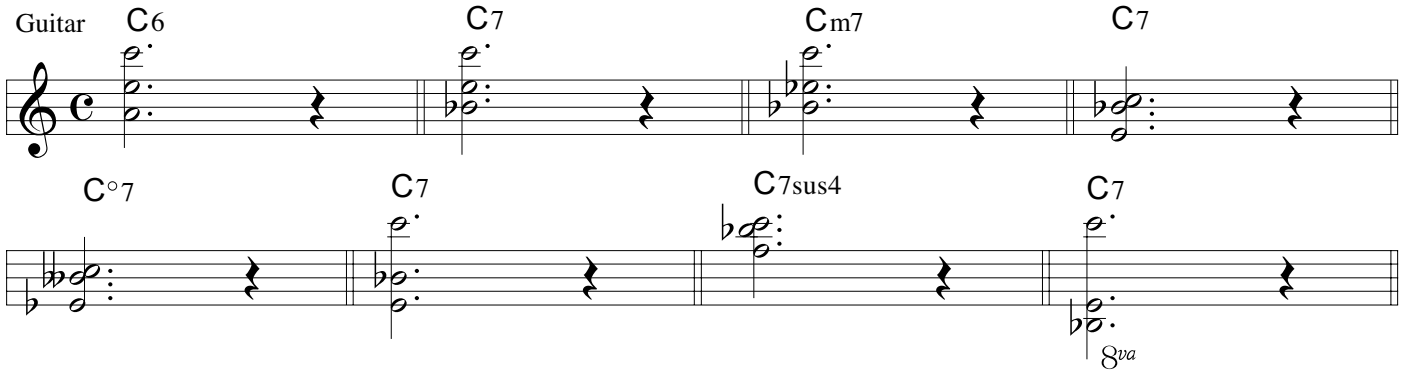
3. If the melody note is the Root or 9th, the strongest voicings of this type are:

R or 9
7 or 6
3 or 4
and:
R or 9
3 or 4
7 or 6

Don't worry too much about not having the root in the bass when you're playing solo with 3-note voicings. There's often not much you can do about that, unless you go to a 4-note (or 5 or 6-note) voicing.



4. If the melody note is the 5th, 11th, or 13, the strongest voicings of this type are:

11 or 5 or 13
7 or 6
3 or 4
and:
11 or 5 or 13
3 or 4
7 or 6

Again: Don't worry too much about not having the root in the bass when you're playing solo with 3-note voicings. There's often not much you can do about that, unless you go to a 4-note (or 5 or 6-note) voicing.

5. It is rare to omit the 3rd or 7th from a 3-note voicing of a 7th-chord, but sometimes it can work nicely.

To do this with control, in my opinion, one should understand the phenomenon of acoustical roots. I learned about this in Gordon Delamont's book, Modern Harmonic Technique, Volume 1.

Okay. I'm going to take a whack at explaining it here, even though I should know better....

There is a phenomenon in Nature known as the harmonic overtone series. Most vibrating bodies, that vibrate at a recognisable pitch, vibrate not only at their fundamental frequency but also at exact multiples of the fundamental frequency. The relative volumes of the audible overtones create the timbre of the instrument.

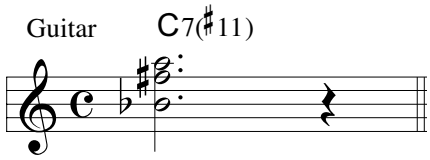
Here is the harmonic OTS of the note A, with fundamental at 110 vibrations per second, up to the 8th "partial":
1 - A 110, 2 - A 220, 3 - E 330, 4 - A 440, 5 - C♯ 550, 6 - E 660, 7 - G 770, 8 - A 880.
Notice how all the octave doubles are exactly twice the frequency of the lower octave.
Notice that the first new note to appear in the series (i.e. something other than A) is E, at the 3rd partial.
Notice how the next new note occurs at the 5th partial, as C♯.
Notice that these 3 notes, A C♯ and E, are the notes that form an A major triad.
A 110 and A 220 are at a frequency ratio of 2:1. Any two notes an octave apart are at a frequency ration of 2:1.
A 220 and E 330 are at a frequency ratio of 3:2. Any two notes a P5th apart are at a freq ratio of 3:2.
A 440 and C♯ 550 are at a freq ratio of 5:4. The maj 3rd interval is a 5:4 freq ratio.
C♯ 550 and E 660 are at a freq ratio of 6:5. The min 3rd interval is a 6:5 freq ratio.
[Note: Ignore, for the moment, that in the 12 tone equal temperament tuning system, these intervals are not at these exact freq ratios. Remember that a 12TET E is really vibrating at 329.628vps, not exactly 330vps. In

