



# **Restoration of 1880-1890 Franz Schwarzer Zither**

**Performed by Ron Cook**

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**For D. Joseph Madl of Billings, Montana**

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## Background

This fine zither was crafted in Washington, Missouri, at a small company founded by a German immigrant, Franz Schwarzer. Washington began as a Missouri River boat landing. The St. Johns settlement from which it grew was at the extreme western edge of the frontier when Lewis and Clark's "Corps of Discovery" camped nearby in May of 1804. By 1818, when Franklin County was formed, thousands of American settlers had already arrived. Many of these were friends, family and followers of Daniel Boone and his sons who had come to the area in 1799. Daniel Boone served as the Spanish syndic (judge) on the north side of the River. The first ferry in the area was licensed to run in 1814. It connected the settlements of La Charrette and Marthasville on the north bank to the Franklin County settlements.

An early German visitor was so taken by his trip to the area that he returned to Germany and convinced many German immigrants to settle there, making Washington the largest German community west of Pennsylvania. Franz Schwarzer arrived in Washington in 1865. By 1869 he had started a zither factory, soon turning out International Award winning instruments. Schwarzer zithers were manufactured until 1952.

In recent internet searches, I found several concert and "guitar" zithers attributed to Franz Schwarzer. They were 1900-1950 era instruments, distinguishable from this restoration by having actual guitar machine tuners on the zither's fretted portion. I believe this restoration to be from an earlier period, perhaps 1880-1890, due to the use of threaded tuning pins on the entire instrument.



Home of world famous zither maker Franz Schwarzer. Washington, Missouri

Photo courtesy of the Washington Historical Society © 2001

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The history of Washington, Missouri, of the German immigrants who settled the region, and of Franz Schwarzer, is a fascinating look at the era of westward expansion, at a new American experience for a group of people, and at one of those people who adapted old-world music, musical instruments, and craftsmanship into a business that lasted over 85 years.

## Valuation

There are quite a few Schwarzer zithers tucked away in attics and closets around the world, and some occasionally show up at auction and music dealer websites. I found one 1890 Franz Schwarzer zither, with case, that looked identical to the one I restored. The dealer was asking \$300 for it. The case was missing all the bottom padding and zither-shaped framework, and the back had a huge blemish. The finish was rubbed off one area showing the wood beneath. At least two of the ivory feet were replaced with pieces nearly twice as large as the remaining original. Prices for other Schwarzer zithers I found ran from \$50 to over a \$1000. The higher valued ones are from around 1920 or later and are harp-shaped zithers with intricate carving and inlay work.

Valuation is difficult since prices vary so much. I feel that this instrument is worth more than the 1890 zither mentioned above, especially since the varnish is relatively intact over the entire zither, and the case seems complete (except for the missing leather handle), although a little worn. Also, your family history/provenance traces the Schwarzer zither back several generations, probably to when it was purchased.



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## Day 1: Assessment



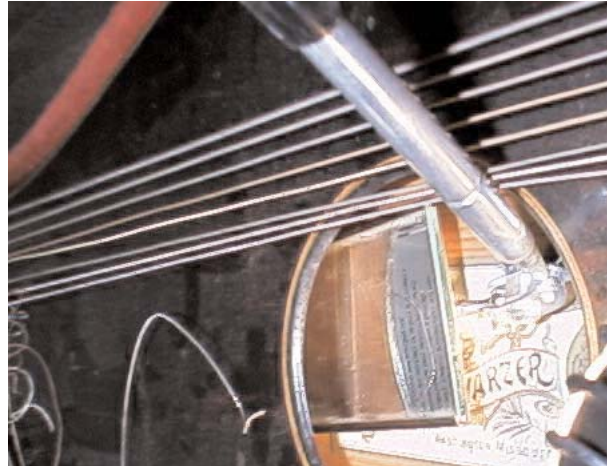
On Day 1, when the zither arrived, I could see what we already knew: that it needed crack and glue joint repairs and a new “foot” for the bottom. As I took a little closer look, I found out that because of the failed side glue joint, the string tension had slightly warped the body and soundboard, which probably caused the top to crack. I planned to remove strings and take a closer look the next day.

