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FROM: Zapped Taps™/Alfred Desio 213-665-5628
ABOUT: Tap-Tronic™ System Article #1
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Tap-Tronic™ System Article #1 for International Tap Association (1/9/96)

Alfred Desio, the first tap dancer to explore the electronic possibilities of tap, has been developing, evolving, and performing his invention Tap-Tronics™ since 1979. His system was used for the Tri-Star movie *Tap* starring Gregory Hines.

The following is a basic explanation of how you can assemble your own Tap-Tronic™ system.

Tap-Tronic™ System

In order to have a basic electronic tap setup you need the following:

1. - 1 pair of shoes (tap) that can be experimented on if necessary
2. - drum triggers (sometimes called piezo, transducer, or sensor)

They come in different shapes and sizes. But basically do the same thing. When the drum is hit the trigger sends the signal or sound to a destination. In our use the trigger would send the tap click to a destination. Prices vary, \$18 and up, each. For our purpose, one for each tap. However, just one on each shoe placed under the front tap is very effective. If you decide that you want to place one under the heel tap as well, the wires coming off both triggers have to be joined either by a "Y" connector or hard wired (soldered).

3. - Transmitter Receiver

This is known as a wireless. It will send the tap sound from you to equipment without the use of wires. Used, \$60 and up. It should be the kind of wireless that has a monaural 1/4 inch jack connected to the transmitter, which is usually small enough to put in a shirt pocket. If you ask for a guitar wireless you will be right on.

This is basically it. With the above, you can send your tap sound to a receiver (dimensions about the size of a cigar box) that has an output hole in it that you connect to a sound system. This is pretty easy stuff you say? Well yes...but there are important details to address:

A. - Most important is the position of the piezo (microphone) in the tap shoe. It must be firmly bedded between the sole and the tap. It cannot hop around. This will cause false triggering. You want the piezo to trigger only when you tap. Experiment until you are satisfied with the result.

B. - Where do you get the piezo mikes and wireless? At a music store. Explain your project to a knowledgeable salesperson and you'll find that very helpful in getting answers.

C. - What do I recommend you use as a sound altering device for your tap sound? If you are on a tight budge used stomp boxes are best. A digital delay, flanger, chorus, and EQ are best. It's what I used in 1979 and today I still get a wonderful effect from these five stomp

boxes. If you want to hear the effects, I have a tape available at cost. You can call me at 213-665-5628 or send an e-mail to "louisehr@mizar.usc.edu"

The raw sound of a tap signal on a wooden floor can, when amplified, seem harsh. This same harsh tap signal fed through a flanger and digital delay can offer some exciting possibilities. Turn the knobs on the stomp boxes as the signal goes through and you'll see what I mean. On the other hand, tapping on a smooth surface like tempered masonite will create a spike-like sound that when processed through the stomp boxes has a totally different character. I cannot emphasize too much how important it is to experiment. If you know how to access a drum machine with a trigger input, you can use your tap signal to play the drum samples in the drum machine. But truly the first thing you should master is the construct of the piezo integrated into the tap shoe. Remember, it must not be allowed to slip around or false triggering will result. Early on, I mentioned that you can connect your receiver to a sound system so that the tap signal can be amplified. You can do this trick with a home stereo system or any tuner with an auxiliary input. If you don't understand any of this it's OK. You'll learn as you proceed. Find that salesperson and interest them in your project. Or show them this article. And give me a call. Good luck!

Zapped Taps™/Alfred Desio

TO: Jackie Szablewski, ITA Program Director 303-449-7732
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(from article by Desio for International Tap Association called Tap-Tronic™ System Article #2)

Alfred Desio, the first tap dancer to explore the electronic possibilities of tap, has been developing, evolving, and performing his invention Tap-Tronics™ since 1979. His system was used for the Tri-Star movie *Tap* starring Gregory Hines. This is the second installment and covers melodic possibilities with Tap-Tronics™.

Melodic Possibilities

Hello Tappers. This second installment of Tap-Tronics will cover some equipment and how to use it with tap dancing, but first a reminder about your basic set up. You need a pair of shoes you can install transducer microphones in. Transducers, one for each shoe minimum and a transmitter/receiver, also called a Wireless. You place the Transducer securely between the tap and the sole of each shoe. Connect the transducer's wire to an audio cable up each leg and connect both to a Y adapter. Then to the small hand held transmitter. Any question? (213)665-5628 or e-mail louisehr@mizar.usc.edu. Oh yes-you need a sound system. A home stereo will do. Collecting equipment has become major in seeking ways to improve and explore the possibilities of Tap-Tronics. The drum machine is an electronic box that has sounds of percussion stored in it. The sounds are not on tape but are on computer chips. You call the method of storing the sounds onto the computer chips "sampling." The sound to be sampled is recorded digitally into the sampler. In the "Dynacord Digital Drum Machine" and "Add 1 Sampler" you can find one of eight trigger in jacks that when you connect your tap sound to it you can play its sampled drum sounds. Trigger In is another way for the drum machine to play. Instead of pushing a button to hear a cymbal crash, any signal coming into the trigger in will accomplish the same thing. Imagine that you have your Tap-Tronic shoes properly wired and ready to go. You switch on your transmitter-then tap softly, and the drum machine responds with soft cymbal sounds. Then you stomp hard and the drum machine plays a loud cymbal

crash. How do you hear the sound? You must connect the output from the drum machine to your sound system. Almost all drum machines have trigger in because drummers use their sticks to create the signal that tap dancers make with their taps. The example of the cymbal sound is one of an infinite amount that are available in drum machines.

