RASS1 Manual Index

Forward:

Thank you for purchasing the Retro Analog Studio Suite 1 library for Nebula Commercial!

This is a collection of high quality presets to help you use your DAW as a traditional analog studio by supplying your tracking and mixing environment with the complete signal paths of several ideal all-analog equipment set ups. In addition, I have created several presets of individual pieces of gear to allow you to flexibly piece things together as you wish.

If you haven't yet purchased this library, then make sure to download the free preset versions for NebulaFree and Commercial!

A Little Background:

My name is Michael Angel. I have been recording since the bug bit me in 1989, and completed my first professional project studio circa 1992-'93. Since that time I have seen computer technology give birth to a whole new frontier in recording. I began doing CD Mastering in 1997, and just over a decade later, what used to be a $600 4x CD Burner is now a 16x DVD-R/52x CD-R for roughly $35.

The speedy technology and development in the world of sound recording plug-ins is truly mind-boggling, and today we have the options of completely software-coded 'concept' plug-ins to those that are created by actual measurements of real hardware.

Still, there have been limitations that make both the simulated and measurement-calculated approaches fall short to varying degrees.
The Nebula by Acustica Audio (Acusticaudio.net) is a truly phenominal device that continues to evolve weekly. It operates similarly to a hardware keyboard sampler. Elements of sound can be recorded and processed by a complex playback engine that has recognition and functionality for everything from waveform function to dynamic timing and fluctuation, from LFO's to filtering and threshold comparisons.

I first learned about the Nebula project in 2006-2007 when speaking with developers of Impulse Response technology. I watched as months and months of development began to yield the first free demo releases of Nebula. Very different from convolution or dynamic convolution, Nebula uses streams of sampled data kernels to recreate very realistic reactions of recording hardware. Like others, I was amazed at the quality of the equalizers, and the similarities in the compressor to the original device. When I later spoke with Giancarlo about my plug-in concepts and development, I was hopeful that there might be some way to incorporate them into the Nebula system. There will more than likely be future collections that I develop as the technology allows even more complex manipulations in sound, but I am comfortable in sharing the thoughts and process with you now that this first library is complete! I truly believe that this collection illustrates the amazing leaps and bounds that Acustica Audio have accomplished, and I applaud them in their giving of time, generosity in customer relations, and scientifically embracing the sharing of technology over greed.
Thank you Acustica Audio!!!

This collection of original presets has been created for the Acustica Audio plug-in "Nebula". I have been developing this library in theory for nearly a year and a half. Many notes, studies, spec. sheets, and endless hours have been invested in offering you what I believe is an extremely bountiful collection of true-to-their-original presets of equalizers, compressors, console signal paths, tube and tape devices, and individual preamplification devices. In order to create these presets, a truly vast range of techniques were implemented, and if not for the months spent creating much of the data and actual measurement

filters ahead of learning the ins and outs of sampling specifically for the Nebula, this would not be getting released so soon. If this project were integrated into any other company's product line, it would most likely still be in development a year from now. That is to say, I am truly blown away at the abilities of Nebula's engine.

The Concept:

Now, about the concept for this library. For the majority of the plug-in industry, the entire focus is on emulating a single piece of gear, or sometimes in multiple functionality, like programs that offer separate equalizers and compressors within the same tool. As other individuals begin releasing their amazing presets for the Nebula, the main focus will likely be on individual settings and overall presets of single pieces of gear.
I began my studies on this specific topic when I found that over and over again, as a new plug-in or collection of plug-ins were released, the anticipation was tremendous and initial reception good, but the excitement would dwindle so quickly, and why?

Wasn't the plug-in successful at what it set out to achieve? Was the marketing a scam? Well, it seems that as time goes on, most plug-ins do a better-than-average job at emulating the target gear, and optimizations make them useful even if differing in some ways. The ability to avoid noise floor and use multiple instances almost always wins over outboard gear when a complex mixing situation calls to order. But, as the crowds of home recordists and seasoned professionals grow, all are focused on the quality and dimensionality of sound being replicated, and even in the best device emulations, something seemed lack-luster.

Then it hit me, and the concept from there plagued me. Surely, if "insert company name here" can create an amazing emulation of an 1176, then people can use the presets to get great drum bus and individual snare kick and toms, right? If "insert company name here" can pack an 85% identical collection of eq's and compressors into a USB-controlled device for well under $1000 that should be it, right? No more quest for the ideal digital studio, right? WRONG! And Why? What is missing?

"Why does 'such and such' sound so much better on vinyl?"
"Why did 'so and so's' release in the 80's sound so much better than what I am trying to create now, since I am using the same compressors and eq's and

have studied 7 books on their producers and mixing engineers and I have all the settings right, and my microphones and preamps are the same models and they cost me a fortune, so WHY?"

Here is my conclusion. Assuming that your recording technique is not to blame, then neither is your collection of plug-ins. The very devices that have gotten you into the recording process are part of the symptom that holds you back. In the 50's, 60's, 70's engineers would have killed to have our bandwidth, storage, conversion quality, zero loss in redundancy, greater than 100 dB of dynamic range, high end truly reading above 16 kHz, and ZERO noise floor without DBX NR! But, they would have soon found themselves embracing their familiar technology very quickly once again, despite the calibration, cap replacement, down time, degaussing, and loss of quality in overdubs, once they heard what pristine audio truly sounded like! This is not to say that modern technology is a bad thing. I am very enthusiastic what we are able to do in converting high quality analog sound into very authentic and dimensional digital files with amazing resolution and bandwidth. I believe that we are blessed to have the capabilities of our time, and we should certainly focus on the degree to which we can use the quality of modern sound to push the envelope of clarity, dimension, dynamics, and reality in reproduction (not even mentioning the number of channels). But, if we are going to place a single compressor on a single track, or use digital mixing software in a traditional format like grouping and bussing, then we need to take a look at what is missing!