Old instruments all have a tendency to fail at glue joints. The most common are older violins dating up into the early 1900’s, which are highly susceptible to this. The reason is hide glue. As hide glue ages, it becomes brittle, and any severe bump could cause the glue to fail. Sometimes, in extremely dry climates, or even the changes of climates from humid to dry and back again, can cause wood joints to “pop” apart, especially if the strings are always tuned to pitch keeping strain on the instrument’s body. If an instrument is to be stored away for long periods of time, it is always best to loosen the strings.

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## Day 2: Continued Assessment



The next day, Day 2, I took the zither out to my workshop so I could remove most of the strings from their tuning pins and loosen those that weren't in the way of needed repairs. As I moved the zither around, I noticed the sound of something rattling inside the body cavity. I took my inspection mirror and light and looked around to find a few surprises.

First, the rattling sound came from a large brace that had separated completely from the top and was caught under a scalloped lengthwise brace. The top two pictures show the removed brace and the location under the soundboard (seen in mirror) where the brace came from. Second, the front brace, under the top crack (lower left photo), was partially separated. This separation was caused by the stress from a broken tenon that fit into a mortise slot in the fingerboard brace. The last picture shows one of the side mortise slots where a brace should rest. The large loose brace also had a broken tenon on one end (the end that fit into the side mortise slot), and a crack at the other tenon.

An interesting surprise was the name of the builder written in pencil on a side brace. Many stringed instruments have the builder's signature somewhere inside. Usually hidden where it can't be seen without a mirror. This zither was built by George Hesse.

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## Day 3: Beginning the Crack Repair



On Day 3, after much head scratching, I decided to begin the zither repair and restoration by closing up and sealing the top crack. I started by reaching into the soundhole and trying to scrape as much of the old brittle hide glue as possible off the top of the brace. With a small piece of wood, I applied white glue to the brace and wedged it up to raise it to the sound board. I then “flooded” the crack with white glue and applied crosswise pressure to pull the crack closed, and downward pressure to try to even up the warp and hold the top down on the wedged brace.

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## Day 4: Disappointment & Taking Another Tact



The next day, Day 4, when I removed the clamps from the previous day's gluing, I was disappointed to see that the brace and crack gluing failed. The brace slipped down, causing the crack to open up again. More head scratching.

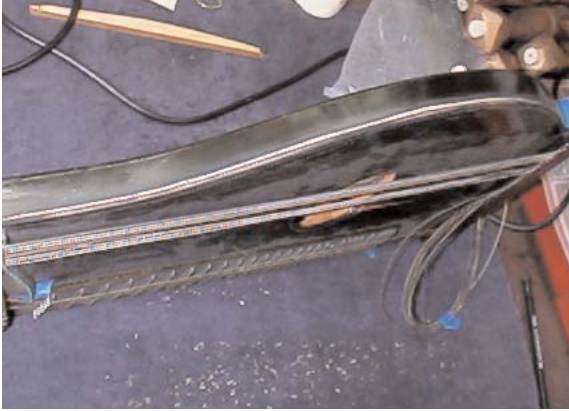
The more I thought about it, the more I felt that the slight warp to the body was making it difficult to fix the brace under the crack and to close up the crack. I decided that repairing the side would stabilize the body enough so the two braces and the crack repairs would hold better.

I used a painter's tape to mask both sides of the side joint so glue wouldn't squeeze out and mess up the finish. I also scraped the joint edges with a tiny knife to remove the old hide glue. Using Titebond, I flooded the joint and applied cam clamps to pull the joint closed. The bar clamps are to pull the side in slightly to straighten up the body warp as much as possible.

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## Day 5: Gluing Success



The side gluing was successful. A little scraping removed the beaded up glue squeeze-out, and a little sanding with 320 grit to 600 grit paper smoothed the edges. I would apply a matching finish to this edge later.

Now, I felt I could tackle the top crack and brace repairs.

As I mentioned before, the braces had missing or broken tenons, so I had the idea of putting a small block under the end of the brace to keep it pushed up against the sound board. In the bottom of one of my workshop drawers I found some old aluminum clamps that were small enough to fit under the brace to pull it up, and after again scraping and applying glue to the brace under the crack I tightened the clamp, little by little, pushing a wooden wedge under the brace to even out the clamping stress. It took several minutes, but I was able to get good contact.

Once clamped, I inserted and glued the small block under the end of the brace next to the keyboard brace.



