

VALVE

VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS

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”

mark III vertical tasting

Once again I was amazed at the coordinated efforts of the membership as we arranged four pairs of Dynaco MkIII's, each in a different state of modification, for comparison.

Thanks to Chris, Dave and Greg for their loan of the amps auditioned.

The amps were in the following states of modification:

Pair 1 - bone stock.

Pair 2 - stock except for some mil spec looking coupling caps found at Boeing Surplus.

Pair 3 - Beautifully restored polished chassis with black painted transformers, increased filter capacitance, MIT coupling

caps, metal film resistors.

Pair 4 - Triode input mod with 12AU7 drivers, polypropylene caps, cathode feedback, increased filter capacitance, silicon bias supply rectifier.

All amps used 6550's, biased to each owner's taste.

As usual, I'll give my humble opinion first and then quote some of the member's evaluation forms.

The improvement in sound as we progressed from pair to pair was pretty linear. Each step brought out more high end detail and midrange presence. (please see update on p.3 for the latest changes attempted on the triode mod amps). The thing I really noticed was how much more midrange presence all of these amps had than my Stereo 70 when playing the Magnepans. (hey, they're good enough for Walt Jung!)

Member comments were as follows:

Pair 1 - more strained, constricted, less natural than others. 6 fourth place

CLASSIC RADIO'S REFERENCE SYSTEM

MAY, 94

SPEAKERS - MAGNEPAN MGIIA

AMPS - CLASSIC RADIO MOD DYNA MK III

PREAMP - APT HOLMAN

PHONO - DENON DP6000/DA305/AUDIOQUEST 404

CD - ONKYO DX1400

TUNER - KENWOOD L-07T

OPEN REEL - AMPEX 850

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Altec alternatives

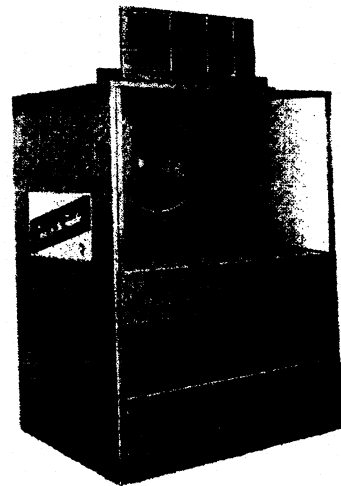
This month we hope to hear some vintage loudspeakers. Once again Eric will generously give us a glimpse and a listen from his fast growing collection.

A pair of Altec - Lansing A7 "Voice of the Theatre" loudspeakers and their domestic counterpart, the Altec Corona, will visit our listening room.

As of this writing one crossover is misbehaving, so our demo may be mono, but interesting nonetheless.

The A7 is the smallest of a line of loudspeakers Altec produced for use in theatres, auditoriums and studios. It consists of a low frequency driver, type 803A, coupled to a short horn and rear

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VOLUME 1
NUMBER 4
JUNE 1994

Dan Schmalz
editor

Next Meeting
8/5/94 12 noon

rankings

Pair 2 - more open, more presence than #1. Dynamics superior to #1, bass fuller, deeper. 4 third place rankings, one second and one first.

Unfortunately the person ranking these amps first didn't write down any comments.

Pair 3 - Musical, somewhat thin, clean, more scratch on the violin bow. 4 second place rankings, two thirds.

Pair 4 - Most clarity, detail. Best depth, ambiance, dynamic gradation. Attack on violins most accurate. Five first place rankings, one second.

I should mention the software used.

First the good ol' Telarc *Wagner, The "Ring" Without Words*, Maazel & the Berlin, CD-80154, tracks 4&5. A very useful recording for picking out detail and dynamic range.

Next, DG 139021 *Beethoven: Violin Concerto*, Ferras, von Karajan & the Berlin, side A (vinyl). Lots of strings, a great IM test record.

Third, Milestone MCD-9207-2, *Sam Serious Blues*, Jimmy Smith w/Marlena Shaw, Track 5. Good for checking cohesiveness of highs and mids in voice.

