HOW TO RUIN a THEATRE ORGAN

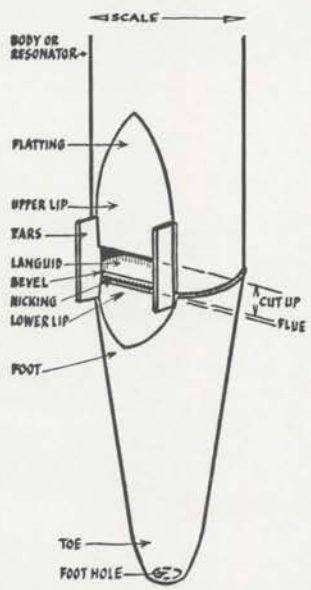
by Dan Barton

Cartoons: Seonaid

PART TWO—CONCLUSION

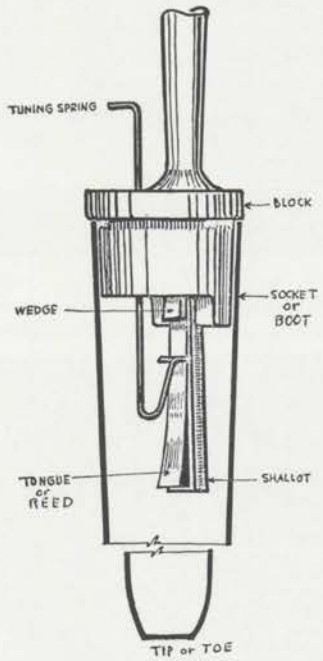
In the first round, veteran organ builder Dan Barton explained the difficult-to-learn skills required of organ builders, then described some of the "surgery" performed by well-meaning but unschooled experimenters who "always hurt the thing they love"—the very pipe organ they have so painstakingly restored. Dan continues with some specific examples.

THE quality or timbre of a flue pipe is obtained by the division between the languid and the upper and lower lip. When the balance of this division is changed by raising the upper lip and increasing the wind pressure, the tonal quality is permanently damaged and the pipe is ruined.



Parts of a Flue Pipe (from 'The Organ Today' by Norman and Norman (St. Martin's Press).

The tonal characteristic of a reed pipe is created by the vibrations of the brass tongue setting in motion sound waves in the barrel of the pipe, thus producing a harmonic development which results in the pleasing tonal character of the pipe. When a reed pipe is overblown the reed "freezes" to the shallot and there is no



Parts of a reed pipe (from 'The Organ Today' by Norman and Norman (St. Martin's Press).

sound. The organ "surgeon" then bends the reed to increase the distance between the reed and shallot. He then increases the pressure 10 or 12 inches which causes such a violent action of the sound waves in the barrel of the pipe

Wind pressure isn't critical when applied to a New Year's party honker.

that there is no harmonic build-up. The result is that the original tone quality is gone and the pipe sounds like a horn being blown at a New Year's Eve party. To repair the damage the bent reeds would all have to be replaced and the pressure returned to normal.

I met the noise-at-any-cost-artist, who did this job, and he proudly told me he

The closer the calliope to the console, the thicker the ear muffs.

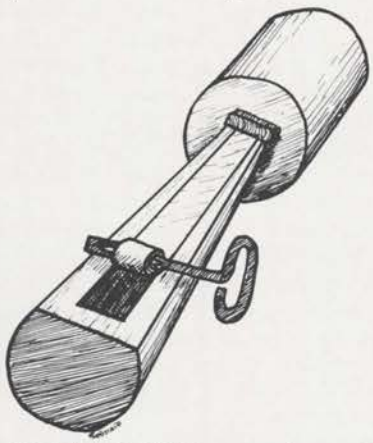
was an organist, had never seen an organ factory, and had heard about revoicing and had figured how to do it all by himself. I finished my visit with him by asking him if he could turn a Diapason into a Vox Humana. He looked serious and said he was not sure, but he was willing to try.

To gain volume at a higher pressure without losing the tonal quality you must use a different rank of pipes with a larger scale, wider cut mouths, thicker metal or heavier walls on wood pipes, and for reeds, larger scale, long shallots, larger openings in the shallots, and longer and heavier tongues.

If you ever have an idea of ruining an organ by the methods just described, write to me and I will send you the name of an air calliope maker. By using Reisner's all-electric valves on the calliope and adding a switch to the relay and a tablet on the console, you can add noise without tonal quality to any organ and you will not have to ruin any valuable organ pipes. I suggest the calliope be placed right beside the organ console, as close as possible.

Here is another one. Three enthusiasts restored a 3-14 Barton and did a good job. Then for some reason beyond comprehension they decided the valves on all the big stops were too small. They bought felt and leather and made new valves about twice as large and three times as heavy. They worked long and hard installing them. The original valves were of a weight that worked fast on the pneumatics, the new ones were so heavy they slowed down the action. To get the action back to a quick response they raised the pressure. Now they were over-blowing the pipes and decided to revoice them and they ruined the pipes. Then they wrote to me. My, my was I surprised to find out I had put the wrong size valves on all those Barton organs! They should have written to me before they started.

Back in the old days a large theatre circuit, which bought Bartola pit organs from me way back when they had small theatres, took over the Opera House in one of their locations and we installed an early model Barton in the Opera House. The organ had a 6-rank chest, with 5 unit ranks, all on 5" wind. Five years later they built a new 2500-seat theatre and we installed our newly developed Barton unit organ, a 3-17 on



To get just the right 'high pressure' curve, the 'improver' may adopt radical methods when dealing with reeds.

