

# VALVE

VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS

## quantity, quality, quacity

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One final suggestion: take the stuff out of your trunk!

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Last month's meeting was special. Although lightly attended, it had all the elements of interest we discussed when starting this club. Everyone brought something to sell at the swap. There were Heathkit W7's, a Mac MX-113, a Fisher 500, a Curcio Stereo 70, A Pye amp, and Electro Voice speakers, to name a few items. This is very important for the health and well being of the club. If we keep bringing a good selection of equipment, word will spread and others will come with their equipment. A brief observation: everyone who comes to the swap says "everything here is too expensive" when looking to buy, and

CLASSIC RADIO'S REFERENCE SYSTEM  
MAR. 94  
SPEAKERS - QUAD ESL  
AMP - HK CITATION II, VARIOUS OTHERS  
PREAMP - APT HOLMAN  
PHONO - DENON DP6000/DA305/AUDIOQUEST 404  
CD - ONKYO DX1400  
TUNER - KENWOOD L-07T  
OPEN REEL - AMPEX 800  
(AMBIENCE RECOVERY AND SIGNAL  
PROCESSING EQUIPMENT NOT USED THIS  
MONTH)

"nobody offers what my equipment is worth" when trying to sell.

A suggestion, based on personal experience: everyone bring some nice, relatively expensive pieces as well as some stuff you picked up cheap.

The more pricey stuff may not sell that day, but a lot more people will know you have it, and you may get a call soon after the swap with an offer you can handle. See me about demoing items through the shop system.

The cheap stuff you can sell at less than the going rate. You still make some money since you got it cheap (and I know you guys are like me, you get stuff CHEAP), and you help stimulate some exchange. One final suggestion: Take the stuff out of your trunk! I talk to members after the meeting who are dismayed to find that a certain item they were interested in was at the swap but they never saw it because it never came out of the seller's car. Enough about swaps.

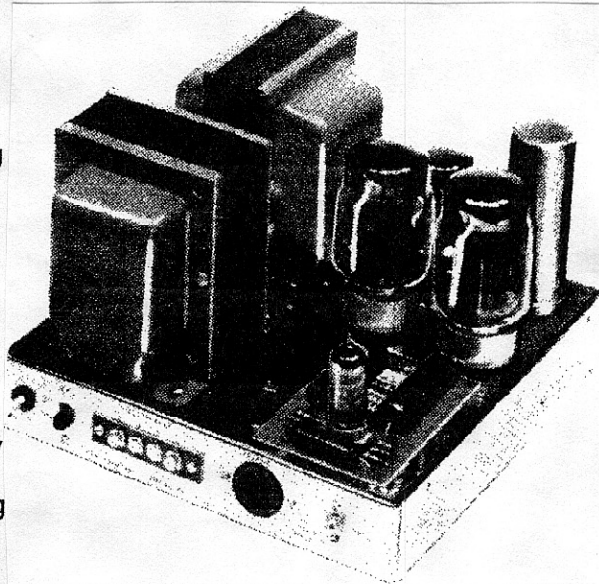
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## a triode input MkIII

This month's audition will be somewhat adlibbed due to my impromptu vacation mid-April. Following morning sessions writing this newsletter I have been devoting the afternoons to the modification of Chris' Dyna MkIII's, using Norman Koren's mod to the Stereo 70 described in Glass Audio 1/92. As of this writing one amp is complete and fully operational, so I will stick my neck out and say that there will be a stereo pair ready to audition by May 1.

During our March meeting I mentioned that Mr. Koren's article suggested the applicability of the triode input modification to the MkIII circuit. Chris approached me with an enticing offer to modify his MkIII's after hearing my

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Dan Schmale,  
editor

Next Meeting  
5/1/94 12 noon

The meeting got off to a fine start with many of you paying your dues. Thank you to those who did, and please to those who still need to pay!

Thanks are also in order to Dave and Eric, who supplied the QUAD system for our demo.

And a fine demo it was.

Those of you in attendance got to experience the incredible detail and imaging of those ESL's with a variety of amplifiers. My Magnepans seem a bit harsh in the upper midrange and lacking in imaging after listening to the ESL's for a while.

