

Before making any suggestions that might help an organ enthusiast repair a damaged pipe I want to pay a tribute to a person who, in my opinion, is one of the great artisans of the pipe organ industry — THE VOICER.

Many organ fans confuse voicing organ pipes and tuning organ pipes. They are two separate functions. Organ tuning is done after the installation has been completed. The tuner sets the temperament and tunes all the stops to the temperament octave. He also does the finishing, by which is meant adjusting the volume of the pipes in each stop so some tones are not louder or softer than the others. Finishing is most important with reed stops.

A voicer works in the factory or in a pipe shop which is operated separately from an organ factory. He has a voicing room connected with the pipe shop. It takes several years of experience combined with an artistic temperament, a natural ear for tonal quality, great accuracy of workmanship and plenty of patience. He usually starts with such work as weighing metal — zinc, tin or lead — into exact proportions for metal pipes. He helps with the casting, solders metal pipes together or glues on sides around the blocks of wood pipes, always observing and studying the art of the voicer. A voicer usually receives the pipes from the pipe shop in such a condition that no sound can be produced from them. The voicer makes the pipe speak.

The voicer of metal flue pipes adjusts the shape of the languid, which is the flat piece of metal that lies horizontally just inside the mouth, determines the width of the mouth and adjusts the upper and lower lips. He nicks the front edge of the languid like the teeth of a saw, some with shallow nicks very close together and others much deeper and farther apart. Nicking creates a series of air columns instead of a solid stream.

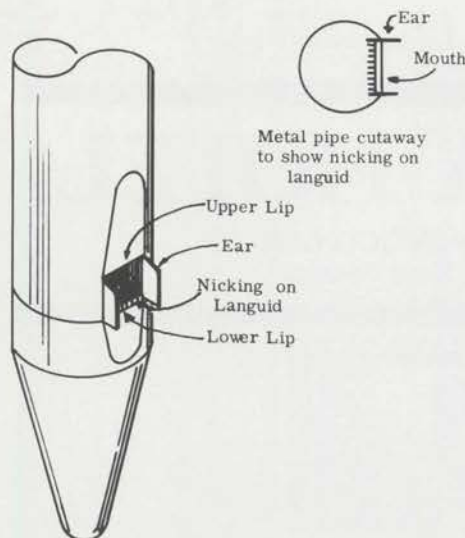


Fig. 1. Parts of metal pipe (mouth).

In wood pipes the voicer adjusts the upper and lower lips and the block. The block is the same to a wood pipe as a languid is to a metal pipe. The voicer by these operations creates the timber or tonal quality, such as French

repairing and voicing damaged organ pipes

by Dan Barton, Organ Builder

Illustrated by Tony Provenzano

Horn, Oboe, Violin and many others. The voicer makes the pipe speak with many of its upper harmonics or partials to produce the tonal quality of Strings, Trumpets and Tubas. He makes pipes speak with no harmonics or partials to produce the tonal quality of Flutes, Bourdons and foundation tones. The pipe with only a part of its harmonics or partials becomes a Diapason. By suppressing certain partials and using only one partial the voicer creates the tone quality of the Clarinet or Oboe. The voicer uses small nicks close together for String tones, deeper nicks farther apart for Flute tones. With reed pipes the voicer adjusts the shallot, which is the partly cut away brass tube that carries the reed. The voicer determines the thickness, width and vibrating length of the reed. Without doubt, the greatest precision of all the voicer's art is the curving of the reed. He curves small reeds with his fingers, exactly the right curve to create prompt speech, no rattle and with correct tonal quality, an exhibition of experience, skill and patience. The large reeds are curved on a curving plate, sometimes called a curving block.

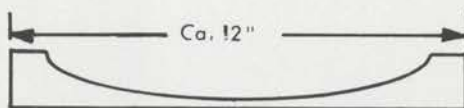


Fig. 2. Reed curving block (side view).

