

VALVE



VSAC '97 photos

Andy Bartha's cool speaker cables

Paul Joppa's 6DN7 driver

DAC attack part III

S.E.X. kit schemo revealed!

Ed Billeci's three chassis per channel SE WE212E amp, truly the icon of VSAC '97

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VALVE

the monthly magazine of eXtreme audio

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editor's thing

Yo, bottleheads,

Sitting here at the ol' laptop in an awsome Spartan Imperial Mansion 50's era streamline trailer on the Washington coast, waiting for Eileen to return with the Tanquerey and tonic, so we may toast the end of the first VSAC and the beginning of our first vacation of the summer (well, there was that one day cruise on a nuclear sub a few weeks back, but that's hardly what most would call a vacation, and another story altogether).

gether). Wow. We did it. The first gathering of the international tube audio community. To be sure, we need a few tweaks to make to next year's event (consider that question answered) even better; more time between seminars for folks to see everything (yes, the most common complaint was that there was too much to hear and do!), better organization of equipment needed for various display rooms and seminars, an extra day just for the manufacturers and members of the press to relax together, and a few other changes, but all in all, you folks made VSAC '97 the international tube audio event of the year, if not of all time. The list of people to thank is huge, but I'll try to hit some of the key players.

First and formost is Eileen, who singlehandedly ran the last week of show preparation while I panicked to get my own equipment built for the show. Her unflagging support of all my cockamamie schemes, and her sense of forthought and organization saved this event from sinking on several occasions.

Next is Paul Joppa, who did a superb job of organizing and hosting the seminars. Paul's commitment to sharing knowledge in the tube community shone like a star during those talks, afterward everyone buzzed about the wonderful sense of free trade of what was once thought to be deep dark secrets during those talks.

Thanks also to all the lecturers, who did a bang up job of sharing information without turning the talks into ads for their own products.

This sense of community and sharing was truly the spirit of VSAC '97. After hearing of great friction between exhibitors at the Stereophile show, it was fascinating to see VSAC exhibitors hanging around in each other's rooms, offering well considered assistance and excitedly hooking equipment from different rooms together. Also I want to thank two giants of the audio press, Bascom H. King and Dick Olsher, for taking the time to come out and see just what these loose cannon SE types are up to. It's clear after all too brief conversations that both of these men have a vast and deep knowledge of things audio, and I hope they came away with some new opinions of our little corner of the high end.

Thanks also to two giants of the West Coast audio scene, Winston Ma and Paul Stubbelbine, for taking time to stop by and share their new collaborative works in progress.

And thank you to our distinguished international attendees, Eduardo B.E. de Lima, Mr. Masaho Uchida and his family, Takuji Yamamoto, and of course, Mr. and Mrs. Susumu Sakuma.

Sakuma san is my new favorite beatnick. Whether or not you liked the technology of the Sakuma system is moot. Sakuma san has a rare gift for picking music that brings emotion out of tubes, he is the only man who has ever brought me to tears with a particular selection of music. People all throughout the weekend speculated that this sparkling eyed, white schocked sprite with a sense of humor five times the size of his tiny frame, was bewitched. Truly an honor to be in your presence, Sakuma san.

Thanks so much to our talented interpreters Nori Herman and Chisuko Farley, who went above and beyond the call of duty, organizing shopping trips for Mr. Uchida's kids, and helping the Direct Heating folks set up for the concert.

How about Mikey? Hey Mike Lefevre, my virtuous twin, born to different parents, thank you for coming out and being our famous person, constantly hounded by the admiring masses, and patiently, attentively answering their every question.

Thanks also to two of my dear friends, John Tucker and Tony Glynn, for getting me to actually try this idea after mulling over it for two years. Thanks also to Tony for your success in untiringly working to get so many people to come.

Tucker? Well, what can I say about my best friend? Smoothplate either designed or built half my equipment, scraped together the right parts for the Sakuma system loudspeaker at zero hour, listened to the ravings of a madman during the last two weeks before the show, opened his woodshop to other exhibitors, myself included, to help them finish their equipment at the expense of completing one of his own projects, and gave a fine performance in helping to convince that fellow who decided to open an exhibit room without paying that it wasn't the healthy did you just tune in? here's what's happened so far...