The low attendance allowed everyone a chance to sit in the narrow but very deep "sweet spot" where these speakers come to life.

A brief blow by blow of my experiences assembling this system might be of interest to prospective QUAD collectors. The ESL's used had been rebuilt several years ago (parts are still available from the factory, see November 1993 HI-FI News & Record Review article, in the library). The rear damping pads had been removed, which supposedly improves detail and transparency.

Dave suggested that I plug in the speakers overnight to charge the diaphragms. An occasional listen during the charging period showed the treble panels charging much more slowly than the bass panels. By the next morning things were in balance.

All the talk about a lack of bass in the ESL's seems rather exaggerated. Granted the lowest octave may have been weak, but overall bass to mid to high balance seemed excellent, as long as you sat dead on the perpendicular axis.

The tough test sounds of human voice, massed strings, and percussive transients all reproduced tight and balanced. There was very little of the disembodiment of highs from the midrange that makes single string instruments seem to come from two separate sources.

All in all these speakers are

an excellent choice for listening to not too loud music in a fixed listening position. Don't bother if you like live listening levels or move around as you listen. They're kind of like giant headphones.

The rest of the system, while adequate, really wasn't up to the exceptional standards of the ESL's.

The amps seemed OK after some tube replacement, except that one seemed out of phase with the other amps used that day. Eric scrounged up a matched pair of Mullard KT-66's for one amp and a matched pair of Osram's for the other.

The amps have an under chassis

**any requests?**  
**We still need to find some high quality speakers of 94dBm or better sensitivity for demos.**  
**Would some people be willing to volunteer some time to help construct our new listening room?**  
**Construction experience is not necessary.**  
**Do we have anyone with sheetmetal fabrication tools/experience? I need some chassis made.**

jumpering scheme to adjust for various speaker loads. These had been set for 4-8 ohms, so a little re-jumpering got things set for the 16 ohm ESL's.

The extensive documentation (copies in the library) supplied by Eric for these units made service fairly easy.

The preamp tubes were replaced where necessary and controls were cleaned. Unfortunately, this unit seemed to need more involved work than I was able to perform for a demo.

Something was wrong with the treble, requiring a maximum

setting for adequate highs, and balance was also off badly, requiring adjustment beyond the range visible on the unit's strange control. Perhaps a recap of the unit would put things in order. Another problem was a lack of the proper adapter for phonograph playback.

A quick and dirty attempt to scratch one together resulted in a intolerably hummy unit, so analog demos were out.

CD and tuner then, were the sources.

CD functioned properly through the tape input (with the proper adapter), and the tuner performed well after some work.

Six hours of alignment on the cramped and extremely shocky unit yielded a nice sound with medium sensitivity and good separation.

Apparently British stations served fairly close listening areas when this unit was designed, as reception of the low powered Seattle stations I like to listen to was less than great. These stations come in fine with most American tuners when connected to either my 24' x 14' rhombic antenna or my six element RS external unit, ground mounted on a 20' mast.

One strange feature of the tuner is the enclosure of the solid state multiplexer. Alignment instructions indicate jumpering and test points which cannot be reached without fabrication of special tools, as the unit's vented cabinet is spot welded together. Luckily, separation and sound quality were good, so no adjustments were attempted. If you pick up any QUAD equipment and need help getting it going, give me a call.

The next listening test was to examine how other amps performed with the potentially difficult load of the ESL's. After tracking down a bad cable (yeah, it was from Raydeau Shaque) we got down to business. One amp I really enjoyed was Rick's Harmon Kardon Citation II, recapped with MIT's. Has anybody noticed that these amps have a sort of edgy,

slightly accentuated upper treble? Anyway, I think maybe this slightly forward treble balanced nicely with the ESL's. The Citation II seemed a bit less punchy than a 60 wpc amp should be, but that may be due to this differing input sensitivity thing between amps that drives me crazy. It was probably a good thing since a 60 watt amp is a potential danger with the ESL's.

The next amp at bat was a very rare and heavy Goodsell (sp?), a British amp from Radio Steve's collection. It had that very sweet, clean high end characteristic of the Williamson circuit, and one huge output transformer.

