HOW TO MAKE HARMONICS LOUDER ON THE CLASSICAL GUITAR

By Douglas Niedt

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Here's How to Make Harmonics Louder on the Classical Guitar: A Quick Summary

Step #1: Play everything else around the harmonics quietly!

Play any notes before, after, or with the harmonics quietly so the harmonics stand out.

Step #2: Use fresh strings.

Harmonics are overtones. As strings age, they lose their ability to produce overtones.

Step #3: Pluck natural harmonics with the fingers (not the thumb).

Play with the fingers flesh/nail together, on the left side of the nail with FREE STROKE.

Step #4: Pluck artificial harmonics with the "a" finger, not the thumb.

This rule applies to artificial harmonics on both the treble strings AND the bass strings.

Step #5: Pluck natural harmonics about halfway between the soundhole and the bridge.

Natural harmonics always sound best plucked there.

Step #6: Don't overplay natural or artificial harmonics.

Too strong of an attack only produces more percussive noise.

Step #7: The natural harmonics at the 4th/9th frets and the 7th/19th frets are the same.

On some guitars, one will produce better harmonics than the other. Test them out.

Scroll down to watch detailed video.

DOUG'S DEEP DIVE (all the details)

What is the best way to pluck a natural harmonic? What is the best way to pluck an artificial harmonic? Should you use rest stroke, free stroke, play straight onto the nail, left side of the nail? Should you use the thumb? If you use the thumb, should you use flesh/nail or just the flesh?

To answer those questions, I ran seven hours of tests with a live test subject. Then, I repeated the tests, recording them in my recording studio.

The Test

It is essential to know that you, the person playing the guitar, do not hear the harmonics you are playing the same way as your listeners hear them. Because of your proximity to the guitar, you hear things differently than your listeners. Therefore, you are not the best judge of which techniques work to improve the volume of your harmonics. It is similar to the difference between how you think your speaking voice sounds compared to a recording of your voice that tells you how it really sounds. Therefore, I used a person with exceptional hearing as my audience to judge which tricks or hacks worked the best to play louder harmonics.

My Test Subject

My test subject was a female student with exceptional hearing. I often tell her she has "dog ears." She easily hears things I struggle to hear and has a fantastic ability to hear both very high and very low frequencies. She is also a very sensitive musician and is an excellent judge of tone quality. Like Mozart, she has an aversion to loud and piercing sounds (when he was young, Mozart fainted at the sound of a trumpet).

The point is, I had someone whose hearing and feedback I could trust without reservation.

NATURAL HARMONICS

The Givens

1. I ran the tests on my 1973 Ramirez (Brazilian rosewood back and sides, cedar top) with fresh Savarez 540J strings.
2. I conducted the test in a large room, with the test subject seated 10 feet away from me. Someday, I would like to rerun the test in a concert hall.
3. I played the natural harmonics halfway between the soundhole and bridge. No matter what else changes, this always ensures maximum volume and clarity for natural harmonics.
4. I also recorded the tests. I was curious if it would be necessary to use different techniques for the recording studio than on the concert stage. For you audio geeks out there, I used two matched Neumann 170-R microphones going into an Avalon AD 2022 Pure Class A preamplifier and then into a Hilo Lynz Reference A/D D/A converter system. I listened to the tests through vintage JBL LSR-6823P reference monitors and Sennheiser HD800 headphones.

FOR NATURAL HARMONICS, I TESTED THESE VARIABLES ON BOTH THE TREBLE AND BASS STRINGS

1. REST STROKE with finger
    A. Flesh/Nail Left Side
    B. Flesh/Nail Straight On
2. FREE STROKE with finger
    A. Flesh/Nail Left Side
    B. Flesh/Nail Straight On
3. REST STROKE with thumb
    A. Flesh/Nail
    B. Flesh Only
4. FREE STROKE with thumb
    A. Flesh/Nail
    B. Flesh Only
5. I tested each variable from low to high volume by gradually increasing the force of my finger or thumb strokes. I was careful not to change how I plucked the string. On free stroke, I was especially careful not to pull the string outward as I increased the volume.

THE RESULTS FOR NATURAL HARMONICS

I know you're on pins and needles.

Left side of the nail vs. playing straight onto the nail:

And the winner is: Left Side of the Nail.

The natural harmonics always sounded louder, fuller, and clearer played flesh/nail together on the left side of the nail instead of straight on. It didn't matter whether I played rest stroke or free stroke. It didn't matter if I played the treble strings or the bass strings. The straight-on attack produced a pronounced string scrape on the wound strings, which obscured the volume and clarity of the harmonic. It also resulted in a thinner tone overall.

Note: I minimized the amount of string scrape when I used the left side of my nail. As I plucked the string, I tried to keep the fingernail in the groove of one winding instead of scraping across several windings. Watch the video for more details.