Finally, Concord CJ-294 *An Elegant Evening*, George Shearing & Mel Torme', Side One (vinyl). More great voice and a good piano for realism testing.

I might add that these are all butt kicking performances.

Dave and I were talking the other day about clubs where every piece of equipment is tested with the Sheffield Drum Record.

I only own one Sheffield test record and I can't imagine using it to check my system because the music is silly.

I believe firmly that a person needs a variety of recordings to thoroughly perform subjective listening tests.

My unsolicited advice is to assemble a group of your favorite cuts with an emphasis on the kinds of sounds I mentioned in my personal test recording selection. They should all be stuff you love

to listen to, from live performance masters if possible. You will really pick up on new details you may find with these types of recordings because you love 'em and hence really listen to them.

On that note I would suggest that each of you bring a favorite testing recording occasionally to keep us all open minded.

We might all find that not only speakers, but other equipment in the chain as well, play certain kinds of music best. Wow - I'm gonna tick somebody off with that comment!

Please give me input on what you'd like for our next bakeoff.

dan

any requests?
Last month some members, myself included, were disappointed by the noise and interruption of kids during the meeting. Since I must reduce my liability for the safety of unsupervised kids on my property, and since I go to the trouble of having my three year old away from the house during the meeting, I will ask other members not to bring kids. Thanks!

clinics

In putting out this newsletter I feel that I have presented a sort of subjectivist attitude. I don't really swing that way (much) and I'd like to present a more balanced approach to our auditioning. The advantage the subjectivist has is that he needs only carry a couple of CD's and an issue or two of an esoteric audio magazine with him to support his argument. The objectivist has the burden of producing test results to support his arguments. This of course

indicates that he has lots of test equipment in his possession (and is possessed of knowledge of its operation) by which he generates his results. A few of us have a decent collection of test gear, but the majority of us have a VOM, a Variac, and maybe an o-scope. One way to even out the objective/subjective evaluation process would be to hold clinics to which members would bring equipment they would like to submit for future review by the club.

During these clinics we could perform a simple program of tests, say, frequency response, harmonic distortion, IM distortion and square wave reproduction. This would give us some common ground for understanding why our equipment sounds "cleaner", "more open", "muddy", "thin", etc.

It might also give insight as to whether or not those mint condition Marantz 9's you bought are performing the way they should.

To pull this off we would need equipment and expeditious operators. As usual I will volunteer my equipment as a start, but this cannot work as a one man show. I have a nice square wave generator, a Heath harmonic distortion meter sans manual, a big surplus audio generator and a frequency counter, a couple single trace scopes, a pink noise generator, and other stuff.

I would need to know what other members have in order to work out some test procedures.

Some nice equipment to have would include:

A Spectrum Analyzer (Hi Dave!)
An IM distortion meter.

A dual trace scope (anybody want to fix mine? I'm too busy to learn a new skill!)

A scope camera.

Some good test CD's

Let's talk about it at the meeting...

dan

cravings & offerings

This is where our new classifieds will go --- I didn't get enough ads from people to put together a first run this month. Call me with your ads or give me a copy at the meeting.

Mark III triode input update:

After the last meeting Greg suggested I read a letter in Glass Audio describing the use of a 100 ohm resistor to tie the screen to the plate in the input stage of the triode mod. Said modification sports a 70% reduction in IM over the capacitor tied version in a Stereo 70.

Well I tried it, subbing a 330k resistor for the 1.5M resistor supplying the screen, as shown in the letter.

The result was more detail at the expense of the warm, close midrange. It sounded much like my triodified Stereo70 I really liked the increased detail, but I changed it back. Voices just didn't sound as good, nor did cellos or horns. I think part of the magic (for me) of the MkIII is due to a slight hump in the midrange frequency response. The resistor coupling seems to emphasize the highs instead.

