

## Short History of Reso-phonic Instruments

The slide and whine. The enduring tone. The smooth, rich combinations of notes and chords that effortlessly connect without staccato pauses. How do *you* describe the attraction of the resonator instrument?

Usually associated with Hawai'ian guitars and blues players, these instruments were first developed in the 1920's as a way of increasing the unamplified guitar's volume. The basic idea is to incorporate a loudspeaker-like cone into the instrument. There were some different strategies for doing this, both conceived by **John Dopyera**, a Slovak-American immigrant, who was building and repairing instruments in Los Angeles. He developed these to help musician **George Beauchamp** have a louder guitar to play at this gigs. After experimenting with several designs and materials he settled on a thin aluminum cone, modeled on a loudspeaker, with a bridge mounted on the point of the cone. While this was indeed louder, he decided that having 3 speaker cones actually produced a more balanced guitar tone. This became the tri-cone design for which the **National Guitars** were known. For cost-saving reasons they also made single cone guitars as well. Constructed with metal bodies these were popular through the 1920s-1930s but production ceased during World War II since the aluminum and steel were needed for the war effort.

After separating from the National Guitar Company in 1929, John formed the **Dobro (Dopyera Brothers) Company** with his 4 brothers and they began to focus on the single-cone design, using wooden guitar bodies but they used an innovation: they reversed the cone in the body and created an 8-legged cast "spider" upon which the bridge sat to transfer the vibrations to the cone. It proved to create a louder, richer tone choice as well.

Eventually, despite competing patent claims and a legal battle (which Dobro won), the National and Dobro Companies merged in 1934. Gibson now owns the Dobro patents.

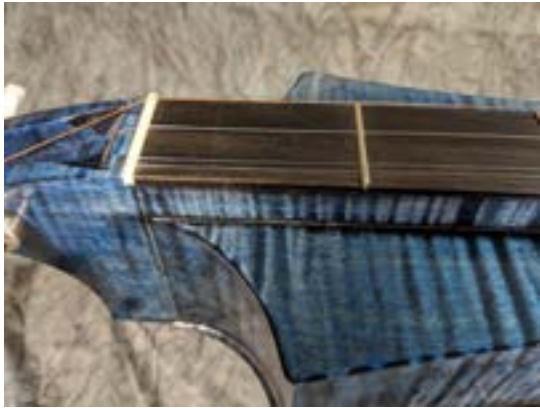
## Short History of Reso-phonic Dulcimers

**Homer Ledford** of Kentucky is recognized as the first person to build a dulcimer with a resonating cone in the late 1970s. A photo of his instrument is found on p.73 of this book.

Others dulcimer builders may have experimented with these ideas, but it wasn't until after 2000 that they began to become more popular. **Don Neuhauser**, of Charlestown, Indiana, built the instrument that I play. His is based on the Dobro design with the lifted nut, the inverted full-sized Quarterman cone and the spider beneath the bridge to transfer the vibrations of the strings to the cone. A list of current builders is included later in this book with photos of their designs. (See pp. 73 and following.)

# Set Up of Reso-phonic Dulcimers

One way that reso-phonic dulcimers are set up is as a standard 3-string mountain dulcimer, with the nut and bridge at normal height. In this set-up the player simply plays what they already know how to play with either a flatpick, fingers or finger-picks and the only difference is that the resulting sound comes from the resonator cone on top of which the bridge is sitting.



Normal Nut

These are examples of an instrument built by Bernd Krause in the standard dulcimer design.



Biscuit Bridge sitting on the cone

The next way that the instrument can be set up is to have the strings raised, in order to be played with a slide and never have the strings actually touch the frets, in either a 3 or 4-string configuration. This can be accomplished by using an elevated string-lifter nut (that fits over the installed nut or the zero fret).



Don Neuhauser's Dulci-Bro (left) and Ben Seymour's Dulcinator (right) both use this option. Don's covers and replaces the nut. Ben's covers and replaces the zero fret.

The other way the strings are lifted is by having a dual-purpose nut installed which has options for the strings to be either higher or lower. (The Folkcraft Resonator Dulcimer uses this option.)



The strings in the left image are in the lifted position to play with a slide. The strings in the right image are in the lower position to be played like a standard dulcimer, fretted with fingers or a noter.



The final variation is for the string-lifter nut and the bridge to have slots for 4 equi-distant strings so that the instrument can be tuned in an open chord, more like a National or Dobro guitar is typically tuned.



The Neuhauser Dulci-bro (pictured here) is usually set up this way in a 1-3-5-8 tuning, or D-F#-A-d. As noted later in the book, several other equi-distant tunings are also useful.

Because the 3-string, lower nut set-up doesn't require learning new technique, I will not duplicate what can be found in many instructional books for mountain dulcimer players here.

Instead, **the remainder of this book will focus on playing with 4 equi-distant strings and the use of slide technique.**

## Dobro Quarterman Cone with Spider under the bridge

Mike Clemmer's Clemm-bro is an example of the use of the Dobro style inverted aluminum cone with the cast "spider" under the bridge to transfer the vibrations to the ring of the cone underneath the polished cover. This also the way that Don Neuhauser builds.



## String Gauges

I prefer to use Resophonic Guitar Strings which are a heavier gauge, in order to stand up to being played with a slide. In my experience they provide a "meatier" tone than standard, lighter gauge dulcimer string sets. My preferred set is flatwound and uses strings 1-4 from the standard 6-string set this way:

4. D = .036 (furthest from the player)
3. F# = .028
2. A = .019
1. high d = .016 (closest to the player)

## Slide

There are several options of tools to use as slides, which glide along the top of the strings. A glass bottle-neck style, even the backside of a pocket knife (I used that in a workshop that Steve Miklos was teaching since he had run out of demonstration slides for the class.)

The slide actually creates a moveable "fret" along the string which makes it possible to imitate the human voice and play **all the notes** including the notes **between** the notes. In this book, these are denoted with a + sign after the fret number to indicate playing half-way between the frets.

*Holding the Slide will be addressed in the Left Hand Technique Section.*