Fingers free stroke vs. rest stroke:

And the winner is: Fingers Free Stroke.

The natural harmonics sounded clearer, more transparent, and louder with fingers FREE STROKE rather than fingers rest stroke. Fingers free stroke sounded better than rest stroke on both the treble strings and the bass strings! Rest stroke produced a pronounced percussive thump, and the harmonics were a little dull by comparison. The free stroke produced a harmonic with purer harmonic clarity and a more open sound, giving the impression of being louder and filling the room.

Thumb rest stroke flesh/nail vs. flesh only:

And the winner is: Thumb Rest Stroke Flesh/Nail

The natural harmonics sounded about the same volume, whether plucked rest stroke by the thumb with flesh/nail or rest stroke with the thumb all flesh. Flesh/nail had a slight advantage in clarity. All flesh produced a more prominent percussive thump, but it is a distinctive and attractive tone color and can be useful in some situations.

Thumb Free Stroke vs. Rest Stroke:

And the winner is: Thumb Free Stroke

The result was the same as that of the fingers, but the differences were more subtle. Thumb free stroke produced more transparent natural harmonics with less percussive noise. Rest stroke produced a pronounced pop or thump which detracted from the harmonic.

RESULTS OF THE SEMI-FINALS

So, those tests give us two finalists:

A. The FINGERS free stroke played with the flesh/nail on the left side of the fingernail.

B. The THUMB free stroke played with the flesh/nail.

Finally, the BIG WINNER—Fingers free stroke vs. thumb free stroke:

And the grand prize goes to:

Fingers Free Stroke!

The fingers playing free stroke on the left side of the nails produced clearer, louder, more transparent natural harmonics on the treble AND wound bass strings! The fingers produced less percussive thump allowing the actual harmonics to be heard more clearly.

Yes, string scraping was present on the wound bass strings. But it was less objectionable and interfered less with the sound of the harmonic than the percussive thumps of the thumb. I minimized the amount of string scrape by trying to keep the nail in the groove of one winding as it plucked the string instead of scraping across several windings. See the video.

The results were the same on each string, albeit with very slight differences in percussive noise and harmonic clarity.

Finally, the results were the same for the recorded tests and the live test subject. So, playing natural harmonics with the fingers free stroke will sound best both in public performance and in the recording studio.

Does plucking more forcefully make a natural harmonic louder?

Plucking natural harmonics with more force will make them louder, but only up to a certain point. If you pluck a given harmonic quietly and gradually increase the power of your pluck, you will notice that when you reach a certain level of force, the volume of the percussive plucking noise begins to increase more than the volume of the harmonic itself.

ARTIFICIAL HARMONICS

The "givens" were the same except for number 3. Playing halfway between the soundhole and the bridge does not apply to artificial harmonics.

I TESTED THESE VARIABLES ON BOTH THE TREBLE AND BASS STRINGS

We don't use rest stroke to play artificial harmonics, so I played the tests with free stroke only.

1. The "a" finger on the treble strings.
2. The thumb on the treble strings.
3. The "a" finger on the bass strings.
4. The thumb on the bass strings.

THE RESULTS FOR ARTIFICIAL HARMONICS

And the winner is: The "a" finger!

The "a" finger won hands down on both the treble AND bass strings. The artificial harmonics plucked with the finger were louder, fuller, clearer, and more transparent than those plucked with the thumb.

This result surprised me. I know that the thumb produces less scraping noise on the wound basses than the "a" finger. But the string scrape of the "a" finger on the wound strings is less detrimental to the quality and volume of the perceived harmonic than the percussive thump of the thumb. The thumb thump detracts from and even slightly covers up the sound of the actual harmonic. Plus, the harmonics plucked with the thumb were a little duller than those plucked by the "a" finger.

The results were the same on each string, albeit with very slight differences in percussive noise and harmonic clarity.

And again, the results were the same for the recorded tests and the live test subject. So, executing artificial harmonics with the "a" finger on ALL the strings will sound best both in public performance and in the recording studio.

How Forcefully Can I Pluck an Artificial Harmonic?

You can't! Plucking harder with the "a" finger only produces more percussive noise. It does not make the actual harmonic louder. The best way to make an artificial harmonic sound loud is to use the correct method of execution and always pluck the string with the "a" finger, not the thumb.

CAVEATS

These tests were made with Douglas Niedt playing a 1973 Ramirez on fresh Savarez 540-J strings. The results might vary from player to player, guitar to guitar, and string set to string set. But all in all, I believe that if the player is using the correct method of execution to play natural and artificial harmonics, the conclusions are reliable and useful for anyone.

