EMBEDDING PROGRAM CHANGES INTO PERFORMER TRACKS

H ERE'S A TECHNIQUE I USE TO INsert program changes in my Mark of the Unicom Performer 3.5 sequences. When creating songs, I'll start by recording sections of the song into small sequences that MOTU refers to as "chunks." Once I've created several chunks, I can arrange them in a song window to form a continuous sequence. Within this window, I can place chunks end to end or one above another. Chunks placed end-to-end play in sequence, one after another; those placed vertically play simultaneously.

Once my song is arranged, I record program changes and MIDI volume levels for each track in single-bar chunks. As Lachlan Westfall de-

scribed in his Jan. '91 "Mind Over MIDI" column, I've determined that each synth I use will change from one patch to another within 10 clocks at 120 bpm. (Performer has a resolution of 480 clocks per quarter note.) With this information, I can calculate acceptable locations for program changes to be inserted inside a song where necessary.

After I've placed my sequence chunks in order, end to end, I arrange my program-change

chunks above the song chunks. At any time, there may be two or more small sequences playing. If a program change occurs at an inopportune moment, I can slide it forward or backward a few clocks, or alter the sequence so that notes don't sustain too long.

The advantage of this technique is that once all my chunks are properly arranged, the program changes remain separate from the sequence. This simplifies the process of editing, because if I want to transmit a different program change than the one I've specified, I don't have to sift through a ridiculous quantity of MIDI data—notes, aftertouch, continuous controllers, etc.—to zero in on the program change I want to alter.

If your sequencer doesn't have the ability to manipulate chunks, you might still be able to use an empty track to store program changes and other types of MIDI data that can be more easily handled on a separate track.

—John B. Hameier, Houston TX

BREATH-CONTROLLER INTERFACE FOR THE KORG M1

B REATH CONTROLLERS can add a subtlety of expression to your synth playing that is difficult to achieve using a keyboard alone. Here's a circuit that lets you use either the Yamaha BC1 or BC2 breath controller as a MIDI controller for the Korg M1.

The breath controller interface is basically a control-voltage mixer that drives the internal LED of optoisolator 01. (See Figure 1.) The output stage of 01 is a photoresistor that acts like a potentiometer plugged into the M1 pedal input jack. Gain pot R2 determines how much modulation effect the breath controller will have, and offset pot R1 allows you to set the modulation base-point to taste. Jack J2 is an input that accepts control voltages between

Fig. 1. Circuit diagram for the M1 breath-controller interface.

0 and +5V from sources like LFOs, envelope followers, and other prehistoric relics. The unit can be powered by two 9-volt batteries as
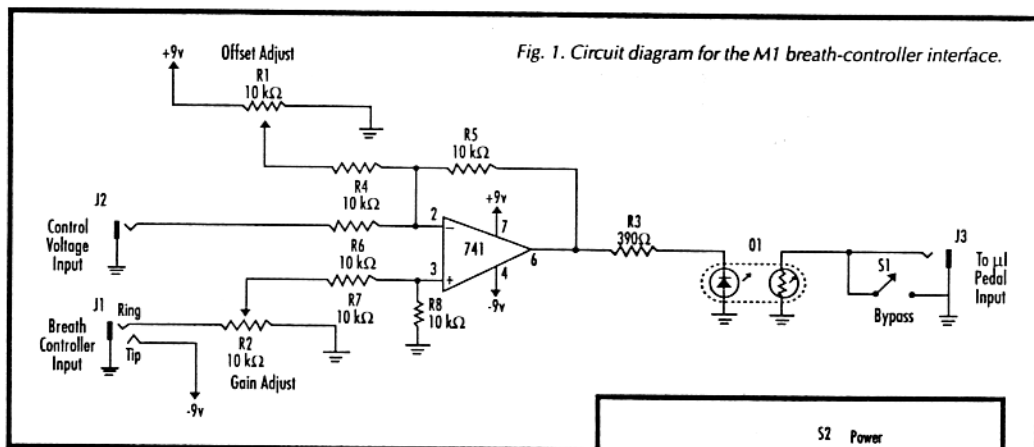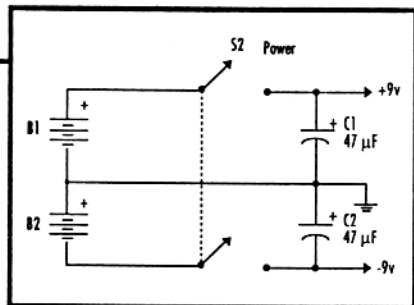
shown, or using a DC power adapter.

To use the device, connect the output at J3 to one of the M1's pedal inputs with a patch cord, assign the desired function to that pedal on the M1's Global page F2-2, and blow into the controller while playing the instrument's keyboard. The breath controller is most effective as a controller for volume or VDF cutoff. If you really want to get twisted, select data entry as the pedal function, go to program edit page F0-2, and use the breath controller to whiz through Oscillator 1 waveforms while you play. Think of it as budget wave sequencing.

—David Snow, Gaithersburg, MD

PARTS LIST

RESISTORS (1/4 WATT, 5% TOLERANCE)

R1, R2	10k linear pot
R3	390 ohm
R4-R8	10k ohm

CAPACITORS (16 WORKING VOLTS MINIMUM)

C1, C2	47μF

SEMICONDUCTORS

IC1	741 op amp
O1	Clairex CLM6000 opto-isolator

OTHER PARTS

J1	1/8", 3-conductor open-circuit phone jack
J2	1/8", 2-conductor open-circuit phone jack
J3	1/4", 2-conductor open-circuit phone jack
S1	SPST switch
S2	DPDT switch
B1, B2	9-volt batteries
Misc.	8-pin DIP socket, circuit board, wire, knobs, enclosure

PART SOURCES

The CLM6000 can be ordered from Digi-Key Corp., 701 Brooks Ave. South, Box 677, Thief River Falls, MN 56701-0677. All other parts are commonly available from many sources, including Radio Shack.