Restoring a Schober Recital organ

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Introduction

This site describes my adventures with a Schober Recital organ, a transistorized electronic organ built from a kit. It contains literally thousands of electronic components which took months to solder together back in 1973. Even more challenging for me was assembling the console, the bench, and the full 32-note AGO pedal clavier. The result is a two manual electronic organ suitable for performing classical organ music.

But after 34 years, the organ and especially the keyboards needed a thorough cleaning and restoration, now mostly completed. On these pages I've described the entire process of cleaning contacts in detail, as well as adjusting the pedalboard.

I hope this site will encourage other Schober owners, whether they have the Recital, the Theater Organ, the Consolette II, or some other model, to dust off their instruments and get them back in good working order. Since Schober organs are often available for minimal cost or even for free, anyone can become a Schober owner by investing the time to do the restoration.

Either way, be sure to check the Schober Organ Orphans web site for lots of useful information, and to sign up for their newsletter if you haven't already.

(Note that all pictures on this site can be clicked for larger versions. To return to the text, use the Back button on your browser.)

In the beginning...

When I was in high school back in the 1960s, I came across Richard H. Dorf's article describing the "Electronorgan" in *Radio and Television News*. He had taken an old pipe organ console and fitted it with tone generators which used dozens of 6SL7 tubes and neon bulbs to generate the sounds. Besides the tone generators there were stop filters, preamplifiers, and other circuits. The instrument was said to compare favorably with other electronic organs. Naturally I wanted to build one, but where would I get an organ console -- or that many 6SL7s, for that matter?

Another ten years went by, and I eventually discovered that the Schober Corporation, run by the same Richard H. Dorf, was selling electronic organs in kit form. In 1973, my wife and I bought a Recital organ kit, then spent nine months soldering circuit boards, building the console and pedal clavier, and wiring everything together. We had a big party when we finished, and we were very happy with the results.

I spent many hours playing it, but over the years keyboard problems gradually got worse, particularly on the Swell. Notes just wouldn't sound, would sound intermittently, or would make unpleasant scratchy noises.

Devtronix tone generators

Finally it seemed that something would have to be done. I searched in vain for Schober Organ Company, only to discover they were out of business. Eventually I found out about Devtronix, and ordered a set of their tone generators. Although the Devtronix generators solved almost all of the keying problems, they also changed the sound of the organ. For the most part, I didn't like the Devtronix sound as much as the original. (See my Devtronix page for details and possible solutions.)

In the photograph at left, the blue object inside the organ is the power supply for the Devtronix generators and reverberation unit.

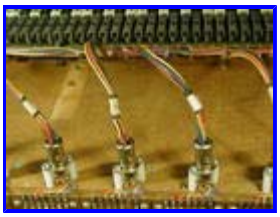
I ended up installing a Devtronix generator only on the Swell, and continuing to use the Schober generators for the Great and the Pedal. As shown at left, this was a rather temporary installation since I wasn't entirely happy with the results. (The green board at left is the generator, and the one at right is a Devtronix reverberation unit.) But as the years went on, the keying became unreliable even with the Devtronix generator.

Devtronix reverberation

I had been using the Devtronix reverberation unit for years, but never thought it was quite equal to the Schober Reverbatape -- though of course there are no tape loops to wear out. During restoration, I discovered that the organ sounded much better without the reverberation unit. Since it is entirely unshielded, it tends to pick up noise from the tone generators. Mine may not be adjusted properly, but it also tends to muddy the sound.

For now I'm happier without it, but I may eventually try enclosing it in a metal box with its own power supply. Feeding the delayed sound only to one or more distant speakers (as Devtronix recommended) would probably help also. On the other hand, much better digital reverb units are now available.

Adding keyboard connectors and cleaning the contacts



From time to time members the Schober Organ Orphan group reported good results using DeoxIT contact cleaner, but I wasn't anxious to unsolder the keyboard cables so I put off trying it. Finally I decided to add connectors, as shown at left, to the keyboards before cleaning the contacts. Although it was a lot of work, it was a good investment because the first time I re-installed the Swell keyboard about 25% of the notes were still bad -- and that was with the Devtronix generator. With the connectors, it was easy to remove the keyboard again to do more cleaning.

The cleaning itself was time consuming but not especially difficult. The contacts on the Great keyboard were in the best shape, possibly because they are in a more protected location than the Swell or Pedal key contacts.

Pedalboard

Since the pedalboard contacts are permanently mounted in the console, no connectors are needed. Cleaning and adjusting the pedalboard and its contacts was a bit of a chore, but turned out very well.

Other repairs

Although most electronic components in the organ had fared well after 34 years, there were a few obvious problems. The lovely red and black test prod wire furnished by Schober to distribute power had become sticky and covered with dust, exuding some sort of corrosive substance onto the terminals of the power supply. I carefully removed all of this, cleaned the terminals with isopropyl alcohol, and installed number 16 red and black automotive primary wire in its place. Note that the color coding on at least some Recital organs is a bit unconventional: red is used for the negative supply voltage, and black for the positive supply, which is treated as circuit ground. This results from the use of PNP transistors in early Recital organs. If possible verify the polarity with a meter before replacing any of the power distribution wiring.

I should mention that the thermal circuit breaker in my Schober power supply never was reliable, so I long ago replaced it with a 3-amp fuse in an inline holder.

Almost all the large electrolytic capacitors show signs of fluid leakage, and they will eventually need to be replaced. A check with a capacitance meter showed that they still have normal capacitance despite the blistering and chemical leakage visible in the picture at left. Since replacement capacitors are physically smaller and just don't have the same antique charm, I decided to wait until the old ones actually start causing problems.

Results

This is still a work in progress, but the organ is now re-assembled and is once again a delight to play. The Great keyboard contacts were cleaned successfully and are working with the original Schober generators; they are is as good as new. The Swell keyboard contacts were much more oxidized, but they are now working properly with the Devtronix generator. I plan to add more DIN connectors and hope to get the Swell working with Schober generators. The pedalboard switches are now cleaned, adjusted, and working but could stand another round of adjustment to ensure that they all switch at the right depth. But I'm having too much fun playing it, so no more adjustments for the moment.

External Links

Rick Andersen's Schober Theater Organ Page

The official Schober Organ Orphans' Page

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