THE GRAND FINALE: SEVEN SIMPLE HACKS AND TIPS TO MAKE YOUR HARMONICS SOUND LOUDER

1. Use fresh strings. Harmonics are overtones. As strings age, they lose their ability to produce overtones. The loss of overtones occurs with both the treble and bass strings. You will also find that certain sets of strings produce louder and more transparent harmonics than other sets on your particular guitar. Experiment to find the best set of strings for your instrument.

2. Pluck natural harmonics with the fingers (not the thumb), flesh/nail together, on the left side of the nail with FREE STROKE. This rule applies to natural harmonics on both the treble strings AND the bass strings.

3. Pluck artificial harmonics with the "a" finger, not the thumb. This rule applies to artificial harmonics on both the treble strings AND the bass strings.

4. Always pluck natural harmonics approximately halfway between the soundhole and the bridge. They always sound louder and clearer plucked there rather than at the bottom of the soundhole.

5. On both natural and artificial harmonics, don't overplay them. Too strong of an attack only produces more percussive noise, and covers up the clarity and perceived volume of the harmonic itself.

6. The natural harmonics at the 4th fret and 9th fret are the same. The natural harmonics at the 7th and 19th fret are also the same. On some guitars, one will produce better harmonics than the other. Test them out.

Plus: Some guitars produce clearer and louder harmonics than others. Unfortunately for your wallet, expensive guitars usually produce better harmonics.

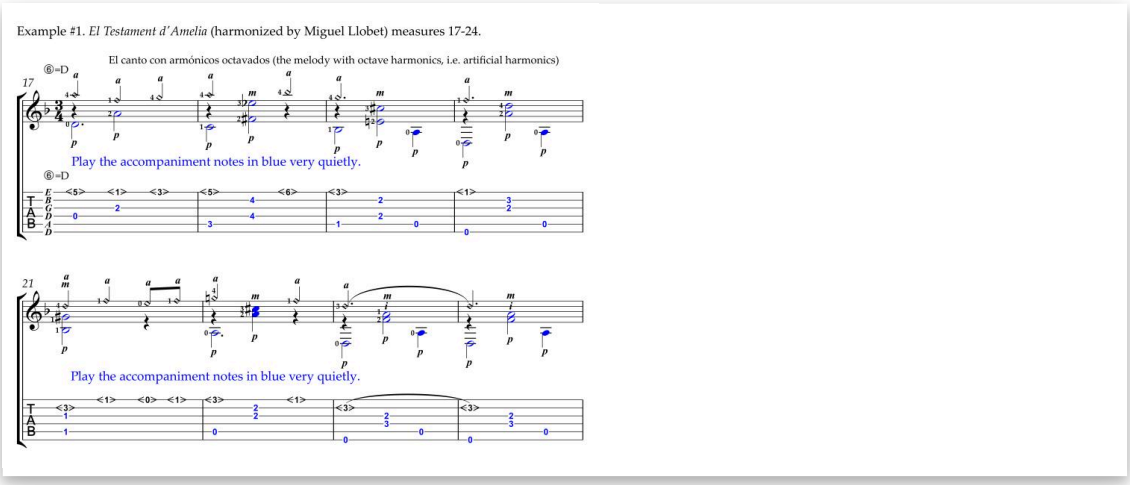
A humorous note: Histrionics don't work. Grand gestures such as dramatically lifting the hand away from the strings after plucking a harmonic do nothing to improve the volume or quality of the harmonic. And guys, wearing an ascot and making those dramatic gestures only makes it worse.

Tip #7: BUT THE FINAL, OBVIOUS, AND OFTEN #1 BEST SOLUTION TO MAKING YOUR HARMONICS LOUDER?

Play everything else around the harmonics quietly!!!

Remember, overplaying harmonics only results in more percussive noise, not louder harmonics. Therefore, the solution is to play any notes before, after, or with the harmonics very quietly to permit the harmonics to stand out.

Look at this example where the melody is in artificial harmonics. The passage is from *El Testament d'Amelia*, harmonized by Miguel Llobet from his *Canciones Populares Catalanas*. Example #1:



It is essential to play the non-harmonic notes I have marked in blue very quietly. To do that, practice this type of passage very slowly. Hesitate before playing any non-harmonic notes and intervals so you can intentionally play them VERY quietly. Exaggeration is always a useful practice technique. Eventually, you can reduce the length of the hesitations until they disappear. Then, the harmonics will remain front and center. All the other notes will be in the background supporting, but not detracting from the melody in harmonics.

Next, in the instances where the thumb plays an accompaniment note simultaneously with an artificial harmonic, make the thumb play its note very quietly. That is more difficult to do and will take several hours of practice over 3-7 days to master. Watch the video for tips on how to practice that technique.