If you want an excellent demonstration of harmonics and partials, secure one of a pair of high grade cymbals such as used in concert bands. Hold the cymbal by the strap and hit the outer edge a sharp blow with a padded beater, such as used to play a bass drum. You

will hear a prime tone and a multitude of overtones. The overtones are harmonics and partials of the prime tone.

I repeat, a good voicer represents years of experience combined with an artistic temperament, a natural ear for tonal quality, great accuracy of workmanship and plenty of patience. He is indeed a great artisan. His value to organs is too often overlooked.

The organ enthusiast has no need for such qualifications, for he will never be confronted with organ pipes directly from a pipe shop that must be made to speak before they can be used, but enthusiasts do encounter voiced pipes that have been damaged so they do not speak properly, or perhaps not at all.

Fixing damaged pipes so they will speak is not easy, but here is how you can try.

Metal flue pipe: If the mouth is badly damaged and the languid (the horizontal piece of metal inside the pipe) is badly bent the pipe cannot be repaired. The languid is soldered inside the pipe during the process of manufacture and cannot be replaced.

Metal flue pipes are made from either common or spotted metal and are easily damaged. If bent only slightly near the mouth the pipe will lose its speech. The tools needed are a Lip Raiser and a Languid Depressor. To make the tools use two old table knives or other metal as thin as a knife blade. If the metal is steel, draw the temper by heating. Cut the blades off square at the end. Bend the end of one blade to a right angle 1/4 inch from the end. The flat blade is the Languid Depressor, the bent blade the Lip Raiser. Use an undamaged pipe for a pattern.



Fig. 3. Metal pipe repair tools made from detempered table knives.

The languid must be in a position near the lower lip to provide a slot through which the stream of air is directed so it strikes square against the upper lip. Usually the trouble is caused by the stream of air passing in front or in back of the blade of the upper lip. Use the Languid Depressor to move the languid slightly up or down and the Lip Raiser to move the lower or upper lip in or out. If the pipe has no speech or if it flies off its speech or sounds its octave or if the pipe is slow to speak, try pulling the upper lip slightly outward and move the languid slightly downward. If no results, reverse the procedure. Take it slow and easy and work carefully on the languid. If the solder breaks loose and the languid becomes loose in the pipe you are done. Do your practicing, if possible, on pipes which don't matter should you ruin them.

If the upper part of the pipe or resonator is badly damaged, try this experiment. Cut the resonator off and replace it with a heavy tin tube. Solder the seam of the tube and solder

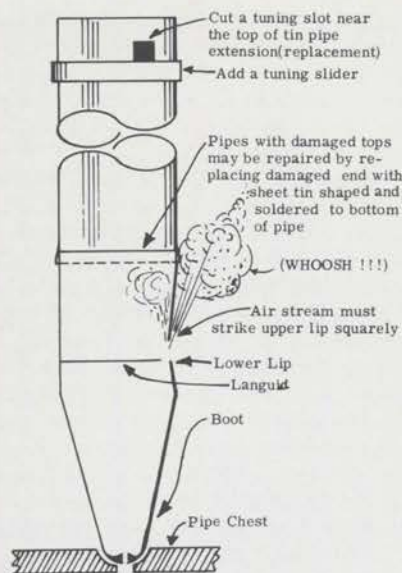


Fig. 4. Metal pipe repair (shows languid, upper and lower lips which may be adjusted to direct air).

the tube to the stub of the organ pipe. It should be slightly longer than the original pipe. Cut a tuning slot in the top. Make a tuning slide of tin so it can be moved to lengthen or shorten the tuning slot. If the slide is not spring material fasten it with a piece of tape. You will not recover the original tone quality, but you will have a speaking pipe which is better than a blank note. Soldering pipe metal is an art unto itself. It melts at temperatures not much above the melting point of solder. Therefore, soldering must be done rapidly and with a light touch. Practice on some scrap pipe metal before tackling a pipe intended for use.

