GEAR MASTERCLASS

HandSonic Highlights

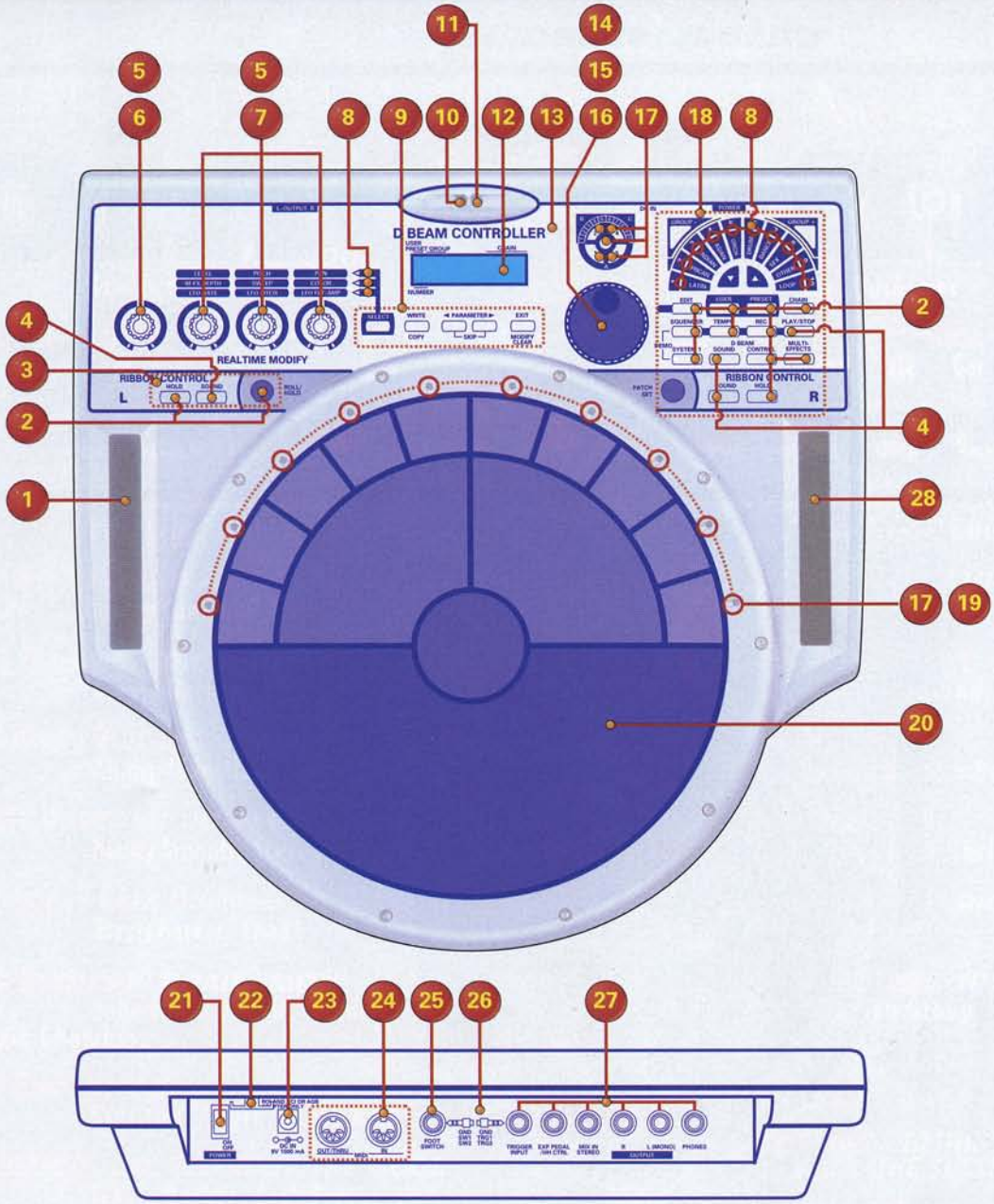
Roland's HandSonic, also known as the HPD-15, has been on the market for a little over five years. Designed to link percussionists that use a hand drumming playing technique to the world of electronic percussion, it remains a unique percussion controller to this day.

