

STARSHIP ONE

**Combining existing technology into
a truly expressive monster-synthesizer**



Fig.1: Here it is. Another, no holes barred Marc Brassé beast

Introduction

This article is about my Starship One project. It does not only describe this “instrument” but also explains the idea's behind it. It is a truly multifaceted tale, even though I'll have to take some shortcuts to avoid turning this into a complete book about my vision on synthesis.

First, as a sort of introduction, this list of the “specs” of the total setup:

- 4 manuals, including:
 - 1 solo ribbon controller (Doepfer R2M)
 - 2 polyphonic keyboards (Technics WSA and GEM S3) of which 1 has poly aftertouch S3)
 - 1 set of polyphonic basspedals (Fatar MP1)
- 3 independent synths (Technics WSA1, Technics WSA1R, Gem S3 turbo)
- User sample loading (WAV's), so a sampler on board in all but the name (GEM S3 turbo)
- More then enough "oscilators" / voices to play with (64 + 64 + 32)
- 32 track fully editable sequencer, with extensive MIDI controller compatibility, even including poly aftertouch (Kawai Q80).
- 8 track high spec digital audio recorder (Roland VSR-880).
- a high grade, near modular, real time, stereo effects processor to add a bit of the analog twiddly stuff if needed Eventide Modfactor).
- Hardware Audio patch bay
- Extremely versatile MIDI filtering processor (MIDIMIXFIX)
- Chromatic tuner (Samson CE40).

The more subjective bits:

- Lot's of knobs and switches.
- 8 independent displays!(er, that is actually decadent).
- A snazzy customized casing (well, at least I like it) including a hint of Star Trek TOS bridge styling.

Now does that sound attractive or not?

Don't get me wrong though. I am not claiming that I have built a full instrument myself. This is more of an exercise in combining existing elements into an ergonomic and thus inspiring package. It has been a worthwhile effort though. Somehow the total seems to be more then the mere sum of its parts. This has come very close to my ideal.

What can the reader gain from my experiences? Just like with the Son OF GX project I hope to inspire others to do something similar. So the next time you think that your most expensive synth still doesn't totally fit the bill try to formulate what it exactly misses and get your thinking cap on. You to might turn a mere compromise into a winner.

Philosophy

What is the sense behind this particular project one might ask. There are so many instruments on the market so why choose this particular combination of elements?

Well, that has everything to do with the sort of music I am most interested in and thus want to create.

Basically I am a fan of electronic music in its widest sense, from the earliest pioneers to the latest incarnations and then I mean music made with electronic means in general. In this respect I do not only mean electronic dance music, which is often put under the same general label but is a much more restricted in it's form.

Furthermore I am a fan of a lot of other musical styles, including classical music. One can say a lot about western classical music. That it is to elitist, too complex, to brainy and that other styles are much more rhythmically sophisticated but one cannot deny that it is very refined when it comes to harmonic content and expression.

It is my ideal to compose music that is melodically understandable and interesting but still original enough to avoid normal clichés. In practice this boils down to wish to combine the best of classical expression with the sonic width of electronic instruments. The sounds that I actually find the most interesting are those that blur the line between electronic and acoustic. If a listener says "I dunno what this is but I love it" I have hit the spot I wanted to hit.

The Starship One project is my attempt to “build” a hardware instrument that is the ultimate tool for creating

such music.

That leads to some key principles. My ultimate instruments should:

- be extremely versatile
- be extremely expressive
- enable the performer to separately record all the elements of a live improvisation in one go
- enable further refinement of these improvisations after the initial recording



Fig.2 : It's the combination that does it (see text).

Initialisation

This particular project more or less started when I bought my first Technics WSA1 synthesizer in 2012. I knew about this synthesizer since it was released in 1995 but never heard it, let alone play it myself. 17 years later I did. And boy was I impressed.

That deserves some explanation: The WSA1 was one of the first so called virtual modeling synthesizers. In these instruments the sounds are not produced by dedicated oscillators but by a software program describing the properties of the simulated sound. This was more or less a natural reaction to sampling technology. When samples are used the individual sounds as such are very detailed and realistic but what you put in is what you get out; a recording of something that already happened and not something that can be reshaped in real time. Therefore samplers tend to be rather bad in producing sounds that react in real time to the player's input.

