

FAKING A BAROQUE GUITAR

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Summary:

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I converted a baritone ukulele into an ersatz Baroque guitar. It was a simple modification, and the result is a charming little guitar.

Background:

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I don't know how an electric guitar player like me got interested in Baroque music, but after noodling with "Canarios" on a Stratocaster for a few months, I began wondering what it sounded like on the guitars Gaspar Sanz played. Recordings of Baroque guitar music abound, but the musicians commonly use contemporary classical guitars, which are almost as far removed from the Baroque guitar as is my Strat. Several luthiers build replica Baroque guitars, but they are very expensive, and I couldn't find one locally.

I am only a very amateur luthier. With lots of work and dogged stubbornness, I might be able to scratch-build a playable Baroque guitar replica, but I wasn't sure that my level of interest warranted an elaborate project, so I dithered. Then I met someone on the web who had actually heard a Baroque guitar; he said it sounded more like a modern ukulele than a modern classical guitar, though with a softer, richer sound. That started me thinking about a more modest project -- converting a modern instrument into a Baroque guitar.

I had gotten a Baroque guitar plan from the Guild of American Luthiers. Its light construction, small body, and simple bracing were indeed ukulele-like. A small classical guitar might have made a better starting point, but it is hard to add tuners to a slotted headstock, and I find classical necks awkwardly broad, so a large ukulele was more promising. Ukuleles have four single strings, and a Baroque guitar would have five courses with at least three doubled, which would mean that a ukulele neck might get rather crowded. Fortunately, I have quite small hands, and besides, I play a Strat.

Construction:

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I ordered a Bushman "Cedar-Tone" Baritone ukulele, model 1879B-HG, for \$325. I bought it sight unseen (but from a dealer with a good return policy): I don't know enough about ukuleles to judge one, but a solid cedar top suggested decent tone, and the peghead had room for extra tuners. The instrument was not perfect, but it was reasonably

made -- far better than the cigar-box-like ukes commonly sold as toys -- with ladder bracing, a nice neck, and pleasant tone. It resembled a scaled-down Martin 000, with a 20-inch scale length and spacing between outside strings at the nut of about 1-1/8 inch. It had a classical bridge, not the knot-in-slot style of simpler ukuleles.

I had decided on an eight-string guitar with five courses, the middle three doubled and the others single. They would be tuned like strings one through five of a standard guitar -- A-D-G-B-E from bass up -- with the B strings identical but with the D course, and perhaps the G, having one string an octave above standard tuning.

There was space on each side of the peghead for a tuner between the existing pair, and for another at the peghead end. The spacing wasn't quite right for four-on-a-plate mandolin tuners, and I wasn't sure separate geared tuners would fit. I ended up using ungeared Grover tuning pegs made for ukuleles and mountain dulcimers.

To spare the finish, I drilled through the existing 11/32-inch holes into a hunk of wood to make a jig, drilled pilot holes for new pegs in the jig, and used the jig to drill pilot holes into the peghead from both sides. These met in the middle with no problem, so there was none of the chipping and ragged edges where a drill breaks through. I enlarged the holes from both sides similarly, using a "Unibit" step drill for the final stages. It did not quite reach half way through the peghead, so I used an 11/32-inch drill bit to complete the holes. When I was using it, all wood to be removed at the surfaces had already gone, so the finish was safe.

The peghead was almost too thick for the Grover tuners. I had to replace the 6-32 screws that hold them together and adjust their tension, with screws 1/16-inch longer. Then all was well.

The pegs are a pain, both because they are ungeared and because they are narrowly spaced. Perhaps I will upgrade. On the other hand, the Grovers are light, so the guitar balances far enough aft not to behave like a dippy bird in normal use.

At the bridge, I used the outside holes for the single strings of my modified tuning. The holes for the other new strings were isolated enough so I could ignore the remaining old holes.

To drill new holes without taking the bridge off, I used a length of 3/16-inch dowel with a drill bit in its end, on center-line. To make this tool, I chucked a number 60 drill bit (0.040-inch diameter) in a drill, then with the drill held stationary, and not running, I

twirled the dowel in my fingers while pressing the tip to the fixed bit. With careful initial centering, that produced a neatly centered hole down the axis of the dowel. If it hadn't, my dowel was four feet long and I only needed eight inches of tool, so I could try again. I then pushed the drill bit into the dowel, pointy end out.

The dowel was long enough to extend past the end of the guitar when held parallel to the soundboard with the drill bit touching the bridge. In this position, I rotated the protruding end of the dowel in my fingers, and it gripped the bit well enough that if I pressed gently and frequently backed off to let wood dust clear, the drill bit drilled into the bridge rather than merely rotating in the dowel. (I tried several kinds of cement to improve the grip of the dowel on the drill bit; none worked.) I drilled each pair of new holes about 5/64-inch apart, a hair more for the D course.

With hindsight, 0.040 inches was almost too small. It is finicky to get the strings to turn the corner at the saddle end of the hole.

At the nut, I used the old slots for the two outside ukulele strings, and the six new slots needed were well clear of the other old ones. I spaced each pair of new slots like the matching bridge holes. With 1-1/8 inch at the nut between the outside strings, that works out to only 9/32 inch between centers of adjacent courses, even closer than on most electric guitars. Did I say I have small hands?

I strung up with two sets of baritone ukulele strings, with an octave on the D course only. Baritone ukulele tuning is d-g-b-e' -- like the treblemost strings of a standard guitar. Thus my tuning is as follows (use a constant-width font to see the table clearly):

Baroque Guitar Course Number:	5	4	3	2	1
Nominal Tuning:	A	dd'	gg	bb	e'
Baritone Ukulele String(s) Used:	d	de'	gg	bb	e'

The neck did not mind the extra tension. It had been straight with the original ukulele strings, and developed a slight bow convex to the fingerboard when I removed them. I was expecting a concave bow when I strung up, but no, it went back to straight. Go figure.

There is no interference above the peghead between any pair of strings, nor does any string touch any tuner not its own. All that is complete coincidence; I just put the new tuners where they would fit.

Making Music:

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After getting the strings stretched enough to hold tuning for more than a few seconds -- did I mention that tuning pegs were a royal pain? -- I started banging out "Canarios", and was promptly charmed. This is an unfancy, mass-produced guitar, and I am an unfancy, mass-produced player, but even so, the voicing is noticeably different from any electric guitar, classical, or steel-string acoustic that I have encountered. Compared to these instruments, this guitar lacks bass and is short on sustain. Modern instruments were developed in part to remedy these faults, yet there remain kinds of music to which such a voice is well suited. Furthermore, the octave D string adds a wonderful shimmer -- I will probably soon put an octave on the G course as well.

I also tried some more modern pieces, including some that had me working up the neck all the way to the soundboard. The instrument was still in reasonable voice when so used; "Baroque and roll" may be a possible musical form ...

With so small a body, the guitar is necessarily quiet, which has the up side that you can pound on it as hard as you like without the neighbors calling the police immediately. Notwithstanding the small body, it balances well. A strap from the bridge end to the heel of the neck would work, though I haven't put one in yet.

For an electric-guitar player with small hands, like me, the narrow neck is fine. If it were any less wide, it would probably feel toy-like, but as is, I would merely call it delicate. If the neck of a Strat or Martin is like the handle of an average coffee cup, then this neck is like the handle of a fine-china teacup. Still, guitarists with big hands, or who are accustomed solely to classical guitars, would probably find the neck too narrow. Yet for me, this instrument is eminently playable, a lot of fun, and probably a keeper.