Back Issues

Volume 1 - 1994 issues - \$20

a Williamson amp; Dyna Stereo 70 mod bakeoff; converting the Stereo 70 to 6GH8's; a QUAD system; triode input Dyna MkIII; MkIII vertical tasting; smoothing impedance curves; Altec A7; Ampexes Nagras and ribbon mikes; Triophoni, a 6CK4 amp; audio at the 1939 World's Fair; books for collectors and builders; V.T. vs. R.M.A. cross reference; FM tuner tube substitutions; Big Mac attack - the MI200; 6L6 shootout; a vintage "audessey"; more FM tuner mods; vintage radio mods; Heathkit rectifiers; PAS heater mod.

Volume 2 - 1995 issues - \$20

Rectifier shootout, tube vs. solid; FM 1000 recap and meters; single ended 10 amp; triode output W-4; Optimus 990 - speaker for SE?; star grounds; tuner shootout; Living Stereo, vinyl or CD?; World Audio SE integrated; firin' up - smoke checking; Brook 12A schematic; 6C33 vs. 3C33; Heathkit power transformers; 6B4's + Magnequest = SEcstasy; W5 mods; triode operating points; Dyna restorations; Marantz 7,8 and Scott LK150 impressions; hackable vintage gear; Quasimodo - PP 805 amp; restoring a Scott 340 in 75 minutes; a dream system for 78's; cartridges and styli for 78's; Restoring a Lowther, Part 1&2; easy tube CD output hack; 6ER5 phono preamp; 304TL & 450TH SE operating points; hypothetical DC ESL amps.

Volume 3 - 1996 (\$25):

Single Watt, Single Tube, Single Ended, an amp for Lowthers; the Vintage Speaker Shootout of 1996, QUAD vs. Lowther, vs. A7; the Voigt Loudspeaker, the Single Ended eXperimenter's kit; cathode coupled SE 6AS7 amp; how to build the Superwhamodyne; refoaming AR woofers; mesh plate tubes; rebuilding QUADS; QUAD amp filter surgery; single gain stage amps; the Brooklet, and Brookson, choke loaded PP 6080 amps; transformer coupled PP 6DN7 amp; the Iron Maiden;

choice. Judy Tucker took the bull by the horns when we needed mass quantities of paperwork typed up and calls made to track down critical info. Thanks, Judy.

John likes to tell me that I rekindled his interest in audio, which had been waning when he moved here from Houston a while back, but that feeling is mutual I assure you.

Buddha. Those of you who didn't meet John Camille at the show are poorer for it. John "Buddha" Camille (yup, that was really his call sign when he shot down MIGs for a living) came into our amp building class and patiently shared knowledge that made it clear Buddha has forgot more than the rest of us will ever know about electronics. Not only that, he's brilliant, charming, funnier than hell, can solder better than anybody I know, and truly loves hanging out with fellow bottleheads, no matter their level of experience.

Thanks to all the exhibitors who took the risk of doing this first show. In spite of the slightly dissapointing attendance (my goal was 200, we hit about 180), every exhibitor seemed to have gained something from their participation, a sale, a list of leads, a review, or a new business contact.

Thanks to Darcy Kaufmann of the Silverdale Hotel for holding our hands through the learning curve.

Volunteers. Boy this is a long list. Thanks to Grego Sanguinetti, Gary Dahl, Ed Billeci, John Hoffman, Eric Lenius, Dave Dintenfass, John Carey, John Ott, Andy Bartha, Jon Ver Halen, Pat Currie, Reid Welch, Kim Jenkins, Richard Riley, Tom Vetromile (official VSAC'97 photographer and insurance agent), and a bunch of you who just stood in whenever and wherever necessary. Thanks also to Ed Billeci, Steve Fellini and Ian Joel for getting pictures from the show up on the web so fast.

Try http://www.teleport.com/~tube - Ed Billeci's website, for some nice shots.

And lastly, thanks to all of you who attended. Wouldn't have been a party without you.

See y'all at VSAC '98 I hope,

Doc B.

