing with 20th Century harmony on these sheets).
Notice in progression (5) above that naming the O7 chords from the bass makes it hard to see the logic of the progression. You might say, “The logic is clear – it is based on a descending bass”; but what about the Em to G O7? No, the logic is based on following each triad with an O7 chord of the same name:

G/B G O7/Bb F/A F O7/Ab Em/G E O7/G D/F# D O7/F C/E C O7/Eb Dm7/D G7/G Cadd9/C

So always be on the lookout, when you see O7 chords, for easier ways to name them. The last determining factor in naming them has to do with more SYNONYMS. Any O7 chord contains the same notes as 4 different incomplete (no root) 7b9’s.

Here is a reference chart of the affinities between O7 and 7b9 chords:

All iO7 family O7 chords = (I17b9, IV7b9, (bVI17b9), VII17b9) The circled chords are the most commonly used ones.

All ivO7 family O7 chords = (V7b9, bVII17b9, bII17b9, (III17b9)

All vO7 family O7 chords = (V17b9, I17b9, bIII17b9, #IV17b9 ⇐ (also called bV7b9)

Many people might prefer to rename certain O7 chords as 7b9’s; the advantage is that this method opens up other doors:

Notice that in progression (2) on the previous page, you could rename the C#O7 as A7b9 (which is logical because it is a secondary V7). Now here is the advantage: If you can play A7b9, you might try A7+ or A7b9+ or A7#9+ (or even Eb9 or 13 by way of the cross-cycle principle). Calling the chord C#O7 doesn’t open all these doors.

Here is a suggested list of commonly done conversions (major key) of O7’s to 7b9’s:

1) When any vO7 family, O7 chord progresses to a ii(7), ii67, or II7, convert the O7 to V17b9.
2) When any ivO7 family O7 chord progresses to a vi or VI7, convert the O7 to III17b9
3) When any ivO7 family O7 chord progresses to a I or iii, you might convert it to V7b9
4) When any iO7 family O7 chord progresses to a ii, V or v, you might convert it to II17b9 or bVI17b9
5) When any iO7 family O7 chord progresses to a iii or III, you might convert it to VII17b9
6) When any iO7 family O7 chord progresses to anything, you might substitute II7, bVI7, VII7 or IV7 for the O7 chord.
7) When any O7 progresses to a 7th chord or triad of the same letter name, don’t convert; if it is a disguised version of this, convert to same letter name.

Examples: C/C G O7/C# G7/D is fine, but C/C C#O7/C# G7/D should be converted to C G O7 G7.

Also in this type of case, you may try and substitute any of the four 7th chord families that are related by virtue of SYNONYMS.

Example: instead of C/C G O7/C# G7/D you might try C/C Eb7/Db G/D because G O7 is also A7b9, C7b9, Eb7b9, and F#7b9.

By the way, if you ever do encounter a O7 chord in a minor key tune, you will be able to figure out what to do with it if you understand O7’s in major keys.

One last word of caution: most sheet music incorrectly lists O7 chords as O triads. Example: if you see something like C G O7 G7 or C Eb O7 Dm7, many times they actually mean C G O7 G7, C Eb O7 Dm7. If in doubt, either consult the piano staffs on the music or just play a O7 chord instead of a triad.

Often, O7 chords are played with non-chordal tones “frozen” on top of the chord; you will naturally end up with playing these chords when working out a song in chord-melody style (see On a Clear Day, Pennies from Heaven, How About You, Manhattan, and others).

Suggested tunes for getting into O7 chords:
DIMINISHED 7TH FAMILY VOICINGS (all listed on C)

Try leaving out any notes in any voicing, if you are working in 3 NOTE HARMONY

7th on top (if you move these forms in 3rd increments, you get the 2nd 4th & 6th on top)

7's with inner voice frozen up a whole step:

Forms with 9th in bass (some were listed above) and possible altered soprano or semi-bass

6th on top -

Also try Ab7, F7, D7, B7 & other inversions of Ab9, B, Bm11, Vu etc., and same on F, D,
The following principles concerning diminished chords are pretty complicated, and take quite awhile to absorb, unfortunately. While it is quite possible that part of the fault lies with the choice of words, (and I apologize if this is so), much must be said if the chords are to be thoroughly understood and used with knowledge, not just with a hope and a prayer.

A good idea might be to wait until you play a song that contains a diminished chord before tackling the subject so you will have some place to relate it to. This way you will gradually absorb the material instead of trying to do a crash course which would probably slip away pretty quickly without application.

**DIMINISHED 7TH CHORDS** - Certain progressions using 7th chords appear very often, especially in major keys, so naturally you want to be familiar with them. The 7th chord is an amazing chord in that any note in the chord can be called the root. Example: a C7 chord contains the notes C, Eb, Gb, Bb(A); an Eb7 contains the notes Eb, Gb, Bb(A), Db(B); an F#7b5(GB) contains F#(Gb), A, C, Eb; and an A7 contains A, C, Eb, Gb.

All 4 chords contain the same notes. They are called SYNONYMS (homo-onyms). This makes for problems when trying to name the chord; many people prefer to group them into 3 categories, each containing 4 members (more on this soon), and there are many cases where a 7th chord can be renamed as a 7b5 chord (more on this also will follow).