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## Day 6: Wood Cleats



I let the glue set for two days before I removed the clamps. This time, everything held, and I felt I was making good progress.

Whenever I repair large top cracks in instruments, I glue small wood cleats underneath to help strengthen the joint. I use small pieces of pine, fir, or maple, with the grain running crosswise to the top grain. For this zither, I glued two maple cleats between the newly glued brace and the soundhole. That will keep the crack from reopening at its weakest end, at the soundhole.

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## Day 7 & 8: Frustration, Then Success



Day 7 brought on the challenge of putting the large brace back into its proper place.

Because the tenon was missing on one side and broken on the other, and also because it would be impossible to create new tenons and insert them into the mortise slots (unless the top was totally removed), I decided to glue the brace in as close to its original position as possible. At least, with this brace, I was able to do a complete scraping of the old hide glue off of the top.

To start, I drilled a couple of small holes in the brace and ran a piece of string through it so I could maneuver it (and not lose it). My first attempts at installing the brace were very frustrating, to say the least. Every time I had it in place, it rolled and dropped down. When I did finally get it in place and clamped, it wouldn't clamp all the way up. I took my inspection mirror and found another side brace in the way by barely 1/8 inch. The glued-in brace was resting on it. I again removed the brace, and let my brain (and my back) rest for another day.

On Day 8, I was able to look at this part of the repair with fresh eyes. I put a small slot in the brace to go over the side brace and screwed in a small eye bolt that made it extremely easy to clamp to and maneuver the brace. Day 7 took several hours to get nowhere. Day 8, took 20 minutes to successfully glue, insert, and clamp the brace in place.

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## Day 9: The Ivory Foot



Now that the crack and joint gluing was completed, I was able to turn the zither over to make a replacement foot.

The two original ivory feet have tiny “spikes” on them. I’m not sure of the reason for this, especially since these would scratch table tops or poke a player’s legs when played on the lap, but I think there might have been rubber cushions on them at one time. Since rubber deteriorates and crumbles off over time, that might account for the exposed spikes.

Several years ago, I acquired several pieces of antique ivory, some fossilized, from a dealer at a downtown flea market. These had evidently been used by a jewelry maker, since many were cut into pendant shapes. I took one small piece, drilled it to fit the dowel the missing foot was once attached to, and carved it to about the size of the originals. A little sanding and some white glue was all it took to complete this portion of the repairs.

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## Day 10: Spot Finishing



On Day 10 I began the spot finishing.

Where I repaired the top crack, I had to scrape a little of the finish to even out the joint and remove glue squeeze-out, like I did on the side joint. The finish on this instrument is what's called a faux rosewood finish. The wood is a soft wood, more than likely spruce, with dark lines painted on under a reddish-brown varnish to simulate rosewood. This type of simulation, making cheaper wood look like expensive figured wood, has been a common practice with furniture builders for hundreds of years, and it's still being done.

To duplicate that look, I started by brushing several coats of black water-based stain on the crack and the side joint. After each coat dried, I rubbed the area with 0000 steel wool, then reapplied another coat.

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## Days 11 & 12: More Spot Finishing



Finishing always takes time so each coat can dry completely between applications. After putting on the black stain, I then applied several coats of red oil violin varnish over the crack and joint areas.

On Day 12, I began the polishing of the repaired areas with rubbing oil, pumice, and rottenstone. Then I cleaned the entire instrument and polished it with a fine paste wax.

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## Day 13: Completion



On Day 13 I restrung the zither and tightened the strings, but not to pitch. Since there was no tuning key, I'm supplying one so it can be tuned to pitch after the return to its owner.

I did an internet search to see if I could locate a tuning chart for guitar-zithers or concert zithers, but didn't have any luck. There's actually very little information on this type of zither anywhere to be found. I was able to find out about Franz Schwerzer, and a little history on his company and the community his factory was in, but nothing about the instrument itself--and absolutely nothing on the builder, George Hesse. On the internet there seems to be mostly "definitions" as to what a zither is, but many of them relate to European instruments that differ quite a bit from Schwarzer's creations.

I enjoyed the challenge of repairing this zither. Every instrument restoration is a challenge, but it's very satisfying to be able to keep antique and family heirloom musical instruments in working order for future generations to enjoy.