

REVIEW: Nagra VPS Valve Phono Preamplifier

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In the professional audio industry the name Nagra is synonymous with precision. For over 50 years, Nagra has been an industry leader in developing analogue and digital audio recorders. Famous for their sound quality and reliability, Nagra recorders have been the first choice in high-quality recording equipment for a generation of location sound recordists and engineers.

My personal introduction to Nagra came in 1992. I was a young film studies student at the time, and had my first taste of high quality pro-audio in a lecture on the Nagra III NP analogue audio recorder. I spent many subsequent hours with the Nagra III, studying its operation, taking the recorder out for field recording sessions, and performing a series of recordings for short film projects with other students. That early time with the Nagra III, where I explored the nuances of recorded sound, was instrumental in my movement into audio as a professional.

Nagra's history in the recording industry, however, dates all the way back to 1951 when the company produced their first field recorder for audio. The Nagra I prototype was a vacuum tube-based design utilizing a spring motor from a Thorens turntable, an interesting link for Hi-Fi enthusiasts. The first production model appeared in 1953, renamed the Nagra II. The Nagra III NP (1961) was the first recorder that included the crystal Neo-pilot sync system, making it

suitable for film and television recording. Nagra continued to produce industry leading analogue field recorders until the late 1990s, when digital-based field recording equipment began its ascent through the recording industry. Although Nagra began production on a series of digital recorders in the '90s, beginning with the Nagra-D, a four-channel PCM audio recorder utilizing a helical scan head and 1/4" tape rather than DAT, by the end of that decade, Nagra's dominance of the field recording industry had diminished. In 2008, however the company introduced the Nagra VI, a six-track digital audio recorder designed as a multi-track successor to the earlier generation digital and analogue recorders.

In 1997, Nagra made its first foray into consumer audio with the introduction of the PL-P full function vacuum tube preamp, part of their new Hi-End series of electronics. Mostly valve based equipment, the company's objective was to provide the audio enthusiast with equipment that met the same standard of audio reproduction for home listening as they had been providing to the professional recording industry.

By the time I reached out to Nancy Belt (GM Audio Technology Switzerland USA) in early 2013, substantial change had occurred for the Swiss manufacturer, now operating independently of its long-time corporate parent The Kudelski Group, under the banner Audio Technology Switzerland. In its new incorporation Nagra operations two divisions, *Pro Audio & High End Audio*. When I contacted Belt and subsequently Matthieu Latour (Audio Technology Switzerland Marketing Manager) I asked to audition two components, the VPS phono amplifier and the newer Jazz line-stage preamplifier. I will be providing separate articles on the two units, beginning with the VPS phono amplifier.

The VPS

According to Latour, when Nagra introduced the original PL-P full-function preamplifier the objective was to build a high-quality valve-based pre-amplifier with an equally high-quality phono amplifier section. A simplified PL-L line-stage only version of the PL-P followed a few years later, and the next logical step was to produce an autonomous phono amplifier. The VPS utilizes the same basic circuit found in the earlier PL-P, however, as a stand-alone phono amplifier it was intended to surpass the performance of the PL-P, pushing the circuit design and performance to a higher level.

Housed in a small, 12.2" x 3" x 10" (WxHxD) anodized aluminum main enclosure the main case contains the preamplifier circuits, valves and adjustable load circuitry. A smaller external power supply houses the power transformer along with the rectifier and smoothing circuit providing the 12V DC supply.

Designed to be organized in a system of Nagra components and / or with Nagra's VFS (vibration-free support base), the top cover includes three conical cavities intended to receive the feet of a second Nagra unit placed on top.



Appropriate feet are included with the VPS that also allow it to sit on a matching Nagra component or on the VFS. I placed the VPS on top of the Jazz preamplifier, which sat stacked on the VFS base.