In case you're not familiar with the HandSonic, here's a brief overview of some of the specifications: 15 pressure sensitive pads arranged in a circular fashion, 160 factory patches and 80 user patches, 600 instrument sounds (primarily percussion), 64-voice polyphony, built-in 4-track sequencer, two ribbon controllers, and a "D-Beam" controller. To give the player even more control, the HPD-15 has inputs for a kick trigger, hi-hat controller, expression pedal, and footswitch.

We interviewed three HandSonic experts to get their take on the instrument and offer up a few suggestions for your reading and performing pleasure. Mike Snyder has been working with the HandSonic for many years as a Roland product specialist. He's recorded several CDs and played for both film and TV productions. Tommy Snider (no relation to Mike) currently lives in Paris and has been involved in Roland's drum and percussion R&D for more than 20 years. His experience on the HandSonic goes back to before it was an actual product. Brad Dutz is familiar to readers of DRUM! for his educational columns, but he's also a genuine HandSonic guru. In addition to his ten solo CDs, Dutz's credits include playing with some of the biggest names in the industry.

BY NORMAN WEINBERG

HANDSONIC ANATOMY



1. Ribbon Controller
2. LED
3. Rubber Switch
4. LED
5. J R-Knob
6. 20M/M Rotary POT
7. 20M/M Rotary POT
8. LED
9. Rubber Switch
10. Diode
11. LED
12. LCD
13. Panel
14. D R-Knob
15. Rotary Encoder
16. Ring
17. LED
18. Rubber Switch
19. LED Lens
20. Pad
21. Button
22. Hook
23. DC Jack
24. MIDI Connector
25. Phone Jack
26. Panel
27. Phone Jack
28. Ribbon Controller

Live & In The Studio. It seems that the HandSonic is equally at home in the live performance venue or the studio. Most of Snyder's experience is in the studio but he adds "the times I have used the HandSonic in a live setting, mainly as an addition to a drum set, it's caused a noticeable 'stir' in the audience. People have just never seen anything like it." When taking the HPD-15 into the studio, Snider has a few suggestions. "Any generalized EQ setting really doesn't work when recording the HandSonic, or using it live, for that matter. It really depends on what type of sounds the player is using. In general the HPD is rich in the low-end."

He offers a great tip for getting that perfect live sound. "I record something quickly in real time into the sequencer, then start the playback, and go into the room or hall to hear what it sounds like through the P.A. Then I can adjust the general EQ, and if needed, I'll adjust the kit levels, and/or individual sound levels."

All three of our specialists agree that – live or in the studio – the internal sounds of the HPD are so good that they don't need to MIDI the machine into another sound generator or computer. Snider told us that he uses "only internal sounds. With all the editing on board, you can tune any instrument to whatever musical environment you're working in." Snyder comments on both the sounds and the touch. "The internal sounds, for the most part, are very acoustic-like. Now, if I were a keyboard player and not a drummer, I'd be using the HandSonic to program all my drum and percussion parts, regardless of the sound source. Its great sensitivity makes it perfect for the subtle touch of a keyboardist."

Playing Techniques. When you first get your hands on the HPD-15, it's a wonderful feeling to call up a conga patch, play a basic pattern, and hear the instrument respond in a highly natural manner. But playing the HandSonic in an unnatural manner can also be a lot of fun. The five larger central pads along with the ten smaller pads offer multiple triggering possibilities – layering and contrapuntal performance – that just aren't available with any other percussion controller. Our boys agree that each performer has to approach the instrument on its own terms and in their own way.

"This is where the challenge of creating your own playing technique comes in," Snider says. "That's also part of the fun too." Using this technique, "one player can sound like two or three percussionists who play perfectly together. And even if they play bad, they're still together." He continues that even though the HPD is designed as a hand drum, "it's a completely different instrument with different dynamics and hand positions. Of course, hand techniques, stamina, finger control, and independence all contribute to a more dynamic and creative performance."