Nowadays that disadvantage seems to have disappeared but that is only a superficial impression. By taking a lot of samples, often even of the same instrument at the same setting and levels but played ever so slightly different and reproduced after another the impression can be gained that a real instrument can be heard. In reality this however is a bit of a scam. In essence every sample layer is still a static snapshot.

Enter physical modeling. In the mid 1990s computer speed and power had become affordable enough to design instruments that could calculate in real time what was expected from them. First on the market was Yamaha with the VL1. Later Korg followed with the Wavedrum, the Prophecy and later still the polyphonic Z1. And then there was Technics, a brand normally known for its homekeyboards.

Modeling the Technics way

Technics decided to do things a little bit different. Multitimbrality and sample realism had become sort of standard in synthesizer land. Also the concept of the workstation had established itself. The typical user expected an instrument that was a total music solution in itself. Virtual modeling synths were now possible but it was not yet practical to try and build a total workstation around the concept. Korg for instance failed with its first try, the original, pre-Z1, Oasys (not to be confused with the much later production version). In the early 90ties the price of such an instrument would still have been prohibitive. So Technics went for a compromise. Now compromises normally spell trouble or at least average results but this time it led to one of the most flexible (and underrated) synthesis engines ever designed.

Modeling essentials

A typical model of an instrument normally includes a few stages:

1. The exciter

If one plays an instrument there always is something that makes the sound happen. It can be a hammer striking a string, like in a piano, a finger or pick exciting a guitar string, a bow on a violin, a stick striking a drum skin, etc., etc., etc..

2. The resonator.

The exciter might make start the sound but it is not the only factor determining the total sound. The rest of the instrument can be described as a so called resonator. This is the part of the mechanism that harmonically resonates with the exciter. It can be a pipe or an acoustic body made from a series of materials (wood, metal, etc.). The original intention behind such bodies was amplification (when electric amplification did not yet exist) but sooner or later it was found out that the total sound of the instrument also depended on the layout of the resonator body.

Those are the basics but what did the people at Technics do differently? In short: They still included samples in the concept. Instead of fully modeling a sound from scratch the Technics engineers still took samples as the starting point,

They said: The prevailing trend is to use samples and treat them with a subtractive synthesis engine (filters, amplifiers, envelope generators, etc.) Why not still use samples, look at those as the exciters and stick a resonator program between these and a subtractive synthesis engine? Then the sound of the samples can be modified by a modeling algorithm and subsequently still treated by a subtractive end stage. One could call it a sampler Plus approach.

Sounds like a cheap copout at first but it actually made a lot of sense. It thus became more of a natural step than a revolution but one that combined all the best of (affordable) existing technology and simply added the advantages of modeling. They called the result acoustic modeling instead of physical modeling.

BEEP! Something smelly is going on here. If one uses a sample as an exciter a lot of resonance information is already contained within that original sample (of a piano or whatever). So how could Technics claim they completely separated both aspects? Was that acoustic modeling name only commercial blurb then? It depends how you look at it. The name seems to indicate the new Technics synthesizer should be extra good at simulating existing acoustical instruments. Well, it rather was and it even offered a lot more.

So let's forget about the smaller details and concentrate on the fact that this indeed is a very impressive combination.

The most important difference is that although other physical modeling synthesizers have even more control over certain parameters than the WSA but since most stay so close to their original models (wood, string, brass, etc.) that they are rather bad in producing new, sonically interesting sounds.

Commercial disaster (?)

So in 1995 Technics jumped on the commercial trend that physical modeling was.

Shortly after that the whole trend went belly up and so did the WSA..

All this stuff was becoming way too complex for the typical commercial users. They had accepted new technologies (FM, sampling, etc.) as long as the presets became ever better but learning to program these digital beasts oneself was becoming a bit of a life's work. These synth engines were so complex and sophisticated that even the works programmers had their trouble getting the best out of these instruments. Take the WSA factory sounds. Now they were very good indeed, they still sound good after all these years, but they hardly made use of all that was possible with this extremely flexible synth engine.