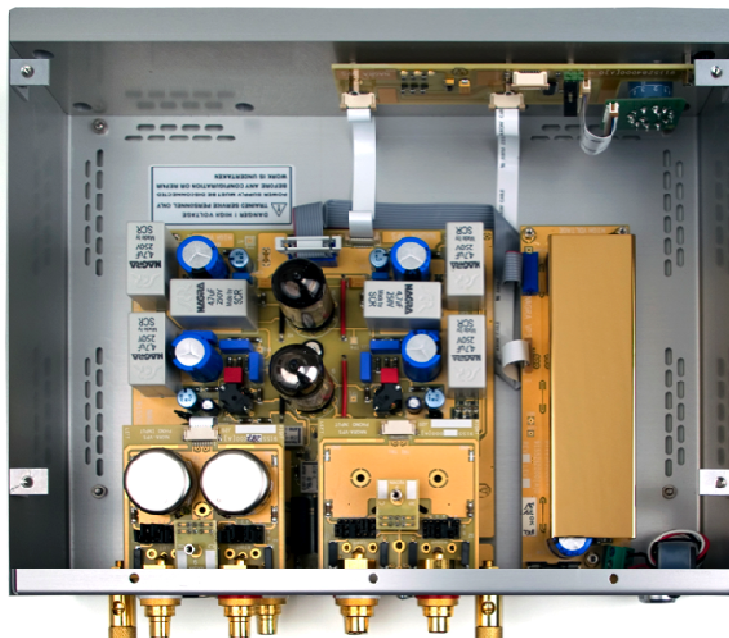


The front panel of the VPS includes just one rotary selector knob that matches the styling of Nagra's pro-series recorders, giving access to all functions: *power-up*, *standby*, selection of *phono input A or B* and *muting*. A blue LED is used as a status indicator.

Connectivity includes Gold-plated RCA connectors for inputs A & inputs B (optional input); Gold-plated RCA output connectors; XLR asymmetric output connectors; Gold-plated earth connector (one per input); Two-position switch for output level adjustment (0db or +15db); Lemo locking connector for external power supply.



Latour provided substantial documentation to aid in a technical report of the VPS, and I've prepared an abbreviated summary. The Nagra VPS contains five separate circuits. Input A is standard moving coil (MC). Input B is an optional input, available as either moving magnet (MM) or moving coil. The main amplification circuit, a voltage conversion circuit and a control circuit follow the two input circuits.

