

VALVE

VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS

in this issue - letters, letters!

EV horn towers

Rectifier mix'n'match

PAS - heaters and cables

Vintage radio mods

Triophoni meets the X1

upcoming meetings

December 4, 1994
Rectifier Shootout & Christmas Party
at Classic Radio, Poulsbo
12 noon

January 8, 1995
Vintage Equipment Restoration
at Classic Radio, Poulsbo
12 noon

**volume 1
number 10
december
1994**

VALVE

*is the newsletter of
Vintage Audio Listeners and Valve
Enthusiasts
dedicated to the preservation and
dissemination of vintage audio
knowledge.*

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believe electrons flow from minus
to plus, and they can kill you along
the way if you're not careful.
Vintage audio equipment operates
at potentially lethal voltages.
Always treat it with respect.*

editor's thing

Well the year's about shot and it's time to look back and see from whence we came. We started in February with a small group of hardcore bottleheads standing together BS'ing at an antique radio club swap meet.

Since then we've tripled our ranks, gotten national exposure in audio publications (thanks again Glass Audio), which has led to international newsletter circulation, and found new friends in the retail biz (thanks Classic Audio and Nuts. About Hi-Fi).

We've seen exotica you can't get anymore, like Mac MI-200's and Ampex 351's, and done stuff of dreams like listen to every kind of 6L6 tube made to find the best.

We've imported experts from far away to tell us more about our fast growing hobby, and found collections of fascinating equipment and expert knowledge right in our back yards.

Well, all I can say is just wait till next year. We haven't listened to half the vintage equipment I've sniffed out this year, and there's much new stuff looming on the horizon. In fact, yours truly is in the sitting down and talking stages about a new line of equipment himself. Stay tuned.

This year we're going to have one or two nationally advertised vintage and modern tube gear swaps, and a clinic for folks who are new to vintage audio restoration.

I'll be saying thanks and goodbye to my antique radio customers so that I may concentrate my efforts on tube audio.

We'll have some fun with the Pacific northwest Audio Society too. I plan on challenging those transistorheads to a shootout (say Steve, will those Hartsfields fit in your Buick?).

It's gonna be a great year!

Don't let the blue smoke out,

DAN

letters from fred

*great recollections from Fred Suf-
field, P.E.*

8 Nov. 94

Dear Dan,

Now that my paper about the AN/APS-6 radar is in press, the November issue of the Proceedings of the Radio Club of America, I can start on another that a fellow in the East, formerly Dept. of Def. wants me to write about another radar.

Kind of odd for an old audio man, but I really made my notch in the radar field.

To add to the list of books:

Yagi Antenna Design

James L. Lawson

ARRL Press

225 Main St.

Newington, CT 06111

Antenna Engineering Handbook

Jasik

McGraw Hill

Another interesting book, but not for reading, just one to leave around to impress friends who happen to see it, and thus go home saying, "Boy... is he smart!"

Higher Mathematics for Engineers and Physicists

I.S. and E.S. Sokolnikoff

McGraw Hill

For those looking for a pair of output tubes to beat anyone's equipment, look at the 833 triodes. I had two for display, but never got around to using them. No output transformer! (12K ohms primary, 100 mA quiescent, 800 mA max current -dan)At 4000 volts, Class B, 29 watts drive (480V peak AF grid to grid -dan), 2400 watts out!

Just traded my W.E. 755 speaker (you got cool stuff, Fred. - dan) in W.E. cabinet to a friend in Chicago for several old General Radio items, pre 1930!

GR-275 Peizo Elec. Osc.

GR-514 AM Audio Freq. Amp.

GR-102 J Decade Resistor

GR-413 B Beat Frequency Oscillator

Now my garage is filling up again.

Best Regards,



feed the beast

Wow. My ranting last month really paid off. You guys came through with no less than six nice articles/letters this month with the promise for a couple more real soon. Thank you.

We have our regular contribution by senior statesman Fred, whose listening recommendations (single ended 45's, JBL drivers, etc.)always show a very well tempered ear; A couple of pieces by Rick, who knows one heck of a lot about power supplies; two nice articles by Steve S., owner of much audioexotica; and a neat contribution by new member Daniel (cool name) who does gonzo retro radio modophilia.

Please keep it up! You mod and resto guys are doing a good job of feeding the beast, and now I want to beg you folks with historical interests for some input too. Write me some interesting descriptions of your stock equipment; specs, designers, sound quality, etc. -d

a vintage 'audessy'

Last month's meeting at Steve Schneider's was an opportunity to witness some really special vintage gear. For followup, we have some thoughts by Steve about his 'systems':

building a reference system

Here are musings from a relatively new audiophile searching for his ultimate music system.

I have played the Mercury HI-FI Stereo recording "Sil Austin and His Orchestra" (SR 60236) numerous times and still have not found any modern recording that can reproduce the saxophone as well as this old Mercury pressing does. Sil Austin, the saxophonist, comes out of the left speaker and grabs your heart and mind during his solos. His saxophone is so emotional and wide open that you think that he's in your music room. Although the type of music is not my cup of tea, so to speak, it is so smooth and lifelike that it has become one of my reference recordings for portraying accurate musical reproduction.

The sound stage of the orchestra is apparent but Sil Austin's saxophone is the key to appreciating the music. It is smoother in its portrayal of live sound than any CD that I have heard. The music is coming off the record as it was recorded.