Reed pipes: The shallot is the partly cut away brass tube that carries the reed. The reed block is the metal part which holds the shallot and reed. The wedge is the wedge-shaped piece of metal or wood which holds the shallot and reed in the block. Reeds are also designated as reed tongues.

Reeds can be replaced. Secure some spring brass exactly the same gauge as the damaged reed. Secure enough brass for several reeds. You may need several before you hit the mark. Cut a reed using the damaged reed for a

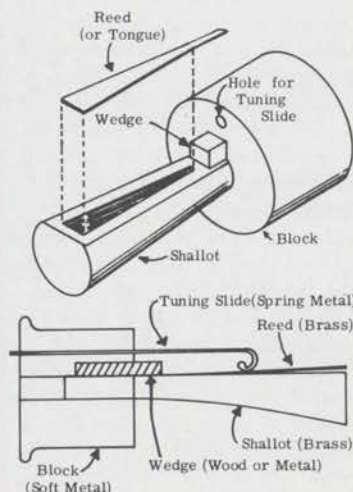


Fig. 5. Reed pipe sound generating mechanism.

pattern. You can also use an adjoining pipe's reed for a pattern. After the reed is cut it must be polished to make sure it is free from grease, corrosion or other substance. The next step is to curve the reed. This is done with a curving block. The curving block can be obtained from an organ supply company. The reed is held on the curving block at the small end. With a tool such as a small half-round chisel or shank of a screwdriver press the length of the reed starting from the small end. Use an adjoining pipe's reed to judge the proper curve of the reed. Experiment by curving small reeds with your fingers. Mount the reed on the reed block and hold the lower end down. Hold the shallot and reed to a light. If you see light between the reed and shallot your experiment did not succeed. Try again. Keep your hands dry when handling reeds and never blow your breath on a reed. You will start corrosion that will eventually spoil the reed.

Wood pipes are not so easily damaged as metal pipes and a first class "do-it-yourself" man can replace a damaged part or even build a new pipe. Make sure the block languid, which is inside the pipe near the mouth, is exactly the same size as the original block. Some organ pipes have two languids but they will

only be found in very large organs where great volume is necessary. The inside surfaces of wooden pipes are sized with diluted glue, the outsides may be varnished or lacquered, if desired.

Keep in mind that repairs undertaken by organ buffs must necessarily be classed as experiments. Don't be too disappointed if you don't get the desired results. Just remember the qualifications of a voicer: 1) artistic temperament, 2) a natural ear for tone quality, 3) great accuracy in delicate workmanship, 4) the patience of Job and 5) several years of apprenticeship. There are no short cuts and it is most unlikely that these abilities will be found very often among the scores of organ enthusiasts now confronted with the problems of such repairs. If a reasonable number of experiments result only in pipes more mangled than before, give up before you are branded a "pipe destroyer." In this case, turn the job over to professionals. But even though you have ruined a few pipes beyond repair you will also have learned something of the working of pipes. So, have fun — and gain some invaluable experience. □

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Long Center Schedules Four Favorite Organists

The 1985-86 Long Center Organ Series offered the Springdale Music Palace artist, Karl Cole, and his friend Anna Chovie for the opening concert on November 1. His concert attracted a large and very responsive audience.

Next in the series, on March 1, will be Tom Wibbels, the versatile artist who had his audience calling for "More!" at his Chicago Convention concert.

Tom Hazleton returns on May 4 for his fourth appearance at the Long Center in Lafayette, Indiana. During the Chicago Con-

vention his was one of the top programs when he played the six-manual Barton in Chicago Stadium.

Ken Double will conclude the series on June 7. He dedicated the organ in February of 1981, and has since played the concluding program to a full house for each of the organ series.

Ticket information may be had by phone at 317/742-5664, or by mail at Long Center for the Performing Arts, P.O. Box 13, Lafayette, Indiana 47902. □

Karl Cole and his friend Anna Chovie at the Long Center console.

(Frank J. Oliver photo)

