

From the Workbench of Allen Miller . . .



PIPE TRAYS: A Primer on the Moving and Storage of Organ Pipes

*There is one safe way to store pipes.
That is on their intended chests,
properly racked vertically,
and tied securely to yokes or stays.
In fact, under such conditions,
pipes will not only withstand
the passage of time, but often will
withstand devastating earthquakes
with little or no damage.*

Pipes stored on chests take up lots of space, and this is not a practical way to try to move them. (I know of one person who tried!) The solution for moving and storage is to build suitable boxes called pipe trays.

Most organ companies build pipe trays of rugged lumber and construction, usually four- to six-feet long and from 30" to 36" wide. Such trays are usually about 3" deep, and will hold the most fragile pipes from a modern classic organ. Large scale theatre organ pipes never seem to fit such trays well, however.

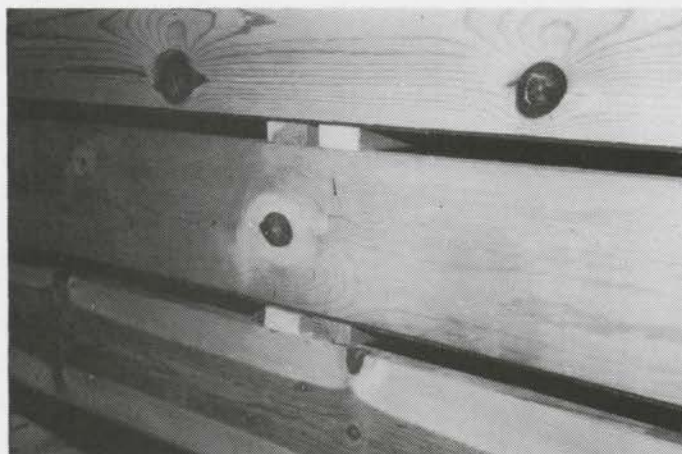
Here are construction details for building pipe trays from inexpensive materials available in almost any town. Usually, materials can be obtained and the trays built on location with a hand saw or sabre saw, a rule, a straightedge, a drill and a hammer.

The trays described are built from 1" pine boards, with bottoms of cheap paneling available at most discount lumber stores. The tray dimensions are derived from the materials, and will yield a finished tray 8' long by 2' wide. Depths are variable from 4" to 8" which will accommodate most theatre

organ pipes. A guide is given for Wurlitzer pipework, which will help when planning for materials. I have used this type of tray for over 20 years with excellent results, even with long-term storage.

The bottom is by itself quite flimsy. Support comes from three cross-braces located at each quarter of the length. Rather than cut hand hold reliefs in the sides, the braces space the trays apart so that you can slip your fingers between trays to pick them up.

After packing, braces are also nailed to the top of each tray. Usually two top braces are enough, although there is nothing wrong with using three. The "trick" is to locate the top braces just inside (or outside) the bottom braces so that when the trays are stacked, they will not slide end-to-end. With braces top and bottom, should the trays slide sideways, they cannot drop into one another.



CLOSEUP OF SIDES OF PIPE TRAYS SHOWING NESTING OF SLATS.

For traveling, the trays can be fastened together with cross braces on the sides and ends and tied to the sides of a truck.

This is not the only way to build pipe trays, but one which is guaranteed to work with a minimum of extra effort.

This scheme will yield one tray capable of handling all but the longest five pipes of an 8' rank. Choose side widths according to ranks being accommodated. A guide is given below:



A 4" tray will hold TWO ranks of pencil strings, Concert Flute, Quintadena, and small scale reeds. 6" and 8" will hold Tibia, Diapason and Tuba ranks. Some large-scale ranks will require two pipe trays. Extra trays will hold pipe supports, chime tubes and miscellaneous parts.

PLANNING:

Determine how many trays and what depths you will need.

For each tray, figure the following materials:

½ sheet 4' x 8' cheap wall paneling for bottom.

2 each 10' x (4") x 1" pine for sides and ends.

(select widths according to depths desired)

1 each 10' x 2" x 1" furring strip for ribs, top and bottom.

22 each 2½" 8d-common nails.

48 each 7/16" x 1" 11-gauge roofing nails.

ASSEMBLY:

Start with a 4' x 8' sheet of wall paneling, nominally ¼" or 1/5" thick, mark the exact center down the length and cut the sheet in half. You will have two sheets 2' (1'11-7/8") x 8'.

Cut two pieces for the sides 8' long, and two pieces for the ends 1'-10¾" long. This dimension will work with 1" stock, which is nominally either 13/16" or ¾" thick. Normally

the frame will wind up being 3/16" wider than the bottom panel, which allows for slight variations in the straightness of the sides.

Cut furring strips for the top and bottom slats. Furring strips are nominally 10' long x 1 1/2" x 3/4". Cut them into 1' 11-7/8" lengths, five per tray.