Snider offers up an example of his performance technique with Preset 01/13, Pandeiro. He explains, "With the right hand, the fourth finger moves between the last four small pads – cowbells and other instruments – and the forefinger always plays on the upper large right pad, and the right-hand thumb on the lower large right pad. The left hand is playing with the thumb on the large lower left pad and the other fingers on the upper large left pad."

Dutz tends to play the instrument "with both hands – left on the lower left pad and right hand on the lower right pad – with the middle three fingers, just as I would when playing a frame drum between the legs. This can lead to many rapid tablaesque grooves. Generally, I use the larger pads more often, especially for quick switches." He offers an especially useful application by adding, "I took two hand-clap samples and raised one pitch and lowered the other, and made different decays with different reverbs. Then I created a patch with one of the sounds on the lower left pad and one on the lower right pad. I played them at the same time, even with a slight flam, and got a very large realistic sound of several people clapping together."

"Playing two or more sounds together opens up a new dimension of sound," Snyder says. "I can do things that I can't do in the acoustic world, like claves, triangle, and cowbell together at the same time." He agrees that playing the HPD requires "a lot of finger techniques. Seems that all that drumming on the tabletop and the back of the steering wheel is now paying off. The pads are incredibly sensitive. You can play right at the edge of the pad, right next to another pad and there is no false triggering or crosstalk."

Since the pad layout of the HPD is not the typical black/white pattern of a keyboard, performing melodic passages can be confusing. Snyder doesn't use the HandSonic for much more than playing very simple melodic parts. "That being said, I've seen people take the melodic side of the HPD-15 to the edge," he adds. "Tommy Snider knocks my socks off with what he does melodically. He uses a whole new finger/hand technique." However, Snider modestly states, "When I use it melodically, I basically create my instrument for the song, and assign and tune sounds in a way that lets me play it easily. Sometimes melodic sounds are only on the outside ten pads; sometimes to all the pads." Dutz states that he uses the melodic features of the HPD for "pitched gongs, balaphone, and gyilli," yet confesses, "layouts are still random on my melodic patches."

Controllers. We all know that percussion instruments are defined as those that create their sound from striking, scraping, or shaking. The striking aspect is well represented in the world of electronic percussion, but controllers that allow scraping and shaking are much less common. The ribbon controllers on the HPD are one of its most unique features – the D-Beam is the other.

It's a pretty obvious choice to lay guiro or cuica sounds under the ribbon controllers, but Dutz has had success assigning other sounds to the ribbons. He suggests, "Mark trees, wind chimes, turntables, even broken glass." He likes to play "udus, Mark trees, and gongs with the D-Beam. But, be careful," he says, "I've triggered them accidentally."

Snider suggests that you spend some time getting to know the power of these unique devices. "To really understand the potential of the ribbon controllers, it's a good idea to explore all the different types of trigger parameters that are possible with those controllers," he explains. "The preset kits illustrate the obvious, but there are countless possibilities. It's a good idea to experiment with different sounds and different ribbon controller functions."