12TET, C♯ is 554.365vps, not exactly 550vps. We still tend to hear 12TET intervals as being representative of their OTS equivalents, most of the time.]
The acoustical root of an interval with a freq ratio of 6:4 (or 3:2) is the tone on 1. Eg. The ac rt of the interval A - E, is a low A, one octave below the A in the interval. (P5ths are @ 3:2 or 6:4.)
The acoustical root of an interval with a freq ratio of 5:4 is the tone on 1. Eg. The ac rt of A - C♯ is a low A, 2 octaves below the A in the interval. (Maj 3rds are @ 5:4.)
The acoustical root of an interval with a freq ratio of 6:5 is the tone on 1. Eg. The ac rt of C♯ - E is a low A, 2 octaves plus a maj 3rd below the C♯ in the interval. (Min 3rds are @ 6:5)
So, a close-voiced major triad involves the freq ratio - 6:5:4.

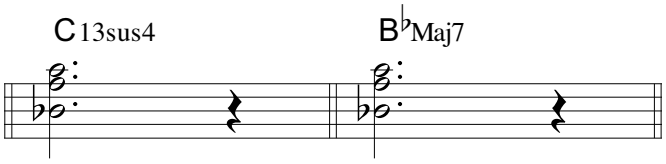
The major triad is unique in the world of chords because no matter what inversion or voicing of a major triad, *all* the intervals involved will always imply the same fundamental tone. I.e. *All* the intervals in *any* voicing of a major triad have the same acoustical root. Major triads are the only chord with 3 notes or more that have this quality, unambiguously, all the time. (But dom7 chords come close too.)
A 440 C♯ 550 E 330 is 6:5:4 - ac rt (aka "1") is A 110.
A 220 E 330 C♯ 550 is 5:3:2 - ac rt (aka "1") is A 110.
C♯ 550 E 660 A 880 is 8:6:5 - ac rt (aka "1") is A 110.
C♯ 550 A 880 E 1320 is 12:8:5 - ac rt (aka "1") is A 110.
E 330 A 440 C♯ 550 is 5:4:3 - ac rt (aka "1") is A 110.
E 330 C♯ 550 A 880 is 8:5:3 - ac rt (aka "1") is A 110.

Contrast this with the intervals in a minor triad...
The intervals that comprise a close-voiced minor triad are: the min 3rd, the P5th, and the maj 3rd (between the chord's ♭3 and 5).
Min 3rds have a freq ratio of 6:5.
P5ths have a freq ratio of 3:2.
Maj 3rds have a freq ratio of 5:4.
Examining the tones in a close-voiced Am triad, we will see that its component intervals all have different acoustical roots:
The ac rt of the interval A - C (min 3rds are @ 6:5) is actually F. (I.e. It is in the lowest region of the overtone series of F, that the min 3rd formed by A and C first appears. A is the 5th partial of F. C is the 6th partial of F.)
The ac rt of the interval A - E (P5ths are @ 3:2, 6:4, etc.) is A.
The ac rt of the interval C - E (maj 3rds are @ 5:4) is actually C.
The only reason we experience the root of the entire chord as being on A, is because of the harmonic persuasiveness of the P5th interval which has the simplest freq ratio (3:2) with the lowest partial numbers.
INTERVALS WITH SIMPLE FREQUENCY RATIOS (i.e. low partial numbers), ESPECIALLY P5THS, ALWAYS HAVE THE STRONGEST FEELING OF ROOT.
We actually experience a root-position close-voiced minor triad as having the same freq ratio as a root-position close-voiced major triad (6:5:4), but with the 5th partial being somewhat distorted.
I.e. It appears that our ears, when presented with several pitches sounding simultaneously in a chord, attempt to assign a common fundamental to the overall structure.
Some chords, like major triads, have a very strong root feeling. Some chords, depending on the intervals involved, have little or no root feeling, or a very ambiguous feeling of root.
[Note: When I want to denote an altered partial I'll use an asterisk next to the partial number. Eg. 6:5*:4.]

So, when voicing chords and trying to determine which omissions will work better than others, it's good to know how all the intervals present in the voicing will affect the feeling of root. Sometimes, we can get away with omitting 3rds and 7ths without disturbing things too much, because the chord quality is implied so strongly by the acoustical roots of the intervals that *are* present. For now, you should probably just experiment randomly with exotic omissions and see what the results sound like to you. You're either going to like the results, and find them useful, or not.
Again, for a full understanding of acoustical roots please see Gordon Delamont's book, Modern Harmonic Technique, Volume 1.

