Schober Organ Notes No. 75

OVERTURE

Disclaimer: We accept no responsibility for any unfavorable consequences resulting from following our advice

OVERTURE

I hope everyone had a great summer. I had a lot to do this year and had to travel back and forth between New York City and Vermont many times. That is my excuse this time for Organ Notes being a little late again. I will be going back to Vermont right after I print and mail this issue. Because of my two locations, with some Schober items in both places, I may forget things here or there, write a note and forget to take it, etc., so please, if I forget to do something that I told anyone that I would do, remind me!

PETE STARK AND HIS SCHOBER THEATRE ORGAN AND MIDI CONVERSION

by Pete Stark

(As many of you will remember, Pete used to write Tech Notes for our group. Here is an update of what he has been doing lately -- Ed.)

When I bought a used Schober Theatre Organ some years ago, it was electrically in pretty bad shape. I spent a lot of time fixing things, and most of it now works. To be sure, I still have to fix the percussion group and the Reverbatape, and install a decent sound system. And the combination action is probably a lost cause. But it makes musical sounds, which it didn't when I first got it. At least, it does when someone else plays it besides me.

I am a better tinkerer than I am a musician though. Even I don't enjoy listening to myself play! I have therefore decided to tear my beloved -- oh, how I yearned to get a Schober in the 1970's when I couldn't afford it! -- my beloved Schober apart, and rebuild it, using more modern technology. Still not 2002 technology, but at least bring it into the 80's or 90's.

A lot of modern music making uses electronics. Using MIDI -- the Musical Instrument Device Interface -- is common these days. A MIDI circuit carries information that most resembles sheet music. It does not carry actual sound. Instead, it carries information on what note to play when, how loud, for how long, and on what instrument. MIDI data typically comes from a keyboard or from a computer, and it goes to a sound module -- a device which actually produces the sound signal, which is then sent to an amplifier and speaker system.

Sound modules come in many types. Some are pure synthesizers which produce synthetic sounds unlike real instruments; others are samplers which use recorded samples of real instruments to produce their sound. And then there are modules that use both synthetic and sampled sounds. Several manufacturers make sound modules that reproduce organ sounds, both classical and theatre. These range in price from perhaps $100 up to many thousands of dollars.

My aim is to use my Schober organ to produce the MIDI signals, and several sound modules to use these MIDI signals to produce the actual sounds. By judicious choice of module, I figure I can achieve extremely realistic organ sounds -- much better than a plain Schober organ ever could. Just adding a simple MIDI output to an existing organ is theoretically not too difficult -- several manufacturers offer MIDI add-on kits, but I have developed my own printed circuit

board which is described on the Schober Organ web page (http://www.cloud9.net/~pastark/schober.html) under the Technical Information topic. The problem comes in how to connect it to the Schober keyboards.

Some electronic organ keyboards key a DC voltage, which then powers their oscillators or other circuits. This DC voltage can be also sidetracked to a MIDI interface circuit. Unfortunately, Schober organs do not key DC -- they key audio directly, and this can't be used to feed a MIDI interface.

There is one exception -- if your Theatre Organ has the Schober Percussion Group, then it has an extra set of spring contacts mounted in front of the keyboard. These springs can be rewired to produce a DC voltage for feeding to the MIDI board. You lose the use of the percussion group, but all other functions still work. If you do not have the percussion contacts, then the only way to switch DC is to rewire the entire keyboard. Some users have already done this in order to use the Devtronix keying system, in which case the job can become a lot easier, and give you both MIDI as well as regular Schober sounds.

For my organ, I have decided to take the drastic approach: completely rewire the keyboards and pedals, and tear out all original Schober sound generation circuitry. In other words, rely completely on MIDI sound modules to produce the music. Remember - I'm a tinkerer, not a musician! But I want classy, realistic sound.

Unfortunately, my approach raises the stakes. If you just add MIDI to an existing organ, you will probably just use the MIDI to add a few stops that you particularly like. Although most sound modules have their own controls to choose the type of sound, you still use your regular stop tabs most of the time, and only use the MIDI module's controls now and then for special effects.

But if you tear out every Schober circuit and use MIDI for everything, then none of your stop tabs work, and EVERYTHING has to be controlled from the MIDI sound module. Changing registrations becomes a bear -- MIDI sound module buttons and switches are not designed for rapid sound changes. Fortunately, registration changes -- called patch changes in MIDI lingo -- can be sent to a sound module through the same MIDI cable as the music data itself. Unfortunately, Schober keyboards cannot produce those signals.

So what's the status of my organ project? I've done the two easy parts:

1. I've designed and built the printed circuit board that connects to one keyboard and generates MIDI data to indicate what key is being played. I call this the MD-1 board. I need four of these -- one for each keyboard, one for the pedals, and one for stop tabs and other controls. The stop tabs and other controls don't play anything, but this is an easy way to detect which is on or off and convert it into computer-usable form. At this point I only have one of these, but making more is just grunt-work.

I've found a place that will make my printed circuit boards for $33 apiece, and it only takes about $25 of additional components to finish each one. I've tested the board and the computer software that makes it work, and it works fine, but I haven't actually connected it to a real keyboard yet. The final assembly will come later.

2. I've acquired four MIDI sound modules to produce my organ sounds, ranging in price from $75 to $350 each. I may eventually want some changes in this department, but for now this seems more than adequate. What I haven't done is the hard part: the middle portion of this system. The part that takes the outputs of the four MD-1 boards -- especially the one that connects to the stop tabs -- and generates the control signals that actually feed the MIDI sound modules. I still have to make some basic design decisions. For instance, do I mix all the outputs

from all keyboards and pedals and send them to all sound modules through one giant controller? or do I connect each keyboard to its own sound module through its own small controller, thereby essentially creating three separate little organs? The first approach gives me much more sound variety at any given time, while the second is much simpler to implement, although it makes things like inter-manual couplers messy to implement.

Oh yes ... there are a few other loose ends that will still have to be done at the very end. Fortunately, most MIDI sound modules provide stereo as well as their own reverb, but some analog method of controlling volume via the expression pedals will have to be added. And perhaps the most difficult part of all -- providing several channels of audio amplification and speakers which satisfy my wife's esthetic desires. But that's another story!

If any of you have comments, suggestions, or offers to help, please let me know. Take a look at our Schober Orphans web page for more information, or write to me. My email address is pastark@cloud9.net

Pete

HELP NEEDED

Our new member Robert Schultz built a Schober Concert (tube) organ in 1958. He is looking to update/fix it. If anyone has suggestions or is able to help, please contact him: email: Wyoprimo@aol.com or 1033 E 17th, Casper, WY 82601

ADS

Disclaimer: Any deals, making of payments, reciept of payments or verifications are strictly your responsibility.

Schober Consolette II

Available for free to a good home. Contact: Jim Dragoset, 3401 River Oaks Dr., New Orleans, LA 70131, Phone 504-393-0230 (home) 504-392-8935 (work). Email: jdragoset@stoprust.com

Schober Concert

A tube Concert Model Schober is available for free. It has been mostly rebuilt with new capacitors but still needs some alignment and calibration. It is located in Oshkosh, WI about 1 hour south of Green Bay and about 1-2 hours north of Milwaukee. Please contact Jeremy Tourville, email: jtpian0@juno

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Editor: Alexander Kruedener, 161 East 89 Street, Apt. 4E, New York, NY 10128, (212) 831-0662. Kruedener@juno.com

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Fred Henn Founder & Headmaster Emeritus
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EDITOR Alex Kruedener kruedener@juno.com
FORMATTING Bill Kohrumel bk3@usmo.com
EMAIL Jack D. Gildar JDgildar@juno.com
Schober Organ Orphans' Page: http://www.users.cloud9.net/~pastark/schober.html