Andy Bartha's cool inventions

Andy Bartha displayed his wares in one of my rooms at VSAC, demonstrating the killer bang for the buck qualities of his three sizes of "Whatchamacallits", resonance control devices composed of lead shot molded into a silicone damping material. I liberally applied these to my turntable, as I do at home. Andy also suggests trying them on transformers and CD players, and is currently developing a line of tube dampers of various sizes.

The turntable setup was as follows, in decreasing order of what I perceived to be the greatest improvement:

- 1 The largest RCD, drilled for a spindle and used as a record clamp. This is a big change, much tighter bass.
- 2 The smallest RCD, drilled for use as a replacement tonearm counterbalance weight. This along with some heat shrink tubing, has damped my bargain Linn Basik very nicely, much improved image, cleaner mids and highs.
- 3 Three mid size RCDs placed under the motor assembly of the DP-6000. Subtle but definite improvement of isolation, resulting in better quiet.
 - Four mid sized RCDs placed one to a corner on the plinth. This seems to help damp vibration a bit too.
 - four small RCDs on the tonearm mounting board. This gives further reduction of vibration transmission through the plinth.

Another of Andy's brainstorms was to take a pair of the Solo foil crossover inductors (16 ga.), and unroll them.

Andy then lightly sanded the copper foil and shot it with some clear spray finish. The ends of six foot sections of this foil were then rolled up and inserted into crimp style spade lugs. Once the assembly was completed the entire six foot cable was wrapped with teflon plumber's pipe thread tape, and heat shrink tubing was used at the terminations to hold the wrap in place.

Andy suggested we try these in place of the 12 ga. stranded continuous cast Vampire speaker wire I was using. Wow, big improvement, more vital sound, better top end, seemingly more dynamic and lively.

Andy has since tried the same process with some Goertz silver foil (\$!) inductors, and says it's even better.

Give this a try. For about \$20, I think you'll be impressed. Doc B.

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5

HANDMADE ELECTRONICS A PARTIAL LISTING OF WHAT WE HAVE FOR THE BEGINNING OR ADVANCED HOBBYIST Capacitors- KimberKap, RelCap MultiCap, Hovland, Nichicon Muse, Cerafine, Solen, Our own high quality oils, 500vdc silver micas, Philips 1% polystyrenes, Resistors-Holco metal film, IRC RN metal glaze 1% series, Mills & Memcor wirewound, Allen-Bradley/Stackpole carbon compositions, Alps, Clarostat, Dale volume controls. Tubes/Valves- Golden Dragon, Svetlana and other Russian made. Connectors- Kimber, Cardas, Edison-Price, WBT and some nice inexpensive plastic binding posts that do the job. Transformers- Hammond, MagneQuest and Tango (interstages only). Metalwork-Hammond and our own basic chassis using non-magnetic materials. Kits- 2A3 and 300B single ended and a nifty RIAA board based on an RCA Victor circuit. To get the latest copy of our catalog, send: \$4.00 using Visa/MasterCard/Discover or \$2.00 or 5 IRC postal coupons to: Handmade Electronics Post Office Box 9114 Allentown, Pennsylvania 18105-9114 USA Voice: 610-432-5732 Fax: 610-432-8971 Email: handmade@ix.netcom.com Export http://www2.netcom.com/~handmade/first.html Import

Brainiac's driver for voltage hungry output tubes



After a chat with Paul about the challenge I had coming up with a single stage input/ driver for my VV52B amp, which requires about \pm 94V grid swing on the 52s to get full output, Paul sent me a super cool circuit designed to drive just about anything that needs a lot of grid swing. Says Paul, "This should get close to \pm 250V output, with a gain of about 250. It'll drive a 5K load too, in case you want to zap your parallel 50s."

Perhaps even more intriguing, never the conventionalist, Paul P.S.s, "Hang that junior nickel 5K transformer off it and you should get a couple very nice watts out, in fact this could be a son-of-S.E.X. stereo parafeed amp...."



Andy Bartha Audio 954-583-7866 EST

Did you know every CD/Laser Disc you purchase has a "filmy coating" that was used to keep the polycarbonate disc from sticking to its metal mold during manufacture? No matter how sophisticated your CD/ Laser playback system is, it cannot correctly read the music beneath this film. This loss of focus is destroying the very heart and soul of your musicit's no wonder the purists have preferred analog! Only REVEAL removes this film, plus, it cleans and seals the surface, protecting against scratches, smudges, fingerprints, glare and magnetic dust.