So, What Is Missing?:

What is missing is not found in a single hardware device. It won't be made up for in a whole rack full of hardware devices. In fact, let it be stated here and now that it will not be compensated with an HD system where an initial track is recorded from mic pre to tape and then digitized to PT. Using an analog summing device, although an excellent way to go, will not bring back what is missing for "that" classic sound! If it did, then everyone would be using them and the search would be done. Everyone would be visiting forums and groups just to tell each other that the search is done, and to ask when somebody is going to make something new that no one has thought of!? But, the search for excellent analog continues. The reason is simple: people are not getting the results they expected despite the hundreds or thousands spent on excellent hardware simulations. I have no doubt that excellent recordists are out there scratching their heads, wishing to achieve greatness. "I know it ain't me,

because I am doing everything right, using everything I should, and it sounds great, but..."
I know, I know... "get on with it already." Ok, I will. The Signal Chain!
Yep, that is all.

The Signal Chain!:

Let me ask you this:
If you have reduced jitter, optimized clocking, excellent preamplification, and all of your bouncing of tracks is noise free, and you can record source material with 20dB of head room without any loss or added noise, then why would you even need to know about setting up gain-staging? If you can take the time to completely automate volume levels on every track AFTER it has been recorded and never go OVER into distortion or under into noise, then why don't you? That is what the compressor and limiter were originally created for: controlling levels to tape to avoid distortion and hiss, and maximizing levels to tape over and over. Even within the console, gain staging was critical, because only at absolute zero, not over or under, were the best specifications achieved. That means you had to know your gear. The input comes into a gain pot, where you set the level that gives you as much clean signal without going over, as can be achieved, Then, the fader balances that level as it goes out to it's tape track via a compressor to maximize it's setting either at zero, +3dB, +6dB, or if your technique is radical, +whatever it can handled! Well, a lot of folks are using an analog console as their front end, and they hit it to tape first. So, why doesn't that work?

Well, what happens then? The signal is preserved in the digital realm and never has to leave for another piece of hardware, and it is digitally grouped and sent to two track. Even if it passes through an analog summing box, I bet that is the only analog left in the chain before the master bus re-enters digital. I'm not knocking it. It is a great process, and the best digital is GREAT! But, if you are looking backwards at all, and wish you had "that" guitar sound, vocal, or overall recording, then this library I have created for Nebula is a response to what you have been waiting for...

The true analog sound of earlier high end recording studios was a phenomenon of necessity. We can hear the differences and qualities of different technical schools of thought in design AND in the amazing talent of producers, artists, and engineers by listening not just to era's, but different facilities. The Beatles definitely hit on "the Abbey Road sound". Decca

definitely had a sound. Neve vs. API vs. Trident vs. Putnam vs. SSL vs. Harrison etc. etc. etc. They all have wonderfully distinct sounds. But simply placing an excellent simulation plug-in of an individual device in your signal path is not enough. You are not challenged to get the volumes aligned correctly from start to finish, and there are no consequences in going over or under. Even if every measurement were taken at every volume, the device is not going to interact with your pure digital signal chain the same as it did with the signal chain back then.

Here is why:

Microphone >
Analog Channel Input >
Gain Pot >
Analog Output to Analog Compressor/Limiter (or not) >
Tape Track...>
Back into Analog Channel Input! >
Back to Gain Pot >
EQ or not >
Effect/Compressor/Limiter send or not >
Analog Channel Group Bus (if not bounce to other tracks first) >
Master Analog Tape.

That was just the minimal, typical signal chain for the mix. Then it had to be mastered for vinyl, cassette, and eventually CD. Depending on how many transfers were required, the high end frequencies would be adjusted that much more, that much earlier in the process, to account for what it would lose by the final stage. The absolute best case scenario in multi-tracking in the traditional recording studio was six full passes of input and output before a single recorded element made it to the master track.

So, are you willing to emulate that many things in your signal chain in order to achieve the target sound? Most likely if you give it a try with your best outboard gear, you will hear more of what they did back then, which is more the build-up of discrepancies and limitations than the beauty that comes from them. We hear these amazing recordings without the frustration of what had to be avoided in order to achieve them.

So, with notes and specs in hand, I started using every tool, program, plug-in, and piece of outboard gear that I have to study the process and figure out just

what parts of the gain-staging process and complete signal paths were additively necessary and convincing to the process. How small a change can build up to something noticeable in the final outcome? For months I created preset chains of effects that each brought only what a particular circuit would do in the process. I created before/after files of preamps overloading at every conceivable setting, with and without eq circuits engaged, and then used different combinations of minimal settings inside DAW's and various plug-ins to create templates to state my case that the signal chain "is where it's at!". It speaks oceans to the complexity of tiny alterations in sound, that it is as hard for very well-developed software to achieve the same final results as outboard gear in the same scenario. But, I finally started finding some measurements in my studies that seemed to result in the right conclusions sonically. Regardless of which plug-ins I substituted in their position and settings in my imaginary signal chains, the results were finally taking the proper sonic form. I had finally created some analog-emulated templates that sounded very convincing on different material, and comparing the waveforms visually showed that all challenges were being met.