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:

- Fisher 400 CX service manuals
- Fisher 20A owners manual
- a early edition QUAD amp and preamp manual
- a 1959 vintage HI-FI buyers guide
- Fisher 70A spec sheet.

I know some of you have big libraries of service info. If you do, could you send me a list if what you have? That will save me the trouble of asking each individual member when another member needs something we don't yet have in the library.

what's brewin' ?

I was delighted to obtain a pair of Dyna Mark III's this month. Of course I will be performing the triode input mod on them, with future plans to design a real triode input and driver circuit card.

Eric has suggested that he may develop a conversion for Fisher receivers using the Sovtek 5881 to replace the nearly extinct 7591. We'll cover it in a future issue when he gets to it.

Greg is debugging a preamp based on 12SL7's. We hope to get an audition soon.

I'm looking pretty seriously at Eric Barbour's Nuvistor phono preamp from Glass Audio. I checked my stock and I have just enough of the dinky things to build one. Hey, then we can have an all tube signal chain!

**NEXT MEETING
SUNDAY JUNE 5, 1994
SWAP MEET AT 10 AM
MEETING AT NOON**

loaded to a "bass reflex" enclosure. This is crossed over through a type 800E 800Hz crossover to a type 802 high frequency driver connected to a type 811B multicellular horn baffle, which spreads the high frequencies horizontally over a 120 degree arc (and about 40 degrees vertically). The high frequency driver sits on top of the dark gray bass enclosure. Maximum power handling is only about 30 watts, but efficiency is around 110 dB SPL, so you can run them with very small amps. Eric and I listened to one of them with a Fisher 20A (6BQ5's PP at about 15W) in his garage with the door open and we found that they sounded plenty loud about 30 feet outside the door!