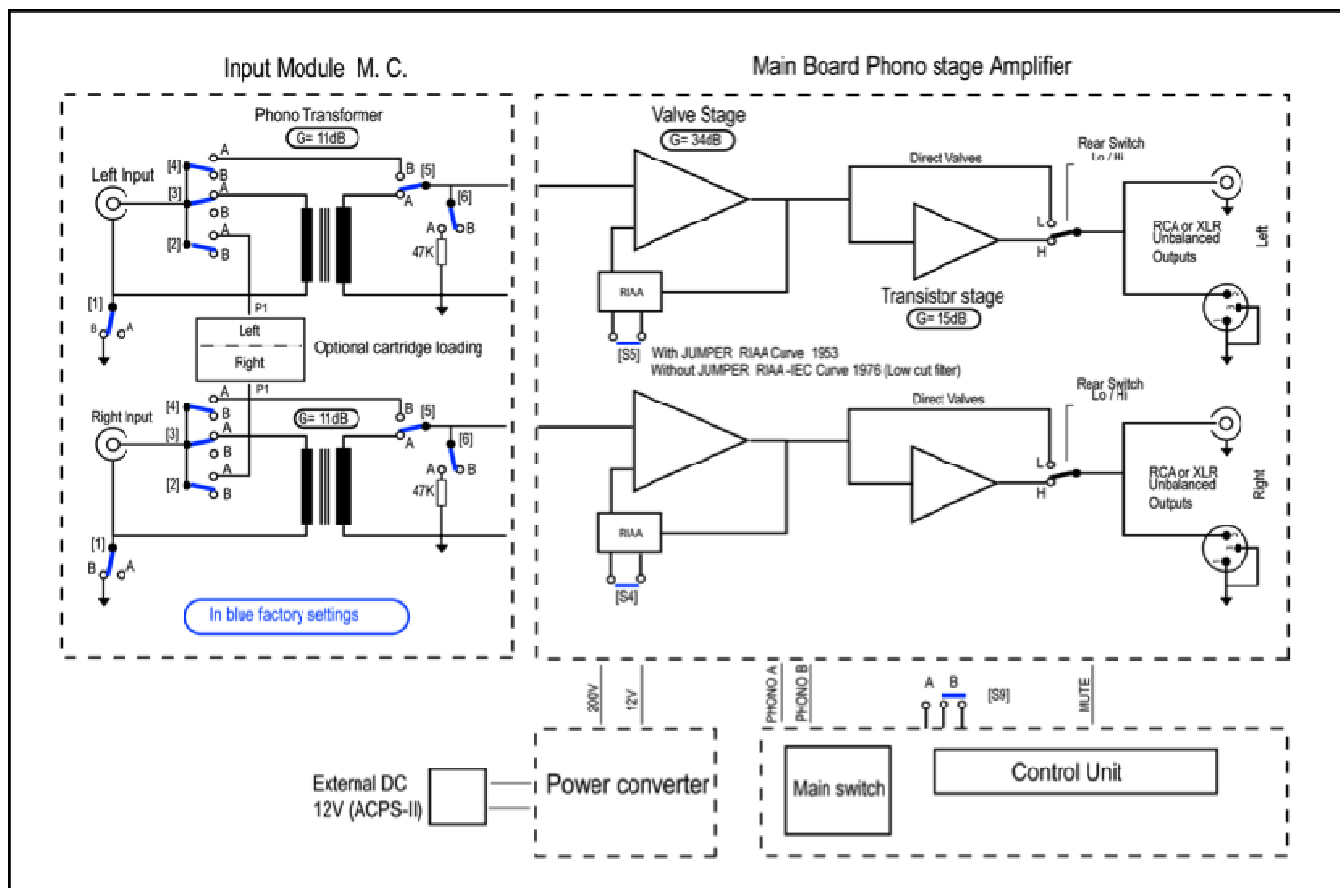


The input boards are modular. The standard version comes set for MC provided with transformers, which can be switched (bypassing the transformers) to a MM input thanks to a system of jumpers. (The optional second circuit available for MM or MC has no transformers).

Impedance matching for various cartridge selections is available via a set of small, switchable modular circuits that correspond to specific impedances. The circuit is changed inside the VPS, and is easily removed with a small screw (the top of the case is removed with a hex key and no tools are required to remove the circuit, just nimble fingers).

Six standard modules are supplied with the unit (three resistive and three capacitive) set for: *33 ohms, 100 ohms, 330 ohms, 100 pf, 220 pf, 470 pf*. Three additional circuit modules are available (at no extra charge) with settings chosen by the user.

The input transformers on the VPS are designed and wound by Nagra. In building the transformers, Nagra borrowed skill and experience from their pro division's many years of designing highly sensitive microphone input transformers for their field recorders. Their magnetic core uses glass-metal (as used in the playback heads of tape recorders). The transformers are protected from parasitic interference by a cover in annealed mu-metal and they provide a gain of 11dB.



The main amplifier circuit has two stages. The first, which provides a gain of 34dB, is built around two double triode valves, one type ECC 81 and one ECC 83, rigorously selected and

matched. Each channel of this first stage has a jumper allowing a choice between two RIAA curves: *1953 & 1976*. With jumpers in place RIAA 1953 curve is applied, offering the greatest bandwidth. With jumpers removed, the 1976 curve is used, with attenuation below 90Hz.

