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Restoration of Meinel Harp Zither



Completed by Ron Cook

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For Guenter Grothe

Background

Guenter Grothe found previous zither repair logs on my website and inquired about the possibility of having his concert zither restored. From this zither's appearance, it could be around 110 years old. However, there is no maker's label, only a stamped logo of initials on the first fret of the fingerboard that could stand for Adolf Meinel. The actual date of manufacture is hard to determine. It could have been made around 1900, the approximate time of the development of the harp zither, or as late as the 1930s. The damage was not too bad but could have been worse. The harp post had come loose, and the frame was slightly warped. The back was cracked, but no glue joints had come loose or popped open. The fingerboard had some cracks, but they were not a problem. A small area of the top veneer had separated and a bubble had formed. The frame was actually in decent shape, other than the slight warp, so I didn't have extensive frame repairs to perform.

After receiving the zither, I took several "before" photos, and a close up of the stamped logo. Following is a little history of Meinel instruments and the region of Germany known for musical instrument manufacture. Also at the end of this log are tuning diagrams and charts for the concert zither.

History

Markneukirchen is a town in the Vogtlandkreis district, in the Free State of Saxony, Germany. It is the main town of the German musical instrument making region that it is known for high quality brass and string instruments. It is also the home to the Museum of Musical Instruments, which was founded in 1883. It hosts an annual International Instrumental Competition, and since 1993 it has been a member of the World Federation of International Music Competitions.

In 1862 Christian Hermann Meinel started an instrument workshop at his home in Markneukirchen. Until his death in 1899, he was known as a fine craftsman who made excellent quality instruments. His son Friedrich Adolf Meinel, was born in 1872. By 1896, he became a master craftsman and took over the business. He worked with the community of zither players to improve the sound and quality of the instrument. It was Adolf Meinel who developed the harp zither.

Friedrich Adolf Meinel's son, Adolf Richard Meinel, was born in 1910. Like his father before him, he learned how to make zithers in the family workshop. At 26, he became a master craftsman and began producing both zithers and guitars of excellent quality. After World War II, when East Germany became a Russian satellite nation, Adolf Richard Meinel was forced to dismiss his employees, because open trade with Germany and other Western European nations was not possible any more. He still made a living by producing guitars for the Eastern European trade.

Adolf Richard Meinel's daughter, Ulrike Meinel, was born in 1952. She learned from her father all about the construction of plucked instruments. After completing her education, she worked as a restorer in the Museum of Musical Instruments at the University of Leipzig for three years. In 1977, Ulrike became a master, and started working in her father's workshop in 1982, where she now runs the family business, still making the styles of concert zithers developed by her grandfather.

Valuation

Concert zithers, as well as chord zithers, from Europe and the United States have shown up quite often the last few years on online auction sites, at antique and collector's shows, flea markets, and in antique stores. To me, the obvious reason for the influx of old zithers is the number of estates being divided up or liquidated as parents and grandparents pass away. Many inquiries on value, age, or restoration have come to me from family members who inherited a piece of their family's history.

Due to the large number and wide range of existing zithers, from factory made, catalog ordered pieces to the intricately carved and master built instruments, it is hard to determine their value. Assuming this is a Meinel concert zither from the late 1800s, it could have very good value as a historic instrument. However, without a label, the only way to find the zither's age is through a scientific analysis of the woods and finish. Judging from the construction and materials, this instrument could be dated anywhere from between 1890 to the 1930s. The harp-shaped concert style zither is still being made by descendants of Adolf Meinel in Markneukirchen.

The value of concert zithers in the United States is far lower than their value in Europe, especially in Germany and Austria where zithers are still popular as folk instruments. In American auction web sites, chord zithers have recently sold for as low as \$10. Better concert zithers have gone for \$50 to \$300. In Europe, auction sites have sold concert zithers in good to excellent condition for twice that.

For many people, the value is not monetary, but sentimental. To be able to have a restored piece of family history on display, to know its use, its background, and who played it, and to be able to pass it down to future generations, is priceless.



Meinel Zither sold on Austrian auction web site

Day 1: Assessment



On the first day, I always look over an instrument to see how much work is needed to repair or restore it. This zither was not in as bad of condition as others I've worked on, but it did have a crack on the back, a few loose binding pieces, some cracks in the fingerboard, a missing foot, and a bubble on the top where the veneer had come loose. The case, which was original to the instrument, was in much worse shape. It was literally falling apart. Fortunately, it still had all the hardware intact.

Many of the strings had been replaced over the years, and several were still missing. There were replacement strings that came with the restoration, but they were not gauged properly, and not of the type for this style of harp zither. It had the correct strings for the fretted portion and the first 12 melody strings, but the bass and contrabass strings would have to be replaced.

There is no label under the soundhole, and it looked as if there never had been one. Usually, there is some discoloration of the wood and some glue residue left to show where a label had been affixed. There was no such discoloration or residue present. However, there is a stamped logo on the first fret of the ebony fingerboard. It shows an F. A. and perhaps an H or a flourish, over an M. This could stand for Frederick Adolf Meinel, who developed the harp zither around 1900-1910.