Following this was a very nicely crafted rack mount stereo amp built by George. It featured a Mullard type front end with EF86's and 12BH7's (a new favorite of mine) driving 8417's through Langevin transformers, and vacuum state regulation. A very pleasant unit, quite neutral.

We hope to see more of George's work in the future!

A final audition was made after most of the group had left. A pair of Ampex monoblock's, using a Mullard input and 6973's in Ultralinear output for 24W and recapped with polypropylene was tried. In spite of a lack of 16 Ohm terminals the amps sounded great. By the way, they're for sale. Give me a call if you'd like an audition.

Next month we hope to have another shoot out, this time with Dyna MkIII's. I'll have a triode input mod that I'm doing for Chris ready (I hope) and we'll see what else we can scrounge up. Bring some if you have 'em.

Thanks again to Dave, Eric, Rick, Steve and George for sharing a bit of their collections. Your generosity makes this club happen!

dan

**NEXT MEETING  
SUNDAY MAY 1, 1994  
SWAP MEET AT 10 AM  
MEETING AT NOON**

**I will be sending ads to Audio Amateur Publications and Antique Radio Classified this month to help promote the club.**

**I will also continue to advertise in the Little Nickel.**

**If you know of a way to get us a free plug, do it!**

**We all need to do what we can to get the word out if we want to grow.**

**Call a friend or acquaintance who is interested in audio and invite them to the meeting this month.**

**Call me and I'll send them a complementary newsletter.**

**Think about volunteering to work other club's swap meets promoting VALVE.**

**If you're traveling, get some complementary newsletters from me to leave in the stores you visit.**

**Remember, more members means more neat stuff.**

*Done any interesting projects lately? Why don't you share your experience with us? You don't need to write a formal article, unless you'd like to. Just send us a letter, pictures, schematics, etc. We'll put it in an upcoming issue. Send your correspondence to VALVE, 1127 N.W. Brite Star Lane, Poulsbo, WA 98370 or call 206-697-1936.*

#### **the library -**

We received the following new items this month:

- An interesting article on constant current power amplifiers
- review of the Dyna PAT-4
- review of the Dyna Stereo120
- the loan of Audio Cyclopedia
- Fisher FM90X service data
- Fisher MPX100 manual

#### **loaner test gear -**

- B&K 707 tube tester
- Heathkit IM10 oscilloscope

*If you have old gear (working please) that you'd like to donate, we could use a VTVM, audio generator, rf generator, etc.*

#### **what's brewin' ?**

We continue to play with the Stereo70. Driver tubes are now 12BH7's and the PC traces have been jumpered on the 7199 sockets to accomodate 6GH8A's. A huge 2000mfd @ 450V cap will replace the 4 x 525mfd energy bank. Smoother and faster ---

Rick will be experimenting with low RFI ultrafast soft start diodes in his Citation II ---

Dave has been recording some local performances with a Nagra portable deck and an RCA ribbon mike ---

Mike has been experimenting with Eico HF20's converted to use the 6B4G triode ---

Parts have arrived for our next amp project. Monoblocks w/ tube regulated Mullard front end and 6CK4 triode pp output. They'll be for sale ---

modified 70.

After a somewhat mind bending experience picking out the slight differences between the 70 circuit and the MkIII circuit from very different schematics, parts were ordered from Mouser and AES. In spite of the different tube complement, the parts ordered were almost identical to those listed in the Stereo 70 article. I will not rewrite Mr. Koren's article here, instead I will tell you the deviations from his article I found necessary.

Firstly, the connecting lugs on the MkIII PC board are numbered differently than on the 70. Also, the 6AN8 has a different pinout than the 7199. I have reproduced the diagram of the modified 70 which appeared in Glass Audio with the pin and lug numbers of the MkIII superimposed.

The connections to the B+ supplies are different as well. Construction was done in a manner similar to the Stereo 70 mod I did, with the extra driver's PC board mounted on standoffs next to and above the main PC board, with connections to the underchassis components wired through one of the output tube cooling slots.

The addition of the 10k resistor to the input grid required rewiring of the 470k input loading resistor across the lugs of the input jack, so that the 10k resistor could follow it.

The .22 mfd polypropylene capacitors were connected to convenient holes vacated by removed components, as in the 70 article.