The Hartsfield speakers reproduce a wide dispersion of sound that recreates the atmosphere of a live studio recording session. The triode amplifiers take any edge off of the horn speakers and push them effortlessly without any evidence of clipping or working hard at all. They also extend the sound stage in front of the speakers at least twenty feet. This could be because the speakers take a maximum of 35 watts RMS and the triode amplifiers are only using four or five watts during normal use. (editor's note - based on recent experience with JBL midrange horns and considering the low listening levels necessary for Steve to keep his lease, I'd guess we heard no

more than a watt max from them big Mac's). The amplifiers, however, have four hundred peak watts available when needed. The bass and treble are smooth yet not as extended as those of the CD's that I have tried. Does this really matter? The imaging and sound stage appear to be extremely realistic. Therefore it really doesn't matter to me that the bass and highs are not as extended as those of CD's.

Realistic reproduction of music is really what it's all about isn't it? This particular record may have benefitted by the stereo system that I used in evaluating it. You see, back in 1959 Mercury Records used Ampex recording equipment and McIntosh MI 200 triode amplifiers in their recording studios. The system I used has the same type of amplifiers that Mercury records used. The record itself can be found for about five dollars in used record stores in the local area.

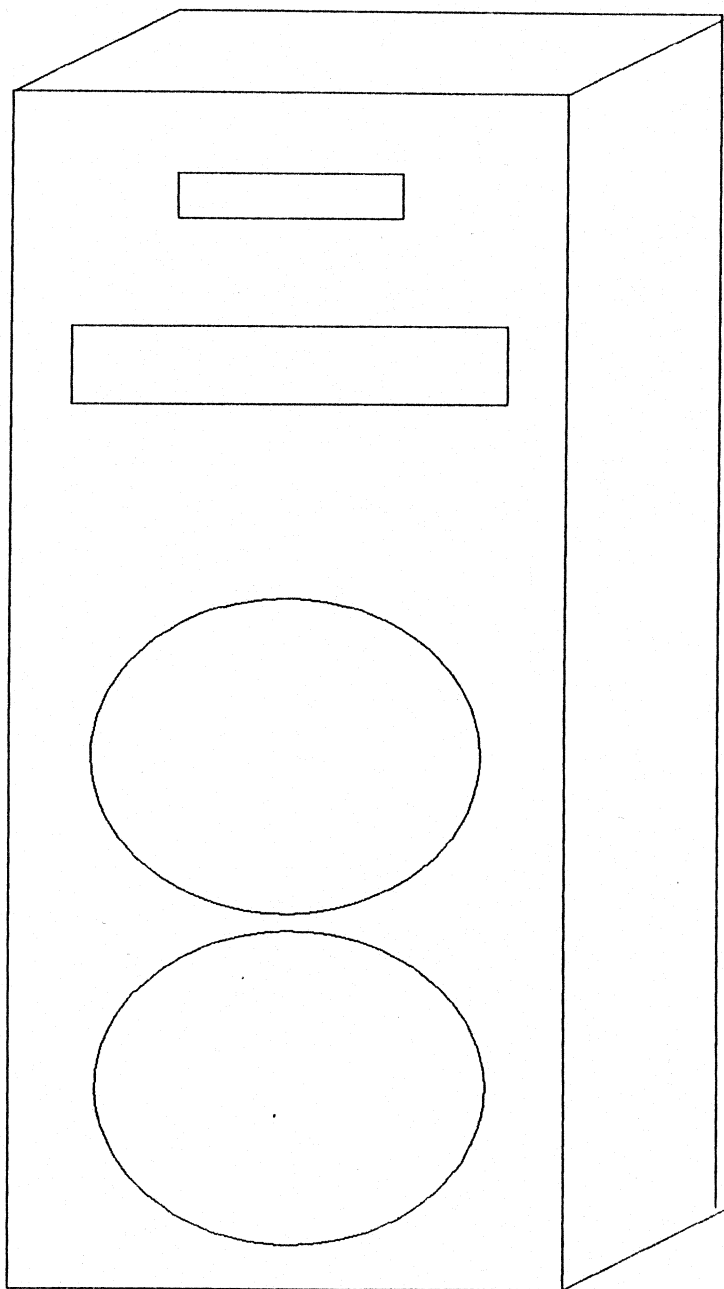
My reference system consists of the following items: Stanton AM30 cartridge, a Dual 5000 turntable with modified patch cords, An EICO ST84 preamp, a pair of custom modified McIntosh MI 200 amplifiers, a Revox B226 CD player, two Ampex 351-2 tape recording machines, and a pair of custom made JBL Hartsfield speakers with three way crossover networks.

resurrecting old horn speakers

Finding the vanishing horn speaker is only half of the problem. Getting a cabinet that is still pleasant to look at and functional can also be a challenge, but it can be gotten around if you know a good cabinet maker. The other potential problem is finding components that are still functional. I personally overloaded an Electro-Voice T35 tweeter in my Speaker Factory Towers twice using solid state gear between ten and fifteen years ago.

I wanted to restore these because I thought that they would work well with tube equipment. I contacted Richard, the former production manager for Speaker

Diagram A



Factory (a speaker manufacturer that was in business in the early to mid seventies that specialized in using Electro-Voice components), to see if he would make new cabinets for me. He said that he would and had the plans. However, I wanted a modification of them in that I wanted the midrange horn speaker placed in a horizontal position instead of a vertical one for better sound dispersion (see diagram A for my revision of the original design and diagram B for the original design). He concurred, admitting that the old speaker was designed with a compromise for a narrower cabinet which the sales department wanted.

To give a little background for these speakers, they were Speaker Factory's competition for Speaker Lab's Super Seven speakers of the mid seventies. Speaker Lab, however, made their own woofers which, according to Richard, did not test out as well as the Electro-Voice woofers.

The tower speaker used a T35 tweeter, an 8HD midrange horn with a T250 driver, and two Electro-Voice 12" woofers wired in series.