Watch me demonstrate how you can play your harmonics louder in this spellbinding video. I think this video is unquestionably Oscar material. Be sure to watch for me on the red carpet at the Academy Awards.

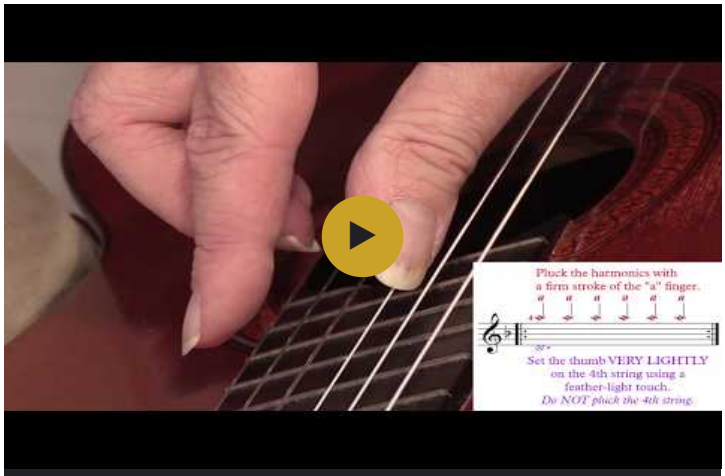
★ Underneath the video is a list of the topics I cover and the timecode for each item.

★ Also, if you prefer, you can read the transcript of the video (below). You can also see the printed musical examples I use when I discuss how to make the harmonics louder on *El Testament d'Amelia*.

★ You can turn on closed captioning ("CC" at bottom right) if you find it is hard to understand my speech.

★ BE SURE TO WATCH ON FULL SCREEN. Click on the icon at the bottom on the far right:

How to Make Your Harmonics Louder on the Classical Guitar



Topics and time codes in the Video

- Tip #1: Use Fresh Strings. 00:08
- Tip #2: Pluck natural harmonics with the fingers. 00:48
- Tip #3: Pluck artificial harmonics with the "a" finger, not the thumb. 05:34
- Tip #4: Always pluck natural harmonics approximately halfway between the bottom of the soundhole and the bridge. 07:14
- Tip #5: Don't overplay natural or artificial harmonics. 07:41
- Tip #6: The natural harmonics at the fourth fret and the 9th fret are the same. And, the natural harmonics at the 7th fret and the 19th fret are also the same. Test them on your guitar to see which sounds the clearest. 09:28
- Tip #7: Play everything else around the harmonics quietly.11:13
- **HOW TO MASTER THE BALANCE BETWEEN THE HARMONICS AND THE ACCOMPANIMENT.** 11:48

TRANSCRIPT OF THE VIDEO (with written musical examples):

Do your harmonics sound a little weak? Here is how to play louder harmonics on the classical guitar.

Tip #1: (00:08)

Use fresh strings. Harmonics are overtones. As strings age, they lose their ability to produce overtones. The loss of overtones occurs with both the treble and bass strings. You will also find that certain sets of strings produce louder and more transparent harmonics than other sets on your particular guitar. Experiment to find the best set of strings for your instrument.

Tip #2: (00:48)

Pluck natural harmonics with the fingers (not the thumb), flesh/nail together, on the left side of the nail with FREE STROKE. This rule applies to natural harmonics on both the treble strings AND the bass strings.

I ran seven hours of tests with both a live test subject and in the recording studio. It was very clear in all the tests that playing natural harmonics with the fingers free stroke with flesh and nail together, on the left side of the fingernail, produced louder and clearer natural harmonics than any other method. Neither the fingers rest stroke, the thumb rest stroke, thumb free stroke, thumb flesh/nail or thumb all flesh sounded as good. Playing natural harmonics with the fingers free stroke was the clear winner.

I have to admit, I was surprised that using the fingers free stroke sounded better on the wound bass strings.

A major difference was that playing rest stroke with the fingers or the thumb produced a pronounced percussive thump. This thump was distracting to the listener and detrimental to the perception of the actual harmonic. Free stroke produces less percussive noise, allowing the harmonics to ring transparently and fill the room. On the wound basses, the fingers produced some string scraping. But that was less injurious to the clarity of the harmonic than the percussive thumps.

Plus, we can minimize string scrape if we use the correct execution. If I draw the nail across several string windings, I generate an obnoxious string scrape. But, if I set the left side of the nail in the groove between two windings and stay parallel with the groove as I pluck the string, I minimize the scrape. It can be difficult not to cross any windings. But if I cross only two or three windings, which is fairly easy to do, the scrape is minimal. Then, for the listener, the focus is on the harmonic with minimal distraction of string noise. The perception is that the harmonic is loud, clear, and transparent.