Now your CD Laser Disc player will read the music correctly.

MARTIN DEWOLF,

Bound for Sound "Best sounding and easiest to use CD cleaner"

DOUG BLACKBURN,

Positive Feedback, Soundstage "Cannot reproduce what REVEAL does on CD's with anything else"

Satisfaction 100% guaranteed. An 18 oz. can is \$34.95, plus shipping (that's about 4 cents per disc) You'll be hearing your music for the



The shirt of choice at VSAC '97 \$16 each, plus shipping, XL fits all. ELECTRONIC TONALITIES/VALVE



The kits are coming, really! The power transformers are trickling out of the factory, the manuals are being written, and we have a cool new adapter plate coming for the Afterglow, which mounts a nine pin minature socket in an octal hole. Hang in there, in won't be long now! ELECTRONIC TONALITIES/VALVE

L. Dean Moore, Audiogenic Pete Goudreau

I don't know about the readers; but, I'm extremely excited about this, the third article in this series, that I've presented for two reasons. First, the input transformer modification presented in this article provides the second greatest improvement in overall DAC performance of anything I've attempted. Second, perhaps first and foremost, I have the honor of introducing Pete Goudreau who I am now co-authoring this series of articles with. Pete is in large part one of my mentors on DAC modifications. I consider it both an honor and a privilege to work with him. I became acquainted with Pete through the internet. Some of you may have read his posts on the modifications of The Parts Connection DAC-1.0 there. I have in essence performed all of these modifications, separate and apart from Pete, on both a 1.0 and 1.5. The benefit to the readers of VALVE is that these modifications are repeatable, transportable and affirmed by more than one person.

Specifically, this article pulls one of these modifications out and applies it to Norman Tracey's X-DAC 3.0 which appears to be extremely popular with the readers of VALVE. In fact, the esteemed editor of this publication, the one, the only S.E.X. Doctor, owns one. Now if I could just figure out a way to get him to modify it! (*Dean, surely you don't think anything I own is unmodified*? - *B.*) Hey, maybe we could get one of the readers to buy and/or perform the modification in this article on an X-DAC 3.0 and then we could have a shoot out

Anybody out there wanna go mano-a-mano with Doc ?

a bonus for X-DAC 3.0 users

First off, could this void the warranty of you-X-DAC 3.0? You betcha! You're on your own here. Second, any disclaimers which appear on the inside cover of VALVE apply here as well.

Now that you've been warned, here's the idea. Take a look at Sheet 2 of 5 of the schematic for the X-DAC 3.0. The SPDIF a and SPDIF b signals in the upper right hand corner of the schematic feed the input receiver chip, CS8412 pins 9 and 10, at the lower left hand corner on Sheet 1 of 5. This is where the modification you will perform will be inserted. This modification will install an input transformer to reduce the noise coming in on the

digital input. Look at Sheet 2 of 5, again. Assuming that you only require one input, you can dispense with the majority of the circuitry on this page. Here's what you need to do. Let's look at just one input and make that input 1. Remove R18, 75 ohms. Remove the reference to ground at the bottom of R18. T1 must be replaced with the 1:2 ratio step up transformer. This is offered by the Parts Connection in the new catalog for \$9.95. Across the secondary of T1, install two 150 ohm 1206 SMT resistors in series. These resistors should be mounted immediately adjacent to the transformer secondary pins to minimize any inductance in the loop. Also install a 22pF 1206 SMT capacitor across each 150 ohm resistor. The connection in between the two 150 ohm resistors should be reference to the digital ground on the CS8412, pin 8. This connection should also be bypassed to the chassis through five 22pF 1206 SMT connected in parallel. This puts 300 ohms across the secondary which loads the transport with 75 ohms. Remember, 300 ohms divided by the turns ratio of the transformer squared equals 75 ohms. The faraday shield of T1 should be referenced to the chassis through the lowest possible impedance path possible. Some copper foil tape and/or a piece of soldering wick works well for this purpose. Now connect the transformer secondary pins, with the resistors in series across them, which are now essentially the SPDIF a and SPDIF b signals, to the CS8412 pins 9 and 10, skipping U22, through 0.047uF capacitors. Check all of your grounding to prevent latch up of the receiver. You might also want to experiment by galvanically referencing your transport output to ground. Galvanically referencing the transport output may not be possible in some designs and might actually degrade the sound in others. Both methods should be tried for optimal performance. Presto, you just increased the CMRR! Now let's talk about the termination from the BNC input connector to the primary of T1. If you used a chassis mount BNC connector with a surface mount cap in it I alluded to in my first article you're ready to go. If not, use a Trompeter UBJ-26. Slip a ferrite bead on the pig tail of this connector and connect it to the primary of T1. Now you have a CLC pi filter on the shield of the input of the DAC composed of the surface mount capacitor in the chassis mount connector, the ferrite bead, and the parasitic capacitance associated with the primary of T1. Mission accomplished.



