

Building a singing vessel

Part 3 of the Technics WSA1 basic programming course

The next goal

In the previous 2 instalments of our little course we have looked at the WSA as a basic synthesizer (article 1) and made some first forays into getting to grips with the modeling parameters (article 2). In this 3rd article we will start building a “new” sound.

A Singing vessel?

At the end of article 2 I shortly described a preset. This is the actual quote:

“One of my favourite presets sounds like a big empty metal vessel is being struck with a pipe. By using the REALTIME CONTROLLER I can make it do all sorts of crazy things that sound like the vessel is suddenly shrinking or the wall becomes thicker or the material changes. So it really gives one the feeling that an instrument / object is moulded in real time.”

As a practical exercise I will describe bellow how you can create your own version of this, rather basic, preset. This will go a long way in proving how special the WSA actually is.

The main settings of this sound are so ridiculously basic that it is a bit of a wonder. It is actually one of the few sounds I did not program myself. A previous owner probably hit on it by chance and I simply renamed it into SINGIN VESEL. It is however SO evocative, even in spite of its very basic layout that it is a perfect example!

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The version bellow will however still only be an approximation. To have to type row after row of parameters is not much fun. Therefore I reconstructed a new version using one of the standard ROM sounds. Certain subtleties might therefore be lost in this version but I am sure you'll get the picture anyhow.

The unavoidable what-to-do section

1. Press the ROM/ EXT. switch at the far right of the panel.
2. Push SOUND COMBI button no 10.
3. Now select the SYNTH STRING 2 preset (R1-074).
4. Play a few notes. Indeed. It's just a basic string synthesizer sound.
5. Now press the EDIT MODE : SOUND button.
6. Then press MODELING in the main screen.
7. Apply the following changes:

Layer 1:

sample:	group: O
driver:	Surdo Open
model:	original

Layer 2:

sample:	group: C
driver:	ElectroAc. Gtr
model:	original

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8. Go back to the main editing screen and then switch to the AMPLITUDE page.

9. Apply the following change:

Layer 1:

level: 127

freq.: 739.9 Hz

10. Now play the keyboard. If you have done everything right you will now indeed hear a rather metallic sound. But it is not yet behaving much like the struck vessel I promised. The sound starts rather slow for a percussion type sound and when you hold a note the sound remains at the same volume / level throughout. Is it actually any wonder? We are still working with the typical envelopes for that string synth sound.

11. Time to apply a bit off that (Section 4) ENVELOPE GENERATOR magic we talked about in the 2 earlier instalments. You are still in the AMPLITUDE page. Press the ENV. button in the right top of the screen.

12. The envelope page now opens. Here you can change the amplitude envelopes values (You don't say!). Time to get creative. You can for instance start with making that attack shorter. An attack of 0 is a bit to much "in the face" as far as I am concerned. As if the "microphone" was placed directly beside the striking point. I like the idea of hearing a vessel that is struck from the far side, which gives the whole more of a resonating character. So in your minds eye you now pick up your pipe and walk around the vessel and strike it there. In that case a somewhat longer ATTACK of about 15 fits better.

13. Just as a guide these are the envelope settings of layer 1 in the original preset:

ATK 34

PEAK 100

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DECAY1	70
SUSTAIN1	70
DECAY2	99
SUST2	30
REL	80

14. Now go back to the main editing screen and switch to the CONTROLLER page:

This is what you will see

controller 1: Muting and Position

controller 2: Fitting and Position

You actually do not have to change these settings at all. I just want to make you aware of their importance. In this screen you can assign a whole range of parameters to the X (left to right) and Y (up and down) direction of one of both Real Time Controllers. Playing around with all these settings is already a source of much fun.

When you push, pull, bend or twirl the controllers under the current settings you will hear the sound change quite dramatically. Yep, you are now doing some serious real time model tweaking already. But beware! If you move the controller around in circles your head might actually start to spin as well!

A general remark: Remember how I put the envelope generators in section 4. These controllers / settings could also be considered to be part of this 4th section, which we will from now on call the PROGRAMMABLE MODIFIER section. In other words; In my approach I do not make much of a distinction between EG'S (envelope generators), LFO's (low frequency oscillators) and such. In principle they all do the same thing. They take work out of your hands by automating certain processes for you so that you can concentrate on hitting the right keys or handing real time controllers.

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A few extra refinement tips

These are some extra pointers for those who can still stomach even more metallic mayhem.

A: Adding more envelope juice

1. I already gave you some values for the EG of layer 1. Now what about adding some extra sparkle by using that second layer with that not so obvious electro acoustic guitar sample?

Well, in many metallic objects certain harmonics, the ones that the objects resonates on most easily, keep ringing on longer than most others. The guitar sample with its clear pitch can take on this role.

So now try to find EG's settings that pronounce this effect. So make layer 2 die out as well but even later than layer 1.

I intentionally will not give you any specific settings here. It's high time you start making your own decisions.

B: Making it squeal

2. You can even set layer 2 to a higher octave to create an overtone effect, like a feedback electric guitar. Go back to the main screen and press PITCH.
3. In this page you can now offset the pitch of a layer by changing values in the KEY SHIFT column. Set the key shift value for layer 2 to +12 (= one octave higher)

If you think that takes too much power out of the main "body" of the "vessel" you can even specifically add a third layer to individually generate such overtones.

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C: Tweaking the filters:

1. Time to have a look at the subtractive filters in section 2B.

Go back to the main editing screen and switch to the FILTER page. The most important filter values to set here:

Layer 1:

filter type: high pass
freq. 739.9 Hz

Layer 2:

filter type: low pass
freq. 21.1 kHz

These are not very strong settings yet but they might help to add a bit extra metal.

2. Envelope-wise we until now we only messed around with the amplitude (=volume) settings). Time to do the same thing for the filters. You should by now know the drill.

D – A whole orchestra of vessels

1. This is one of my favourite tricks to make the WSA really fill out the whole stereo panorama: Go back to the main screen and press the TONE LAYER.
2. Then press the PANNING button on the right side of the screen.

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3. Scroll up the values in the PANNING column beyond R63 to RDM, which stand for RANDOM. Do this for every layer in your sound.

Every note in every layer will now have it's own stereo position, so your virtual stage is now filled with a whole row of individually tuned vessels. But even these positions are randomized. So pressing the same key several times will lead to differing stereo positions at every stroke. How the (beep) do those virtual stage hands push these vessels so quickly from one side to the other?

Only scratching the surface yet

By now you should know what to do next. Keep experimenting with all the parameters mentioned above. Why not also apply that mysterious interaction parameter in the MODELING screen? Why not even add more layers with other metallic sounds? Just do your own thing to your hearts delight.

Also remember to store everything interesting you find. Renaming can of course be performed via the standard saving routine (see the factory documentation).

And if you think this is rather fancy stuff already:

- In our example layer 3 and 4 are not yet used!
- The models are still set to ORIGINAL!
- No interaction between the models has yet been applied!

Still it already is a weird and crazy sound! That's what you can already do with some basic settings.

Have fun!

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