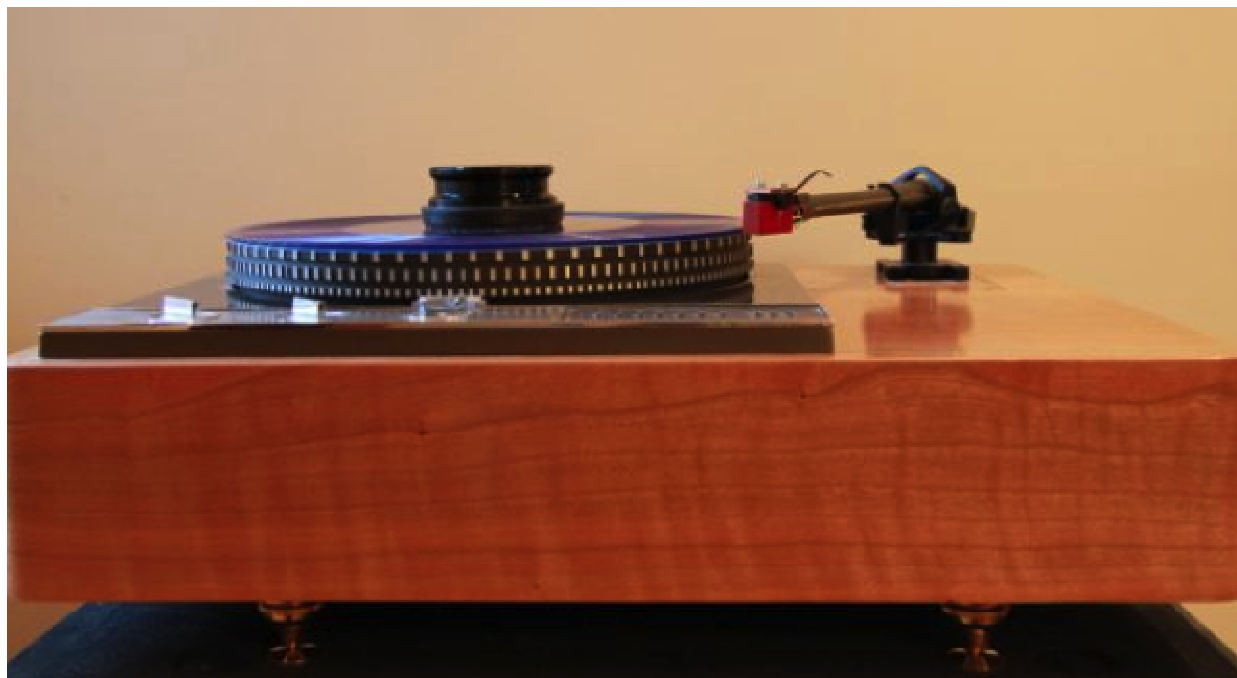
The second stage of amplification, with separate components and activated by a switch on the rear panel, provides an additional gain of 15dB. This circuit is based on Nagra designs for microphone preamplifiers. With these two levels of output the user is able to set the sensitivity of the Nagra VPS (300 mV for the low level and 2V for the high level) in order to accurately match the input of the pre-amplifier.

Just behind the front of the unit a control circuit handles the functions activated by the rotary selector. It is equipped with a microprocessor managing the soft-start valves, the mute function and standby. When the power is switched on, the Nagra VPS provides pre-heating, feeding the filaments of the valves, but then waits two minutes before applying the high tension to the anodes. The power supply circuit provides the different voltages required for the valves (high tension) and the circuits. It is fed from +12V that is provided by the external AC power supply.

Listening to the VPS

The VPS and Jazz arrived together, however since I planned on writing separate articles for the two units, I inserted the VPS first. I was breaking in a new Dynavector XV1s cartridge at the time, and felt that one new component was as much as my audible memory could manage.