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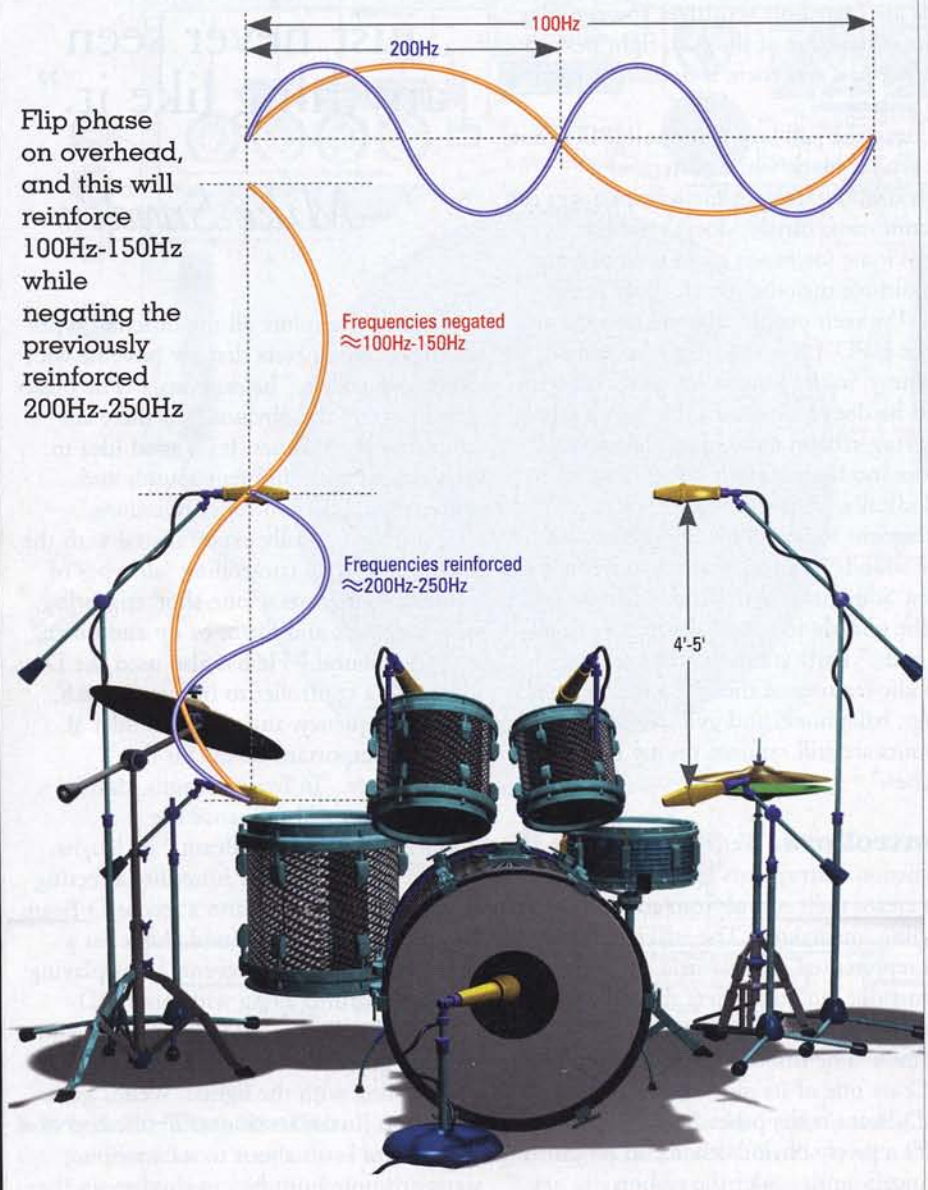
>
> *–Mike Snyder*

He's been equally experimental with the D-Beam as well, controlling "all types of sounds, sometimes a 'one-shot' triggering, or going back and forth, or up and down, to play a sound." He has also used the D-Beam "as a controller to influence pitch, cut-off frequency, and more." Snider also offers an important caveat for live performance. "In live situations, drastic light changes will influence the performance of the D-Beam," he laughs, "but hey, it's real – like humidity affecting calfskin heads." He shares a recent D-Beam horror story. "I did a sound check for a 'drummer day' type of event. I was playing electronic drums along with my HPD-15/SPD-S set up. I told the engineer and lighting guy, 'When I play the HPD, don't do anything with the lights.' Well, I guess he forgot. Just as I was nearing the end of a tune where I was about to start swiping sixteenth-note horn hits in rhythm on the D-Beam, a red spotlight zooms in on me, and I was literally fanning air."

Snyder also likes to think outside of the box. "I often set the left ribbon controller to send MIDI volume information," he says. "Since I'm right handed, I can play a part with my right hand, and control the volume of the HandSonic with the ribbon controller. Both ribbon controllers are very sensitive, thereby allowing very precise changes in volume, or for that matter, any

BY KAREN STACKPOLE

Fatten Up The Bottom End With Physics



While discussing unusual ways to record drums with Ex'pression College for Digital Arts' Advanced Recording instructor George Borden and student Jonas Alt, a secret technique from the recording magicians of yore came to light. This rather scientific approach involves the phase relationship between overhead and close mikes to enhance the bottom end *oomph* of the drum set. So don your lab coat and check this out.