It's true that those tap dancers who get involved with electronics will be challenged similarly to people who have computers. Most electronic musical instruments use a digital language as do computers. Without getting into the technical it is possible to tap melody. What is required is:

1. a computer or sequencer that can store the melodic idea digitally.
2. an interface that can read the tap trigger and translate it into a Midi Clock. Midi clock replaces and performs the same function as trigger. Each tap that you make becomes 1 midi clock. Trigger to midi interface is a common item in electronic musical instruments.

The sequencer can be set to respond to midi clock the way the drum machine responds to trigger pulses. In the case of the drum machine, each trigger pulse or tap plays a cymbal crash. In the case of the sequencer, each midi pulse or tap makes a note of music play that has been previously stored digitally in the sequencer. The drum machine has the sampled sound on a chip and that sound plays and is heard through the stereo you've connected to the output of the drum machine.

With the melodic sequencer the sounds are not stored on chips in the sequencer. Digital information is stored in the sequencer. That is why I compared it to a computer. The sequencer allows you to program digital information that is sent through a midi cable to a box similar to the drum machine that has sampled sounds of musical instruments. If in the music box program #1 is the sound a grand piano, the sequencers' digital information will play a grand piano. How does the box with the piano sample know which note to play? Simply stated, the digital information you have preprogrammed which is controlled by your tap trigger or midi clock sends out a number 60. As an example, the number 60 is designated to play middle C. #61 is always C sharp. #62 is always D. #63 is always D sharp, etc. The next number the sequencer sends when you tap is #61. Then the box with the piano sample in it plays C sharp. I think you get the idea. A chain of events makes the box with the piano sample in it play a note.

Let's review this.

1. Tap shoe with transducer hits floor.
2. Sound of contact travels up wire on leg to transmitter.
3. Tap sound continues through air to receiver.
4. Receiver sends tap sound out to interface.

5. Interface reads tap sound as trigger pulse and translates it to midi clock.
6. Midi clock goes out of interface through midi cable to sequencer with digital information 60 and 61 stored in it.
7. Midi clock number one, or tap trigger one, tells the sequencer to send information number one the digital information 60 to the box with the piano sounds.
8. The box with the piano sample recognizes the digital information #60 and middle C piano note is heard.

As in the case of the drum machine we must connect the output of the piano box to a stereo sound system and the amazing thing is all of this takes about seven milliseconds. Considering that 1000 milliseconds is equal to one second, seven milliseconds is a very fast response.

As compared to the stomp boxes I mentioned in the last ITA issue, costs for a used drum machine, an interface to convert trigger pulse to midi clock, a sequencer to store melodic information digitally, and a sound module with piano samples combined will jump dramatically. I suggest buying used equipment.

Zapped Taps™/Alfred Desio

TO: Jackie Szablewski, ITA Program Director 303-449-7732
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DATE: 7/9/97
PAGES: 2 pages total
PHOTOS TO COME: 2 photos, #1 of Miss So-Ree Oak and Alfred Desio (vertical)
#2 of Colburn Kids Tap/L.A., Miss So-Ree Oak, and
Alfred Desio (horizontal)
SIZE OF PHOTOS: EACH 4 X 5 GLOSSY

Tap On the World Challenge

I was preparing an electronic tap program for the Barcelona International Dies de Dansa last summer (1996) when I received a series of phone calls from the Los Angeles local Korean television station requesting me to teach a Korean movie star to tap dance for a documentary to be televised on KBS, the Korean Broadcasting Station. Now, it wasn't a musical---it was to be a program about "World Challenges," and in this case, the World Challenge was Tap Dance. I explained to the producers that Miss So-Ree Oak (who had never had a tap class in her life) would have to attend daily 3 hour sessions for 16 days, at the end of which she would perform with me and Colburn Kids Tap/L.A. in a festival in Hollywood called Dance Kaleidoscope. I also explained to the producers that this was a very short amount of time to become proficient at tap dance. They assured me that she was athletic and because of her film experience was a thorough professional.

I left almost immediately for Barcelona, accompanied by Louise Reichlin, my wife, and with tap dancer Channing Cook Holmes. We would be performing on a stage in the Courtyard of the Museum of Contemporary Art, also the location of a Festival of Architecture running concurrently with the dance festival. The Festival ran (in various locations about the city) for three days, and my evening featured performers who used acoustic and electronic percussion sounds in their work. We were fortunate that the last Olympics held in Barcelona had required voltage correcting equipment, as my Tap-Tronics™ need to be plugged in. The festival was a huge success and I stayed an additional week to teach Master Classes at El Timbal.

I returned to Los Angeles, and my arrival was immediately followed by Korean movie actress Miss So-Ree Oak, an interpreter, a television crew, the writer-director, and Miss Oak's Mom. First, we all had a Korean lunch, and then we began her first lesson (camera rolling). The program this was to be for was about challenges in life. Miss Oak, widely known film and

television actress in Korea, had always wanted to learn to tap. She had looked many times at the American films of Fred Astaire and of Gene Kelly, but she had never taken lessons. To learn to tap was her challenge. She proved to be a good student, and I began restaging the dance we were performing to include her (camera still rolling). The performance, at the outside Anson Ford Amphitheatre, went well.

Several months later, I received a copy of the tape that was broadcast on Korean television, which was enlightening because at the end of every day's lessons and rehearsals, Miss Oak had gone back to her hotel and practiced all the material (camera still rolling).