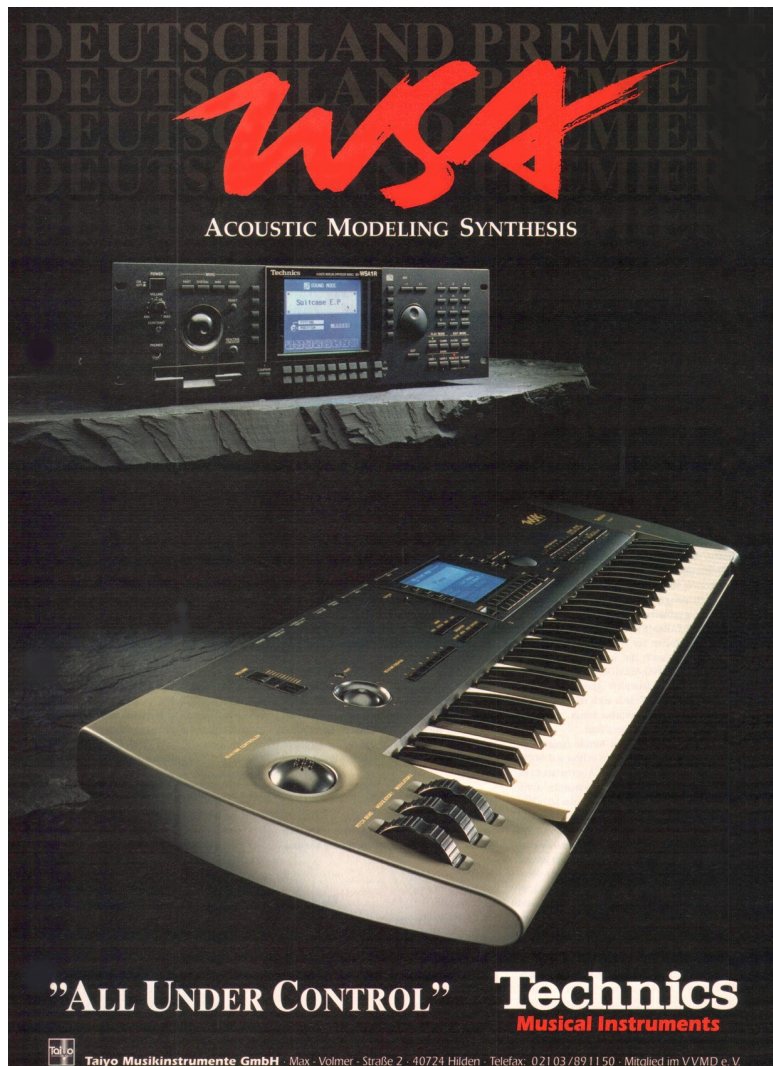


Fig.3: Modeling the Technics way The WSA1 and the WSA1R rack

All brands found it difficult to actually sell these new virtual modeling wonder synths. On the surface most of them even seemed to offer a lot less than the previous generation (fewer voices, no multitimbrality, no inbuilt sequencers). And in the practice they didn't even sound much better.

But was that true?

On the surface it was. In the shop all these instruments seem to do about the same as a state of the art sample driven synth. To reap the advantages of physical modeling one must develop one's playing skills. In other words: The user has to really work hard to make such an instrument sing. If you want something to sound like a guitar, or a clarinet, or a trumpet you also have to think like a player of such instruments and modify your keyboard playing technique accordingly.

My God, so to get the best out of such a contraption one not only needs a degree in computer programming and acoustical physics but also a classical music training including multi instrumentalist and arrangement skills. Surely only geniuses could do it all. Well that is a bit of a stretch but one needed to be rather dedicated to get the best out of such an instrument.

It's probably the most important reason everybody suddenly went back to analog synthesis. And thus a very promising trend ended. Let's get on with real life. Money must be made.

We are still more or less living in the period that followed. The more analog (real or modeled) a synthesizer is the better its chances are of becoming a success. Hell, Korg even re-released its classic MS20.

Technics had an extra handicap. It was not recognized as a typical synthesizer manufacturer. Its reputation was built on hi-fi equipment, electronic piano's and homekeyboards. No "serious" musician would ever play a Technics.

So the WSA1 bombed. Technics cut its losses and never built a programmable synth again. True? Only partly. In the real world the technology went into the KN-series keyboards which were among the best auto-accompaniment keyboards of the next years. So do not feel too sorry for Technics. Maybe they had to sell the remaining WSA's at cost price but they still made a very decent buck out of the technology.

Back to the future

I also went back to analog synthesis with glee. In the mean time I did however never forget what modeling technology promised and sooner or later prices of second hand equipment became low enough to enable me to it out for myself at last.