So again, on both the treble and bass strings, use the fingers free stroke to pluck natural harmonics. Be sure to use flesh and nail together on the left side of the fingernail.

Now don't go and grab your guitar, play some harmonics with your fingers, then the thumb, and say, "Doug, you're wrong. I think the thumb sounds better."

It is essential to know that you, the person playing the guitar, do not hear the harmonics you are playing the same way as your listeners hear them. Because of your proximity to the guitar, you hear things differently than your listeners. Therefore, you are not the best judge of which techniques work to improve the volume of your harmonics.

It is similar to the difference between how you think your speaking voice sounds compared to a recording of your voice that tells you how it really sounds. Therefore, I used a person with exceptional hearing as my audience to judge which tricks or hacks worked the best to play louder harmonics.

Tip #3: (05:34)

Pluck artificial harmonics with the "a" finger, not the thumb. This rule applies to artificial harmonics on both the treble strings AND the bass strings.

Again, in the seven hours of tests I ran, we discovered that using the thumb produced pronounced percussive thumps. Just like with the natural harmonics, these thumps distracted the listener from hearing the actual artificial harmonics and slightly obscured their clarity. The harmonics also sounded a bit dull.

And again, on the wound bass strings, the finger produced some string scraping. But the minimal scraping detracted less from the harmonic than the thumps produced by the thumb.

Artificial harmonics plucked with the "a" finger, even on the wound bass strings, were clearer, louder, and more transparent than those plucked with the thumb.

Tip #4: (07:14)

Always pluck natural harmonics approximately halfway between the soundhole and the bridge. They always sound louder and clearer plucked there rather than at the bottom of the soundhole.

Tip #5: (07:41)

On both natural and artificial harmonics, don't overplay them. Too strong of an attack only produces more percussive noise, and covers up the clarity and perceived volume of the harmonic itself.

If I play a natural harmonic quietly, and then gradually pluck with more and more force, you can hear what happens. The harmonic sounds louder and louder up until a certain point. Then, all of a sudden, the percussive noise increases, but the volume of the harmonic stays the same. Listen. That is the line you do not want to cross. It will vary according to the string and fret at which the harmonic is located.

The same is true of artificial harmonics, but even more so. Any excessive force will increase noise at the expense of the clarity and transparency of the harmonic. Listen.

Tip #6: (09:28)

The natural harmonics at the 4th fret and 9th fret are the same. The natural harmonics at the 7th and 19th fret are also the same. On some guitars, one fret will produce a better harmonic than the other fret. Test them out to see which sounds best on your guitar. Then, in your repertoire, whenever possible, choose that fret that produces the best harmonic.

Plus: Some guitars produce clearer and louder harmonics than others. Unfortunately for your wallet, expensive guitars usually produce better harmonics.

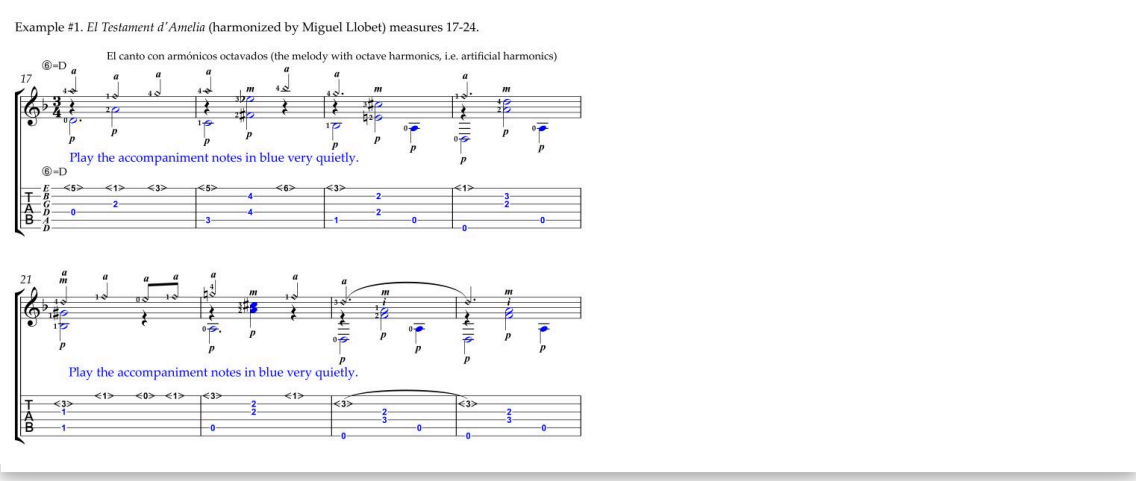
A humorous note: Histrionics don't work. Grand gestures such as dramatically lifting the hand away from the strings after plucking a harmonic do nothing to improve the volume or quality of the harmonic.