The Speaker Lab Super Seven used 10 and 12 inch woofers wired in parallel. Having had a pair of both in the mid seventies the Speaker Factory Tower speaker initially had less bass until I rewired the woofers in parallel. After my modification they had more bass than the Speaker Lab Super Seven speakers. However, neither presented the midrange very well unless you sat right in front of the speaker. Since they both used the same Electro-Voice midrange and tweeter horns and also had them angled the same way their sound was uncannily similar.

I have since sold the Speaker Lab Sevens to my parents. I can also attest to the fact that the tweeters easily show clipping when connected to poor quality solid state equipment. Once I lent my parents a Sansui 9000 series solid state receiver from the 1970's (future collecti-

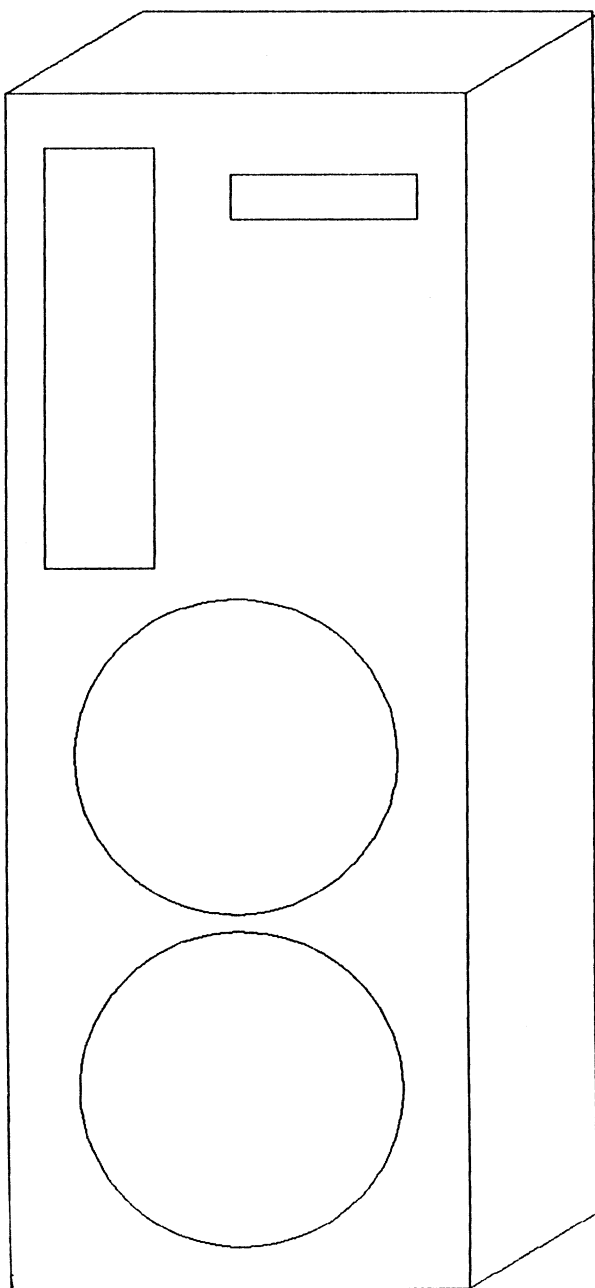
ble? - dan) they have begun listening to music again. They love the music so much now that I'd have to fight them to get either the receiver or speakers back.

As for the Speaker Factory Towers, I used them in their new configuration with the midrange horn facing the listener horizontally and below the tweeter but above the two woofers. By placing the speaker in this configuration the music became better dispersed and less beamy. I used two types of components in testing the speakers. One of the systems was solid state with a McIntosh C27 preamp and a MC2500 amplifier. The other system used a Dynaco PAS 3 pre-amplifier and a pair of modern Sonic Frontiers SFM-75 mono amplifiers that were originally kits. Both systems shared the same playback components of a Pioneer Laserdisc player model CLD 3390 (an overseas model not available in the U.S. in 1991) and a Philips model 212 turntable with a Signet AM20 stylus.

The sound was good in both systems and I used the solid state system primarily for movie soundtracks when I was not evaluating the music of both systems. The solid state system did not clip or sputter in any way, the 500 watts per channel easily powered the speakers, and the bass was out of this world. I once was listening to a movie soundtrack and thought that we were having another earthquake and actually got a little worried, until I realized that the movie was depicting a rumbling sound similar to an earthquake. The bass of the speakers actually got down below 20Hz. I couldn't hear the sound, I just felt it. The speakers produced this sound while at moderate listening levels. I was very impressed.

The midrange and treble were politically correct and the detail was good, but was not fluid. If I can use the comparison of a U.S. Marine unit marching down Pennsylvania Avenue in a Veterans Day Parade as an example of the solid state sound compared to a Russian

Diagram B



ballet on Broadway in New York as the tube sound to help the reader better understand the difference: then this example has served its purpose. The solid state system, like the Marine unit, kept to the beat and was musically correct, but was two dimensional in its sound stage and fatiguing after an hour or two. I guess that's why I like to listen to tube equipment.

The tube equipment, on the other hand, rounded off the shrill sound of the tweeters and midrange. This gave both the digital and analog sources a more three dimensional sound stage and a smoother sound overall, like the ballet. However, I did sense occasional problems with the PAS 3 preamp clipping under certain passages from the Pioneer Laserdisc player. I did not have the same problems with the C27 solid state preamp over the same passages. With the tube equipment the bass in the speakers was more fluid and not as tight as with the solid state amplifier. However, it was tight for a tube amplifier. This is probably due to the fact that Sonic Frontier amplifiers push 75 watts R.M.S. down to 30 Hz into an 8 ohm load (big mother iron on those puppies - dan). The McIntosh MC2500 can easily push 500 watts R.M.S. into an 8 ohm load below 20 Hz. With the tube amplifiers I'm not watching out for earthquakes as much and my neighbors are less apt to complain about shaking walls. I can also listen longer to the music before fatigue sets in.