Oh boy did I love what I found!. I was already very impressed by the Korg Z1 but found it to be rather unflexible. Oh, yes it can be very expressive but what I hoped for was an instrument that would enable me to blur the lines between synthetic and acoustic sound. One that would not only enable me to make analog type sounds like the real thing but also sounds that would help me to build my own original acoustic instruments.

Say a 100 foot guitar played with a hammer!. Wasn't that what they promised all those years ago?

Well, it's about time to move on to the actual Starship One project so I will not explain all the ins and outs here. Let my conclusion suffice.

The Technics WSA can do almost everything I can imagine a synthesizer should do. And it's synthesis engine is actually rather easy to program for a menu driven synth. Of course one knob per function would be better still but a WSA with such facilities would have a front panel as big as a room. Thanks to the big display and a logical menu structure one can however live rather well with the real world compromise provided.

And last but not totally unimportant: By waiting so long they have become dead cheap.

As far as I am concerned these beasts are the most underrated synths ever!

The renaissance of a concept

So I delved deep into the WSA but as always I was soon enveloped in even more ambitious, nay truly delirious dreams. What if could take all that was good about the WSA and combine that in a personal solution that went even further?

I had already learned to appreciate the advantages of multi keyboard, say organ-style console setup through my Yamaha E70 / Son Of GX adventures (which see). Why not combine these positive experiences with the WSA technology and build the supersynthesizer of all times? A sort of Yamaha GX-1 with a synth engine that would even dwarf the original, ha, ha ,ha (haunted laughing)?

And why not even add what I had learned about earlier electronics instrument that tried to combine acoustic instrument style expressiveness with synthesis (Theremin, Ondes Martenot, Trautonium, Hugh Le Caines Electronic Sackbut. Etc.)? Yes, true. I am drawing yet another element into the mix. One on which I also spend pages explaining, but to me this all fits together perfectly. The ultimate synthesizer should be powerful, flexible, extremely expressive and ergonomically sound.

The WSA's synthesis engine provides is a good basis for such a super-system.



Fig.4: The nifty little buggers in the red bar above the S3 mean the difference between decent and excellent control

The practical path to enlightenment

Was it really such a grand vision, such a well conceived plan? No of course not. It grew almost naturally and it actually began with me becoming aware of the few flaws I could still find in the WSA.

These are:

Real flaws:

- The WSA's onboard MIDI sequencer seems quite usable at the surface. It even supplies piano roll editing, which then must have been a first on a hardware synthesizer. In reality however that sequencer is totally underdeveloped and bugridden afterthought that's contrast extremely with the rest of the instrument.. It actually so bad that it is hardly usable.
- The keyboard plays very nicely but has one flaw.: The response of it's black keys to aftertouch differs rather much from that of it's white keys..

Conceptual / technical limitations:

1. It cannot load user samples into it's "resonator bank" (read: sample memory)
2. It does not have polyphonic aftertouch (which I really admire ever since I bought my Yamaha CS80).
3. It does not have portamento.

1. Sample loading

There actually is a cure for that. Sort of. I found out Technics had provided a way to expand on the WSA's sample library. Together with the instrument the SY-EW 1 expansion card was released. So I bought myself a WSA1R rack version with such a card and the SY-ES1 output expander.

The SY-EW was great fun in itself but the added bonus was that I now had 2 WSA's to play around with. Now what more could be done with those?

2a. Poly aftertouch

The same seemed to apply to polyphonic aftertouch. If it could not be built into the actual WSA engines it could maybe be used in conjunction. And thus I added GEM S3 synth I had actually acquired about half a year before bought my first WSA. It can load user samples (WAV's) AND has polyphonic aftertouch. Of course these functions were not really integrated into the WSA synth engine but it still felt like a good compromise. If I wanted poly aftertouch and / or completely original samples I could turn to the S3.

But was there really no way to translate the poly aftertouch MIDI information produced by The S3 into something the WSA can understand? The WSA is a multitimbral synth so what if the poly information was split into mono information including aftertouch per MIDI channel and thus per note. Basically a device with such a capacity would be able to turn every combination of a MIDI poly aftertouch keyboard and a multitimbral synth into a winner.

Could it really be that nobody had thought of that before? Well, as ever Dave Smith of Sequential Circuits fame already thought of it while designing the Prophet T8 but I only found that out later.



Fig.5: The MIDIMIXFIX. It might not look that impressive but It's magic!