THE FINAL, OBVIOUS, AND OFTEN #1 BEST SOLUTION TO MAKING YOUR HARMONICS LOUDER?

Tip #7: (11:13) Play everything else around the harmonics quietly!!!

Remember, overplaying harmonics only results in more percussive noise, not louder harmonics. Therefore, the solution is to play any notes before, after, or with the harmonics very quietly to permit the harmonics to stand out.

Look at this example where the melody is in artificial harmonics. The passage is from *El Testament d'Amelia*, harmonized by Miguel Llobet from his *Canciones Populares Catalanas*. Example #1a:



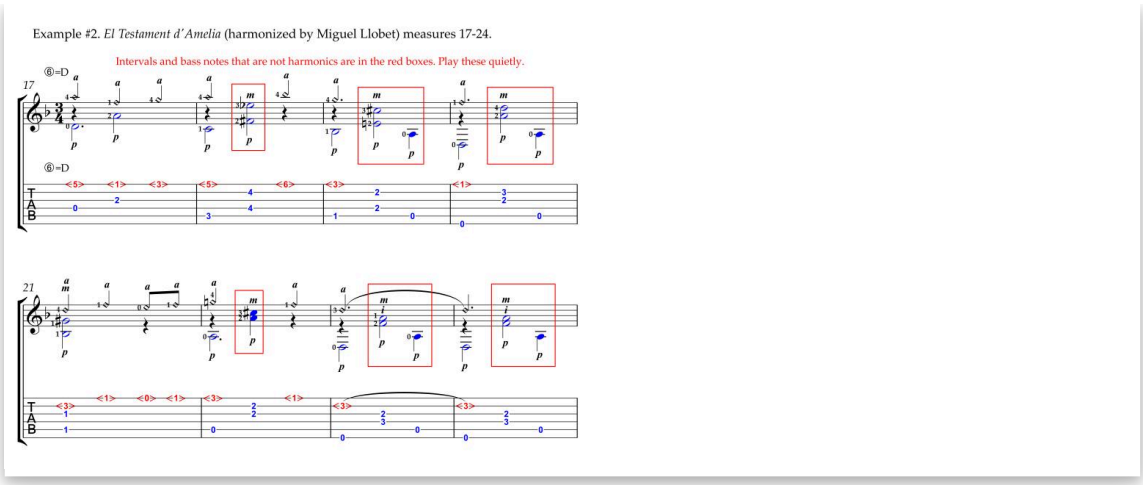
It is essential to play the non-harmonic notes I have marked in blue very quietly.

BUT HOW IN THE WORLD DO YOU DO THAT? (11:48)

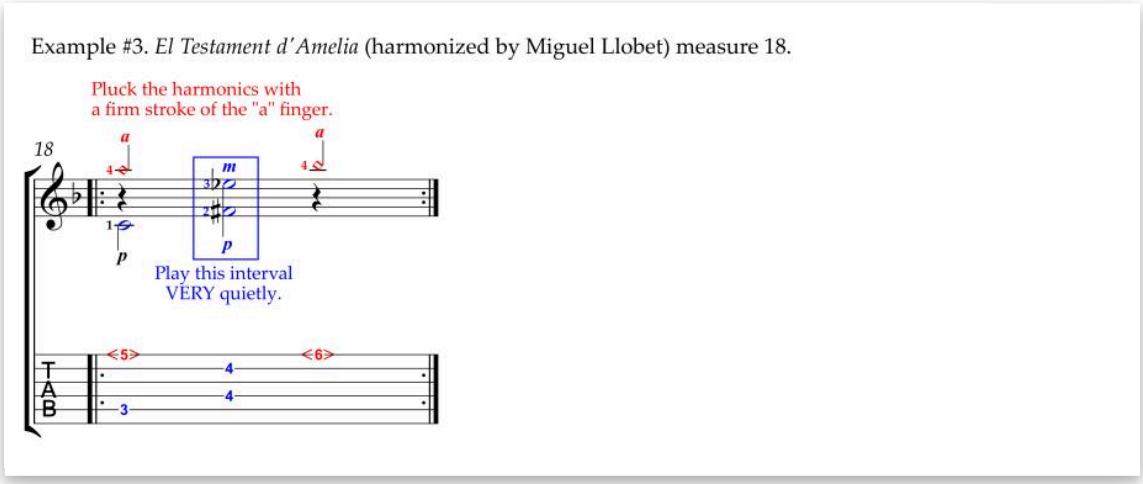
We must solve two problems to achieve the correct balance between the harmonics and the accompaniment.