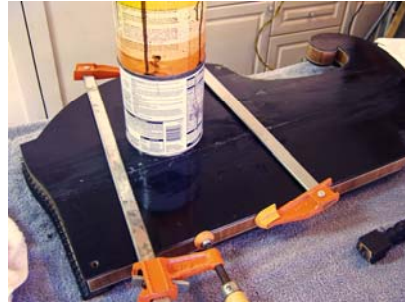
Day 2: String Removal and Inspection



On the second day, I removed the strings and the tuning gears. The silver/nickel plate that covered the gears needed cleaning and had a little bit of corrosion on the underside. The gears themselves were in good shape and with a little cleaning turned easily.

After I took the strings off, I was able to use my inspection mirrors to look inside. I was mainly looking to see that the bracing was still attached. Sometimes when a zither racks, even a little, that could signify that an internal glue joint had failed. Fortunately, all the joints I could see were firmly glued in place. I was also using my mirrors to see if there were any labels, stamped names, or writing inside. Some of the zithers I've restored had names stamped or burned inside. This one did not. Again, the only labeling was the stamped logo on the fingerboard.

Days 3 & 4: Crack Repair and Broken Foot Removal



The back crack was the major repair I had to make. Because the crack had shrunk a little, and the back wood was fairly flexible, I was able to force some glue into the crack. I put some weight on the back to keep the two halves even, and pulled the crack closed with a pair of bar clamps.

The next day, after the glue dried, I scraped off the residue, and sanded it a little to prepare it for a new finish. I also worked the broken foot out of its threaded hole by cutting a screw slot with my rotary grinder with a very small bit, so I could use a screwdriver to remove the broken piece.

Day 5: Cleaning the Top



On Day 5, I used a solution of dish soap and water to clean the top. For the fretboard, I used cotton swabs to get between the raised frets and the tuning pegs.

Day 6: Binding Repair



When I was cleaning the area around the tuning pegs, I noticed there were loose binding pieces at the top edge and also on one side of the small triangular sound hole. I used a very fine blade to hold the binding out a little so I could work some glue behind it. I use specially formulated binding tape to hold it in place. This is very strong tape that does not leave residue when pulled off.

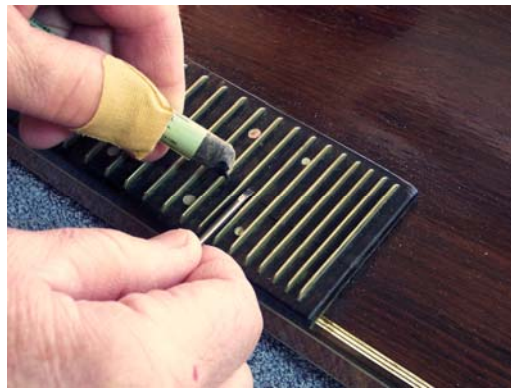
Day 7: Setting and Gluing the Harp Post



The post is actually pinned and slotted in a way that shows it was probably installed at the end of the zither's construction. It came out very easy.

Once I removed it, I cleaned the old brittle hide glue off, applied new glue, and reattached the post. I had to clamp it from the side to pull the slotted end all the way into its groove.

Day 8: Bubble Repair & Fingerboard Patching



On day 8 I went to work on the veneer “bubble”. Somehow, a two to three inch section of the top veneer had come loose creating a bubble on the surface. The only way to fix it was to inject glue into the bubble and clamp it down. I have some special plastic glue “hypodermic” needles that I occasionally use for awkward glue jobs. I poked a very tiny hole at the edge of the bubble and stuck the needle in to inject white glue into the space. I then used a wood cam clamp to press the bubble down.

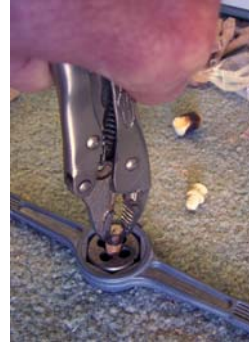
Once clamped, I started working on the small fingerboard cracks. I used a ebony black filler stick , heated it a little over a candle, and worked it into the cracks. It took only a short time for it to solidify. I then rubbed the areas with 0000 steel wool, which also polished up the frets.

Days 9 through 11: Finishing the Back



On Day 9, it was time to start applying a new finish to the back. I first had to sand the rest of the glue residue off from around the crack. Once cleaned off, I first applied some black stain to the sanded area, then the next day, started the first of several coats of black semi-gloss enamel. It's a water-based enamel, so it dried within a few hours, but I let it set overnight before rubbing it down and applying another coat. It took three coats of enamel to get the back to look like I wanted.

Day 12: Carving a New Foot



The five little feet on the zither's bottom are an early type of plastic, probably celluloid, since that was invented around 1870 and used as an ivory substitute for billiard balls. Celluloid parts are hard to come by, so I carved a new foot using tagua nut, also known as vegetable ivory. I turned a nut on my mini-lathe and used my rotary grinder to carve the foot's shape. I duplicated the threaded part of the foot with a standard threaded die.