The VPS (along with a VFS support base) replaced a Tom Evans Groove+SRX phono amp, joining a system that consisted of a Modwright LS 36.5 pre-amplifier, a Bryston 4BSST2 & Allnic T2000 amplifier(s) and a pair of ATC SCM40 loudspeakers. The turntable system included the aforementioned XV1s on an SME312s tonearm mounted on a Garrard 401 turntable (picture includes a Koetsu Urushi Vermillion cartridge).



My thoughts on the performance of the VPS changed over the two months I spent listening to it, transitioning from good to excellent. Over that time, as I prepared my notes for this article, I documented the change that I had perceived and the adjustments that may have brought it about. My early impressions of the VPS were good, *but not great*. It had good overall sonic traits and a revealing, warm sound with an impressively low noise floor. I'll admit that there was no early seductions that made me take notice. Low-level frequency extension and dynamics were good, but again, not great. Detail was very good, but there was a bias toward warmth rather than resolution. Musicality and harmonic detail was engaging, but I wasn't "mesmerized".

I was a bit surprised by my first impressions of the VPS. It occurred to me that perhaps unconsciously I had an expectation of what I would hear based on my affinity for both the brand and Nagra's pro-audio equipment. This caused me to consider factors that may have influenced that early listening period. First, the XV1s cartridge was relatively new, and while I loved how it sounded prior to the addition of the VPS, it was possible that the cartridge wasn't yet at its peak. Second, with the package of adjustable load circuits still on-route from Nagra, I was limited to a 100-ohm circuit for cartridge loading. While I thought 100 ohms would be perfectly reasonable with the Dynavector, Latour had strongly recommended the 33-ohm circuit. Third, I didn't know the history of the VPS review sample, so perhaps the unit itself needed a bit of time to find its audible feet.

So I backed off a bit on the intensity of my work, and after a few additional weeks of non-critical listening my system went through a bit of an overhaul. I inserted the newly arrived 33-ohm load cartridge, replaced the Modwright LS 36.5 with the Nagra Jazz pre-amplifier and settled on the Bryston 4BSST2 amplifier. With this new configuration, I took a gentler approach to listening, resisting making any notes and withholding judgment until sufficient time had passed. Then, with more than five weeks of listening concluded, I felt it was time for some serious analysis.

During this second go-around, the VPS revealed common strengths in its sound on multiple pieces of music. It is capable of excellent low-frequency detail – by detail I don't mean depth of bass, as it doesn't go extremely low in frequency retrieval. However, there is a quality of bass that is exceptional. I discovered this while listening to the opening of "A Simple Twist of Fate" from Mobile Fidelity's newly released version of Dylan's *Blood on the Tracks*. I know this album well (the new pressing from MFSL is extraordinary) and was quite impressed with the sound of Tony Brown's bass early in the song. I perceived a certain harmonic detail that I had not acknowledged before. Similar attributes of texture in bass were present in "Misguided Angel" from the Analogue Productions 45 RPM version of the Cowboy Junkies *Trinity Sessions*, and in Monk Montgomery's work on "Back to Back", the first cut of The Montgomery Brothers album *Groove Yard* (Analogue Productions 45 rpm pressing of Riverside Records 1961 performance). In both instances the bass sounded rich and full of detail with no extraneous flab. I consistently found myself listening to the player and the instrument, not the Hi-Fi system.

In fact, I was often struck at the audibility of subtle instrumental textures. The quality of the musicianship from the artist was more audible than I was used to it being, drawing attention away from the playback system and recording, moving focus toward the sound of the instruments and the skill of the artist playing those instruments. Cycling back to Dylan's "Simple Twist of Fate", the gentleness of the guitar at the top of the song matches the previously mentioned quality of the baseline. And during the last lyrical passage "...blame it on a simple twist of fate..." I heard nuance in Dylan's delivery that had not hit my ear before. There's more skill, more technique in his singing than I have perceived in the past, and it's most evident as he closes the song.