Close mike all the drums in the traditional manner and position two large diaphragm cardioid condensers (such as Shure's KSM32, AKG's C3000B, Audio-Technica's 4050, etc.) directly above the floor tom and snare drum mikes in a split pair configuration. Angle them similarly to the close mikes. To determine how high to place the overheads above the kit, divide the speed of sound (1,130 feet per second) by the distance the overheads are from the close mikes. This will give you the frequency that will be boosted by a phase phenomenon called comb filtering (an effect one usually tries to minimize under ordinary circumstances). The laws of physics decree that the frequency double the length of the boosted frequency will be negated by the same phenomenon.

If you place the condensers five feet from the close mikes on the source, the equation would go like this: 1130/5 = 226Hz. Now this frequency tends to muddy up a mix, so here's the trick: flip the phase on both the overhead mikes at the preamp or console (or by using reverse-wired cables). This effectively cuts the frequency being reinforced by half because the overhead signals are now shifted 180 degrees out of phase, and when mixed in with the close mikes, the enhanced frequency will now lie somewhere around 100Hz, giving the kit that big bottom end. In addition, the muddy frequency between 200-250Hz will be minimized, clarifying the sound.

As you geek out on this approach, keep in mind that phase is a frequency dependent phenomenon and will be affected by the dimensions and reflective characteristics of the room, the size, tuning, and setup of the drums, the complexity of the waveforms around the fundamental frequency, and the dynamics of playing style. Also, the higher you place the overhead mikes, the more room you'll be hearing, the less defined the drum sound, and the more diffused the stereo image will be. Therefore, experiment a bit with placement and angle to maximize the effect of this technique. Use your ears!

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other assignable MIDI controller." He too has had a lot of fun with the D-Beam. "Controlling pitch bend on the factory Talking Drum patch never ceases to get a rise out of anyone listening. That's one of the 'money' patches for me. I don't think I've ever altered the factory setting on that patch."

In addition to creating patches from scratch, some of Snyder's other "money" patches are ones that came direct from the factory. "Single handedly, the Tabla patch has paid for the HPD-15 many times over. The Bongo (P0102), Pandeiro (P0113), and Trash Beat (P0703) are also personal favorites. You can do fun, very expressive things with the muting capability of some of the sounds assigned in the first two patches." He admits that, "Creating the right sound is something I do on a regular basis. Because the playing work I do is mainly music I see, hear, and record only one time, I tend not to keep the sounds I've created for a tune or project. To create that perfect sound, I let my imagination run wild. Extreme pitch shifting is one of

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the easiest and most effective editing tools in the HandSonic."

Dutz prefers to use the HandSonic for "udu, tabla, and surdo. These instruments are so difficult to get a live sound on; and some of the larger drums won't fit in the small stages of live spaces."

The roll button, while not a MIDI controller, can still be used to control sounds. Snyder offers an interesting "roll button" experience in the studio. "I ran across this situation the other day while overdubbing a big low kick drum sound on an existing acoustic drum track. The kick drum I was overdubbing, although big and fat, had way too much attack. The track I was playing to had kind of a techno element flavor, so I wanted to occasionally use the roll function to play a short lead-in to the kick drum. I needed to soften the attack. To do this, I did two things: First, I began to lower the Color editing parameter into negative settings. This kind of darkens the sound. Secondly, I had the recording engineer roll off some of the high frequencies of the sounds, giving me the sound I needed. A sound can also be EQ'd inside the HandSonic, but having the engineer do it was a little bit faster."

Snider offers another hint for using the roll button, "Remember that each kit has its own roll speed setting, so there are lots of possibilities." He clarifies that the roll can be "set to rhythmic intervals, of course, but then the kit tempo will determine that speed; or if the sequencer is running, then the sequencer's tempo will have priority."

