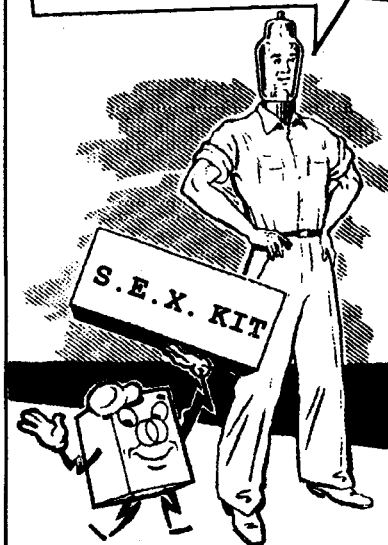


VALVE

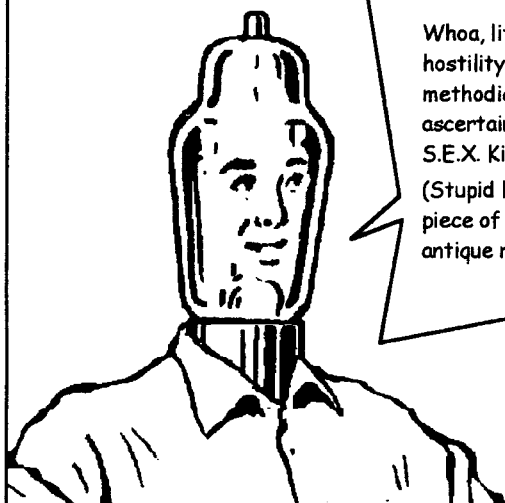
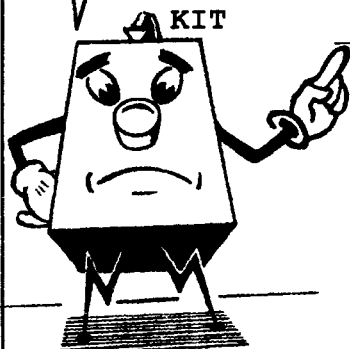
VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS
1127 N.W. BRITISH STAR LANE, PORTLAND, WA 97330

Whamo, we have our first discourse on Single Ended eXperimentation kit speaker mods this month. Doesn't that make you tingle?



BOTTLEHEAD, YOU DIP! I LOOKED AT PAGE 14 OF LAST MONTH'S ISSUE AND THERE WASN'T ANYTHING ABOUT S.E.X.* ON IT! WHAT KINDA CRAP ARE YOU TRYING TO PULL ON THE UNSUSPECTING PUBLIC! (I ALWAYS TINGLE RETARD, I'M AN ELECTRONIC DEVICE!)

*Single
Ended
eXperimentation
KIT



Whoa, little buddy. We don't need to show such hostility to our readership. Some patience and a methodical approach would have led you to ascertain that a last minute change moved the S.E.X. Kit article to page 5 of last month's VALVE (Stupid little box. That's the last time I buy a piece of test gear I don't know how to use at the antique radio swap meet!)

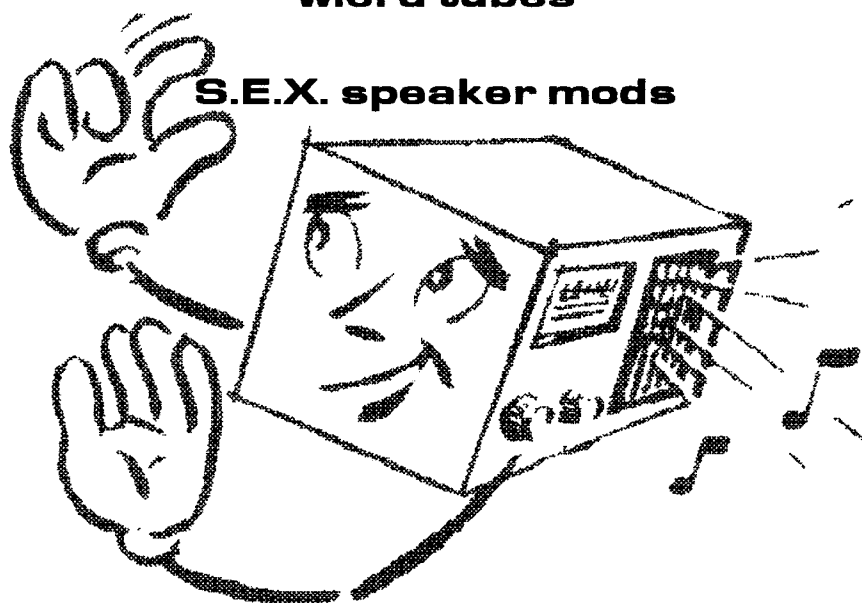
copyright 1996, ELECTRONIC TONALITIES
Mr. Bottlehead is not a real person. Any
resemblance to an 807 is pure coincidence.

