

## Questions and Answers on the Technical Side

by Lance Johnson



### Do you have any questions?

Send them direct to:

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**Q.** Recently I reread your article on "Considerations for Organ Chamber Design in Homes," Dec. 1976/Jan. 1977, as I am planning to install my 2/4 theatre organ in my newly-acquired small home, which has three rooms on the first floor and three on the second. The organ chamber would be on the second floor, using the tone chute concept with listening room and console on the first floor. Realizing that I would save space by having the shades in the ceiling, I have already decided against this idea because having a tone opening above the console just turns me off. I plan to use only one of the set of six shade frames as I feel this will be sufficient for volume. How deep should the tone chute be if I make it the entire width of the listening room, which would be about 12 feet?

**A.** First of all, I don't recommend a tone chute for any organ unless there is simply no other way to do it. There are two disadvantages in this; the tone of the organ will be altered because it has to travel around two corners, which will produce a double sound shadow and hence a drop in volume and a reduction of the higher frequencies, and it robs much space from the house itself. In your case, you will need a chute four feet deep,

which will cause a loss of 96 square feet of floor space, or 48 square feet per floor, plus the wall area. Then you will need at least one deflector set at 45 degrees at the top of the chute to get the tone reflected downward. With only four ranks your organ will be quite soft and bass heavy. If this is what you want to settle for, then go ahead and use the chute method.

**Q.** During your seminar in San Francisco on laying out an organ chamber, the subject got off the track with a discussion on how to replace a secondary pneumatic on an offset chest which was lying on the floor frame. As the pneumatic is mounted to the chest with screws inserted from the bottom, would you please re-iterate your solution for replacing the secondary?

**A.** I told the audience that if it was impossible to remove the chest from the floor the pneumatic must be pried off and re-installed with just glue and a new gasket, or by installing four screw eyes around the pneumatic and screwing it back in place from the inside of the chest. This seemed to generate some heated controversy and I was accused of not doing the job in a "literal" and "historical" manner. The particular chest repaired in this manner held an open 16' wood pedal bass of enormous scale and there was no time in the budget to take off all the pipes, unwind and unwire the chest to repair this one note. However, in other cases, if at all possible the chest should be turned over, the screws removed from the bottom and re-inserted as the factory had installed them. Even better yet, the entire chest should be re-leathered if it is to be turned over anyway. Where do you draw the line? A dead note has occurred and a decision has to be made

considering the amount of time allowed. Was Wurlitzer correct in designing the offset chest in this manner? I am sure that they were not in the least concerned about future removal of the pneumatics or they might have screwed them on from the inside. Happily, most offset chests in a Wurlitzer organ allow just enough room for an offset screwdriver to remove the secondary, but it is extremely time-consuming.

In today's organs, especially those manufactured by major builders who have their own service representatives, if a problem like this occurs the service man will spare no time in telling the factory that they have a design problem and demand a change. Most reputable organ manufacturers will listen to suggestions from their reps and try to correct a problem that has to do with a very difficult service area. It is no secret that many components of Wurlitzer as well as other makes of theatre organs are extremely difficult to service. If this were not the case, I would get only half the letters I receive from organ installers and service people. I am sure if given a chance, we could all think of better ways to build organs to make them more easily serviced. Meanwhile, we have to deal with these vexing problems and many times, the time allotted is not sufficient to do a "literal" or "historical" restoration job.

To sum up, please note that for any major builder of theatre organs, be it Wurlitzer or Robert-Morton, the slightest alteration in the design of a chest would be quite costly for the manufacturer and would interfere with meeting mandatory installation deadlines.

**Q.** I would very much like to know if any measurements have ever been made to establish the transit time of a modern electro-pneumatic pallet mechanism.

**A.** Many years ago I read in a reliable source (I forget the name) that a low pressure chest as used in church organs will open in approximately 1/40 of a second, and a high pressure chest like that built by Wurlitzer on ten inches of wind would operate in 1/100 of a second. Perhaps one of our readers could bring this test up to date and we could publish the results.