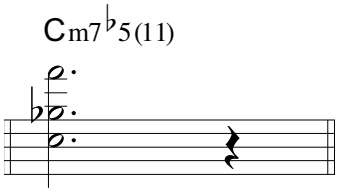


The acoustical root of these intervals is C. These tones will be heard as partials 13, 11 and 7. The ear fills in the missing partials and the acoustical root.

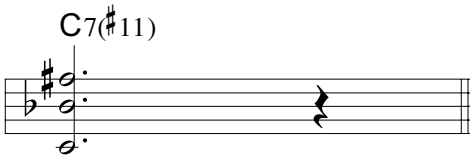


The acoustical root of these intervals is B♭. When this voicing is played as written, the partial numbers are 7*, 6, and 4. Note: On maj7 chords, the major 7th interval is heard as an altered 7th partial.

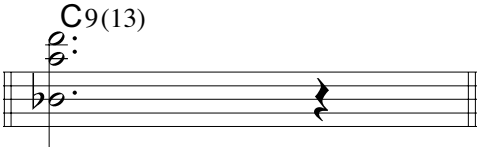
When playing this voicing with a bass player, and he plays a low C, these tones will be heard as if C were the root with the partial numbers 13, 11* and 7. The perfect 11th, when used as a tension, is considered to be an altered 11th partial. The 11th found in the OTS is actually a ♯11.



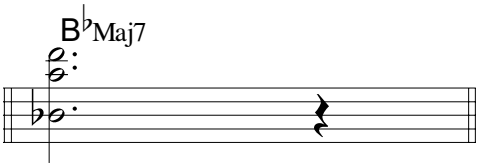
Min7♭5 chords are chords that do not contain their own acoustical root. The acoustical root of Cm7♭5 is actually A♭. The intervals in the above chord will be heard as having the following partial numbers: 13, 7 and 5 with A♭ as the acoustical root. But if played in a context where Cm7♭5 is expected, the above voicing will serve that function well.



Partial numbers 11, 7, and 3, of C.

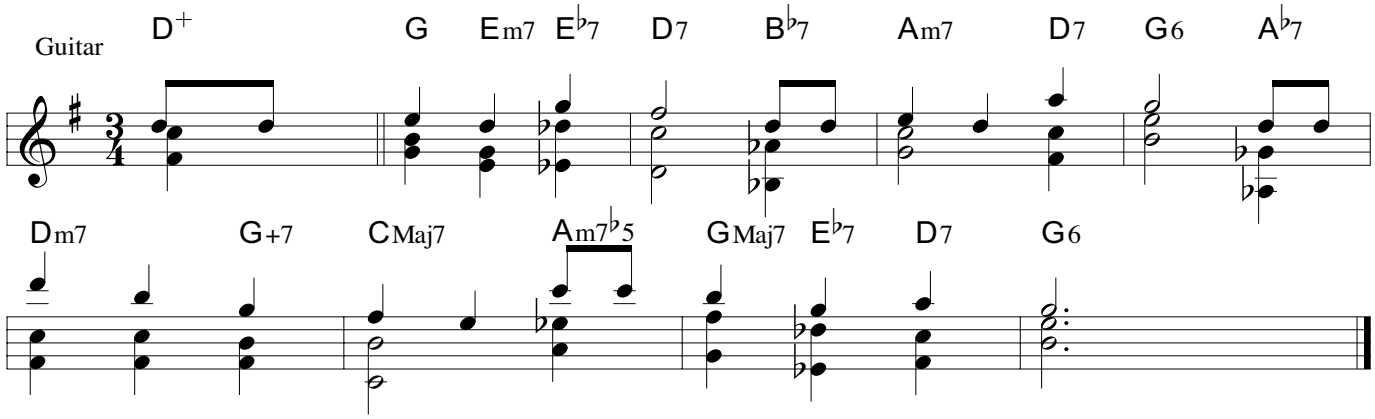


These tones will be heard as partial numbers 18, 13, and 7 when the bass player plays a low C. Otherwise their acoustical root is B♭ as below:



Partial numbers 10, 7*, and 4.

Here's our old favorite, with 3-note shell-based voicings:



• Attempt to harmonize several tunes using the above mentioned techniques.

Here are some tricks/tips I've learned about unusual omissions and some voicing ideas that are governed largely by the phenomenon of frequency ratios and acoustical roots.