VALVE

VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS

in this issue: letters, letters:

**curves for 6CK4, 6DN7 and other
wierd tubes**



S.E.X. speaker mods

WE 416-C specs

**mesh plate tubes - this month's
controversy?**

volume 3, number 4

April 1996

VALVE

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

Editor and Publisher

Dan 'Dr. Bottlehead' Schmale

Contributing Editors

David 'Full Track Mono' Dintenfass

Doug 'Lazarus' Grove

Resident Smart Guy

Paul 'Brainiac' Joppa

Audio Archivist

Crazy Eric Lenius, The Fisher King, P.E.

Our **NEW** mailing address:

VALVE

P. O. Box 2786

Poulsbo, WA 98370

by phone: 360-697-1936

fax: 360-697-3348

Rates:

Membership/Subscriptions:

\$ 25.00 a year (12 issues)

Foreign Subscriptions:

\$ 35.00 a year (12 issues)

Please make checks payable to VALVE

*VALVE in no way assumes responsibility
for anyone harming themselves through
exposure to the contents of this
magazine. We believe electrons flow
from minus to plus, and that 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

Been told people actually enjoyed last month's editorial. Well if that's the kind of thing you like, here's some more vacuous state philosophy.

Six little words that will add years to your life:

Change one thing at a time.

Had a very nice fellow in the club last year who had purchased a classic "just starting out in tubes" stereo amp. He called me and asked if I'd advise him on a few modifications.

I suggested, as I always do, that he restore the stock circuit first and listen for a few weeks before deciding to change anything. Then, when he had a feeling for the type of sound he wanted, we could lay out a plan that would get him to that sound.

Next time he called he announced that he had ordered the plans to a well known mod kit, (not the parts, just the schematic and a few instructions).

He ordered parts, built a new chassis and suffered through some sketchy (for a novice to read) instructions, and ended up calling me when nothing worked.

We put the modded amp on the bench, sorted out the problem, and listened. Very nice, improved from stock. I said "enjoy for a while".

But before we had the thing turned off he was asking me for more ways to improve it.

Like an idiot I told him some stuff that was a little radical, kind of "previous experience required" stuff. I also told him to enjoy the amp the way it was for a while, one more time.

He calls me a week or two later and tells me he tried the mod I suggested, and guess what, he can't make it work. I tell him to come over again and he

makes like real busy. He didn't renew his membership this year.

What happened? Well, I feel like I failed the guy, because I didn't convince him to slow down and learn anything.

The only reason I can tell you I like triodes better than pentodes, or Vit-Q's better than plastic caps is that I slowed down, tried each kind, **one at a time**, and listened.

This is a continuing process. I just found out how much difference various rectifiers tubes make. I have been using my Triophoni 6CK4 amps with the Super-whamodynes because they are the best reference I have right now (yup, I still like the PP amps better than the World Audio SE amp).

I had kinda felt like they were 'finished'. I had used 5U4GB rectifiers for two years because they had the best voltage drop, an important consideration, as my power trannies ran about 100 volts too high.

Well, I ran across a few 5R4WGBs, the kind with the flat glass top and the big ceramic skirt. I had seen these in the schematics of some pretty esoteric stuff, and thought I might as well give them a try. I tried one only, on one monoblock, and A/B'd. Whoa. Order of magnitude and all that. Way smoother, cleaner strings and smoother voices. Bass seemed a bit more controlled too.

(If you decide to hoard based on these recommendations, remember who your guru is and save me a few!)

Apparently the 5R4 sports a little better regulation than a 5U4. Maybe that's why it sounds better.

But the main point is, I probably wouldn't have discovered this if I hadn't changed one tube at a time.