What I did however find was the MIDIMIXFIX, designed by Danish software crack Lars Ole Pontoppidan. He also loves hardware synths but became a little bit frustrated by the fact that the MIDI velocity information output by his GEM S3 did not translate very well to his synth modules. So he built a versatile MIDI-filter. Since I had also chosen the S3 as an element of my setup that was a nice coincidence.

The MIDIMIXFIX can do all sorts of things to match MIDI info from a controller to a receiving machine. More important even was that Lars actually had been thinking along similar lines when it comes to using polyphonic aftertouch data: Why not add a software filter to split up MIDI information including poly modulation into info for more than one channel, the number of channels deciding the number of voices available in such a setup. The big difference between Lars and me however was that I can only theorize while he actually has the knowledge to build such a device.

So I bought the MIDIMIXFIX more or less on the basis of this as yet unfulfilled promise alone. It turned out to be a very good tool anyway, being able to match MIDI information from equipment from different makers. For the poly aftertouch division filter software I did however have to wait. Lars is a busy man. I did however persist (read: I kept pestering Lars) and about half a year later, early 2014, he delivered on his promise. And it works like a magic wand. Suddenly a Yamaha CS80 level of response can be added to almost every multitimbral synthesizer!

You can visit Lars' website via this link: <http://larsee.dk/introducing-midimixfix/>

2b. Poly aftertouch: Why it is so important (to me)

It is my theory that a poly aftertouch keyboard is not only a very nice tool for polyphonic playing but that also shines through on solo lines. Upgrading the Technics WSA1 synth with poly aftertouch (through the use of the MIDIMIXFIX) confirm this. Somehow monophonic lines also sound more alive when I play them this way. This is my explanation:

If aftertouch is set up rather sensitively, every note, even a short one, still gets its own individual measure of modulation.. That might in itself not seem to prove why it should be audible since that modulation value will also be reset every time you press a next note on a mono aftertouch keyboard. If we do however consider the reaction speed needed for a direct response the picture already changes.

Even more important is that notes that are played legato (bound together by slight overlapping) retain their individual measure of aftertouch and thus modulation, even after the new note has been triggered. So providing one plays careful / fluent / subtle enough and thus not puts the same of measure of aftertouch on every finger, the previous note is still articulated differently from the new one until one lets go of it.

With mono aftertouch the modulation generated from the combined pressure of all fingers together will be the same for all notes held at that moment in time. Since this is also true for the short overlaps while playing legato it's actually not so strange at all that there is subtle but noticeable difference. Again: With poly aftertouch every note gets its unique amount of pressure modulation throughout its whole duration. That does figure after all, now does it?

What does all that theorizing mean in practice. That the whole setup now comes very near to the CS80 playing experience. Imagine that: CS80 expression with the added bonus of being able to synthesize about every sound imaginable!

3. Portamento (and much more)

2 more or less done. Only one to go. Portamento. Or at least more flexible pitch control. Maybe true an extra flexible alternative controller.

The R2M is a ribbon controller by Doepfer. Although it has its limits it can be used as a "fretless" controller, so you can play your synth like a violin with almost complete control over pitch. Within the projects it is the portamento ++ solution, which is the third major thing the WSA cannot do itself. The R2M can however do a lot more. Within the setup it might be easiest to think of it as a third monophonic MIDI keyboard.

For tips to improve on the R2M's ergonomics please download my separate "Pimp Your Ribbon" article.

So basically I have been able to address 2 of the WSA's 3 only true shortcomings. The lack of portamento is more than compensated by the R2M and polyphonic aftertouch has been added by the MIDIMIXFIX.

The only remaining problem is that the WSA cannot load user samples. I was told that the all later Technics SY-EW expansion boards, so not only the SY-EW1, can be installed in a WSA. In the end this however turned out to be untrue.

The only true solution would be to build a device that enables the WSA to read in user samples via the expansion board terminal. But where to find somebody who is able and willing to do this?

Again: These additions may seem trivial on the surface but they can mean the difference between average and excellent results. It's a bit like perfectly setting up an electric guitar. A well executed tuneup can turn a nice sounding but rather unresponsive instrument into one that seems to know what you want to hear even before you know it yourself.



Fig.6: The Doepfer R2M plus visual keyscale indicator adds even more expressive power to the setup.

Further ingredients

- **Sequencer:**

Remember that ultra bad on board sequencer. Well I actually composed and recorded 1 track on it but that was such a frustrating ride that I decided something else was needed.