The peaks in the recordings were being handled the same as the analog treatments. The smaller peaks were also being limited or harmonically 'puffed up' without main peaks getting chopped off. The hills and valleys were not showing any signs of typical digital short-cuts, and amazingly the eq side of things aligned well also! My only limitations that concerned me were that I didn't have the ability to effect exactly the same changes to phase correllation as the original gear. I was affecting the timing results accurately, but to do so down to the level of accuracy that the real hardware did meant using an approach that I could not get into, which is why I am so grateful for the Nebula technology! Being able to actually sample the true variations of the actual signal path and save only the data that makes the changes you want... wow! I am very happy that I stopped shopping VST development companies and held on to my thoughts and tests in secrecy until I could use Nebula to develop them.

So, all of this has led me to the release of the Retro Analog Studio Suite 1. I know there are some people out there shrugging at the name, but I am really happy to be using it in the proper context. This collection is a retrospective, and only intends to look backward at greatness achieved and offer it to you for a ridiculously low price. This is ALL about analog gear. Every test at every setting is about gathering the best, and most important additive results of the gear represented. Yes this is a digital plug-in, but contained under the hood are many actual signal chains recorded in analog, along with extremely

tediously crafted simulated signals based on months and months of tests and research. When you pass your sound through these presets, they are passing through the real deal, along with technical emulations that model the process to bring the entire picture into focus one detail at a time. It is a studio suite, in that the entire point was to achieve a single channel of what is truly in the older facilities. In addition, there are individual elements for you to use, since variety is important as well. But you no longer have to be without an actual analog signal chain in your DAW!

About the presets:

The presets are broken down for you into four categories:
RAE: Retro Analog Equalizers
RAC: Retro Analog Compressors
RAP: Retro Analog Preamps
RAT: Retro Analog Tape
The primary achievement of my goal takes place in the equalizer programs. They are not simply an eq emulation or sample, but the entire process mentioned above is achieved in this category.
The following presets are my first fruits of my research in using any means necessary to create the full signal chain to be used channel by channel in your DAW:
Retro_02_High
RetroStudioLowEQ
RetroStudioLoCut
Retro_02_Mid
RetroConsoleEQ1
RetroHi_LoBoost

Each of these six presets places the equalizer filtering within it's place in the simulated signal chain, where each element before and after has been recreated from scratch, some using the actual equipment, and some emulating it from a variety of programs, each doing a very minimal task that it does best, in order to achieve a VERY analog studio result. The Nebula input acts as a combination of the gain pot at input, and as the channel fader. As the input slider is decreased, the build-up of harmonic distortion from input to eq > to output-to-tape, > return-to console channel- > bus to group- > out to two track tape, is decreased at the same time. When the input slider is increased, so are the individual harmonic distortion characteristics, volume changes, and frequency responses of this entire signal chain. Each device in

its proper order adds to the result of the device that follows, and as a result the eq filters add and subtract from the devices that follow.

So, if you increase the Nebula input slider, you are hitting the console input and eq circuit harder, along with the simulated, dynamically changing tape track. But, if you lower eq, then some harmonics after the initial chain, like the tape track, return to console, group bus, and master out, are also affected, while the earlier parts of the chain, the input-to-eq circuit, are still increased by the input slider! The Nebula's output slider control acts as a digital master adjust, and does not affect the harmonic balance of the preset.
If you are able to adjust "attack" and "release", "liquidity", or "drive", then you may be altering the preset from it's true character that it was designed to achieve. I'm not saying to not make adjustments, but if you do so, make sure you know if the preset was made to accommodate anything positive in the result.

The Presets:
The Full Signal Path Equalizers:

Retro_02_High

This preset remains true-to-spec until about +1dB input gain, where I allow the harmonics and frequency results to get a little out of control, mainly because the result is interesting and cool sounding, and because if you keep levels below zero input, you are getting an awesome representation of an excellent early seventies rock-and-roll inspired studio. Original specs, online information, software emulation, and my own studies yield this combo console-eq-tape-master studio.

To get the feel of hitting 'in the red' at input into the console, I used a combination of Solid State and subtle Valve technology to balance the signal coming in, so that a great deal of harmonic content could be captured using only a few kernels of information, and with very little audible distortion.
The eq circuit is a complex passive design inspired by the Helios, but very different from the primary software emulation studied in the sense that the eq interacts with the input at every setting. Although the well-known software emulation was used for studies, and to take measurements of how the eq should respond, the final resulting eq is not an emulation of an emulation, but many different programs were used to capture the essence of this part of the

filtering process, and I believe the result makes for a smoother, rounder sounding eq that is perhaps less like the exact design, but more like what we would WANT it to perform like. There are very few noticeable frequencies that will jump out at you when using this preset. You should get a sense of the actual source material changing form.

The eq curve is technically the same amount of dB's as one would expect when used just as an eq, but some of this volume is exchanged for the input's frequency plot. This character is rounded out by how it changes when going to and from tape, because I believe that the eq's usefulness is completely altered when used between console and tape, and we would not choose to use the eq in the same manner on it's own. The result is, I believe, a truly aesthetic experience where I can imagine sitting behind the console and watching the levels light up as the sound gets hotter!.THD levels yield a SNR range from around -80dB to -25dB depending on how hard you hit the entire chain. The end result of eq places some of the filter load on the preamp and tape stages, which makes for one of the smoothest "hot" signals I have heard in the high frequencies, especially on a computer.