Doc B's highlights of VSAC '97

- Watching our warehouse fill up with all sorts of cool goodies before the show
- Seeing guys like John Ott and Andy Bartha step in and help move what seemed like several tons of gear to and from the hotel
- Walking into room 340, seeing some SOB sitting there smoking, and realizing I just met my main bud Mike L., just as I was about to smack him on the back of the head
- Dinner with Dick Olsher, Tony Glynn, and Eileen
- Dinner with Eduardo de Lima and Eileen
- Walking into my other room and finding Paul Stubbelbine and Winston Ma auditioning some of their collaborative work on my system
- Lunch with Winston Ma
- Spending 45 minutes talking with Bascom King in room 340
- Sakuma san pointing out that he is the guy applauding on the Johnny Hartmann cut he is playing for me
- Meeting Takuji san, and having him tell me I look much older than the picture on my bottlehead T-shirt
- Shutting down that obnoxious guy who tried to open an exhibit room without paying, while Smoothplate and Buddha stood behind me, looking very serious
- Playing Professor Bottlehead at the parallel feed seminar
- Being touched to the point of tears by everyone's enthusiasm to do it all again next year
- Watching the ball room fill up before the Sakuma concert
- Being brought to tears once again by Sakuma's dedication to Eileen of Carmen McRae's cover of *I Left My Heart in San* Francisco
- Hearing all of Sakuma san's music, so many pieces my own favorites as well.
- Getting some sleep finally after 60 hours. Much less weepy the next morning
- Finally getting it together at the first amp builder's class, and teaching with Smoothplate and Buddha - wow!
- Meeting everybody I think this fairly well unanimously has been called the best part of VSAC '97

See y'all next year, it'll never be the same as the first, but it'll only get better !

cravings

For Sale

- Two pairs of assembled S.E.X. amps, built with ceramic sockets and mounted on Hammond 10"x 6" chassis - \$350 each pair
- one pair Altec 290D, with aluminum diaphragms - \$100 plus shipping

Chadd Moore, 419-692-6026

For Sale

two pair Altec LU-1104 on 30170 Y throats, B/O to:

P.J. Finneson P.O.Box 232 Bonanza, OR 97623

For Sale

Eico HF-87, \$300

HK Citation IV preamp w/cabinet, \$275 Altec 600B speakers, \$60 each Crazy Eric, 360-871-5921

Wanted

Your pictures and impressions of VSAC '97

Please send your non-returnable photos to us at VALVE, PO Box 2786, Poulsbo, WA 98370, or scan them and send us GIFs attached to your e-mail at bottlehead@prodigy.net. We will continue to publish cool VSAC pictures in VALVE as space allows. We are particularly interested in "people shots", but any cool photo is desired.

october

Yup you guessed it, VSAC was our September VALVE meeting. Our October meeting will be here at Tonalities, Sunday October 5, 12 noon.. Honestly, I am a little tapped out for ideas for this meeting after concentrating on the show for so long. We will have the finished 69s to listen to, which have turned out to far exceed my expectations. If you heard them at the show, they are more broken in now, and I adjusted the stuffing to kill the slight hollow sound. They rock!