Even though the HPD has three knobs that can be used to make real-time changes to nine different musical parameters, Snider tends to use them "primarily for quick editing, as I use the D-Beam, Ribbon Controllers, FD-8 and pressure for control functions. I use the FD-8 Hi-Hat controller, which functions as a trigger and/or controller at the same time." Snyder uses the expression pedal "mainly for playing sounds and gradually bringing in effects like reverb or chorusing."

The Future. So, where is the future of the HPD-15 headed? Dutz would like to see a few new features on a next generation HandSonic. "There needs to be a rapid sampling device," he says. "One with a great built-in mike. In a live performance, you could create combinations of sounds or sample found objects and play them back at different pitches."

Snyder would like to see even more MIDI control in a second-generation unit. He says, "The ability to assign and utilize more of the available MIDI controllers would be a big step forward for me. This type of flexibility is needed to control the many different types of MIDI information that is needed for the ever increasing meld of music and multimedia performance."

Snider agrees, "There's a very strong future for electronic hand percussion, and the potential it offers is not only in musical performance, personal entertainment, and creation, but in multimedia applications as well. Now that we have a Video Synth that has super quick response time, I'm looking forward to controlling that with the HPD. One of our former R&D engineers programmed her HPD to control the Honda Robot – Aibo." Now that's cool! ■

Emergency eDrum Fix-It Kit

BY MIKE SNYDER

Each of us probably lugs around a small cache of parts and tools needed to fix or MacGyver our acoustic drums and related hardware. It most likely contains snare cord, felt washers, and various other oddball parts, as well as a few tools, like a set of Allen wrenches. We wouldn't think of doing a gig without this "emergency kit" safely tucked away in our stick bag or trap case. Now that we have electronics in our setups, we need to create a new "emergency kit" – one geared toward the parts of our instrument that we plug in.

When the rubber meets the road, we're the person responsible for keeping our electronic gear sounding great and functioning well on the gig. If a problem arises, everyone will be looking to us to troubleshoot, and fix the problem. This includes doing "whatever it takes" to make things work. I personally have had to use everything from a paperclip to a circular saw to fix problems. Here's a list of contents for an eDrum Kit to help you arm yourself against unforeseen problems.

Overview of Contents

Various Adapters
Cables
Tools
Supplies/Parts

Various Adapters

(2+) 1/4"-1/4" Couplers (to extend cord lengths)

(4) Phono/RCA (female) to 1/4" (male)

(2) 1/4" (female) to Phono/RCA (male)

(1+) 1/4" Stereo (female) to 1/8" Stereo (male) Headphone Adapter

(1) XLR to 1/4" (male) Microphone Line Transformer

(1) 1/4" Headphone Splitter

Cables *(in addition to those needed for your usual setup)*

(2+) 1/4" Audio Cables, 10'

(1) Microphone Cables, 10'+

(2) MIDI Cables, 6'+

Tools

Solder Iron, portable *(like the new Coleman Cold Heat solder iron)*

Wire Strippers *(may also double as wire cutters)*

Wire Cutters *(optional, great for cutting off wire ties)*

Screwdrivers *(Normal-size blade and Phillips)*

Jeweler's Screwdrivers *(blade and Phillips)*

Helping Hands Clips *(optional, but useful)*

Supplies/Parts

Solder *(for electronics)*

Electrical Tape

Heat Shrink *(various diameters)*

Butane Lighter *(to heat shrink)*

2'-3' Microphone Cable *(no ends, just cable)*

(2) 1/4" mono-plugs *(always use high quality plugs, like those from Switchcraft)*

(1) 1/4" stereo plug *(can be used to fix headphones)*

(1 ea) Male & Female XLR connectors

(2-4) Banana connectors *(for connecting to some speakers)*

The items on the above list are all available from your local electronics store, like Radio Shack. Granted, you *may* never need many of the items. Others, like the adapters, you'll use constantly! Having this kit will not only help keep your electronic drums running, but will make you look like you're a pro!