PROBLEM ONE:

We have a few intervals and single bass notes that are not harmonics. We must teach our right hand to play these intervals and bass notes VERY quietly. Example #2:



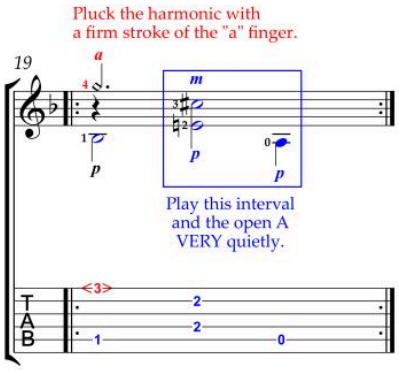
For example, look at measure 18. Example #3:



Play beat one, the harmonic. Then stop and think, "I need to play the next interval very quietly to keep it in the background." Exaggeration is always a useful practice technique. Play the interval VERY quietly. Then, play the next harmonic. Repeat the measure several times, always playing the interval very quietly. Gradually reduce the length of the hesitation before the interval until you are playing the measure rhythmically evenly.

Now, look at measure 19. Example #4:

Example #4. *El Testament d'Amelia* (harmonized by Miguel Llobet) measure 19.



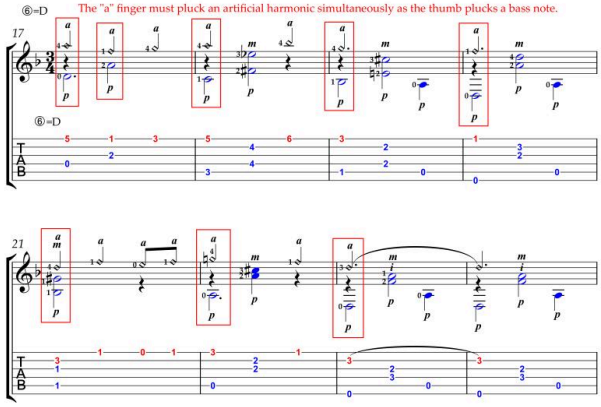
Play beat one, the harmonic. Next, stop and think, "I need to pluck the next interval and the open-A bass note very quietly to keep those notes in the background. Exaggerate. Play the notes very quietly. Repeat the measure several times, always playing the interval and open-A bass note very quietly. Gradually reduce the length of the hesitation before the interval until you are playing the measure rhythmically evenly. Use the same practice strategy on measures 20, 22, and 23.

Now, your harmonics stand out from the accompaniment. The accompaniment notes are supporting but not distracting the listener's ear from the melody in harmonics. PROBLEM #1 SOLVED!

PROBLEM TWO is more complicated to solve.

We have several instances where the "a" finger plucks an artificial harmonic simultaneously as the thumb plucks a bass note. Example #5a:

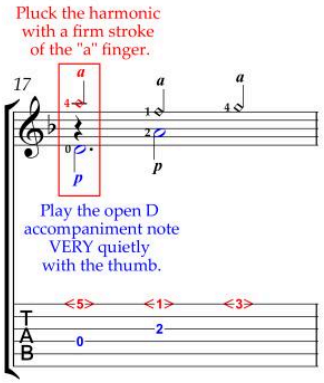
Example #5a. *El Testament d'Amelia* (harmonized by Miguel Llobet) measures 17-24.



We must train the "a" finger to pluck the artificial harmonic firmly, but the thumb to play its note VERY quietly. This technique is challenging to do and will take several hours of practice over 3-7 days to master.

Let's look at the first beat in measure 17. Example #5:

Example #5. *El Testament d'Amelia* (harmonized by Miguel Llobet) measure 17.



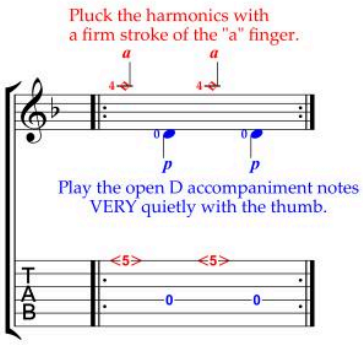
Our goal is to play the open 4th-string D very quietly as we pluck the artificial harmonic above it with a firm stroke.

STEP 1:

First, pluck the artificial harmonic over and over to determine the correct amount of force for the "a" finger to use to produce the clearest-sounding note. Remember, overplaying a harmonic only introduces undesirable percussive noise.

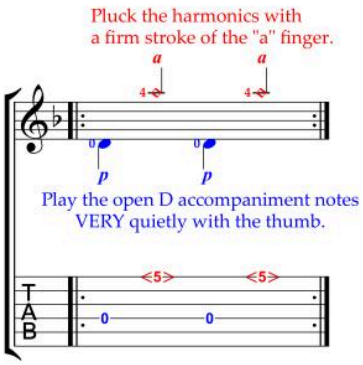
STEP 2:

Play the artificial harmonic, then play the 4th string extremely quietly. Example #6:

Example 6. Play the harmonic first, then the bass note.