1. It is next to impossible to get the ear to hear the intended root of any chord-type that has a ♭3 (eg. min, min7, min(maj7), min6, dim, min7♭5, dim7, etc.), if the ♭3 is in the bass.
You may have noticed that 1st inversion min7 chords almost always sound like the bass note is the root. Eg. Am7/C always sounds like C6. This is because the maj 3rd (C-E), and P5th (C-G), sway the ear that C is the root.
So, any time you're playing without a bass player, and you're on a chord that has a ♭3, make sure you don't play any 1st inversion voicings, unless you don't mind that ♭3 sounding like it's actually the root.
[With the 5th or the 7th in the bass, the ear can often go either way, hearing either the intended note as the root, or the ♭3 as the root. I.e. They are often harmonically ambiguous.]

2. A voicing of any chord-type that normally has ♭3, in which the ♭3 has been omitted, often runs the risk of sounding like a chord with a maj 3rd, unless the chord in question is a diatonic chord in the key-of-the-moment that normally has a ♭3 (Eg. Im - in min keys, IIm, IIdim - in min keys, IIIm, IVm - in min keys, VIm, VIIdim).
Eg. If you're coming from the key of C major, and the music suddenly calls for a Gm7 chord - by omitting the B♭ from your chord voicing you run the risk that your listeners will hear this as G7, rather than Gm7.
This is because in the key of C major we expect to hear chords with B♮ in them, not B♭.
It is also because the OTS implied by the 3 other chord-tones of G7 (G D F, ac rt is G) has a B♮ in it.
Eg. If you're in the key of C and the music calls for an Em7 chord - by omitting the G♮ from your voicing you probably won't affect things much at all, because in this key we expect the chord built on E to have a G♮ in it.
Eg. If you're in the key of C minor and the music calls for a Dm7♭5 chord - by omitting F♮ from your voicing you probably won't affect things all that much, because F♮ is the expected version of F in this key.

3. Many voicings of maj7 chords and voicings of dom7 chords that are functioning as V7 will be fine if the 3rd is omitted, as long as the root 5th and 7th are still present. This is because the maj 3rd will be implied by the OTS that the remaining chord-tones are governed by.
But this may not hold true for voicings of secondary V7 chords (Eg. V7/IIm), because the ear may fill-in the diatonic version of the note found a scale-wise 3rd above the root, which may be a ♭3 above the root.
It should hold true for most tritone substitute dominant chords (Eg. SubV7/IIm) though.
Omission of the ♮3 often works well for maj7♭5, maj7♯5, and most dom7♭5 and dom7♯5 chords (functioning as V7 or not) too.
Oftentimes, even the root can be omitted without too much trouble from the above-mentioned dom7 chords.

4. When playing 4-note voicings of 7th chords (which is the norm btw); when you omit a note, as described above, it frees you up to add a suitable colour tone (9, 11, or 13).
Caution: If the 7th is on the bottom of the voicing, and it is too low, things may sound muddy, or too ambiguous - as if the 7th is the root. ♭9 intervals formed between the ♮7 and the root (when the 7th of a maj7 chord-type is voiced below the root) are normally avoided. But try them anyway. You might find some uses for these sounds.
Also... If the colour tone is added too low in the voicing, it may sound muddy, or it may even start feeling like it's the root.
Examples:
• 1 5 7 9, or 1 7 5 9, or 5 1 7 9, etc. might be suitable voicings for Imaj7(9) or IVmaj7(9).
7 5 1 9 has a ♭9 interval between 7 and 1, but it's not too bad a sound, unless you play it too low.
9 1 5 7 (or 9 5 1 7) would only be suitable if a bass player was playing the root below the 9th, and if the voicing wasn't too low to begin with.
Try several other permutations of these intervals too.
• 1 5 ♭7 9, or 1 ♭7 5 9, 5 1 ♭7 9, or 5 1 9 ♭7 etc. might be suitable voicings for IIm7(9) or VIm7(9), or V7(9).
♭7 9 5 1, or ♭7 1 5 9 might work, if not played too low.
9 5 ♭7 1 can be cool if not played too low. It works better with a bass player playing the root.
Try several other permutations of these intervals too.
• 1 5 ♭7 ♭9, etc., in various permutations, might make for suitable voicings of V7(♭9).
• 1 ♭5 ♭7 9, etc., in various permutations, might make for suitable voicings of VIm7♭5(9) - in min keys.
• 1 ♭5 𝄫7 9 etc., in various permutations, might make for suitable voicings of dim7(9).