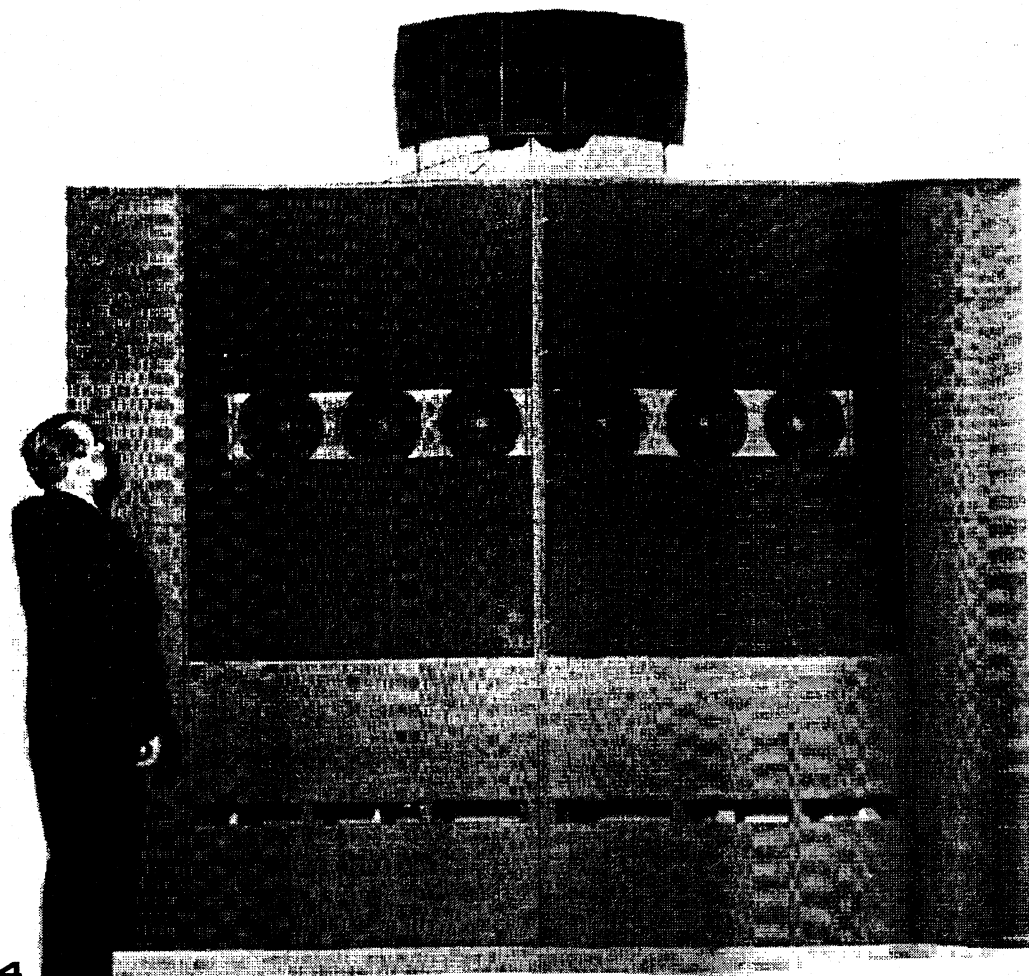
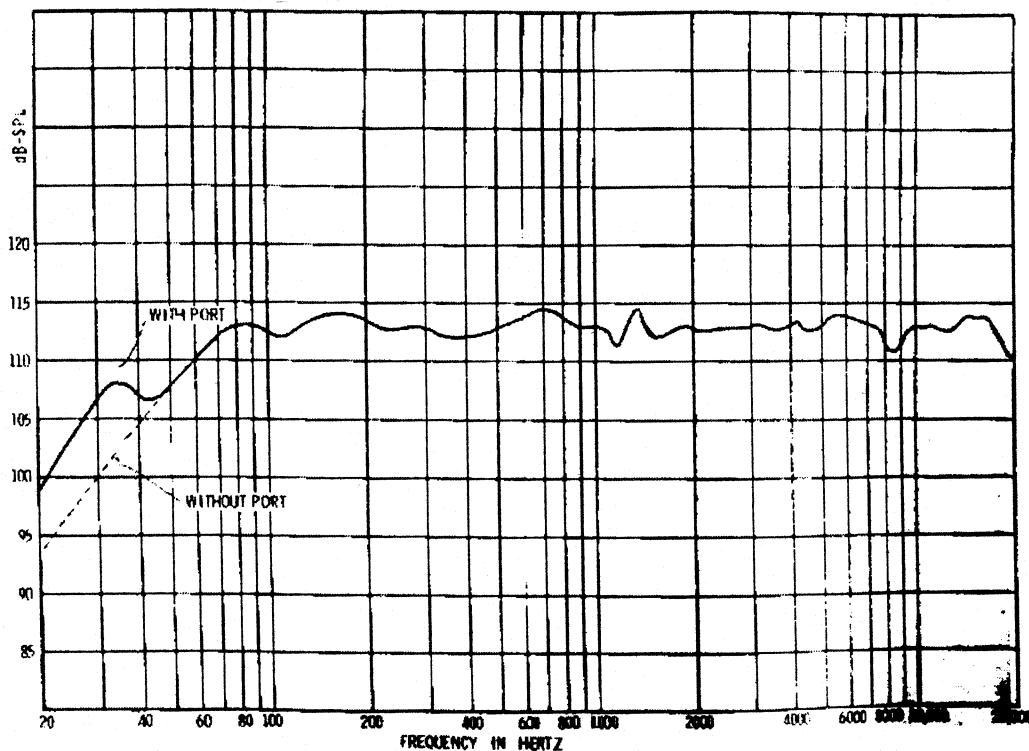
The crossover has quite a large range of adjustment and I think we ended up liking the neutral setting. Treble boost would really bring out that 'horn throat' hiss in recordings.

One thing is for sure. These babies do not simulate a point source unless you're over at the neighbor's. Standing inside the garage, one had the distinct impression of the two separate drivers. However when we stepped out to the 30 foot range things got a lot better.