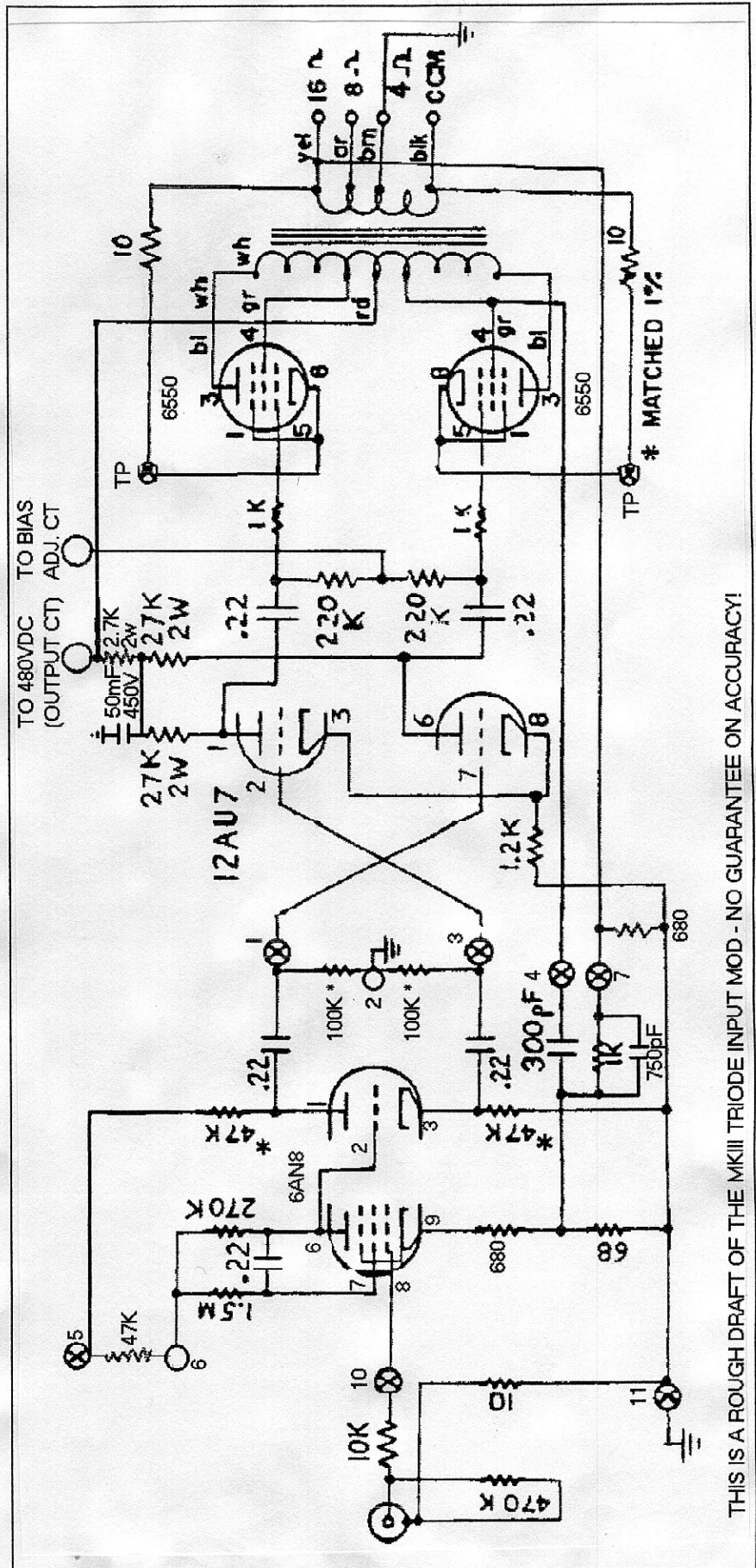
The bias adjusting test points were wired to empty lugs on the octal preamp jack without removing the existing wiring, so that a PAM preamp could still be plugged in.

The original bias circuit used an 11.2 ohm resistor to give a 1.56V reading across it when properly biased. This translates to  $I = V/R = 1.56V/11.2 \text{ ohms} = 139 \text{ mA}$ , or 69.5 mA per tube.