Overall I'm glad that I had the Speaker Factory Towers rebuilt. With the tube equipment they will last me many years and the horn tweeters compensate the tendency of the tube equipment to roll off in the extended highs of certain passages. I guess that's why people used horn speakers during the golden age of tube equipment. This listener will keep his tube equipment and this pair of speakers. I have had them for 19 years and wouldn't give them up because they sound better now than when I first

bought them.

These horn speakers would work fine with the Triophoni amplifiers now being auditioned by VALVE. They are efficient, clear, and would match up well with low powered amplifiers.

Steve Schneider

december's meeting

Dear Dan :

For the rectifier shootout, you can put in the VALVE newsletter that we will be comparing 5R4's, 5AR4's, 5U4's, cheap solid state plug in replacement rectifiers, and HEXFREDs, (the latter were the ultrafast, ultrasoft recovery diodes mentioned in the Audio Amateur article early this year).

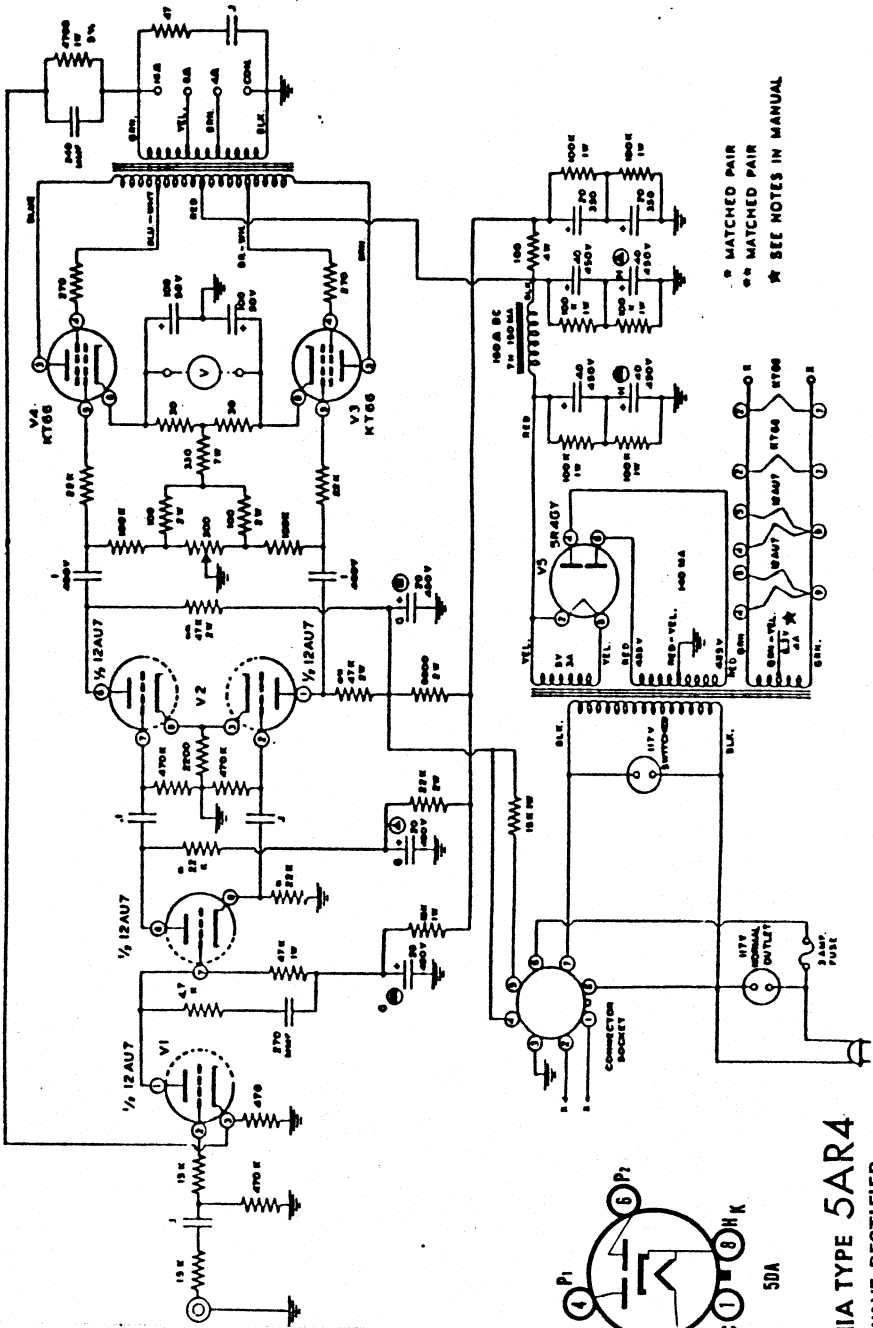
As the enclosed letter to Myron covers, (see Letters this month) hopefully we will also be able to compare 5AR4's hooked up right and hooked up wrong.

I hope to be bringing both stock W-5's and my modified W-5's. The latter would not be the best for the shoot out because I have inserted extra high frequency filtering into the front end of the power supply, which may tend to suppress the differences between rectifiers, as compared to using a standard power supply. I am recapping a pair of stock W-5's, which I hope to have finished, and broken in, in time for the shoot out. This stock pair will have no extra filtering, just the stock power supply, but new capacitors. I am using Wonder Caps in these.

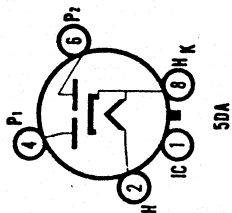
I tested all the caps after taking them out of one W-5. I expected the electrolytics to be bad, and the paper caps to be good. Instead, all the electrolytics were good, and most of the paper caps were bad.