I also have a new pair of very nice equipment stands for the ol' listening room, courtesy of Tony Glynn. Thanks Tony!

By the way, we'll be tearing out the old walls in the basement, and building a new classroom/ shop in the next few months, so we may need some alternative sites for our meetings for a bit Bring your latest project, as usual!

everyone, we have experienced several copyright violations by rather unscrupulengths than any-body to make this hobby affordable to may who to steal Thank-Well, It's been over a year since the S.E.X. S low our ideas. Thank-fully we have a few on our side. If your buds want a Paul has suggested that it's time to pubbuild one copy for your own use, which respect and distribute In spite of the fact that we go to greater lengths than anyattorneys circuit. them how much and somehow and suggest they buy one too! copies of this circuit you lke your sub-scription to VALVEcircuit, people, w that our 1 you may not sell. Also, please resi out, you copyright, it OK of the ideas. audiophile 214K QHN3 came As usual, build one here it is. the prices don't think make copy tell th Paul ous lish our CHANNEL **SNHO** 16 • ONE IK CHNG Ş $\mathbf{1}$ SPEAKERS & OTHER 16 OHN SPEAKERS sk ohns prinary AMPLIFIER, 5 0 NH ∯I TON NFD I. 1200 OHNS FOR 0 OHN SPEAKER 1/2 VB [GDN7] EXPERIMENTER'S KIT **BNHO XE** \leq OHNS FOR S.E.X. SHNS 51 1/2 VA [GDN7] 26 \leq ١٨٨ 88 NFD 270K OHNR ÷ THE CHING 1/2 VA [6DN7] \leq ENDED 2K OHNG 1/2 VB 600N7 **947 NFD** OHNG OHNG IK OHNS Ŵ SINGLE 24K OHN5 IA FLEE 1 NEGOHN WW 220 NFD -WW 0 1 NFD 100K OHNS Z

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september 1997



circuit theory Brief 13

channel. The first 'voltage amp' half of the two channel. The first 'voltage amp' half of the two tubes are configured in a 'mu-follower' (quasi constant plate current) voltage amplifier circuit. The output stage consists of the second, 'power' half of the two 6DN7 tubes operating in parallel circuit uses two 6DN7 tubes per 2.5KΩ air single ended configuration into a gapped output transformer. The power supply consist The amplifier

The power supply consists of a full wave fast recovery soft start rectifier, feeding a two stage capacitor input filter (capacitor, choke, capacitor,

wirewound resistor). A global feedback loop is connected from the secondary of the output transformer to the cath-ode of the lower half of the mu-follower. A bypass VALVE

the feedback loop keeps the feed-adversly affecting high frequency adversly affecting capacitor in t back from

response. This feed

Tespouse. This feedback loop is tailored to the output transformer supplied with the kit, and should be removed if you build the circuit on your own, with iron you may have at hand. Remove the .047 mfd cap and the feedback resistor The filament supply floats at approximately 90VDC above ground potential by means of a voltage divider coming from the B+ (high volt-age) supply, to keep the heater/cathode voltage difference in the mu-follower within tolerance. Overall gain with the feedback loop into the stock OT averages 12.5 dB into 16Ω. Frequency response with 10 dB feedback averages -1 dB at 21 Hz, and -3dB at 16.25 kHz. THD (1kHz) with feedback averages 1.9% at 1 watt, 3.9% at

With a lot filter cap after the IK B+ dropping resistor when using a different OT also. With a 10K feedback resistor and the TFA-204 (about 2 dB NFB) response can be pushed to 4.5W, -1dB @ 21.5 Hz and 25.4 kHz, with the typical slight loss in image depth brought on by negative feedback. Δ waus, with third order harmonics approx. 30 dB below second order. With no feedback into a higher quality output transformer, such as the TFA-204, these numbers constitution. TFA-204, these numbers can improve to 2.9 watts, -1 dB @ 28 Hz and 18 kHz. One should

VSAC '97 photo gallery



Sakuma san, doing what he does best - music! Photo by Steve Fellini



Bruce Edgar's 70 Hz horns and subwoofer - best ever Edgarhorn. Photo: Tom V.