So when you experiment:

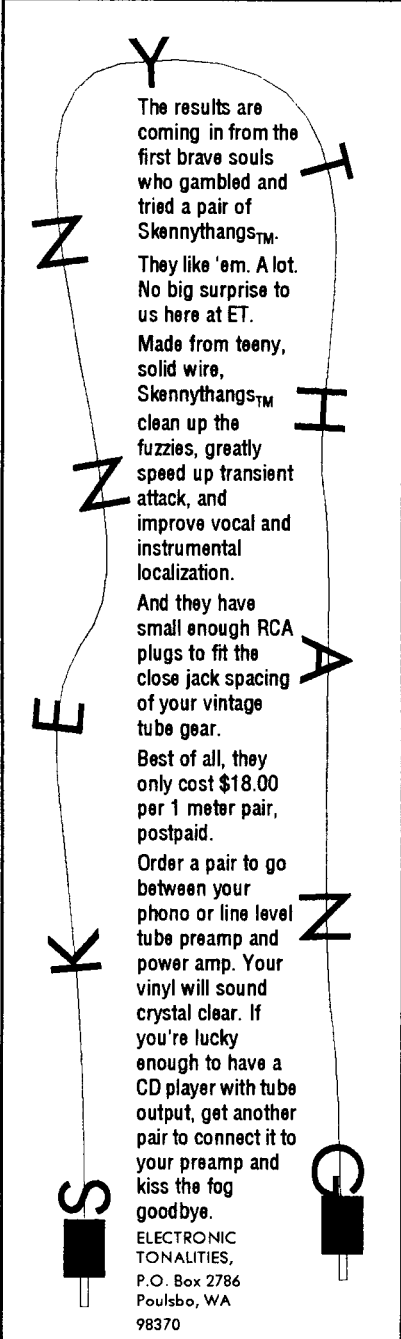
Slow down and learn

Change one thing at a time

Share your findings

and have FUN!

DAN



The results are coming in from the first brave souls who gambled and tried a pair of Skennythings™.

They like 'em. A lot. No big surprise to us here at ET.

Made from teeny, solid wire, Skennythings™ clean up the fuzzies, greatly speed up transient attack, and improve vocal and instrumental localization.

And they have small enough RCA plugs to fit the close jack spacing of your vintage tube gear.

Best of all, they only cost \$18.00 per 1 meter pair, postpaid.

Order a pair to go between your phono or line level tube preamp and power amp. Your vinyl will sound crystal clear. If you're lucky enough to have a CD player with tube output, get another pair to connect it to your preamp and kiss the fog goodbye.

ELECTRONIC TONALITIES,
P.O. Box 2786
Poulsbo, WA
98370

ch-ch-ch-changes

Mid February some chucklehead stole a gummint check out of our mail, which naturally, really pissed us off. Then some chucklehead teller at a local bank cashed it for the thief. One of the two pieces of ID the thief used was a fake with Eileen's name on it, but the other had somebody else's name on it. Now forgive me if I'm ignorant, but ain't the damn name on the ID supposed to be the same as the damn name on the check?

Anyway, to add insult to injury, I'm talking to Paul about two weeks later and he says, "Seen the latest issue of VTV?"

I says, "No, when did that come out?"

"About two weeks ago."

Now I'm really mad. That stupid turd who stole Eileen's check stole my VTV! So we got us a PO Box.

New address is:

VALVE

P.O. Box 2786

Poulsbo, WA 98370-2786

Also please note on our masthead, a new title added to our illustrious, demented audio archivist's name. No, P.E. doesn't stand for Purchasing Everything. Congrats, Crazy Man.

To those of you who tried to fax us last month, I apologize. Seems this Windows 95 wonderkluge would answer the phone and then turn a deaf ear to our fax/modem board. Have returned to the old fax software. Please keep trying. And address all complaints to B. Gates, Microsoft, Woodinville, WA.

march

Thanks to Mike for hosting a very nice time at his house last month. We started with his huge rear horn loaded Tannoys, which have been augmented with Morel dome tweets, being run by the World Audio 6080 SE amp. I really like these speaks. They have a great 'theater' sound to them. The bass is a bit slow, but the image is big and lush, with plenty of highs, which I really miss in most vintage speakers.

Later we moved to Mike's wild listening room. This room is covered, completely, with carpet. Mike has hung album covers all over to liven up the sound a bit. The system is a pair of Altec 604s in fairly small boxes (beautiful black urethane finish!) which are passive crossed and biamped with SE 6B4 tweets and SE 300B mids, both Magnequest outed. The subs are Meniscus, with PP 6B4 power. C20 preamp, and a very cool turntable. All in all very impressive. My only critiques would be a slightly dull high end and wee bit slow midrange due to the big 15" 'midrange' cones. But these are minor gripes, Mike has done a beautiful job of getting his kind of sound. Very inspiring!

april

I hope to have two events in April, our regular meeting will be April 14 (some guys hunt Easter eggs on the 7th). Bring your latest find or project, as this will be a show and tell meeting. I'll ask for help tuning the Magnepan/Newform ribbon combination I put together, and try to finish the input stage mod I built into those cool old Newcomb amps to use for drive. Got a cool 'new' scope to show off too, a Tek RM565.