Negative attributes?
Here's a detail that probably won't be found by larger plug-in developers! Because I created this stuff from my own abilities, I don't think it all came out perfectly. If I did share the concept with another developer, there are things I would hope they could achieve better. Fortunately it mainly deals with design and controls over sound. Since it took a GREAT deal of time and effort to get the filters to react the way I wanted them to, it made it very difficult for me to find a way that they reacted correctly with the harmonic content before and after the chain while also changing the volume balance from sample to sample. The result is that the various eq curves do not leave the unaltered portion of the balance at zero, but rather zero dB hover somewhere around the maximum or nominal peak levels, which makes it obvious that I worked from one tested, sampled, signal chain to the next, placing the importance of how it should sound, over finding a way to achieve the proper volume changes without eliminating the point in building up harmonics in the proper order. So, the great thing about this, is that when you get the sound you want, you can alter the input and output to taste, and you will be doing so with a dimensionally accurate representation of the true signal chain intact!
Many of these issues were further 'ironed out' in the Retro_02_Mid preset, which is consistent sonically with the Hi preset.

Retro_02_Mid

This is the same characteristic as the High preset. The signal chain is slightly cleaner than the high preset, to make interaction with the wide changes of frequencies more accurate, and fall within the limitations of my sampling capabilities, and with certain confines of current Nebula technology made available. You can still achieve an amazing amount of versatility in driving the signal, and it only takes one input fader to control interaction with the entire chain of events! It is completely dynamic, in that changing the eq filter affects the tape, channel return, group bus, and tape out that follow. The result is so cool I can't believe it actually worked!

Negative attributes?
Well, I love the end result of this preset. If I had anything I wish I could alter or change, it would be to add the actual sound of 'breakup' at the tape portion of the chain, and I don't believe it can be done at present, without messing up the transients and taking a ridiculous amount of cpu, which means that some time in the next year or two, someone will have an amazing tape preset with all the goodies: I'm certain of it. Also, the peak is not perfect. I wanted to provide the feel of a Helios in the middle of an amazing studio signal chain, and in doing so I wanted it to be parametric and not notched. I didn't get the perfect amount of dB as what is marked, and the range from 700Hz to around 5kHz is pretty much what I was hoping for, but I reduced some levels between 5-6kHz to make it all come out correctly, and so I wouldn't mess up any recordings in trying to get other things accurate.
For the best results, reduce the input and raise the output fader when setting levels, THEN test the sound of driving the input signal to see if it fattens up the sound or simply makes it sound blurred. This mid range is so sweet on guitars, voice, horn sections, bass... to me it is the studio I wished I had 10 years ago.

RetroStudioLowEQ

This continues the same studio presets into the lower frequencies of the Helios-inspired concoction. Once again, the amount of distortion range is slightly lower in order to help make the filters round out and sound better from input to hitting tape. If you are looking to just place the signal path on your multi-track channels without eq'ing, then this is the preset to use. You get a true zero with the additive frequency plot of the console to tape, return, bus, out to master tape, along with corresponding harmonic distortion, with a low cpu hit, and if using it on a lot of parallel tracks, you can just lower the input

slider to reduce the amount of distortion added, and do so without adding a noise floor! Shazzam!!! Personally, I cannot decide which band I am the most thrilled about, the mid or bass. I like both of them better than the software emulator that I had to study in order to make this Frankenstein come to life. I am really hoping that this eq will become a "go-to" bass adjustment for a lot of folks. That is why I made it!

Negative attributes?
Some of the same scenarios as above. Also, I experimented with creating flexible cut filters that never existed in the original design, but truly they didn't make any sonic sense with the characteristic boost in low end the real circuit produces. And, if I take that bump out of the signal to create a cut that works the same way, it no longer hits the rest of the chain similarly, and the whole concept falls apart. Needless to say, the following boost cut does what the doctor ordered in the original eq filter, but with the style that comes from the rest of the chain. No wonder the original Helios got used so much!

RetroStudioLoCut

50Hz cut from -3dB to -15dB. All the same attributes as above still remain in this preset. You get approximately the same variation of harmonic balance and simulated SNR as the high preset, and using this at -3dB on channels that you may normally use a High Pass gives you a lot of sonic control you never had before. Give it a try. What's the worst that can happen? This is also a great way to manipulate a virtual console's flexibility, by placing this on your subgroups or individual group bus, where you add specific low eq to each track, and then reduce the buildup of all of them together while inputing the drive of the signal to glue them together. I'm telling you, the analog studio has come to town! Use it!!! No patching necessary.

RetroHi_LoBoost

Warning: Many innocent frequencies were injured in the tests done for this signal chain!

I am so happy to be sharing this preset with you! This design is THE Retro Valve studio in all it's glory! Still using very little cpu like all eq's included here, this preset is designed to add a feature that probably would not be present in the console design of it's day. This console specs out at roughly -79dB SNR, but can be driven well beyond that. The input and output sliders of the Nebula

are lowered on this preset because the low frequencies are very powerful and I don't want you to freak out your subs! The great thing about this preset, which is true of the others as well, is that they are synchronized for use in parallel eq'ing! You can place two tracks side by side and eq one while using the original as a blend, or wait to blend until the final mix. In fact, since the filters are essentially shelves in design function, you can blend them with your hi and low cuts of choice for a lot of interesting combinations. Settings on this virtual eq range from 20Hz-20kHz, with five truly classic sounding eq curves to choose from for each boost. The sound of these filters is based on several favorite designs, ranging from the build-style of a Pultec to the incredible drive characteristics of a Manley Passive.

The features that I aimed at capturing here were the very best of eq and valve. I wanted the frequencies to react musically but quickly, so that the huge boost in the lows would only ring and capture the essence of the instrument's harmonics. The drive in the low end would sound very rounded and not flabby or cheap. All in all, I believe that you will find this to be an outrageously useful parallel eq, and once you find settings that will work without blowing your subs, you can freely increase the input to drive the signal. The succeses in this design are in using the benefit of first order even and odd harmonics to increase the attack of the eq filters to make them quick enough to be great for percussive and fast transients, but smooth enough to sing along with extended instrument notes. The tape track and master tape portions of the signal chain slightly alter the peaks in a pleasing manner.