Etc.
• 1 5 7 ♯11, etc., in various permutations, might make for suitable voicings of maj7(♯11).
• 1 5 ♭7 11, etc., in various permutations, might make for suitable voicings of min7(11).
• 1 5 ♭7 ♯11 etc., in various permutations, might make for suitable voicings of dom7(♯11).
• 1 ♭5 ♭7 11 etc., in various permutations, might make for suitable voicings of VIIm7♭5(11), or IIm7♭5(11) - in min keys.
Etc.
• 1 5 7 13, etc., in various permutations, might make for suitable voicings of maj7(13).
• 1 5 ♭7 13, etc., in various permutations, might make for suitable voicings of V7(13), or IIm7(13).
• 1 5 ♭7 ♭13, etc., in various permutations, might make for suitable voicings of V7(♭13) - in minor keys.
• 1 ♭5 ♭7 ♭13, etc., in various permutations, might make for suitable voicings of IIm7♭5(♭13).
Etc.
5. Omitting the 7th from any chord that normally has a maj 7th will change the quality of the chord somewhat, but will probably not affect the chord's harmonic function within a key.

Omitting the 7th from any dom7 chord will change the quality of the chord, and will drastically affect its harmonic function. But this may be overridden sometimes if some upper extensions (9, 11, or 13) are also present.
When the intervals of a chord voicing have a strong acoustical root suggestion, due to simple freq ratios in the lower regions of the voicing, the presence of any upper partials as well will tend to make the ear fill in any missing partials, like the 7th partial.
Remember that the 7th partial of the OTS is much closer to a min 7th interval (above the 4th partial) than it is to a maj 7th. Maj 7th chord degrees are analysed as being an altered 7th partial. So, if you want your listener to hear a chord with a maj 7th in it, you need to have that note actually sounding. But in chords that have a ♭7, it can sometimes be omitted, depending on how the other intervals in the voicing happen to stack up.
Omitting the ♭7 from chord-types that also have ♭3, will change the chord quality somewhat, but probably will not affect its harmonic function.
On chord-types with ♭3, it should usually be present as well, for this to work.
On dom7 chords, with more than 1 extension we can sometimes get away with omitting *both* the 3rd and the 7th of the chord, especially if the bottom part of the voicing has a harmonically strong P5th (or P12th) interval above the root.
Chord voicings where we omit the 7th but not the 3rd, will work out to be, essentially, the same thing as a triad plus 1 tension. In triads with tensions added, the ear tends to fill in a ♭7 unless the chord is functioning in the key in such a way that the normal diatonic 7th on that chord is a maj 7th.
Examples:
• 1 3 5 9 - This sounds fine as a voicing for a V7(9) chord. The ♭7 is hardly missed at all. On V chords we expect any 7ths to be ♭7s anyway.
But the ♭7 is present by implication of the intervals themselves. 9:6:5:4 is the freq ratio of this intervals in this voicing. The 7th partial, although not sounding in the actual chord, is felt to be there by implication.
This voicing can also work as a voicing of Imaj7(9), because on a I chord, the ear expects the 7th to be a maj 7th, not ♭7. If you want your listener to hear a I9 chord you'll need to include the ♭7 in the voicing.
• 1 3 5 ♭9 - This sounds fine as a voicing for a V7♭9 chord. The ♭7 is hardly missed at all. It is there by implication. 9*:6:5:4 is the freq ratio of this intervals in this voicing. (Note the altered 9th partial.) The 7th partial, although not sounding in the actual chord, is felt to be there by implication.
You might be asking why this couldn't be heard as a maj7(♭9) chord, and the answer is that it probably could, except that maj7(♭9) chords are pretty much never used in Tonal music because they sound more than a little bit harsh. They would be especially jarring on I.
[Note: There is at least one somewhat common voicing of a maj7 chord with the equivalent of ♭9 added to it: 1 3 5 7 9 ♯11 13 ♭16. But this sound is balanced by the repeating intervallic pattern (maj 3rd - min 3rd) of its chord-tones and if there are too many omissions that balancing effect is lost.]
• 1 5 9 ♯11 - This works great as either a IVmaj7(9,♯11) chord or as a dom7(9,♯11) voicing [try it as ♭VII7(9,♯11)], even though both the 3rd and the 7th are omitted.
• 1 5 ♭9 ♯11 - This could only be a dom7(♭9,♯11) chord.
• 1 5 ♭3 11 - Although the ♭7 is absent and this is really just a min(add11) chord, the overall sound of the chord is still that of a min7(11) chord. The ear fills in the missing 7th partial when an upper partial is present.
Etc., Etc., Etc.

You may not know if a chord voicing involving unusual omissions will work, until you try it. So try a bunch of them. They'll either work for you, or they won't.