Sincerely,

Rick Graves



THE HEATHKIT W-5M HIGH FIDELITY AMPLIFIER



SYLVANIA TYPE 5AR4
FULL-WAVE RECTIFIER

dinkin' around

tech tips and other unsolicited advice

Hercules vs. the transformer

Got an H.H. Scott LT-110 (the kit version of the 350) in the shop last week that was misbehaving badly, just a buzz would come out. After a couple tubes and an alignment of the RF and IF/limiter stages, mono sounded great, stereo wasn't stereo and had a bunch of growlies.

When I got to the 19kHz transformer on the multiplex board, there was no signal coming out, and the slugs seemed to spin freely. Ah hah! I said (actually I said S__t!). Opened up the can and realized I was witnessing the work of the Gods. Apparently a previous alignment had been performed by Hercules.

Herc had adjusted the transformer with little regard for the fact that kit type tuning coils were apparently set and sealed in place with wax by the mere mortals at H.H. Scott. In attempting to adjust the slugs he had ripped loose the four hair-fine wires coming out of the coils, along with tearing the cardboard tube holding them together. Two of the wires coming from the bottom layer of the winding were torn off flush and unreparable.

The moral? Don't Herc on a tuning slug! If you feel resistance, STOP. It is either sealed in place or jammed against something like the other slug. Either live with it the way it's set or carefully take apart enough covering to see what's going on before torquing it up

Preamp filament supplies

One of the most satisfying mods I've tried lately has been increasing the capacitance of the DC filament supply in various preamps. You go to Raydeau Shaque and pick up some of the 4700 mfd @ 35V caps, say four for a PAS, and some 50V 3A 'barrel' diodes. The diodes produce much less voltage drop

than the toxic selenium 'rectum fryer' and give a genuine 12+ VDC to each filament, instead of the stock 11, and the new filter caps will stack up under the stock clamping arrangement nicely. The increased voltage and energy storage seem to give much more bass and punch to the presentation. As a guy who has hacked PAS's to unrecognition, I heartily recommend this as about the only mod worth doing to them. Quite dramatic. It made a slight difference on a Citation I as well.

I also tried putting Zener diodes across the supply along with the caps and diodes. Didn't notice much difference, so I guess the brute force filter does its job.

cables do sound different

Thought I'd share a new experiment with you here. After being told again and again that interconnect cables do sound different, and admitting to myself that big fat fire hoses connecting amps and preamps do look way cool, I decided to come up with an alternative to the hundreds of dollars per meter tweak bait the dealers carry.

The bright side of cleaning up my flooded basement with Eileen's help yesterday was (along with having her support to bolster me through the grossest of the muck) finding a coil of about 30' of RG-8 coax cable that I'd scored from some old ham's collection, sitting high and dry out of the muck.

Well, I been thinkin' about cobblin' me some big mother cables so I pulled it out and set it on the bench. A couple hours later I was back from Raydeau Shaque with 4 PL-259 male connectors (the only thing that will fit the 3/8" thick RG-8 at RS), four PL-259 to BNC male adapters (so I can still use the cables when I convert my own stuff to BNC, which is a much better connection than RCA), and four gold BNC to RCA male adapters so I get like metals connecting at the chassis/cable interface.

After consulting the old ARRL Hand-

book for proper cable end preparation, I cobbled together one 15' cable. You guys who have been to my shop know that I use 12' Radio Shack interconnects with gold ends to connect amps to pre-amp, letting us use nice fat 6' short Monster Cable speaker leads, with the audition amps sitting between the speakers. Thus my rationale for 15' cable to replace my fine sounding but unacceptably branded RS cables.

I compared the new cable with the RS by means of a switch box with mono source material. I switched the lead connections to the preamp channels occasionally to eliminate sonic differences internal to the preamp (like sh__y Dynaco pots).

Well the new cable sounded dull, compressed, and definitely not as loud. Compensating for gain didn't change the dull highs. Crap! I wasted 38 bucks on connectors!

This morning I had a revelation. The high buck cables have a rep for being capacitive and rolling off highs with some equipment. The PAS has a rep for being terribly picky about output loads.

Put it all together and you get a horrifying picture of me running downstairs in my bathrobe, to try the cable between Citation III tuner and amp directly, bypassing the PAS altogether.

Bingo! No rolloff, and a little more bass and midrange presence to boot.

So was it worth the money? Not if you use a PAS (keep your cables real short or use a low capacitance cable), but for \$60, including the RG-8 cable, you can have a pair of 15' cables that work with load independent sources, look serious, adapt to different connectors, and don't break at the cheap terminations all the time like the RS cables do.

My solution to the PAS problem is a passive preamp I'm brewing from more ham parts. But that's for next time.

dan

letters

Our first letter this month was actually sent to member Myron by member Rick. Rick felt the subject matter might interest Heathkit W-4 & W-5 owners.

Dear Myron,

I enclose a schematic of a Heath W-5 (see p.9). Notice how they take the B+ voltage off pin 2 of the 5R4. I believe this was for the convenience of wiring the tube socket, as pins that are unused by the tube are used as tie points in W-5 construction. Pin 2 is closer to the top of the first capacitor stack than pin 8. The W-4 uses a 5V4 rectifier. The 5V4 has a separate cathode, like the 5AR4, and the pinout is the same between the 5V4 and the 5AR4. Note the B+ is connected to pin 8 in the W-4.

So if you plug 5AR4 into a W-5, it works but the B+ voltage must flow through the entire filament and/or the transformer winding, whichever is of lower impedance. The filament draws 1.9A at 5V, so its resistance would be about 2.5 ohms. The transformer windings would probably be lower resistance, but would have considerable inductance, which would limit transient response of the power-supply.