10, 15 and 25 inches of wind. Came hard times and the Opera House stood closed for many years. Then a group of enthusiasts took over the Opera House, restored the organ and had the use of it. Meanwhile the unit organ in the newer 2500-seat theatre was not being used, and the enthusiasts took note that the pipe scales on the unit organ were larger than the pipes in the Opera House organ. So they got permission to take the pipes from the 2500-seater and put them in the Opera House organ. They enlarged the holes in the rack boards and switched several ranks of pipes. Are you following me? They now had 10, 15 and 25 inch pressure pipes playing on 5 inches of wind! The weak "wheeps" were piteous! Something had to be done, so they "revoiced" the pipes; in short, they ruined the high pressure pipes. The Opera House organ now plays on the original pipes, and the pipes from the 2500-seat theatre are junk.

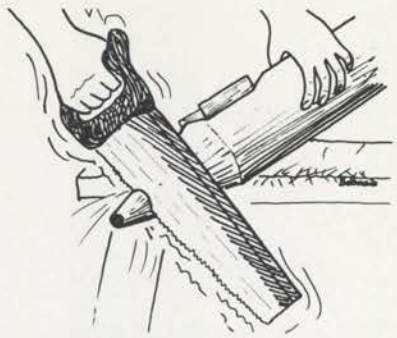
With no weights or springs to hold it down, the Regulator shot up to its full height—and static wind capacity.

Early models of the Barton organ used a damper valve to regulate the air to the regulator. This consisted of a damper inside the air line connected to a lever with a weight at the end, which in turn was connected by a chain to the top of the regulator (later a cone valve, sometimes called poppet valve, inside the regulator was used). When the air raised the regulator the chain closed 'the damper valve. The usual weights and springs were used on the regulators.

A 2-7 Barton with this arrangement was located about 50 miles from our factory. During the years the organ stood idle someone, presumably kids, stole all the weights and springs off the regulators and also took the chains which controlled the damper valves. A young enthusiast bought this organ and, with his pals, put it back in shape and installed it in his home. Like many enthusiasts he was an organist, with no experience in building or installing organs, and with the weights, springs and damper chains gone, he never knew there were such things. When the blower was turned on the regulators went right to the top, stretching the leather to its fullest, and of course the wind pressure in the chests was the pressure of the blower. The musical results were far from good, something was wrong and it was quite apparent it was the wind. They decided there was too much of it. So after carefully considering the matter, they decided to reduce the wind.

The blower was a 2-stage Orgoblo. They took the blower apart and removed some of the impeller blades from the fans. After a few experiments and the removal of more impeller blades, they had it. The regulators did not go to the top, but the organ action did not work, either! A lot of pipes did not speak, and those that did sounded like sick ducks. They had reduced the blower pressure to about 2 inches. Maybe this enthusiast did not know much about organs, but he was smart enough to drive to Oshkosh to see me and he was soon straightened out.

One problem for enthusiasts, who install organs in their homes, is that of too much volume. An organ on 10 and 15 inch wind that sounded fine in a 2000 seat theatre can be too powerful in a home. A good tight chamber, reducing the size of the swell opening and the use of drapes over the opening, solves this problem and still retains all the tonal quality of a theatre organ. I am acquainted with an enthusiast who handled it differently. He owned a 10-rank, 3-manual Barton, voiced on 10, 15 and 25 inch



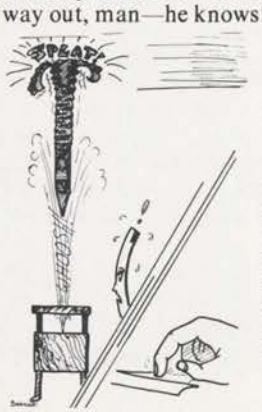
The 'improver' who can't be bothered with reaming out the pipe's toe in order to admit more air, will find the saw most effective—and devilishly permanent.

pressure. The stops were Flute, Tibia, Tuba, Diapason, VDO, VDO Celeste, Clarinet, Vox, Oboe Horn and Kinura. His plan was to change the loud theatre ranks for softer church organ ranks, using used church organ stops of various pressures. He changed the Tuba to a Viol Cello, the Diapason to a Gamba, the Tibia from 8 foot "C" up to a Harmonic Flute, the Oboe Horn to a Dulciana and the Kinura to a Salicional. The pressures on the church pipes varied from 3-1/3 to 7 inches. I have heard the organ. He did not ruin a theatre organ. He just turned a theatre organ into a church organ.

Let me repeat a word about "revoicing." To my knowledge as an organ builder I know that an organ stop that has the proper scale and mouth and correct metal content, or thickness of walls in wood stops, and in reed pipes the proper shallots and reed tongues, and properly voiced to have the correct volume and tone quality, that it is impossible to open the toe hole, cut up the mouth or bend the reeds and play the stop at increased pressure without losing the tone quality or timbre of the pipe. To me there is no such thing as "revoicing"; it is mutilation.

Much of the troubles encountered by organ enthusiasts could be avoided by consulting a competent organ maintenance man. All, but one, and he is the fellow who cuts up the mouths or pipes, enlarges toe holes, bends reeds and raises pressure 10 or 15 inches. He is way out, man—he knows!

Dan Barton



Lightweight pipework has been known to assume astral ambitions when exposed to greatly increased wind pressure.