Since I started playing the organ, I realized I could play better if I had an organ at home to practice on. I first looked at a pipe organ, but found the cost of buying to be too high (especially when I was a 14 year old with no job). Having a small space in my basement didn't exactly pull me toward a pipe organ either. I decided that I would go with an electronic organ.

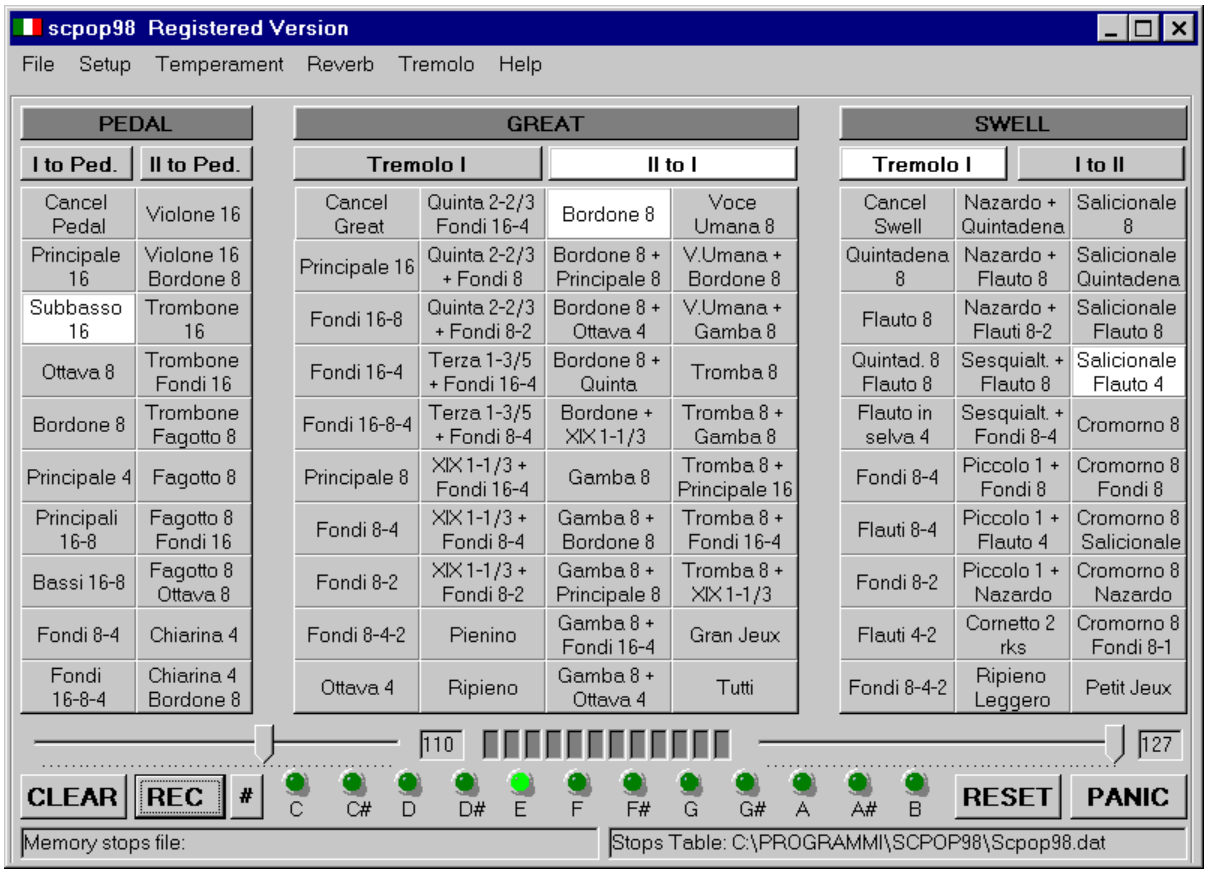
After I decided on an electronic, I started looking at the major brands. Rodgers, Allen, and Johannus were all way out of my price range, which was to be under $1,000. I had done some work with MIDI, so I explored some options on building an organ using a MIDI interface. It would be too expensive to equip an old console with MIDI, so I looked at using my computer as the 'relay' and a synthesizer as the 'pipes'. My current MIDI keyboards will be used as the input, below is a picture of my "Great" keyboard.

I purchased a Roland Sound Canvas SC-88VL, which is fully MIDI equipped.

The reason I bought an Sound Canvas was because you need one to use the SCPOP (Sound Canvas Pipe Organ Project) software. SCPOP is a program that runs in Windows 95/98 that uses system exclusive codes to simulate the sounds of a real pipe organ. It takes the sounds that are already there (for example, flute) and changes the dynamics and 'genetics' of the sound to create a sound that arguably sounds like a pipe organ. The sound canvas is the only widely available hardware that allows users or programmers to change and tweak the sounds (and it isn't too expensive). They explain their program very well on their web site.