Note there are three stacked capacitor sections in the W-5, one and two separated by a choke, two and three separated by a resistor, and hefty resistors separate stack three from each single section capacitor of the other Pi filters. Because of this, I believe the W-5 is suited to just plugging in a solid state replacement rectifier. So the W-5 is perhaps a better choice for the rectifier shoot out than the W-4.

The device we discussed would wire pins 4 and 6 straight through, and would cross pins 2 and 8. This would connect the cathode of a 5AR4 directly to the B+. It would be nice to see if hooking up the 5AR4 right sounds better than hooking it up wrong.

Rick Graves

letters cont.

Our last letter is from new member Daniel. This guy is having fun:

Dear Sirs:

Hi, I've been an Audio/Vacuum Tube Enthusiast for nearly 20 years, and I find it fantastic that there's a club that honors vintage Hi-Fi/Audio equipment from the days when we had a real Electronics industry.

The seed of my interest was planted when I watched my father build our Dynakits Stereo 70, PAS 3 and FM 3 in late 1964 in Mainz, Germany, then hooked up to Dual 1019 turntable, Tandberg 64X recorder and pair of Kirksaeter floor speakers during 1966 (had Fisher Slim-line speakers, Garrard turntable, at first but Dad didn't like for long). I grew up with that system, which Mom now has, and works fine.

My earliest projects and experiments centered around the familiar EL-34 tube, then included 2A3's, 6550's and recently the 6V6.

My own completed amplifiers (are they completed?) include the following:

(2) Dynakit MkII circuit using MkIV shells and solid state power supply with color TV power transformers & time delay in B+ supply, and (3) companion PAM 1 preamps.

(2) Heathkit W-5M amplifiers (very good) using EL-34 output and 5V4-G rectifier instead of 6L6 output, plus (4) WA-P2 preamps, 2 of which are redesigned with experimental circuits.

(1) nondescript Industrial Utility amp redone with EL-34 output, DC heated pre-amp tubes (octal base) Dynakit style driver circuit using 6SJ7 directly coupled to 6J5 phase splitter driving the EL-34's.

(1) homebuilt power amplifier whose chassis was host to various experiments, started as a Mullard 520 circuit, then Dyna MkII circuit, then a Williamson with 2A3 output (6SN7 drivers) and now

a Williamson 6SN7 circuit driving triode connected 6550's with 500 volts B+, good for 48 watts output.

(1) Stereo 70 Amp (1972 model) with 7199 circuit to accept 6AN8A's and newer logo on cage covered with larger plate and early "Stereo 70" logo. Circuit otherwise stock. This unit was subject of series of I.M. Distortion and Harmonic Distortion tests showing effect of EL-34 bias on power, and 6AN8A circuit demonstrating improvement over 7199 circuit.

Tuners: (1) Radio-Craftsman C-800A with phono input rewired to tape head input, (2) Dynakit FM 3 tuners, (1) Dynakit FM 1 tuner with SCA decoder, (1) Heathkit FM tuner to match WA-P2 pre-amp.

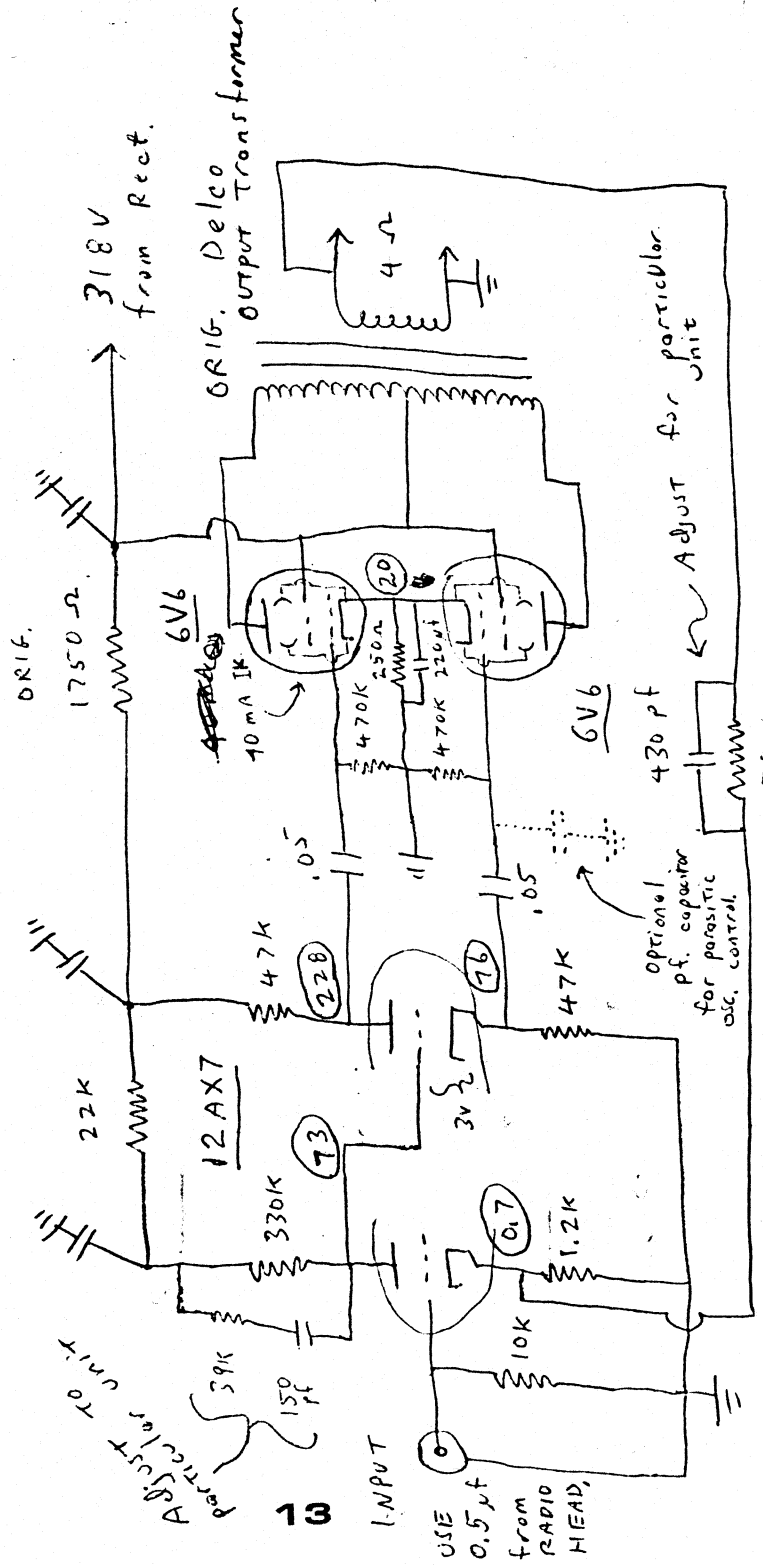
Tape Recorders: Tandberg "2 Hi-Fi", Tandberg 15, Webster Electric "Ekotape 280" and "290" models (Webster Electric is not to be confused with Webster-Chicago).