Revisiting my observations from The Montgomery Brother's "Back to Back", I was also impressed with the spatial detailing and organization of the instruments within the stereo image. Wes Montgomery's guitar is clear and tight with excellent separation from Buddy Montgomery's piano. Bobby Thomas' drums, which along with the bass sit central in the recording, doesn't get muddled at all with the bass, each instrument finding its place in the soundscape with neither overwhelming the other. Listening to this track I felt I was sitting in a small jazz club – a clichéd statement perhaps, but accurate in this case.

As I cycled through a series of albums and songs my improved impression of the VPS continued to grow. With "Corcovado" (from the Analogue Productions 45RPM version of the Stan Getz / João Gilberto collaboration *Getz Gilberto* that also includes vocalist Astrud Gilberto and pianist Antônio Carlos Jobim), Astrud Gilberto's voice sets up a gentle opening, placed hard left on this pressing, the sound is soft and sweet. But then Getz's sax hits strong with great texture, shifting focus both acoustically and spatially.

Again, with the VPS driving the phono system, there was lots of space for the bass, percussion and piano, which all sit further back than the sax, quieter, until Getz's second saxophone movement ends. At this point both piano and percussion are brought gently forward in level and dynamic intensity.

On "Ghost in this House" (from the MFSL Alison Krauss & Union Station album *Live*) Krauss' voice is spectacular – however her performance is so strong it can push vinyl playback to its limit, causing the system to sound shrill. With the VPS and Jazz preamp along with the XV1s, there is no hint of distortion or over-modulation. When I hear this track on a good system I get shivers down my spine.

"You Look Good to Me / The Girl from Ipanema" (side 3 from the Analogue Productions 45RPM version of the 1964 Verve release *We Get Requests* by the Oscar Peterson Trio w. Ray Brown & Ed Thigpen): while there's nothing too hard or dynamic on this side of the album, detail is key. With the Nagra system I heard great detail, particularly in the subtle dynamics within Peterson's piano – when his intensity picks up about half way into the first song, Brown and Thigpen pick up both their tempo and volume in order to keep pace with Peterson's drive and determined playing. In the next cut, "The Girl from Ipanema", everything starts a bit stronger – I love the focus and oomph in the playing from the trio, well captured by engineer's Val Valentin & Bob Simpson (produced by Jim Davis).

Perhaps this is when my opinion on the VPS settled in. I had been impressed with what I was hearing often enough and consistently enough that my early impressions seemed like distant memories. The VPS was providing high quality analogue playback, meshing well with my system, producing fine sounding analogue audio.

The last piece of music I'll comment on is "Northern Sky" from Nick Drake's newly remastered *Bryter Layter* box set. I perceive a slight bit of distortion on Drake's voice. (I'm not certain that what I'm hearing is distortion, as I have perceived this attribute on every version of the song I've heard.) The main percussion, piano and guitar, however, sound wonderful, both spatially and as individual instruments, full of body and texture, while the xylophone rings beautifully opposite the piano. I mention this piece both as an example of a song that impressed while testing the Nagra VPS, and also because it is part of an amazing box set. I strongly recommend both *Bryter Layter* and the previously released *Pink Moon* box set to any Drake fan, and to fans of folk/indie/rock music. These two releases literally re-invent Drake's music on vinyl.

During my final phase of critical listening to the VPS I alternated my musical selections between genres, skipping between jazz, classical, folk rock and also some harder rock & roll from bands like Led Zeppelin, Radiohead and The Beatles. During this time the sound remained consistent, regardless of genre or musical selection. Music doesn't explode with dynamics or low frequency depth, but the VPS is capable of drive, and shows exceptional character and detail, while putting the focus in listening on the instruments and the artists rather than the system. These attributes were clear in the simpler jazz or folk rock material, but the character didn't change under pressure from higher energy music.