VALVE



Grego Sanguinetti, getting ready to fire up the Universal Breadboard Amp. Over a couple of hours, Grego and Paul demoed bi and single 2A3, 300B, 45, 211, 845, 10, 801, SV572, all sorts of cool tubes! Photo by Tom Vetromile



The E.A.R., U.S.A./Samadhi Acoustics room had great sound. Dick Olsher was on hand to talk about his Samadhi Natalia design. Photo by Tom Vetromile



John Hoffman and Eric Lenius set up some very rare vintage equipment, all in superb condition, in the VALVE Vintage Audio room. Above is a part of John's "Audio State of the Art, 1897–1927" display. Photo by Tom Vetromile



Here's John Tucker's personal Exemplars, with his way cool direct coupled VV30B amps with active loads on the drivers, in the Triode Support Systems room. Photo by Tom Vetromile

MagneQuest's Michael Lefevre and Electronic Tonalities' Dr. Bottlehead bring you a special limited edition parallel feed output transformer -



- ♦ 3,000 ohm primary impedance, 4,8 and 16 ohm secondaries.
- the legendary midrange quality of the TFA-204, now with phenomenal bass and treble speed and texture
- measured frequency response of -1dB at 2 Hz and 26 kHz
- perfect for SE 2A3, SE 300B, PSE 50s, SE VV300B, SE VV32B, even works with the VV52B!
- alternating interleaved laminations of M4 steel and nickel - pinstripes!
- stunning polished solid brass bell ends
- use with 2A3/300B and the new, larger EXO 003 60 mA 50H plate loading choke
- o perhaps the most beautiful transformer ever made

special price - \$225 each.

all nickel version available on special order, \$225 each w/black oxide bell ends, \$275 each with brass bell ends



Lowther

MEDALLION II KIT

Introducing the new Medallion II enclosure, specifically designed for the incomparable musical experience of the Lowther PM6A, PM7A, or PM2A. Works nicely with the budget C series drivers too. Comes complete with matching grillsa precut, easily assembled kit. Now availablethe new DX2 rare earth magnet driver





For more information contact Lowther Club of America PO Box 4758, Salem OR 97302 ph/fax 503-370-9115

for an audition in the Puget Sound region: ELECTRONIC TONALITIES 360-697-1936

Finished cabinets also available Assembly manual available for \$15



Paul Joppa, giving the rundown on choosing an operating point in the seminar room. The room was packed for every topic. Photo by Tom Vetromile



Doc B. in da' house, showing how we do it VALVE style. The only guy with the guts to go with a vinyl only front end (had to use my CD in my other room...). Photos by Tom Vetromile, who tested the limits of my insurance by standing on a september 1997 19 VALVE



Some of the VSAC crew, slammin' down a few at the local brewpub, before the Sakuma concert. Sorry that I can't quite make out who the fellow at the back is, next to Ron. Photo by our waitress, using Steve Fellini's camera. Apologies for the strange looking faces, due only in part to the JPEG file this picture came from.



Another JPEG, of Reid Welch, and Sakuma san's right hand man, Takuji Yamamoto

Parallel Feeders, Get Busy!

The reaction to the parallel feed amps we've been playing with has been tremendous. Our seminar on the subject at VSAC '97 was 'standing room only'.

We're working as fast as we can to continue to develop circuits for you potential parafeeders. In the meantime, here's some combos that should work very nicely:

For 45, 6CK4, 6DN7 (see Paul Joppa's circuit in this issue)

- Brooklyn BCP 15 50H 40mA plate loading choke, \$50
- MagneQuest EXO-45 (5K:80hm) or EXO-46 (5K:16 ohm) parallel feed output transformer, M6 version, \$75, Nickel version, \$135
- for operation at 3 watts maximum output

For 2A3, 6A3, 6B4

- MagneQuest EXO-04 50H 60mA plate loading choke, \$99
- MagneQuest EXO-35 (2.5K:8 ohm) or EXO-36 (2.5K:16 ohm) parallel feed output transformer, M6 version \$75, Nickel version \$135
- for operation at 4 watts maximum output

For 300B, VV300B, VV32B, operating at 60 mA maximum

- MagneQuest EXO-04 50H 60mA plate loading choke, \$99
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