For big orchestral recordings, standing at a distance and cranking it up really started to simulate the proper scale. Frequency response was not tubby as I expected. If anything there was a lack of bass at the bottom octave, but above that things are fairly smooth, as can be seen in the frequency response curve (above right) I have scanned from Audio Cyclopedia.

I've also included a picture of the A7's big brother. How'd you like to find one of those at a swap meet?

If you have a barn, old theatre, skating rink or other cavernous space, these could be a lot of fun. Pick up an old RCA capacitive video disk player and an Advent projection TV and call all your neighbors!



letters

Smoothing impedance curves

It is well known that the impedance of the voice coil of loudspeakers exhibits a wide variation as a function of frequency, power level, suspension, and other variables. This variation means that the impedance reflected thru the output transformer to the plate or plates of the audio output tubes will vary. This is one of the reasons that the low impedance triodes look so good, and why feedback with pentodes helps. However, for the ideal performance one would like a speaker that looked like one figure at all times. This is probably impossible, but there is one way to help reduce the swings of impedance.

Connect the speaker through a 'T' pad to the output transformer. Only 3dB will do, for that is so small an amount of power that it will not be a problem with any of today's amplifiers.

As a test I used a Yaxley 'T' pad, 15 ohms, loaded it with a General Radio Decade Resistance, 602N, which goes from 0 to 11,111 ohms in steps of 0.1 ohm, at an average accuracy of 0.1%. I measured in input to the 'T' pad by a General Radio LCR Bridge with 1% accuracy. The figures are (shown in TABLE 1).

As can be seen, if a speaker impedance goes from 5 to 25 ohms, then the reflected value to the plates of the output stage is working on a voice coil value of 11.6 to 17 ohms. This is a considerable improvement in load on the output tubes.

While these are resistive values, and reactance does enter into it, the results do show the advantage of use of the 'T' pad.

We hear so many people dreaming of a WE 300 output

TABLE 1
(values are in ohms)

load	meas. resistance
1	8.8
2	9.7
3	10.1
4	11.15
5	11.6
6	12.05
7	12.41
8	12.8
9	13.2
10	13.5
11	13.9
12	14.2
13	14.5
14	14.8
15	15.0
20	16.1
25	17.0
30	17.8
35	18.4
40	18.9
50	19.8
60	20.45
70	20.9

tube. Have they really looked at the characteristics of the good old 2A3?

	2A3	300
plate voltage	250	300
grid voltage	-45	-61
plate current	60	60
amplification	4.2	3.85
plate resistance	800	700
transconductance	5250	5500
power output	3.5	5.6-6.6*

*(at 250 V, 2500 load, only 4.4W)

The lowest cost approach possibly would be to parallel two 2A3 tubes!

Frederick G. Suffield, P.E.
Sequim, WA

Hey, send us a letter. We love to know what your interests are, and we'll probably print your letter before Glass Audio does!

cultivating squash

I can't believe I'm writing this, but you should check out the June 94 issue of *Electronics Now*. There is an article about a line amp using both 5532 IC's and 12AX7's for amps in such a manner that you may blend the output of the solid and vacuum stages to taste. The tube plate voltage is only 45V to increase the tube distortion sound. The intended result is smoother CD sound. The gradual saturation and consequent soft clipping of the tube stages are referred to in this article as 'squashing'. Cool name!

july

Some of you liked the idea of a tuner comparison for a future meeting. Let's do it. I'm thinking maybe for our July meeting. If you have a favorite tuner, bring it.

If you'd like the alignment touched up beforehand, I'll offer a special deal to members who participate in the comparison.

Be sure to get the tuner to me at least a week before the meeting. I will need service data to do it right.

If you have service data bring it. If not, try Sam's Photofacts at the Seattle Library.

I'll be using my Kenwood L07T as a reference, and may have a hot rodded Dyna FM-3 to demo too. I'd love to hear a Scott 4130, a Harmon Kardon Citation 15 and a Sequerra. Anybody got one of these?

**THE NEXT
MEETING IS ON
SUNDAY, JUNE 5
12 NOON
BE THERE!**