

Acoustic Guitar Bracing in Theory & Practice

Jim:

I'm interested in buying a Guild guitar and would like to know more about the bracing (standard, scalloped, shaved, scalloped floating X). What do these terms mean, and what effect will the bracing have on the sound of the guitar?

Jack Perkins

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Acoustic guitar manufacturers put a great deal of care into the design of their tone bracing and often highlight their bracing patterns in advertising and marketing literature, but unless you're a seasoned acoustic designer, it's difficult to grasp the subtle causal connection between bracing and tone.

Bracing, therefore, is a topic that occasionally baffles guitar buyers. When we brag about our "scalloped" bracing on the D55, well, what does it mean?

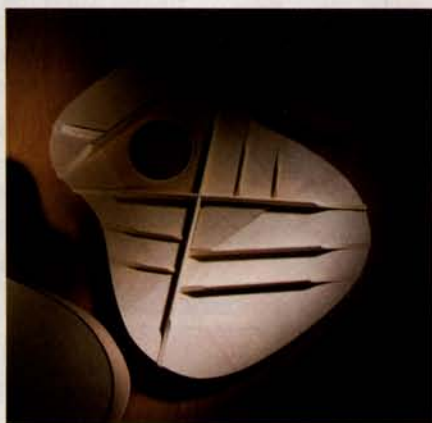
First off, the design of all elements of an acoustic guitar represents a challenging compromise between the strength needed to prevent the string tension from pulling the guitar apart and the delicacy and lightness required to produce a pleasing tonal response, none more so than the bracing of the top.

The three basic physical characteristics which must be balanced to achieve the best results in bracing a top are strength, mass and stiffness. All three of these elements are interrelated so that changing one aspect effects the other two. The less mass there is the more the strings drive the top, producing more volume. If you reduce the mass too much you also reduce the strength and stiffness, resulting in a muddy, washed-out tone. If the top is too stiff you get a tinkling, brittle sound with little volume and no bass response.

Where the mass is removed also plays an important role in the end result, which

leads us to the different bracing schemes used at Guild Guitars.

We employ four basic variations of the classic "X" bracing pattern on the different Guild flattops. The lower echelon Guild flattops use the "standard" bracing, which refers to the standard dimensions and profiles as produced by the wood shop. There is no additional trimming or shaving done to these braces in an effort to maintain the low selling price. These instruments rely on the overall quality of the materials in their components for the robust sound that they have come to be known for.



Guild's Shaved Bracing

The "shaved" bracing pattern, as used on many of the mid and upper price-range guitars, is a method of voicing which reduces unnecessary mass without unduly reducing the strength of the top.

This technique produces an even, balanced tonal response which works very well for vocal accompaniment, both acoustical-

ly and amplified, while maintaining the volume and drive needed to stand out in an instrumental setting.

The "scalloped" bracing on the high-end "D" models is an adaptation of the pattern first used on some of the pre-war Martin guitars. This bracing results in the thunderous bass and sparkling midrange response heavily prized by instrumentalists around the world.

The "scalloped floating X" is used by the Guild Custom Shop, and is a further extension of scalloped bracing, providing the extra voicing and attention to detail only possible in a custom guitar. The "floating" refers to the fact that the X doesn't extend all the way to sides.

If you have any questions on specific technical issues, mail them to me: Jim Inman, c/o Guild Gallery, 7975 N. Hayden Rd., C-100, Scottsdale, AZ 85258. See ya next time. 🍷