Comparisons

After my last article on the Bryston BDA2 / BDP2 converter and digital player, a few readers wrote in asking for comparisons to other products. I privately responded that when writing reviews I'm hesitant to make comparisons of one product to another, choosing to focus on what I'm hearing from the component under consideration rather than compare it subjectively to the sound of another component – as if a piece of equipment itself is a reference for musical playback rather than the actual music or the instruments that have been recorded. However I do understand the importance of comparative analysis. So with this VPS assessment I thought I would attempt some comparisons, using two phono amplifiers that I have used within the past year as reference points.

My personal phono amplifier is a Tom Evans Groove+SRX, and I consider it to be an exceptional phono amplifier. At \$9000 U.S, the TE amplifier is almost a third more expensive than the Nagra, which is a significant difference. However, after my time with the Nagra VPS I'm not able to state unequivocally which of these two units is better: They have different strengths and offer the listener slightly different paths into the sound.

In my opinion, the Groove+SRX is a touch quieter, is slightly more transparent (or neutral if you prefer) and has an advantage in terms of overall dynamic range compared to the Nagra. The VPS, however, has better bass detail, is warmer sounding, and produces a more inviting

and engaging sound. And while the VPS is more *seductive* than the Groove+SRX, it does still produce an exceptional level of detail and accuracy (Nagra's strong efforts in tube selection no doubt play a role in the VPS's ability to balance warmth with detail in its sound). Overall the VPS compares favorably to Tom Evans' excellent Groove+SRX, and a decision to purchase one or the other would come down to personal taste or system matching.

I also recently spent time with another tube based phono amp, an Aesthetix Janus pre-amp with built-in phono. The Janus is a very good full function preamplifier with plenty of features and a warm, natural sound. In comparison to the Aesthetix, I find the VPS to be more revealing with better detail and improved tonal balance without sacrificing the warmth and midrange texture that tube-based products do offer. Tube performance from the Nagra units was also substantially better than the Aesthetix (the Nagra uses ECC 83 and EC 81 while the Aesthetix used ECC 83 and 6922's). In fact, it wasn't until I replaced the stock tubes in the Janus with NOS tubes from tube expert Andy Bowman at Vintage Tube Services in Michigan, that I was comfortable assessing the qualities of the Aesthetix unit as a preamplifier. NOS Telefunken and Amperex tubes greatly improved the performance and noise floor of the Janus, however, even with the better tubes I still preferred the characteristics of the VPS phono amp. I'll point out that I wasn't able to hear the VPS along with the line section of the Janus, so my comparison is really between Nagra's VPS & Jazz combination and the single unit Aesthetix Janus preamplifier. A large price discrepancy exists within this comparison as the Nagra combination costs more than double the single unit Aesthetix Janus, however the tube selection and overall performance from the Nagra products was indeed superior to the Aesthetix, in my opinion.

The VPS is an excellent phono amplifier. My initial impressions of it being a good phono amplifier improved substantially with time and the right configuration within my system. Near the end of my time with the VPS I did think about going backward, tracing some of the early changes I had made that brought about the improved performance. However I didn't really want to mess with a good thing and felt comfortable that the changes had been cumulative. I should know more after I dig into the Jazz preamplifier and will share those thoughts in a follow up article. However after a few months of listening I'm more than confident stating that the quality of analogue playback that the VPS is capable of reproducing is superb. In summary, the VPS doesn't explode with dynamics, but neither do my musical taste – it can manage high notes quite well with natural note extension that's never overbearing or ear splitting. As expected from a tube based phono amp, the midrange is excellent, full of bloom, body, and spatial texture, while bass performance is exceptional, tight and revealing.

As I finish up with the VPS I realize my mind has turned to Nagra's Jazz preamplifier. While I enjoyed the VPS and thoroughly recommend it, the Jazz is another beast that has more than caught my fancy. I look forward to completing part two in this series and will try and share those words with you soon.

~ *David McCallum*



David McCallum with Nagra III recorder (1993)