The diagram below shows how my MIDI system works with the SCPOP.

When I want to use the SCPOP program, I simply go to the start menu and select SCPOP. A window comes up that looks something like this:



I can select one stop per division (Great, Swell, and Pedal). This sounds real limited but as you can see, there are sometimes more than one stop name on a button. (I renamed these stops to more common names) There are 12 memories that you can load that will always be there when you start the program (fixed memories). There are also 12 more 'free memories' that you have to save in a memory file and load them each time. You retrieve these by the F buttons on the top of your computer keyboard, F1-F12. So you get a total of 22 memories, more than many organs have. I am very pleased with the sounds.

I found a 25 note pedalboard at a closing church that was with an 'ancient' Hammond organ. We junked the organ and kept the pedalboard and bench. The people that bought the church were turning it into a home so we got it for free. I attached the bottom 13 notes of the pedalboard to the bottom 13 notes of my Great keyboard with fishing line. Below is a picture of what the pedalboard looked like before we refinished it.

Before

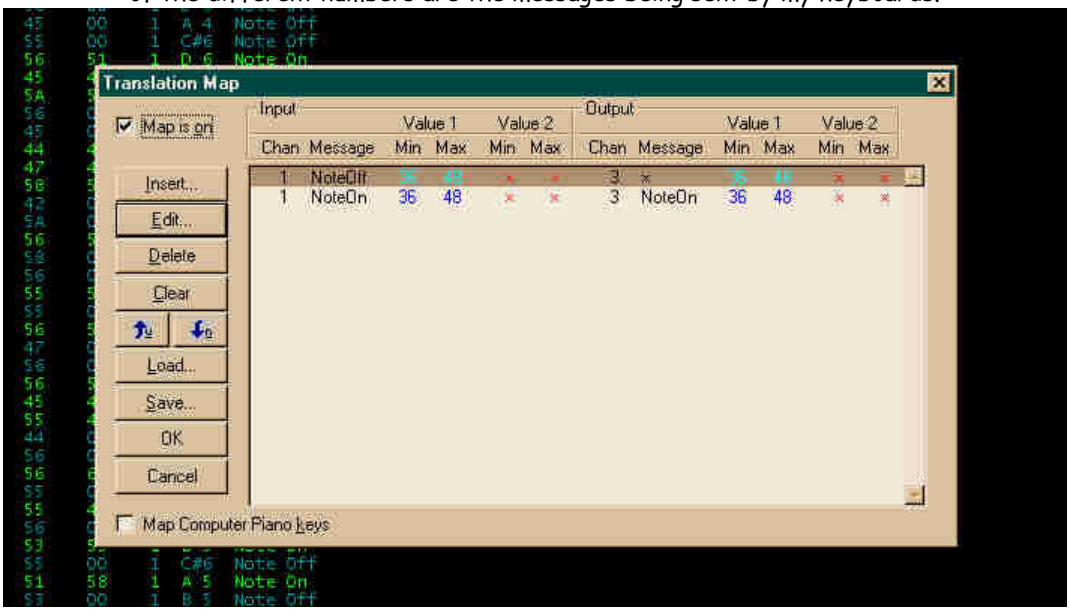
During

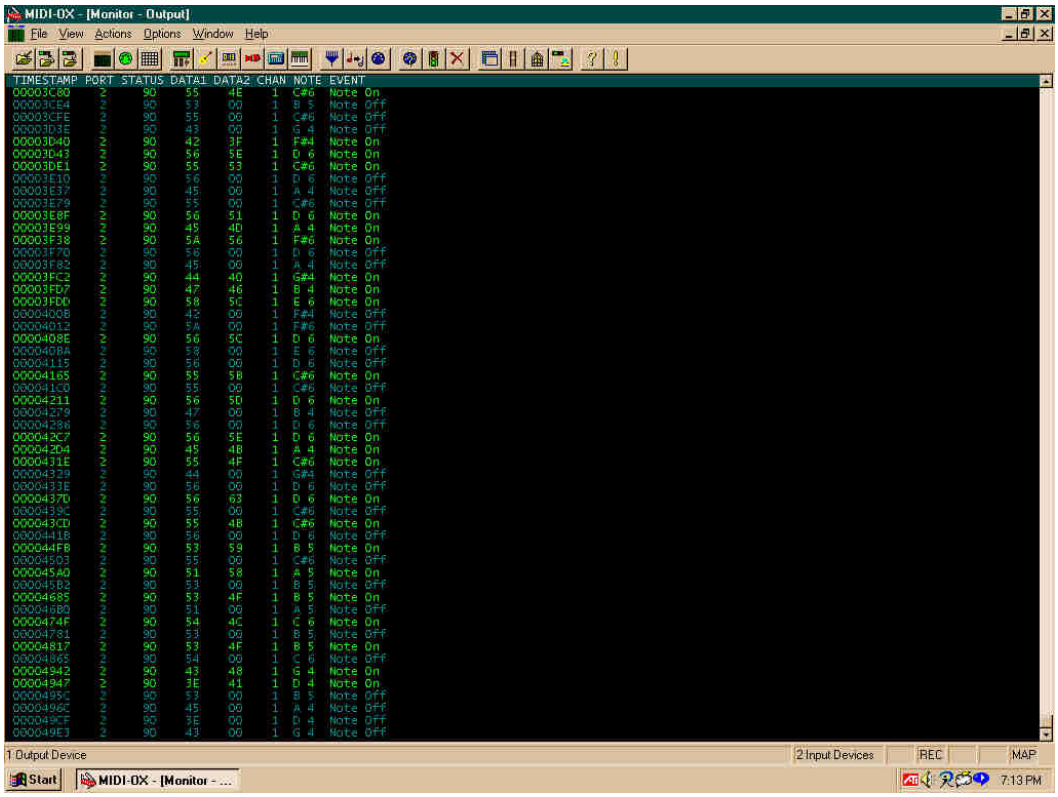
Putting the Pedals back

The finished product! Tada! (I lost one of the caps for the sharp pedals)

Since I only have two keyboards (Great and Swell), and there are three divisions (Great, Swell, Pedal), I needed another keyboard (I thought). I posted a message to the SCPOP e-mail list (registered users are on this list) with my problem and someone said that MIDI-OX worked well. So what is MIDI-OX? It is a freeware software tool that can change your MIDI messages. I used the Data Mapping feature to change the notes that were