With the new cathode bias resistors,  $V = IR = (69.5 \text{ mA})(10 \text{ ohms}) = .695V$

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THIS IS A ROUGH DRAFT OF THE MKIII TRIODE INPUT MOD - NO GUARANTEE ON ACCURACY!

per tube.

I got some glow from one tube's plate when running this way after about 30 minutes, so I dropped  $V_{bias}$  to .6V. Remember that you check the bias for each tube separately now, so use the tube with the highest reading to adjust the bias. Matched pairs of output tubes are essential.

Stock energy storage of the MkIII works out to  $1/2 CV^2 = (.5)(90\text{mfd})(480\text{V approx.}) = 10.37$  joules.

I paralleled 50 mfd @ 900V (two 100 mfd @ 450V in series, shunted with 100k ohm resistors) at the stage just after the choke, 47 mfd @ 450V at the two stages after that, and a new 47 mfd @ 450V stage was added at the B+ supply where a 2.7k ohm resistor feeds the 12AU7 plates.

Total energy storage is now  $(.5)(290\text{ mfd})(480\text{V approx.}) = 33.41$  joules. This is a bit short of the 5x increase suggested as audible, and far short of the 23x increase I used on my 70.

However, the components fit easily under the chassis with the addition of a 6 lug terminal strip. Well does it sound better? Hell yes! About three layers of the mysterious 'veils' are lifted from the treble end. There is much more detail to be heard. At first I thought it was due to a slight increase in gain, but after I compensated for this the improved presence and detail remained obvious.

A more challenging comparison was that between the MkIII and one channel of my Stereo 70. Both sounded very good, but there was a difference.

The 70 had more detail. When listening to symphonic pieces, paper rustling, chair squeaks and other spurious noise were more apparent, as were bow sounds and the slight distortions in horns due variations in the players lip tension (I hope this isn't too silly, I just happened to study

this phenomenon while learning to synthesize trumpet sounds on a Moog synthesizer back in the 70's, so I listen for it).

While the MkIII had slightly less detail, it was still very good. I suspect that it could be made to match the 70 with careful selection of tubes and a Zener regulator in the B+.

More noticeable than the detail differences were the differences in presence. The MkIII won hands down in terms of mid and lower midrange presence. Cellos and horns were much closer sounding, and individual instruments were slightly easier to pick out. This may be a characteristic of the output transformers.

The MkIII's bigger output transformers made themselves known when I played the 'impossible fortissimo' from my *Wagner without words* recording. I could turn the volume control on the preamp up a notch before getting any distortion, and sensitivity of both amps seemed identical, so the fortissimo really did play a bit louder.

The truest test of all came next, The female vocalist. Again the MkIII won hands down in terms of realism. My Magnepans usually have a hard time with this test, but they sounded very smooth with the MkIII's.

As I still had Rick's HK Citation II in the shop, I tried an A/B with it too.

Now this was a surprise. Though more subtle, the presence was still better with the MkIII. Also, the slight accentuation or irritation in the highs I attributed to the use of 6550's in the Citation was not present in the MkIII. Perhaps this edginess is instead due to the pentodes in the input and driver stages of the Citation.

These two factors made for better voice reproduction by the MkIII. Overall balance was better in

the MkIII, with the highs and mids of a single instrument sounding well connected, and detail was equal in both amps (once I compensated for the Citation's lower sensitivity).

Needless to say I am quite pleased with the modification. I will be offering the modification to MkIII owners, so come hear the modified amps at the next meeting, and bring your stock amps to compare. Remember, club members get a discount! Now the question is, do I find a pair of MkIII's for myself, or build my 200W Monsterblocks?

dan

*Eric has loaned us a fascinating video of an interview with Jack Mullen, the man who brought back the high fidelity tape recorder from Germany after World War Two.*

*The tape is about an hour long and shows a great collection of early phonographs as well as the original tape decks and associated electronics used by Mullen to record the Bing Crosby Show. The sound on the tape is good enough to show the vast improvements in recording technology which occurred between the days of Edison's cylinders and analog tape, as Mullen demos much of the equipment in the collection. We'll start the tape at 11:00.*

**THE NEXT  
MEETING IS ON  
SUNDAY, MAY 1  
12 NOON  
BE THERE!**