A special presentation of the S.E.X. kit should be ready later this month. I'll send out a notice when we're ready.

At the special event we'll build and raffle off a S.E.X. kit before your very eyes! Hope to do this at Classic Audio.

letters

obscure tube curves

This first letter, from recently joined subscriber Alan Douglas, has been split up a bit in this issue, due to the tons of great info Alan has given us. See also his thoughts on mesh plate tubes on page 14, and his offering in this month's classifieds - dan

Hi,

I've been trying to think of a way to organize this letter, but it just won't work: too many disconnected items to deal with, so please bear with the stream of consciousness approach.

First off, I like the newsletter, and your it's-supposed-to-be-fun reminders, particularly in the last issue (you don't have to play an instrument well though -- I have fun playing the organ badly, and no one else has to listen to it). If I had my choice, I'd rather read about speakers first, then tuners and other peripherals, and amps and preamps last, since most of the improvement in sound will come from the speakers. But hey, amps are easier to build than speakers, with a much higher chance of getting something you'll want to keep listening to. And there are still new games to be played with amps: before reading your newsletter, I had never considered using 6CK4's or the dissimilar dual triodes, even though I've been running a 6BX7 amp for 30+ years, that I built while in college.

In fact I had never even heard of a 6CK4, and I have thousands of tubes stashed away, and thought I was familiar with most of these crazy things. Out of curiosity I went looking to see who was originally responsible for it, and found it was used in two models of Zenith TVs in 1959-60. It replaced the 6BX7 of previous models, which Zenith had use with

the two sections in parallel. In the 1961 Allied catalog, the 6BX7 lists for \$4.00 while the 6CK4 is only \$2.80; allowing for the fact that TV makers paid something like one-tenth of that, or less, the cost savings would still have been enough to commission Sylvania (I believe) to design a new tube. Anyway, this accounts for never having heard of it, and not owning any. Luckily I had no trouble finding some at the next antique radio meet, and if I'd been willing to take International Servicemasters, I could have had a dozen more. One wonders, however, if there are really that many floating around, if they were used in only two models by one maker. However, with four new boxed examples in hand, I was able to run some curves, which you're welcome to keep. On one plot, I pencilled in some possible operating points and load lines, and if I'm doing the math right, I get about 2 watts output, running over the most linear part of the characteristic, at any reasonable load resistance. I find that the transfer curves are much easier to work with, than the plate-family curves you get in the handbooks. I didn't check distortion, but Langford-Smith gives a graphical method that works right off these curves.

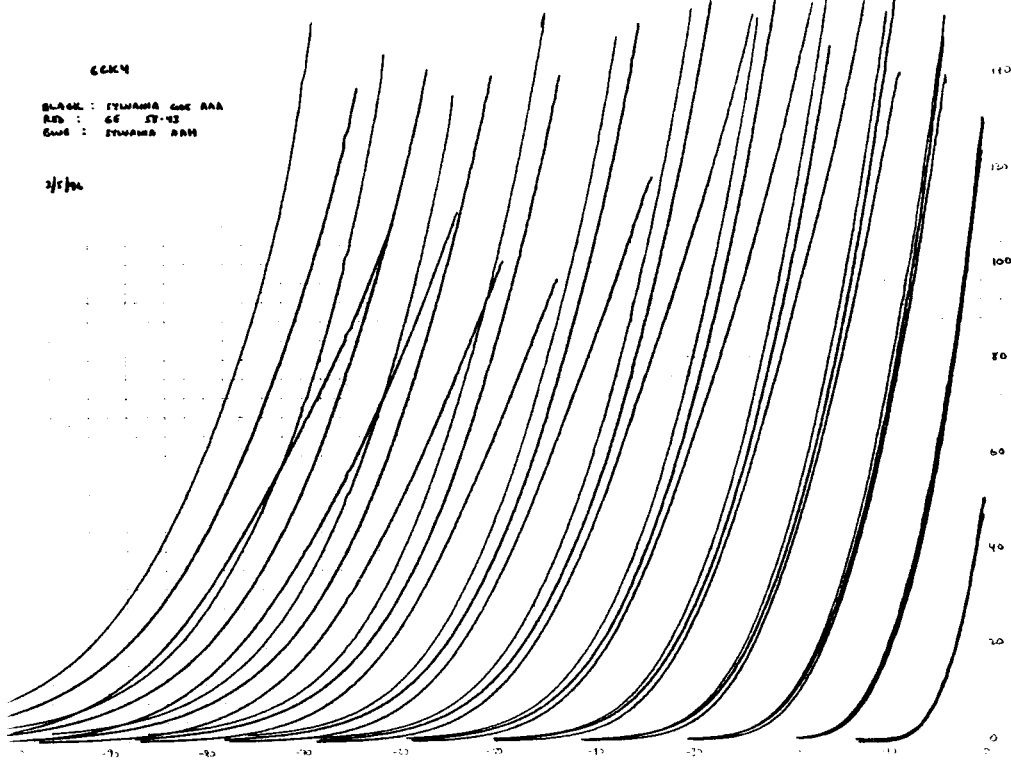
With the cat out of the bag, I suppose you're wondering about the curve-tracing setup. A description will presumably appear in the next Sound Practices (if Joe can afford a new calendar) but basically it's a regulated power supply for the plate, a variable for the grid bias, a 1-ohm current sensing resistor in the negative leg, and an X-Y plotter. I borrowed the plotter from work, a nice H-P 11x17 dual Y-axis job; otherwise everything is from the flea markets or junk box (ok, I have a junk room too. Make that a house and barn).