Most recent project/experiment turned out well: Chevrolet 12V6 push-pull amplifier used with 1955, 1956 Chevrolet push button/Wonder bar radios can be rewired to become a Hi-Fi style output stage using 6V6's, and 12AX7 driver replacing the center-tapped coil. This allows Neg. Feedback to be used. Facing page shows circuit, and following page shows test results. Two units were built.

Pentode type 6K6 can also be tried on the output. Current draw 3.2A@13.8 Volts. Power output originally 4.5W. At low output level, freq. response flat from 10 cps to 62KC. -3dB power band: 55cps to 14 KC. -6 dB power band: 36 cps to 25 KC. Max power, 4.2 ohm load: 8.5W, with 14.5 VDC, 9.8W.

Due to the positive result of the Delco radio mods, I thought I'd try a similar circuit for a 1942 Philco console radio which uses push-pull 41 output, into an Electrodynamic 12" loudspeaker, which also turned out well, though it took more work to bias the 6SL7 correctly (see p.15). Amplifier now has much better control over the 12 inch speaker, and

DELCO CHEVROLET AMPLIFIER, MODIFIED



handles the bass boost very well. The radio sounds closer to an E.H. Scott now than it does a Philcol The 6SL7 lives out of sight behind the power transformer so the casual observer will see original Philcol chassis from the back and see no obvious change. I'm sure I could've done better with more components and a heavier power supply, but I wanted to keep it simple, and the main usage doesn't include loud volume anyway. It's a lot of fun to experiment and try ideas. It's great to belong to a club where my interests are shared, as Audio/H-Fi bugs are just about nil in Virginia.

Thank you,

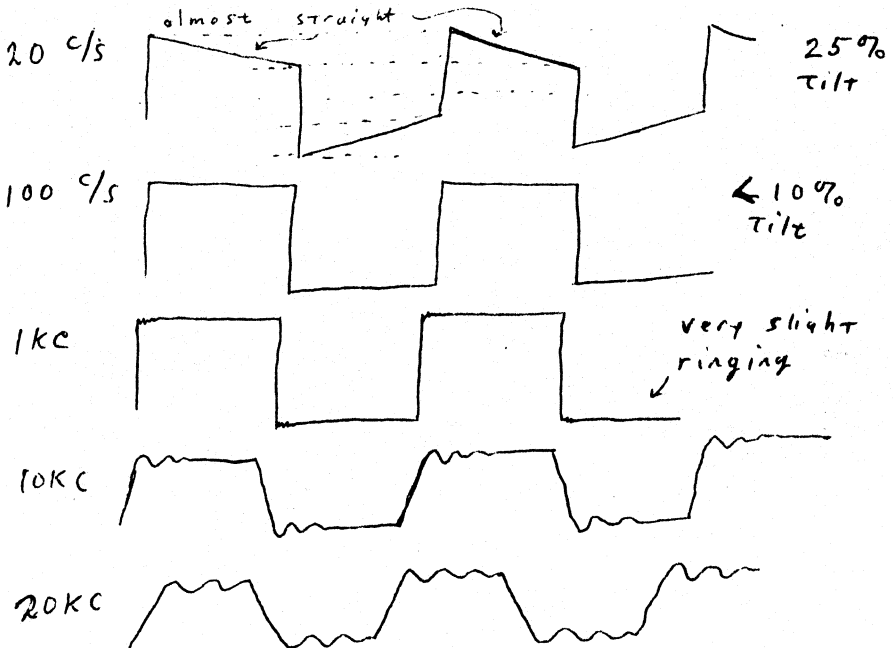
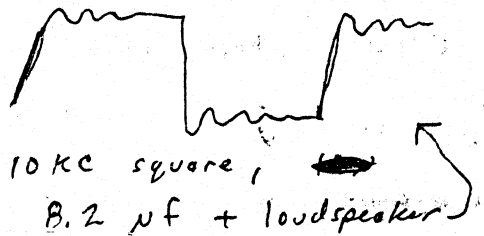
Daniel L. Barbeau

Daniel, you have inspired me to dig out my notes and write an article about my metal Airline midget radio with slug tuning (TRF), germanium detection and AVC, Williamson amp using 12SL7 input /splitter and 50L6 PP output, Radio Shack 3.5" driver, Hammertone chassis and faux granite cabinet. Hotrod! dan