Exaggeration is important. Gradually decrease the amount of time between the harmonic and the bass note.

Then reverse. Play the bass note extremely quietly, then the artificial harmonic. Example #7:

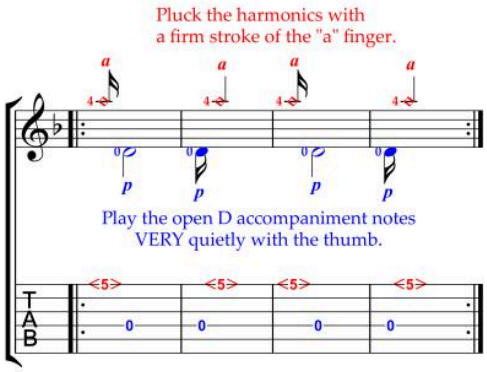
Example 7. Play the bass note first, then the harmonic.



Gradually reduce the amount of time between the bass note and the harmonic.

Finally, alternate back and forth with minimal space between the two notes. Example #8:

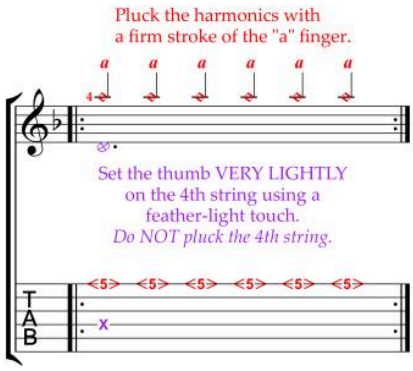
Example 8. Reduce the space between the harmonic and bass note.



STEP 3:

Set the thumb lightly on the 4th string. Continue plucking the artificial harmonic. Example #9:

Example 9. Set the thumb very lightly on the 4th string. Pluck the harmonics.

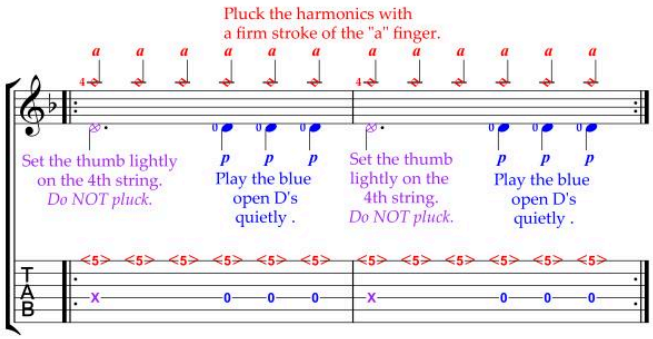


Be sure the thumb is resting on the 4th string with minimal weight. The thumb should not move the string or push it towards the fretboard while it rests on the string.

STEP 4:

Keep the thumb resting lightly on the 4th string. Play three harmonics alone, then play three harmonics simultaneously with the thumb playing its 4th string. Example #10:

Example 10. Set the thumb very lightly on the 4th string. Pluck the harmonics alone.
Then pluck the harmonics with the open D's..



Continue alternating back and forth. Be sure each time the harmonics are played alone, that the thumb is resting with minimal pressure on the 4th string. Is the thumb still playing too loud? Proceed to step 5.

STEP 5:

Same as step 4, but when the thumb plays, tell it not to! You DO want to pluck the string, but sometimes if you tell it not to pluck, it will pluck with reduced force. Repeat 10-20 times. Didn't work? Is the thumb still too loud? Proceed to step 6.

STEP 6:

Same as step 5, but physically lift the thumb away from the 4th string as it plucks. Lift the thumb towards the 6th string as you pluck. The idea is to "pull the rug out from under it." Repeat 10-20 times, gradually lifting the thumb away from the string less and less.

(I end the video by playing the harmonic passage from *El Testament d'Amelia*.)

Frequently Asked Questions

How do I make my harmonics louder?

The easiest way is to play any non-harmonic notes before, after, or with the harmonics very quietly to permit the harmonics to stand out. Learn more about how to make harmonics louder on the classical guitar.

What finger should I use to pluck a natural harmonic?

Pluck natural harmonics with any finger (not the thumb) free stroke. Play flesh and fingernail together, on the left side of the fingernail. Learn more about how to make harmonics louder on the classical guitar.

What finger should I use to pluck an artificial harmonic?

Pluck artificial harmonics with the anular finger (not the thumb) free stroke. Learn more about how to make harmonics louder on the classical guitar.

How can I make my natural harmonics louder?

Pluck natural harmonics approximately halfway between the bridge and the soundhole. Learn more about how to make harmonics louder on the classical guitar.