Negative attributes?
Well, I'm pretty thrilled with the outcome here. If it weren't for Nebula, this type of preset would remain in my imagination until I could afford a combination of ridiculous outboard gear whose price I could never justify no matter how many songs I recorded. I wish that we were five years down the road to where the lamest computer was 5 times faster than a quad, and then we could try the same design with several more variables than even the real gear would personify, with harmonics exceeding that which could be produced. But, that wish will eventually come true and should not reflect negatively on this preset, right?

RetroConsoleEQ1

This preset gives you roughly 10dB of boost with some of the nicest, smoothest, cleanest tube signal to and from tape, in as simplified a form as can produce truly usable eq plots without going into harmonics that would be

so complex to recreate accurately, that I would never get it done. This is a style-based studio. The wonderful thing about the feel of an all-analog studio is that every decision has a musical characteristic to it, like the actual music being created. This is not the preset to use for accuracy, but it will not screw up your tracks either. You could use this as your virtual group bus if you want modern control on your tracks, but want the feel of mixing down to a vintage tube-and-tape studio. To get a feel for this studio, load up some drums, perhaps a loop that has a straight forward mix of kick, snare, and cymbals. Lower the output slider, turn up the input slider about 70%, set the eq to 200Hz at about 7dB and A/B listen. Then bring it down to the lower frequencies. Ahhhhh. That is the reason I set out to create this collection! It makes being technical feel more like an art form, and that is how I feel about the end result of this preset.

Negative attributes?
If I could make this sound as good at +12 and beyond, then that would be awesome, but it truly took too much time and combinations of tools to make +10 work. I believe that this preset should make the original Telefunken guys proud, could have been something Putnam would've installed, and perhaps Groove Tubes would've designed before the DAW era began. Since the highest quality tube balancing does not generate massive amounts of harmonic distortion, the fact that I'm working with only the first order works out great for this concept here, leaving the rest for frequency variation. You will get the massive tube/tape variations in the Preamp section!

1073Clean

The 1073Clean preset collection represents a 'what-if' scenario that I would like to explain. What if a great, straight forward, impulse response-style eq program were to emulate the analog signal chain as described and represented here in this library, but only as it pertains to the frequencies, and not at all as it pertains to distortion, harmonic balance, phase issues, and limiting at various stages? Well, the results of this lead to a very nice clean, eq-only variation on a twist on a theme of an emulation of a very-near-to-true-to-life scenario where the frequency plot of an op-amp console input with xfo's is followed by a 1073 style eq, altered by the frequency plot of an ideal near zero at unity tape track, returned to the same characteristic of the console, sent to a unity-gain setting at group bus, and out to a nominal tape eq curve. The result is, interestingly enough, very close to being the same as the eq curves of the original software emulation. The sound is extremely close, although volume and other variations do enter in.

Originally, I had not planned on including this set of presets in the library. It is based around samples of a high quality software emulation, where Every alteration in sound is based on real-world frequency changes. I used the filter design included in this series of presets for testing and studying. My internal name for them would probably be labeled "You-Ayyy-Deee-Won-Enhanced". In this scenario, I compared the original settings to other actual hardware devices. I found that the way that the filters interact with the preamp of the real gear is so crucial to the sound, it didn't make any sense to me to try and simulate this. First, it would not benefit the concept of the entire studio sound in a single preset. Secondly, I had no desire of copying a developer's hard work. Third, I have a nice outboard device that is very similar to a vintage 1073, with some nice optimizations, and some slight variations, and that device is sampled quite nicely for this library.

So, the reason that I am including these is to make their concept available to you. My study also lead to further realizations that when you add in real gear interaction with the characteristic volume change, compressing of the signal, and growing of harmonics separate from eq changes, the true benefits of any slight eq variations come to life in a big, bold way. Both elements of eq and distortion NEED each other in order to sound authentic. So, this collection provides you with a great 'what if' scenario with very little cpu hit, and no dongle card required. Please let it be clear that if you want a software emu 1073 of the eq only, and a near unity pre setting that does not represent input drive, and you want the ability to use tons of other amazing simulations, while powering them offline from a card, then I strongly recommend the UAD-1 hardware/software as a great tool, reasonably priced, etc. Aside from that, you really cannot beat what Velinas released for Nebula in having an ideal 1073-style unit native on your DAW.

Silver73

These presets are the result of a ridiculous amount of testing, retesting, sampling, studying, and testing once again. This is a collection of presets from my Chameleon 7602. The cool thing about this variation on a 1073 is that it is based more so on the vintage design rather than the improvements Rupert made in his own designs over the years, as is what resulted in the reissue AMS design. The 7602 then takes the design to a new direction with added Hi Shelf frequencies to choose from. Also worthy of mention, and truly the thing that inspired me to get this into a library, is that the Chameleon has a little more SNR than an original 1073, and a slightly higher output from the eq

filters. So, you get a slightly steeper curve, and nearly 4dB wider frequency range on the filters. This combination of changes (improvements?) makes for some interesting observations. Firstly, you cannot compare the 1073 and the Chameleon at the same settings, either at the preamp-only stage, or eq. The curves and volume are different by design, but based on the same qualities. I have found that using the line input set at one notch hotter on the 7602, with the output lowered to compensate, then adjusting eq volume by ear, you get the equivalence that one would expect. But, when placing these variations on paper, and adding the actual range of volume, SNR, and boost/cut range, you could have your comparisons off by as wide a range as 11dB on the pre and 8dB in eq plots. So, to make a long story short (lol), this is a truly classic sounding eq and it belongs in this collection. Every setting was taken with a heavy handed input signal, so this is not your clean, unity-gain 1073. This is the character-drive 1073 eq with very clean eq results, but with harmonics always driving the signal. The "Drive" control has been left on for your experimenting pleasure, but each preset is optimized to run at spec. You can increase the drive but I only recommend doing so with the input slider set to +2dB max. Beyond that, the frequencies no longer represent the unit's settings. The drive control is removed from the Low Cut to prevent a user defeating the purpose of cutting their lows!