Here is a chart of the 7th chords, grouped according to which ones are the same:

**I7 FAMILY**

\[
\begin{align*}
\text{I7} & = b3 \text{, } 7 \text{ of } 7 = \#4 \text{ of } 7 = 9 \text{ of } 7 \\
C7 & = Eb7 & F#7 & A7 \\
& = B7 & G7 & D7 \\
& = G7 & Eb7 & C7 \\
\end{align*}
\]

This chart will be important for certain types of modulation (key changing) techniques later, but for now it is just here for reference (you don't have to memorize it now).

Here are some common progressions using 7th chords, with the 7th chords named according to the base note; try them out.

<table>
<thead>
<tr>
<th>Bass Note</th>
<th>C</th>
<th>Eb7 G7</th>
<th>C7</th>
<th>C#7</th>
<th>Gm7</th>
<th>C7</th>
<th>G7</th>
<th>C#7</th>
<th>F E G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Em7th</td>
<td>G</td>
<td>Eb</td>
<td>D</td>
<td>G</td>
<td>C</td>
<td>Gb</td>
<td>F #7</td>
<td>C</td>
<td>G</td>
</tr>
<tr>
<td>C7</td>
<td>C</td>
<td>C#7</td>
<td>D</td>
<td>F #7</td>
<td>C</td>
<td>Gb</td>
<td>A B</td>
<td>G F F #7</td>
<td>E B</td>
</tr>
</tbody>
</table>

Notice that 1st (and occasionally 2nd) inversions of TRIADS pop up all over the place in these progressions – even though you were advised that triads are not used too much in modern harmony texts, as you get more used to creating rich chordal effects, you will be able to hear how to tastefully use triads without making everything sound too plain or too much like Renaissance & Baroque music (nothing wrong with those types of styles – they are great – but we are dealing with 20th CENTURY harmony after these sheets).

Notice in progression 3 above that naming the 7th chord from the base makes it hard to see the logic of the progression. You might say "He logic is clear, it is based on a descending bass", but what about the Em to the G7? No, the logic is based on following each chord with a 7th chord of the same name: G7, G7, F, G7, Em, G7, D, D, C, C7, D, G7, G7. So always be on the lookout when you see 7th chords, for easier ways to name them.

The last determining factor in naming them has to do with more synonyms. Any 7th chord contains the same notes at 4 different incomplete 7b5 -> (C# G Bb E)
**COMMON PROGRESSIONS + PRINCIPLES**

Here is a reference chart of the affinities between 07 and 769 chords.

- **All IV07 family 07 chords** = (II 769, IV 769, VI 769, VII 769; circled are the more commonly used 07 chords)
- **All IV07 family 07 chords** = (IV 769, VI 769, VII 769)
- **All V07 family 07 chords** = (VI 769, IV 769, XII 769, VI 769, VII 769, IV 769; also called VII 769)

Many people might prefer to rename certain 07 chords as 769's, the advantage is that this method opens up other doors.

Notice that in progression 2 on the previous page, you could rename the C#07 as A7b9 (which is logical because it is a secondary I7). Now here is the advantage: if you can play A7b9, you might try A7 or A7b9+ or A#7 (or even Eb9 or Bb by way of the cross-cyclical principle). Calling the chord C#07 doesn't open up all these doors.

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**MAJOR KEY**

- **1.** When any IV07 family 07 chord progresses to a IV or II7, convert the 07 to VII 769.
- **2.** When any IV07 family 07 chord progresses to a V or VI7, convert the 07 to VI 769.
- **3.** When any 07 family 07 chord progresses to a II, V, or I, you might convert it to VII 769 or VI 769.
- **4.** When any 07 chord progresses to a 74 chord or chord of the same letter name, don't convert; if it is a disguised version of this, convert to same letter name.

**EXAMPLES:**

- C G07 F# G7 is fine, but C G02 G7 should be converted to C G07 G7.
- C G07 G7.

Also in this type of case, you may try and substitute any of the 4 769 chord families that are related by virtue of synonyms → EXAMPLE:

- Instead of C G07 G7 you might try C E67 Bb G7 because G07 also
- A7b9, C7b9, E6b9, and F#7b9.

By the way, if you ever do encounter a 07 chord in a minor key tune, you will be able to figure out what to do with it if you understand 07's in major keys. One last word of caution: most sheet music incorrectly lists 07 chords as 0 triads → EXAMPLE → if you see something like C G07 or C E60 Dm7, many times they actually mean C G07, E07 Dm7. If in doubt, either consult the piano staff or the music or just play a 07 chord instead of a triad.

Often 07 chords are played with minor 7th "flattened" or choir on top of the chord, you will naturally end up playing these chords when working out a song in chord melody style (see CLEAR DAY, PENNIES FROM HEAVEN, HOW ABOUT YOU, MANHATTAN + OTHER).

Some suggested tunes for getting into 07 chords:

- SOMEONE TO WATCH OVER ME, PEOPLE, NIGHT+DAY, BODY AND SOUL, CLEAR DAY, YOU GO TO MY HEAD, BIRTH OF THE BLUES
- SAN FRANCISCO BAY, PENNIES FROM HEAVEN, HOW ABOUT YOU, MANHATTAN, THIS NEARLY WAS MINE