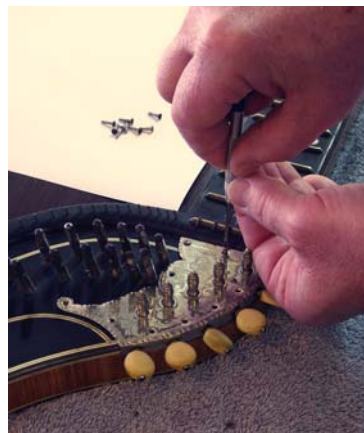
Day 13: Rubbing Out & Polishing the Back



On Day 13, I started polishing the back's new finish. Because I brushed the finish on, there were a few brush marks, plus some dust specks. Before polishing, I rubbed the finish with cheesecloth soaked in mineral oil over sprinklings of pumice, then rottenstone. Pumice is a light abrasive that cuts swirl and dust marks quickly, and rottenstone is an even finer abrasive that leaves a lightly polished surface.

After cleaning the oil and abrasives off the surface and drying it thoroughly, I polished the back with a non-abrasive paste wax.

Day 14: Polishing the Top and Gearplate



The next day I continued polishing the top of the zither. I also took some metal polish and cleaned the beautifully tooled tuning gear plate. Once I washed the cleaning residue off, I reinstalled the gears and plate.

Day 15: Starting to Install Strings



The last thing to do before re-installing the strings was to polish the wire bridges. Like most silvered metal parts, these were a type of nickel-silver (also called German Silver), and had corroded a little where the strings passed over them. Some 0000 steel wool polished the bridges up just fine.

With the bridges cleaned, I was ready to insert after a couple of strings in place to hold the bridges in place. I started with the fretted strings.

Day 16: Bass String Impasse



On Day 16 I installed the first 12 melody strings. I had only two fairly decent contrabass strings to put on to hold the bridges down, but I knew they would not hold well when tuned up. They were too worn.

When this zither arrived, there was a packet of extra strings. A couple of them were good and helped make up the first 12 melody strings. However, the remaining strings were not the right gauges, and most were too worn and unraveled. There were no strings for the bass and contrabass. I received permission from the owner to purchase a set of 12 bass and 12 contrabass strings, and it took almost three weeks for the order to arrive, probably because they had to come from Germany.

Days 14 through 20: Case Work



While waiting for the strings to arrive, I took some time to work on the case. The owner wanted it in better condition to protect the zither. It is the original case and has a thin wood top, back and sides, and is lined with felt-covered fiber board. The fiber board was peeling from most of the edges, and the surface material was extremely worn and peeling from the edges. The corner accessory slot's cover was missing, so I made a new one out of a piece of scrap wood. I added a handle to it and painted it a matte black.

For a few days, I reattached the felted fiber board to the case with applications of white glue. I then painted a black primer around all the top's peeling edges. After that dried, I painted it again with liquid hide glue. That solidified the areas of peeling. After the glue dried, I applied several coats of black semi-gloss acrylic paint.

After the paint dried, I put the case back together, then made a new lid holding strap.

Day 21: Stringing and Completion



The strings finally arrived, and I was able to finish the stringing. This was a long process and took most of the day to complete. But when I finished, the zither looked wonderful.

When I send this back to Colorado, I'll have to loosen the strings for shipping. As for care, if this zither is kept on display, be sure it's out of the sun and away from direct heating or cooling vents. In the winters when the air is dry, it might be wise to keep it in its case with a case humidifier. These are relatively inexpensive, usually less than \$10, and can help to keep the wood from drying out.

As with all repair projects, I continue to learn more restoration techniques. Some are simple ("why didn't I think of that sooner?"), and some are more complex and require periods of research, planning, and some trial and error. This Meinel zither went quite smoothly from start to finish. It just took time to work through the many repair steps.

I was very happy to be able to restore this beautiful instrument to playing condition again. It's probably been around for over 100 years, and should now easily last another 100.

Enjoy!

Concert Zither String Diagram Munich Tuning

There are two zither stringing formats in use today: Munich and Vienna. Munich is the most commonly used because it incorporates every note in the chromatic scale encompassed by the scope of the instrument. The stringing pattern on the fretboard is like the violin family, a fifth apart. The open strings are in the circle of fifths, broken between Eb and Ab and laid flat on the zither, similar to a accordion layout.

Fretboard
Munich Tuning

a-440 - tuning fork or digital tuner

Accompaniment Strings 1-12

13-24

Bass Strings

25-37

Contra Bass Strings

In addition to the basic 29 fretboard, accompaniment and bass strings, zithers may have 2, 3, 5, 7, 9 or 13 contra bass strings - the full harp zither has 42 strings (5 fretboard and 37 open strings). In some early versions, and on perfecta zithers, the contra basses were arranged in the same circle of fifths as the accompaniment and bass strings. Munich tuning was often expressed in treble clef (violin key, or similar to guitar clef) but today is mostly written in bass clef.