Negative attributes?
Nah, I'm pretty cool with having this preset collection on the computer! It is awesome to give the real unit a rest until recording next!
I guess if I had to find something negative, it would be that I would prefer to have a true Vintage 1073, Chandler, and Wunder all here at the same time: I think it would boost the 7602's ego to proudly hold it's head high among the crowd.

The Preamps:

There are eight carefully designed preamp programs contained in this collection.

Three of the presets are completely based on the hardware being sampled. Many dozens of hours of test sampling sessions were done before arriving at the settings used for these presets. The volumes and drive settings are optimized to give you a true sense of using the preamps as an additive part of your signal chain. If you want to load up a few tracks of Neve-Style channels in your DAW, then you can do so, and use the input fader of the Nebula as

your true channel fader. If you want to group instruments together with a touch of polishing and adding harmonics truly found in real hardware, then place a preamp preset on your group bus!

One of the benefits of these preamps, is that you can integrate them with the Clean73 eq's and Tape presets to create your own virtual signal chains. Here is some basic information on each preset.

Silver73_HiGain!

This preset uses a total of 8 kernels to accurately represent the 7602 preamp under very specific conditions. The input level is turned up so that tt will react with personality, exposing the sound of transformers and an extra stage of amplification. The eq section of the preamp is turned on, and each eq band is set to an "on" position, with it's respective volumes set flat. This creates a slightly more unique frequency curve relationship to the harmonics created, and the interaction of the two gives you a very dimensional real-time representation of truly driving the gain of the real device. Essentially, you get a flat reading around 1kHz, with a 1-3dB steady boost all the way up to 20kHz, and a very slight cut in the lows all the way to 30Hz where it begins to drop off all the way down to 10Hz where there is still signal present. Increased drive gives even slightly more rise in the high end from 5-20kHz.

If used ahead of bus compression, you get a very aggressive sound if so desired. Or, if used at lower input and sent to a mastering-style limiter, you get a very pristine enhancement. This is a great preset for treating multiple tracks in a mix when absolute flat response is not your aim. Your dynamic range in regards to THD is roughly from -113dB to -18dB.

Silver73_Smooth

This is a 10 kernel preset, and is not as cpu friendly. If you want the feeling of running a complete DAW sessions through a classic Neve console but cannot spare the RAM, then place this on a Stereo bus, and send each track there one by one, setting levels to taste for each track. The eq plot is very similar to the one above, but the input is fed a slightly softer signal to achieve a more modest every day usage level of the 1073-style channel. Keep in mind, that this is the reaction of only the channel, and not a full studio chain like the eq presets.

Vint_API_Type

This is one of my favorite sounding pieces of studio gear that I have ever owned. Several years back I was in a situation where I needed to record a live performance, and I was not set up for on-location stereo work, as everything in my rig was a permanent studio installation. I found an amazing local contact that rented an 4 Channel API and two U87AI's. I had three separate shows to record and the equipment didn't have to be returned until a few days later, so I became extremely familiar with the API's with every microphone and instrument combination I own. When later I was ready to purchase a new microphone preamp for personal recording use, I was torn between a DAV BG-series, a Millennia HV solid state design, a Putnam tube design, a John Hardy, or whether my choices in the API palette would lean towards an OSA, BAE, or a true API. Well, the bottom line came to the choice of buying an AP-1 Custom Shop preamp from ADK, and I could'nt be more satisfied with the decision. I bought my 990C op-amp directly from Mr. Hardy, and an Avedis 1122 op-amp directly from Avedis (BAE), and decided to go the route of using a Lundahl input transformer to bring the most character out of each combination.

The reason I am sharing all of this, is because it only takes one preset to get the character of this amazing combination into the Nebula engine. This preset is an 1122 op-amp, based on a vintage API 312 design. It is extremely quick and clean, but has some edge in the mids, and the harmonics build up very quickly on your transients, so the sound remains quick and clean, but with attitude. If you cannot hear the personality right away, try adding moderate amounts to some electric guitars and bounce them together. This preset is awesome on individual drums ahead of compression, with and without eq before and after. Use it on groups and individual tracks and even set up templates in your DAW to run it like a combo API with extended low end in the transformer. I have left the drive feature available, although I highly recommend challenging yourself to use it at -30. This is an intentionally quiet preamp design, and the op-amp/transformer combination lends you a boost in extreme lows below 50Hz, and a rise in high end above 10kHz.

Retro-Valve 1

This preset gives you a relatively flat frequency response above 1kHz , with a slight peak from 250Hz to 800Hz, and a slight cut from 150Hz to 20Hz. The dynamic range compared to harmonics is well over 110dB at its cleanest

setting, and when pushed to the max there are only about -20dB of clean signal! Even and odd harmonics are affected by the input level, with an obvious lean towards the odd harmonics. I used 7 kernels to produce the harmonics in this preset, and I believe the result is a powerful tube simulating preset that is far from subtle, but never gets nasty or flabby. The timing is nice and the effect is recognizable on many different instruments. You should try it on a snare after eq, before heavy compression!