And so I took a look at all independent MIDI hardware sequencer that were available for a normal price. Hell I even entertained the thought to turn to a laptop based digital audio workstation.

After a lot of contemplation I decided to add the Kawai Q80 sequencer to the mix. It has a good knobby, matrix style hardware interface. It also provides rather sophisticated micro-editing facilities but since I fell into the trap of doing too much micro-editing in the past I was more interested in a sort of multitrack recorder approach anyway and I think the Q80 seemed to hit the mark rather well..

The Q80 also has a few other tricks up its sleeve. It has 32 tracks, which is very much for a hardware sequencer. Even more important is that it can record more than one track in one go, each a bit's own MIDI channel. That made it perfect for my favorite "initially record everything in one go" approach.

Furthermore there was the promise of the MIDIMIXFIX providing poly-aftertouch being split into multichannel MIDI information. Being able to record such information on individual tracks per channel promised even more possibilities to refine the initial recordings.

So the Q80 promised to provide an optimum between ease of use and flexibility.

In the end it actually is the only element that is not integrated into the main console but a small individual stand (see fig.1) proves to be a very practical alternative. When no sequencing is done it can be set aside and during use it sits at an ergonomic height and angle to the left of the console.

- **Additional effects processor**

I also decided to include the Eventide Modfactor into the mix. It can be chained into any pair of outputs via the hardware patchbay (see below).

But why add it at all? All instruments in the setup have their own dedicated effects processors.

Well, the Modfactor is a rather special contraption. Although it is marketed more as a guitar effects pedal it has a very unique layout. In every setup one modulation source can modulate another. So the amplitude (ADSR) of the signal can for instance modulate the LFO speed of an effect. The best way to look at its possibilities from a synthesizer programmers standpoint is to first concentrate on only one of its effects, namely the filter. One can then look at it as a singular, overall output stage filter with a very flexible, semi-modular functionality, like one might find in a modular synth.

Seen from this particular angle it then becomes a real time tweakable extension of the overall synthesis engine that, as a further added bonus, brings a lot of the old real time "analog" feeling back into a setup that is actually based on less direct menu driven digital synths.

If one gets these advantages it is time to also have a look at the other effects. All the basics are there, from Leslie emulations for organ sounds and flangers or phasers for old style string ensemble sounds to bone crushing ring modulation. So more of those old CS80 forte is also covered, including

ADSR driven ring mod speed.!

The Modfactor It can basically turn every mediocre synth in a modulation fiend. On the Starship One it is not rally a must. But boy can it add fun. Did I already mention all the effects are true stereo?



Fig.7: It' has been colorcoded to make it fit in the overall design but basically it's a standard Modfactor

- **Bass pedals**

A set of basspedals where added to take the setup to it's ultimate form as a multi-instrument. The Fatar MP1 is not velocity sensitive but it is polyphonic so it's quite easy to make voices overlap / play legato. One can even play two-voice parts using both feet.

- **Digital audio recorder:**

All the outputs in the setup need to be monitored through one combined mixer. Furthermore it would be nice if the ability to record audio in real time could be added, just for those cases when MIDI recording might still be too crude or when acoustic elements should be added (vocals for instance). The best compromise seemed to be provided by the Roland VSR880, a rackmount derivative of the successful VS-880 hardware audio recorder. With it's 8 inputs, versatile software mixer, 8 high resolution audio tracks and backlit display it proves to be an almost prefect companion to the setup, only sacrificing physical faders and pan pots in the process.

Additional refinements

Besides the standard elements already mentioned the Starship One contains some additional refinements that on the surface might not seem so very important but further improve its flexibility.

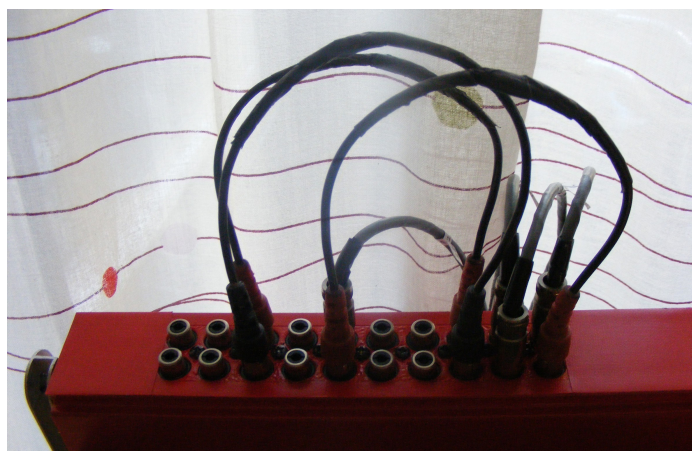


Fig.8: custom made patchbay

- A small patchbay that enables 14 individual outputs to be send directly to an output device, typically my trusty old Roland VS 880 digital multitracker or first route them through the Eventide Modfactor

which now sits in the middle between the keyboards.