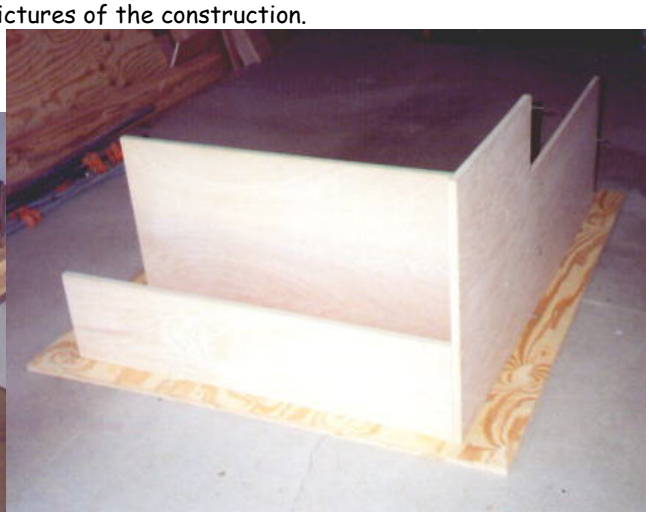
activated by the pedalboard (bottom 13) on the Great MIDI channel (1) to the pedal MIDI channel (3). Here is a picture of the Translation map window of MIDI-OX and below that, the main window of MIDI-OX. All of the different numbers are the messages being sent by my keyboards.





Since it looked very cluttered (above) we have built a console to house all of the different components of the organ. Below are some pictures of the construction.

Cutting the Wood



Console Partially Assembled

Console fully assembled and ready for stain/varnish

Finishing the console components

Back of Music Rack before finish

Assembling the console

The whole system

Well its all finished now. My dad drew out all the plans and he did a great job, I love the feel of this. My whole summer was spent working on this project and I would definitely do it again. It took a little longer than we expected, but that is partially because we used regular hand tools- no professional grade woodworking equipment; we wanted to keep the cost down. Putting 2 coats of stain and 3 coats of polyurethane on each side takes some time as well. The outcome of this project was great! I will definitely enjoy this for years to come, since I can easily upgrade the sounds with other MIDI modules, even connect real pipes at some time. Thanks for taking the time to check this out!!!

Items used and their cost:

Computer System	$550
MIDI Keyboards	$350
Amplifier and Speakers	$320

Sound Canvas SC-88VL	$380
Sustain Pedal for All-Note-Off	$20
Building Supplies for Console	$100
Labor 200+ hours	LOTS
TOTAL	**$1720**

Another view of the SCPOP main control window: