Schober Organ Notes No. 91

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

OVERTURE

This is the 15th anniversary issue of Organ Notes. Our group, The Schober Orphans Group, was founded by Fred Henn. Fred loved the sound of pipe theatre organs from childhood on and when, as an adult he was part owner of a Hi-Fi store, someone brought a Schober demonstration record to the store. Fred played it and the Schober Theatre Organ recording sounded closer to a real pipe organ than any of the available electronic organs he had heard in his search for an organ for himself. Fred built Schober electronics into a Marr and Colton console and fantasized he was playing a real pipe organ. Pending the day he would need it, Fred purchased a single board tone generator just before Schober's demise and put it aside for future use. Years later, when moving and rebuilding his organ into another console, Fred discovered that he did not have the instructions for the single board tone generator. Schober's representative, Jim Ramsey, had passed away, but his wife Laura located the information he needed. Fred realized that there might be others who had the same problem and again, with the help of Laura Ramsey who provided a Schober customer list, Fred contacted other Schober owners. Events and circumstances led to the Schober Orphans Group that became one of Fred's hobbies. At the suggestions of members for some kind of communications vehicle, one of the member suggested a newsletter which Fred typed out on a primitive word processor and printed out on a 9 pin printer. (I attached a copy of Issue #1 of Organ Notes to Issue #90). Bill Kohrumel saw the possibilities of a better looking newsletter and became the "formatter" for it, using a desktop publishing program and laser printer. Bill continued formatting the newsletter for quite a while after I took over as "head honcho" of our group. Health problems caused Bill to pass his responsibilities to George Hoye who is our present word processor/formatter.

NORMAN KELLEY'S SCHOBERS

Norman writes:

In 1957, my Jr. High School classmate built the Schober organ for me and my family. I learned to play on that instrument, and when I moved on to college, the organ stayed with the family and was operational until the tubes--were they 12AX7's?--were burned out and nobody had the interest to replace them. By the time I had settled down and began to plant roots, the organ again came into my possession, and I began a project of replacing the circuitry, with an eye towards updating it to transistor status. The task proved overwhelming, so I purchased the updated model--around 1977-78, I think, and began to put it together. Work again intervened, and the project was put on hold for another period of time. Eventually, the Schober company ceased to exist, and I donated both organs to a group of aficionados who planned on converting the 2 instruments into a 4-manual organ. I do not know what happened thereafter, for we moved and have lost contact with the folks who were involved with the project.

The concepts that Mr. Dorf tried were truly outstanding, from all aspects. His showroom in NYC was a great hangout, and we visited often in the 50's, and I re-visited with him in the 70's, before the company stopped production. I am pleased to see that you and your group are keeping a good thing alive.

My best to you all!

Sincerely yours,

Norman

Schober Recital Organ Digital Conversion

Charles E. Witherell, P.E.

In the 1960s, when I was first attracted to the Schober line of electronic organ kits, we had a Hammond C-3 Model that my wife, a church organist, used as a practice instrument and that I played as an amateur organist and one-time violinist. The Hammond that we purchased new in 1949 with tone cabinet and reverberation unit was virtually trouble-free; yet it did not replicate a true pipe organ sound, which we preferred.

From the demo recordings we obtained from Schober, their design approach seemed to offer a more authentic sound and wider tonal range. We decided to build the Schober Recital, including scratch-built construction of the console itself from the plans offered by Schober. It was an enjoyable project, spread out over a couple of years, and the result was satisfying and just about all we had hoped for. The Recital served us well for many years, but with the usual few electro-mechanical glitches that occurred from time to time. Usually, these were readily correctible with replacement parts obtained from Schober or, later, compromises from local electronics parts suppliers.

As the years passed, the Schober Recital continued to work satisfactorily. We had purchased the Library of Stops kits back in the 1960s from Schober with the goal of someday upgrading the set of original voices to include theater organ types. A couple of years ago, when I retired and finally began to seriously consider a Schober Recital upgrade using these items obtained from Schober some years before, we ran across some of the more recent electronic organs, now with digitally-sampled voices that very faithfully duplicated classical and theater pipe organs.

In the meantime, in the year 2000, on the occasion of our 50th wedding anniversary, we acquired and installed in our house a small Moller pipe organ (3 rank, 2 manual + pedal, Opus 6362, made in 1935). Here we had a true and beautiful-sounding, absolutely real pipe organ sound, right in our home, although somewhat limited in range by its 3 ranks (expanded via unification to provide 22 stops). With this standard of comparison at hand, the work and expense of attempting to upgrade the 1960s Schober analog technology did not seem practical or worthwhile, and this in view of the fact that its outcome probably would not compare favorably with today's digital sampling technology.

When we read a short note in one of the Orphan Notes by Red Carlson of Artisan Instruments, Inc. describing a possible digital upgrade for Schober organs, we contacted them and obtained their demo CD and descriptive literature. In it they described a conversion of a Rodgers analog electronic organ over to their digital system and it sounded like a do-able approach for our 1960s Schober Recital. And it appeared to be possible at a substantially lower cost than simply replacing the Schober with an up-to-date Allen or Rodgers or other digital electronic -- and with a more sentimentally satisfying approach as well (keeping our old Schober console).

The Artisan people, Red Arlson in particular, were most helpful, understanding, and patient in guiding me through the potentially troublesome conversion process. It is important to stress here that digital organ technology is heavily computer-oriented. For someone like me with a mechanical/ metallurgical engineering background who has problems operating an ordinary computer, the prospects of becoming immersed in this foreign and hostile technology presented a formidable challenge. Keep in mind here that computer science, or anything like what we know today, had not been developed or even dreamed about when I graduated from engineering school in 1957. But with repeated trial and error and countless e-mails to Artisan Instruments, the Schober conversion slowly materialized.

I will try to outline, in simplified form, the basic steps in converting the Schober analog circuitry over to today's digital technology while retaining a very recognizable and functional Recital console: The first thing that must be done - once it is decided that the conversion is to occur - is to completely gut the console of all its analog components. This means removing all the tone generators and interface connections along with the combination action, stop board, and all amplifiers, power supplies and all associated wiring. Retained, at least by the way I did it, were the keyboards and pedal clavier and their printed circuit boards with the gold-plated buses and contact springs. Although retained for reuse in the digital conversion, the keyboards, pedalboard, stopboard, and their contact components must also be removed from the console for modifications that must be done on them.

Since different Schober organ models may have differing configurations associated with the keyboards, stop tabs and pedals, I will confine my description to generalities which should apply to all or most Schober models. As mentioned above, the original keyboard and pedal contact assemblies are retained to be adapted to the digital system. All that it requires is a simple make-and-break contact for each key on each manual and pedal note. This is an oversimplification, but an important point to keep in mind.

For purposes of assuring redundancy, I retained all spring/bus contacts for each key to assure reliable contact and I simply soldered a jumper wire across all spring contact points for each given key. With the keyboards out on the bench, it is a good time to carefully inspect and repair any bent or broken contact springs and generally check everything under the keys and their action. I included in this series of steps a complete removal of all the gold-plated buses to facilitate their cleaning. I used Nevr-Dull metal polish to remove all traces of dirt and residue build-up (over 40 years of accumulation!), then sprayed each bus and gold-plated contact spring with a coating of Caig Laboratories Pro-Gold, an electrical contact cleaner I had frequently used on the Schober keyboard contacts in the past.

I also removed the individual isolation resistors from each original Schober key contact. A 2-3 ft length of 28 gauge color-coded plastic-covered lead wire was soldered to the end contact point for each key. This may not have been the ideal wire size, but I had a large quantity of this color-coded wire on hand from wiring the Moller previously. These key contact connections were individually identified by color code and key identification and entered into a table for later reference when the connections were made to the Artisan input boards and entered into the computer program governing organ operation.

At this point, the modified and wired keyboards and pedalboard were returned to the console with the connected leads bundled as neatly as possible behind each keyboard. These leads are later connected in their proper sequence to Artisan input boards mounted behind each keyboard and pedalboard.

The buses on each keyboard are connected (as a common) to a 5 volt DC power supply to complete the circuit through the input boards when each key is pressed. Each key has a unique input address that is recognized by the input/interface boards and computer program which signals a selected tone sample to be played through the later-stage amplification circuitry. A standard 12 volt DC lead-acid storage battery (farm equipment type) and an on- line trickle charger operate the stop tab magnetic assemblies described below and which replaced the original Schober stop tab assembly.

This is probably a good place to mention what is generally required for an operational digital version of the Schober recital organ -- at least as I did it using the Artisan Instruments system. No doubt, there are other systems having similar functions that will produce similar end-results and their components and requirements will undoubtedly differ somewhat from what I used or did.

One initial requirement is the availability of an external computer ("host" computer). For convenience, I have been using my standard laptop that is several years old. The computer is necessary for downloading the program that operates the organ and for the various diagnostic programs used at various stages of installation and operation of the organ system. These operating systems are in the DOS format and require some familiarity and experience with using this computer operating system. The "host computer" is a temporary connection and is removed once the programs are downloaded and the organ is working satisfactorily. There are also several input and interface circuit boards for accommodating the input leads coming from the keyboards, pedal notes, and stop tabs.

For my Schober Recital, I had had material deterioration problems over the years with the stop tab pivoting assemblies. The original plastic components became embrittled over time and fractured, necessitated reworking these from time to time. Accordingly, it did not seem advisable to continue to use these existing stop tab assemblies in the digital upgrade, so the original stop tab board and combination action were removed entirely from the console. These were replaced with new Reisner stop magnet units which were mounted individually on a replacement stoptab board constructed of walnut-veneered plywood following the original Schober console construction drawings. In addition to input and interface circuit boards, there are two computer (CPU) boards and a few other components obtained from Artisan that are required for the system. Their installation/operating manual is fairly extensive and complete and should be sufficient for anyone who had previously assembled a Schober organ kit. Prior knowledge of computer systems is an asset, but probably not absolutely essential, as my understanding of computer systems and programming is certainly limited; yet, I was able to install and operate the new system in my old Schober console. It may be useful to point out here that the Artisan system is not a kit in the sense that the Schober series of kits were, with their extensive step-by-step detailed instructions and bags of parts. You have an instruction manual that is fairly detailed and accurate but it is, of necessity, generalized to accommodate a broad range of organ options -- even the addition of digital ranks to existing and operating pipe organs. Personal help is available as needed, and anyone with basic manual mechanical skills and aptitude (and some patience) for working with organ circuitry should

have no difficulty in converting a kit-built Schober.

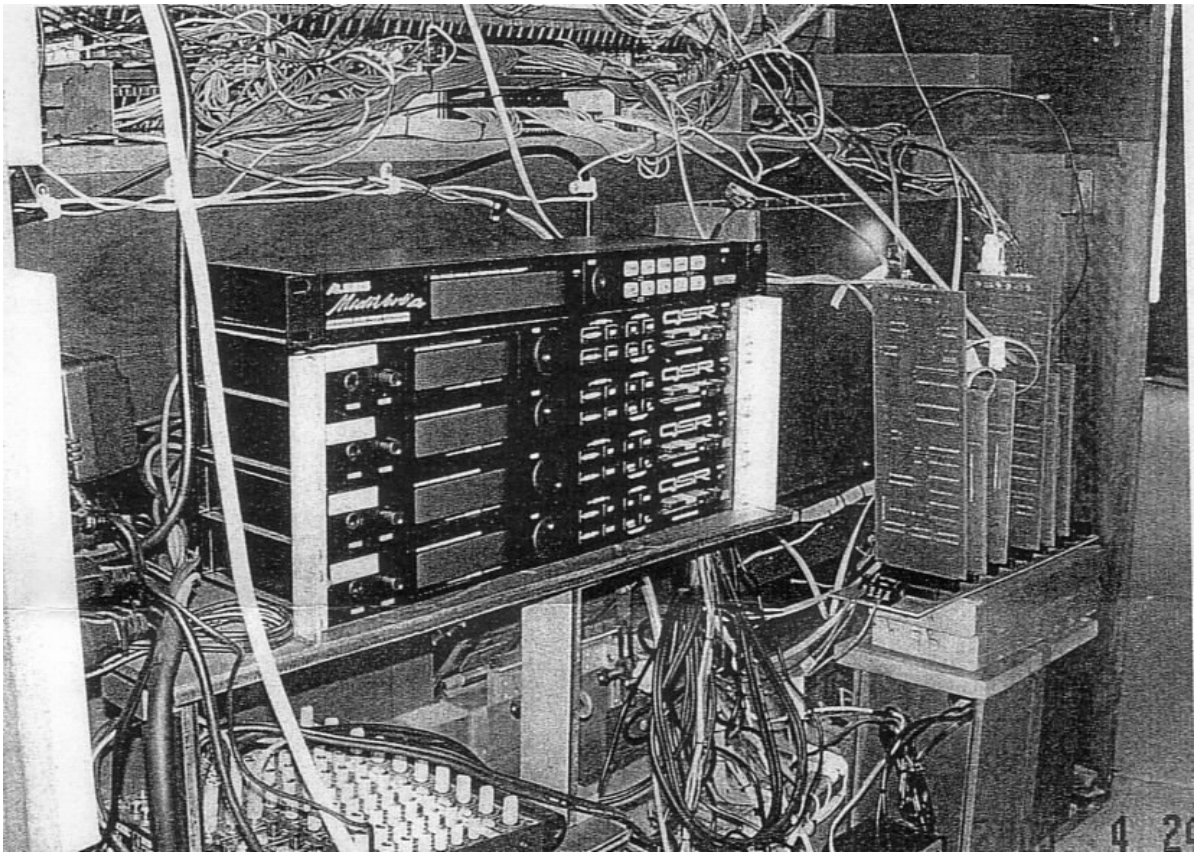
Along the way, I introduced some complications into the conversion process in requesting Artisan to provide a hybrid classical/theater ensemble of voices -- both on the same console. It had been our desire to augment the original Schober Recital to play theater organ voices (through their Library of Stops) that prompted me to look into the digitization venture in the first place. Of course, the addition of a full complement of theater voices (Wurlitzer pipe organ samples) to the set of classical organ voices doubled the number of Alesis voicing components and sound cards, among other complications, but Artisan technicians came up with a way to readily switch from classical to theater voices (a single toggle switch on the console) and a modified computer program. A second set of engraved stop tab nameplates above the classical-labeled stop tabs (see photo) comes into play when the classical-to-theater toggle switch is thrown.

To make everything work and the organ play requires a computer program from Artisan to be downloaded through the "host computer" to the organ computer (CPU board). The program must be customized for the particular installation using a "definition" that reflects the specific key addresses and stops/voices used in the organ. In my experience, writing and revising this definition was a task best left to the experts at Artisan, although with some computer knowledge and an understanding of computer programming, plus the guidance in the Artisan manual, anyone should be able to handle the "definition" requirements. For my somewhat complex hybrid system and lack of computer know-how, I preferred to defer the definition and its intricacies to the Artisan people.

To enable and accommodate a workable combination system consistent with that of most well-equipped pipe organs today, additional console pistons and toe studs were obtained from organ parts suppliers and installed on the console. To make everything work as it should and produce the desired quality of sound, the outputs of the voicing components are fed through a Mackie mixer (mounted inside the console) and its output into a pair of existing studio monitors having integral amplifiers. Recent additions include a Carver Sunfire subwoofer for phenomenal bass reinforcement and an Alesis Midiverb signal processor for reverberation control.