Master_Leveler

This is a useful preset for instrument groups, full mixes, and enhancement to individual tracks. Think of this program as a flexible tube signal path that can run clean or slightly hyped and pleasantly distorted, depending on what your need is.

If you want to go clean but add some character and sonic glue to a bus or mix, then lower the drive and lower the input. The overall frequency response is a 2.5dB cut from around 50Hz to 250Hz, with a slight rise in the high frequencies, which become more animated and have more energy the more the signal is driven. There is a smooth, extended response for transients that is characteristic of tube-based amplification but it is subtle. Used modestly, it makes for a great imaginary console if placed on all tracks (RAM permitting).

33609_Drive

This preset emulates the gain structure of the 33609 Compressor, without exploiting it's compression characteristics. Use the input fader to control volume and drive. This is useful to place in front of your limiter or compressor in bussing situations where you want your program material to maintin sharp, fast transients, but gain the appearance of being louder and more dimensional. The sound remains very tight and punchy, but gets bigger. Distortion is not audible unless you want it to be, and you can get as low distortion as -115dB of clean level, or take it all the way up to nearly all distortion harmonics. This is a 10 kernel program, and it took a lot of changing, testing, and re-sampling to get it just right. The magic truly is in the proper setting up of multiple gain stages to get it just right! If you are looking for a flexible SSL type bus sound, place this on your bus, followed by a nice State Of Logic eq from Nebula, and hit your favorite compressor settings.

Passive_Tubes

Here is a preset that I created to place in several positions in your setup, depending on what you are looking for. There is some very clean tube-inspired high end that round out your group tracks very nicely, but this can be beautiful on individual tracks after eq as well. If you are going for classy, style, smooth, big sound, then try this as the last in chain on each track, and use it at your bus as well. The input slider controls the amount of volume and harmonics. It is set at a best-case setting, but you can control it yourself without too much over-exaggeration.

Valve_Drive

This preset is pretty clean, but very characteristic of using a high quality tube-based signal chain where the input has been passed to a digital device and back into it's analog channel to bus. The overall frequency response is close to flat, with very minute changes that reflect the variance that builds up as the chain is used. You can get a lot from a little with this preset. To get a good feel for it, compare it to the others on the same material. Use the input to increase drive.

The Compressors:

Creating these presets was a labor of love, and they should be seen as "inspired-by" designs. Consider the compressors in this collection a bonus to the primary focus of true analog signal chains. Sending signal chain eq presets to and from some of these compressor presets, using the input and output fader levels to vary the sound differences, will give you an amazing palette of usable, controllable, truly natural, analog feeling and sounding devices.

To recreate an 1176 software compressor that truly performs at every setting the way the original does, it would require sampling in more dimensions and with more settings than I think makes sense for the purposes of this collection. I rather wanted to focus on absolute quality over variety. There are so many settings on an 1176 that make it sought after, but in my opinion there is at least one device out there for every scenario that can do as good a job or better. With choices from DBX, TLAudio, (Yakuzi), FMR, Joe Meek, Emperical

Labs, TubeTech, Thermionic Culture, etc., there are so many flavors of "classic" compression to choose from.

Helpful Tips:

If you try various settings that you like which require changing the attack and release settings that originally load with the preset, I strongly recommend saving the changes as a new preset with a new recognizable name. It is extremely challenging to create the best starting-point combination of attack and release, and the timing range labeled on the sliders do not reflect the actual ranges on the samples taken. So, make sure that if you make a new setting, that you do not save it over the original preset! Also, no one single outboard device or software device was used to create these presets. They are not sampled directly from any single plug-in, and the correlation of reaction to volume and transients are unique to the presets themselves, but have been arrived at in order to be useful in the same manner as the names would suggest. In many cases, I was more pleased at the new results than I thought I would be, and the reaction from low to high input gain is much more of an analog-feel than I could have hoped for. So, when choosing the right settings, really try to imagine the ideal sound you are after, and it is probably in there somewhere!

76_Drum_Slam1, 2, 3

These presets are closely related to each other, and as the names suggest, are intended to give a nice range of uses primarily for individual drums, and any situation that might call for parallel compression. You can load up the original track or group tracks, and copy them to a second track(s) with these presets and mix them to taste. Threshold and ratio controls are not present, but many characteristics of compressing harder and with varying ratios can be achieved by raising and lowering the input fader. My goal here is to make everything flow as if it is in a signal chain or patched in position.

76_AllButtons_+

This preset gives you some of the benefits of using an 1176 in "All Buttons In" mode, where the unit is sent into a sort of overkill mode. You can pull back on the amount of signal being compressed on the original unit when in this mode, and my goal here was to provide a sort of 30% blend sound to the soft, fuzzy, squashed room drum effect that the original displays. The end result provides

an awesome "WACK" snare quality, and can easily be mixed with the original drums.

Bright_Fairchild

This is a personality eq-compressor signal chain to be used anywhere that you are looking for something unique, needing something extreme, or want to bring some life into the upper mids to blend in with the original tracks. I wanted to include some qualities of the Fairchild's pleasant moodiness, but I also felt that my sampling capabilities in this area were best lent to creating a preset that was more of an effect than a fine quality Fairchild emulation. I do believe that the attack and resolve presented here is a great example of the Fairchild sound, but it is preceded by a complimentary eq setting that gives as much percussive edge to the signal before compression, as could still be considered authentic in response. Give this a try on snare, kick, percussive instruments with fast transients, and blending with the original ahead of a limiter.