Fig.9: The chromatic tuner

- Samson CE 40 chromatic tuner. Via the patchbay it can be put in series with every output signal. It's biggest advantage is that it can be used on sounds that are played on the R2M ribbon controller. I have a quite good ear but no perfect pitch, so I can always hear if something is out of tune but do not always hear if the pitch should be a little bit higher or lower. When a note is played the tuner determines the pitch and shows any deviations from it on the meter. A perfect way to improve my "violin playing" skills.
An added advantage is that I can take my eyes more easily off the ribbon controller's visual scale. This improves the coordination during simultaneous ribbon and keyboard playing.
I must however add that I get the best results if I use this only as an extra indicative aid. Our human hearing actually is more precise than a mere meter when it comes to harmonic pitches. I have found that some things that just do not totally measure right on the tuner still sound better than when I follow it slavishly.

The name

Nobody looking at the Starship One will be surprised I love old science fiction movies. As a boy I dreamed of helming in all sorts of Thunderbirds / International Rescue style vehicles. In real "adult" life I cannot afford to own my own private spaceship. The mind however is free as a bird and thus nobody can keep me from making musical journeys that reach beyond the stars. Hence the name.

The shell

The main challenge throughout the building process was to put all these goodies into one nice ergonomic package.

Some might find the solution I chose peculiar. Why not follow the classic solution of mounting all the manuals directly on top of each other, the one normally used to play the higher parts above and the others lower? Then it would have been most logical to stack the WSA1 on top of the S3 and the R2M ribbon controller on top of that.

Well, firstly the racks and most other additional elements would then have to be included into an extra casing above the highest manual. That would have made the whole setup a lot deeper, more like a classic multi-manual organ console.

Furthermore I see the programming stage as an integral part of the total process of composing and production and thus spend a lot of time on it because I seldom use factory sounds. The overall ergonomic layout should take this into account. In that respect the placement of the racks between manuals is a very practical one. Although the distance between the 2 upper manuals might seem unpractical it is actually rather natural. To accommodate this I actually rotated the GEM S3 from its normal vertical axis to bring the keyboard in a natural position for the player while he reaches slightly upwards. One can also play the uppermost keyboard while standing up. This puts the arms, elbows and wrists back in their classical position. In practice I do however find little need to do this. The overall feeling is relaxed and natural, the only real disadvantages being similar to those of every keyboard stack (Mostly how to avoid tying one's hands in a knot).

Lastly I wanted the ribbon controller to be clearly visual to make the use of the graphic tuning scale aid (see fig.6) more practical. This more or less dictated its placement. Putting the WSA directly above that was logical to enable direct switching between both manuals.

So this is where the broad shouldered look of the setup comes from but what about the colors.

Colour choices are of course is much more a matter of taste then it is of practical considerations. In the end I decided on a rather classic combination of practical black,as already present on most control surfaces. I combined this with signal red for the enclosure and side panels and some silver detailing

Now what about the annular look? Although one might rightly see some original Star Trek helm console clues the main influence is what I always call the Atomium School, after the main symbol of the 1958 Brussels World fair. One could imagine the Starship One in a high ceiling room with a spiraling staircase with steel railings, preferably with small globes integrated into them. Maybe a glamorous late fifties / early sixties model should also be added, embracing the instrument in a tastefully restrained bu still very sexy manner.

A daft choice? Beauty is always in the eye of the beholder and at least the period, with it's infatuation with spaceflight, actually matches the name.

Back to reality. The steel frame is a modified CD sales stand I still had lying around. I built all the coverings myself from wood panel and some GRP parts I designed in the past. The red oblong box on top is based on an extruded aluminum profile that used to be part of a sun slat curtain. So basically everything is scratch built. Only the paint is new.

Building almost everything myself enabled me to get this sort of integrated look, almost as if all elements where originally intended to be used in this way.

What do you think?

Marc Brassé
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