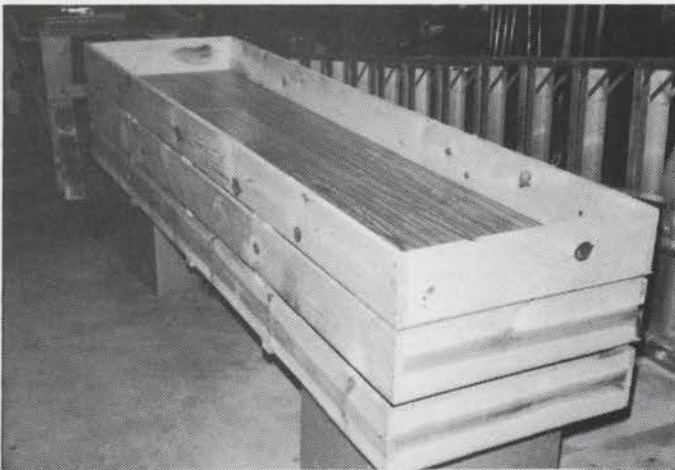
To avoid splitting the wood, blunt the end of each nail by hitting it with the hammer first. Drill pilot holes in the long sides if necessary.

Nail the ends together with three or four 2 1/2" 8d-common nails. You will be forming a rim with the end pieces nailed between the long side pieces.

Square up the sides and nail the bottom on with 7/16" x 1" 11-gauge galvanized barbed roofing nails. These have large heads which will hold the somewhat fragile paneling well. Space the roofing nails every 6", and the 2" nails every 2". Avoid nailing the bottom at 2' and 4' points as slats will be nailed on there.

Nail three furring strips on the bottom, spaced on 2' centers. You should drill pilot holes in the slats to avoid splitting the ends. These slats will ultimately support a good portion of the weight of the pipes in the tray.

After packing the tray, nail the remaining two slats across the top of the tray so that they are spaced just inside the location of the bottom slats.



COMPLETED PIPE TRAYS.

TIPS ON PACKING

It is well worth taking the time to wrap each and every pipe in brown wrapping paper and newspaper. Over a long period of storage, newsprint, especially color sections, may discolor pipe metal, and disintegrates faster than brown wrapping paper. For a short period, newspaper is suitable, and better than no wrapping. The paper keep pipes from scratching each other and gives some protection from denting, as well as keeping dirt away. While plastic bubble wrap may seem like a good material for wrapping pipes, the plastic will discolor the pipes in time, and this material is not recommended unless the pipes are first wrapped in paper.

Wrap the pipes by rolling them diagonally in the paper, folding the ends over about halfway. If you have any doubts about the procedure, it is the same as that used to wrap grinder (submarine, hoagie, etc.) sandwiches! Top octave treble pipes may be wrapped in bunches. I prefer to wrap no more than 6 pipes to a bundle. The technique here is similar except that you try to keep the bundle flat, not rolled up like a log. If you take the time to write each pipe note letter on the outside, you may be glad you did later should you want to find only the "C" pipes.

Pack the pipes in order in the tray from side to side, reversing each pipe end-to-end. If you place each pipe so that its ears face upward, they are less likely to become damaged or to damage adjacent pipes. After completing each layer fill the empty spaces with crumpled newspaper, and cover the whole with several layers of paper to give a flat bed for the next layer. Cover the top with at least two layers of paper laid flat. You may use masking tape to secure pipes if necessary.

Reed pipes which have socketed boots (those which come apart from the resonator) should have their boots removed and packed separately. These as with all the heavier pipes, go on the bottom of the tray, NOT on top of pipes.

Write the name of the rank on the outside of the tray. You may want to use a cryptic name for those valuable ranks. I never label brass ranks with their real names, nor do I divulge publicly what I do call them.

When you fasten the top braces, crumple up some more paper and wedge it between the braces and the top layer of pipes to keep them from shifting easily. This and some criss-crossed masking tape will enable you to tip the tray slightly to go through a narrow aisle or down stairs without fear of dumping pipes on the floor.



METHOD OF FITTING PIPES INTO TRAYS, WRAPPING REMOVED FOR ILLUSTRATION.

Careful packing and storage of pipework will save many hours of "body and fender" work when it comes time to re-install the organ.

TRAYS USED FOR 15-RANK WURLITZER STYLE 260

Tibia	6"	
Diapason	6"	(2)
Tuba	6"	(2)
Trumpet	6"	(Resonators nested in 4 groups)
Flute	4"	
Clarinet	4"	
Oboe Horn	4"	
Saxophone	4"	
Quintadena	4"	
Solo String & Orch. Oboe	4"	(Pack Oboe on bottom, String on top)
Kinura & Vox Humana	4"	(Pack Vox on bottom, Kinura on top)
VDO & Celeste	4"	(Pack two ranks in pairs of pipes)