Spirit_Of_76_A

This preset provides a range of the 1176 sound from crisp to pleasantly fuzzy. Much like the others, it is a personality compressor, and can work for bus group and individual tracks, and may be ideal for parallel compression in the right situation. I would say that this preset represents a combination of the light pumping effect of the 1176 along with the pleasantly hazy, almost fizzy sound that can be useful for overheads and room sounds when needed, but there is smoother attack and more linear response than the actual unit, and no distortion is being measured. I think it will find a great many uses in your mixing adventures!

Neve_HiGain_Comp

This preset is loosely based upon a 33609 within a signal chain where the frequency characteristics model that of a 1272 line amp feeding the comp at a 3:1 ratio and a 100 ms recovery time, returning back into a channel to bus and out to two track. No distortion characteristics are included, and the main emphasis of the success of this preset is in the mid-range grab this provides, bringing elements together while leaving the upper frequencies and bass frequencies open to other processing from the original track while giving a

nice 'glue' to the mids, with varying control available via the input slider. You are free to create settings of your own by changing the attack and release settings, but make sure you do not save over the original, as the entire basis of the preset relies on the input/output timing factor to align with the frequencies sampled, and adjustments will change not only speed of impact on the audio path, but drastic eq and phase changes that may not be what you are after.

Tube_Drum_Comp

The final preset in the compressor section of this library depicts a scenario where a channel on a vintage valve desk is driven into moderate distortion at the input, and passed onto an all tube leveler/limiter. There is a smooth frequency scoop from roughly 150Hz up to 18kHz which is used in conjunction with the rate of increase in responding to the input signal with compressing, similar to how a passive eq would respond when being re-amplified by a tube gain stage. Instead of accentuating the highs and lows, as this chain is created to do for the drum bus in this scenario, the passive version responds to the original low and high signals at their clean, unaffected levels, while the amplifying valve leaves the reduced eq curve alone and brings the extreme frequencies back up to a virtual zero. This provides for a simulated limiting and drive that is based on the devices used more so than the instruments' levels, which gives a very broad and natural effect that I think is unique to most 'vintage' compressor plug-ins, and yet is fairly simple in that it only reflects eq and dynamics without distortion, which is your choice whether to add with another preset! If so, I highly recommend the Retro_Valve_ 1 or Passive_Tubes presets for driving the signal!

The Tape Presets:

In harmony with the inspiration of the rest of the library, these two presets are here to offer you some 'mix and match' flexibility to use in combination with other presets or with your favorite 'go-to' plug-ins. These are not just simplified tape emulations or samples from tape devices, but comprise the signal chain with a focus on the interaction of the colored sound of tape frequencies, harmonic balance, fluctuation of response based on transient impact and overall changes in volume, and then the passing of that response on to the rest of the signal chain, in combination with the original signal being optimized by high quality tube preamplification channels. You have the input of a channel out to tape, back to channel, sent to bus, and out to two-track tape.

Group_Bus

This preset is not extremely heavy-handed, and can be used with lowered input settings for crucial recorded channels and group instruments, and can be driven fairly heavy with hotter input levels with decreased output to compensate, if you are looking to wake up the harmonics and glue things together more. The input chain is based on a very high quality tube console, and there is a lot of harmonic activity in the high end as your input levels are increased, slightly balanced out by very minimal loss from the two tape passes in the chain. The drive setting is available for your use so that you can drive the input signal harder at a lower volume, but is not recommended for taking things over the edge, as the reaction slope is far too exaggerated, but hey, you might find this effect useful (just not for any stable accuracy by all means!). The harmonic balance is affected by the tube's drive settings, and then both even and odd harmonics from the tape signals react in addition to this. You can get some wonderful individual instrument results with this interaction, so experiment and do what sounds the best for the mix.

Channel_Tape_Low

This is a similar signal chain with less of an effect in the activity and energy in the upper frequencies. You should try individual instruments or vocals with this adn also try reducing and increasing drive at low settings. Simply increasing the input volume and reducing the drive gives you a very nice compensation for trying to hit your tube-based console channel at unity, then essentially unity at tape out, unity at channel return, and unity at bus and tape out. The build-up of harmonics is optimized at each stage, so levels aren't out of control, but you can easily take them too far if pushing the signals in this manner.

Here is a range to consider:
With drive set to -30dB, input set to -3dB and output set to +3dB, you are essentially getting a nearly flat frequency response with subtle harmonic content.

With your input set to +3dB and output set to -3dB and drive at 0dB, you now have some balancing fluctuation in the lows and low mids, and some increased energy around 3-5kHz, and a great deal of harmonic distortion without going crazy. Even at higher settings, the sound remains very true to

the signal chain, as the timing is very well orchestrated to give just the right bump in signal to coincide with the type of distortion you get, so things don't get jumbled, flabby, or cheap sounding even when pushed harder than recommended.

Preset Categories:

RAE: Retro Analog Equalizers
RAC: Retro Analog Compressors
RAP: Retro Analog Preamps
RAT: Retro Analog Tape

Preset List:

Retro_02_High
Retro_02_Mid
RetroStudioLowEQ
RetroStudioLoCut
RetroHi_LoBoost
RetroConsoleEQ1
1073Clean
Silver73
Silver73_HiGain!
Silver73_Smooth
Vint_API_Type
Retro-Valve 1
Master_Leveler
33609_Drive
Passive_Tubes
Valve_Drive
76_Drum_Slam1, 2, 3
76_AllButtons_+
Bright_Fairchild
Spirit_Of_76_A
Neve_HiGain_Comp
Tube_Drum_Comp
Group_Bus
Channel_Tape_Low

This concludes the presets!

I truly hope that this collection makes an awesome addition to your enjoyment of Nebula. There are two other library collections available soon, so contact me if you have questions.

Thanks and God Bless You.

Sincerely,

Michael Angel

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