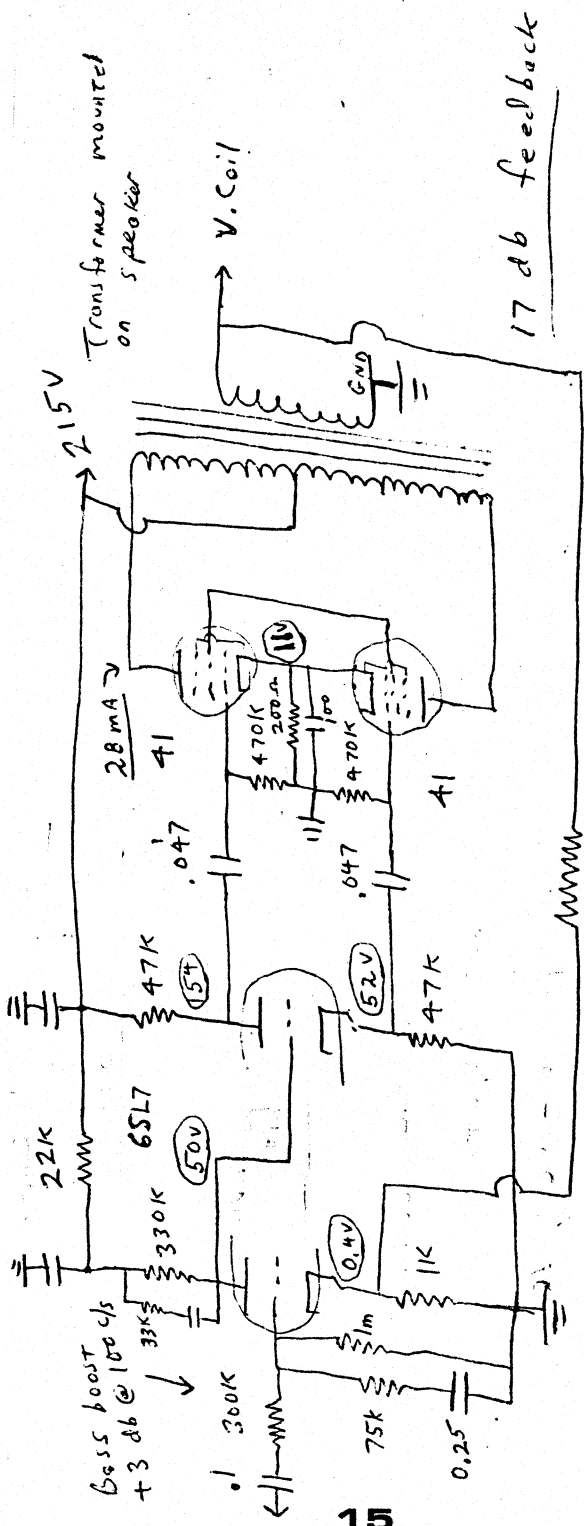
Square - wave TESTS:

(Rise & Fall time 4.0 μ S)
across 4.2 Ω load

Amp is stable with 8.2 μ f + loudspeaker load across output, with any square wave input, 100 c/s to 10KC



ROAD - TEST - Plenty of volume over road noise, low distortion.



No capacitor across βB , resistor was best.

Triophoni meets the X1

Went to a cool demo of Wilson Audio's \$64,000 X1 loudspeakers at Nuts About Hi-Fi, in Silverdale, WA last week. Now I know you Seattle types think I live out in the sticks, but do you guys live within ten minutes of an audio salon with a \$100,000+ reference system?

The X1's played marvelous CD's produced by creator Dave Wilson, via Theta CD and Krell amplification. Wow. I came home and almost pitched my Magnepans.

Now get this. Nuts' owner Bill, PAS president Gil, who works there Sundays, and I get talking a couple days later, and it turns out Bill and Gil are tube guys. Bill has a Marantz 7C and 8B at home running some Thiels (soon to be Watt/Puppies), and Gil is using a Cary preamp.

"Well", they say, "Dana Cruise from PAS is bringing some Nelson Pass single ended MOSFET amps over next Sunday to audition on the X1s. Would you like to bring your triode amps?"

HELL YES!

Well, at the risk of dislocating my shoulder patting myself on the back, the Triophonis sounded pretty damn good considering their comparison to some \$7000 Nelson Pass iron. My entirely jaded ear placed them behind the big Aleph 0's which had better detail and tighter bass, and ahead of the little 10wpc single gain stage amp which seemed just a bit lightweight and overworked. Of course the triode midrange was best.

Actually all the amps sounded very good. My high point was when we couldn't hear any noise from the 98dB @ 1W1M X1's with my amps connected and our ears next to the drivers. No solid state hiss, and no hum. Another high point occurred when a young couple came into the room and asked to hear dance music. Triophoni rocked, with its typical smooth highs, rich mids, and full bass.

I suggest each and everyone of you go check out Nuts About Hi-Fi, Silverdale Wa.

Fabulous equipment (Wilson, Thiel, Apogee, PSB, Theta, Krell, Creek, Rotel, Pioneer Elite, etc.), intelligent staff, neat listening rooms. Give 'em some business.

what's brewin' ?

Rick and Eric are ordering audio grade caps for their Fisher FM-1000 tuners based on a quick sketch of suggested replacements scribbled on a schematic by yours truly. We'll audition one of these marvelous tuners against my tweaked Citation IIIIX when they're done soldering.

Speaking of the Citation III, I followed my own advice and recapped the Multiplex stage the other day. As I plan on keeping it for a while, caps were taken from my secret Vitamin Q stash (after the proper incantations and sacrificial ceremony, of course). It sounded real different afterwards, obviously smoother. Getting to the point were less than perfect reception conditions are clearly audible, which is rather frustrating.

The Citation I has now been re-resisted and the noise floor is much lower. Sounds good!

all done