The result of all this (and nearly two years of part-time effort) is an outstanding system with true organ sound and a wide range of voicing for both classical and theater ensembles. With two organs in our fairly spacious house -- this upgraded (digital) Schober and the Moller pipe organ -- we have a good standard for comparison of the two systems. I must say that, depending upon the selection of stops my wife uses while she is playing, I am frequently unable to determine at a distance which of the two organs I am hearing. This, I believe, is a tribute to the pipe organ realism available in the digitized Schober Recital and its playback system. Accordingly, we are very pleased with the final result, and are glad that we have retained the old Schober Recital console and many of its original components which now have a new and extended life in today's digital electronic world.

See the accompanying photos:



TANDEM AMPLIFIER KIT

Our member Mark Gordon writes:

Hi A.K.: In reference to a previous conversation we had about a Schober kit that connected 2 TR-2 amps together, I have found out the following; in the literature you sent me I found on page 8 in the last paragraph it states: "where 80 to 100 watts of amp power is needed -- such as in churches and auditoriums -- 2 Schober TR-2 amps can be connected in tandem to 1 LSS- 100 system using the SCHOBER TANDEM-AMPLIFIER KIT." I believe the literature is about the construction of the LSS-100 speaker. In another piece of lit. on page 49 it states the following: "The LSS-100 can handle 100 watts of program power or organ signal. If the installation requires that much sound to fill the auditorium, two TR-2 amps can be used to drive the LSS- 100. A SPECIAL TANDEM-AMPLIFIER KIT IS AVAILABLE; IT PARALLELS THE TWO AMPLIFIER INPUTS AND PLACES THE OUTPUTS IN SERIES." I believe this came from Dorfs' musical instrument book but am not sure. This "tandem- amplifier kit" is what I am looking for. A schematic would work also for I could build it if I could see the parts and layout. ANY INFORMATION WOULD BE GREATLY APPRECIATED!!! I would gladly pay for any shipping or postage cost for the information or the kit.

On a different note, I changed my e-mail address to thomasvox@juno.com. Please put this new address on the Schober Orphans' page so people can contact me if needed. Keep up the good work. I read the newsletter front to back every time I receive it. Thanks again for all your help. Have a very good day,

Mark Gordon

ADS

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

Wanted

Schematic for, or Tandem Amplifier Kit See letter above from Mark Gordon. Email: thomasvox@juno.com

(If you don't have e-mail, write to me and I will send Mark an e mail. I would also be interested in a Schematic, AK)

WANTED

Devtronix generator/keyer kit (assembled or not). Contact: Dick Stallings, E-mail: stallingsd@edgecombe.edu Phone: (252) 823-5166, Ext. 273

FOR TRADE OR BEST OFFER

Geoff Morse writes:

Alex,

I purchased an entire Theater Organ Kit from the company in NYC just before they went out of business (no hint of that when I was there in person -- they kept mum). I have been dragging it around with me for numerous moves, etc. Still not completed.

Would it be of any interest to anybody that I have an uncompleted Theater Organ Kit? It consists of cabinet, bench, PC boards (some completed, switch pc boards not wired, nor the peddle group). Mechanical tape reverb, manual, etc. Not even sure all the parts are there, but think they still are.

All new (albeit old in the box), including keyboards and peddle wood, peddle caps, etc. Cabinet and bench put together but not stained. Been sitting and moved from place to place for years, so needs work, especially around the area that sits on the floor. I don't want much for it, just something.

Would like very much to see all of it go to a Schober person. Was building it for my father (I am an electronics guy) and he passed away. I regretfully do not play.

Geoff Morse Located in Ocean Park, WA Tel: (360) 2454-9099 fax: (360) 665-3190 URL: www.sanddollarstitchery.com Email: gmorse@centurytel.net

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