There are also curves for a 6DN7 and 6EA7, which you might find useful (bearing in mind that I checked only one sample of each, new in the box, but you

6CK4

BLANK : SYLVANIA 606 AAA
 REF : 66 57-43
 CASE : SYLVANIA 606 AAA

3/5/46

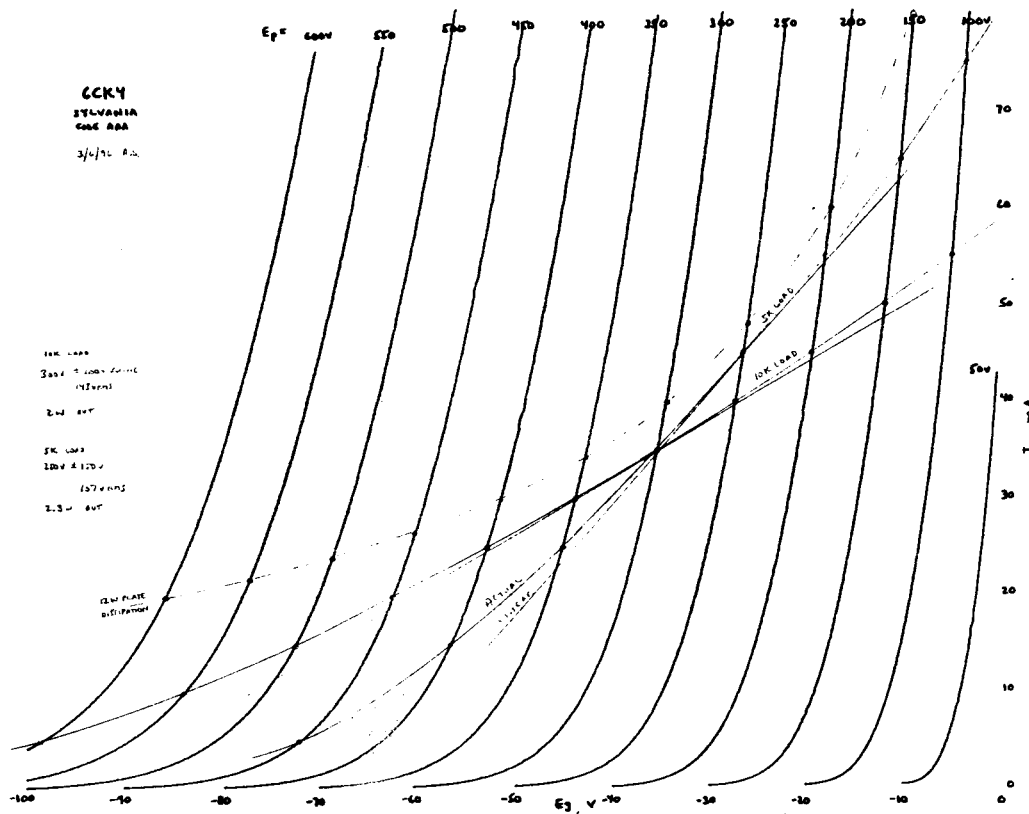


6CK4

SYLVANIA
 606 AAA

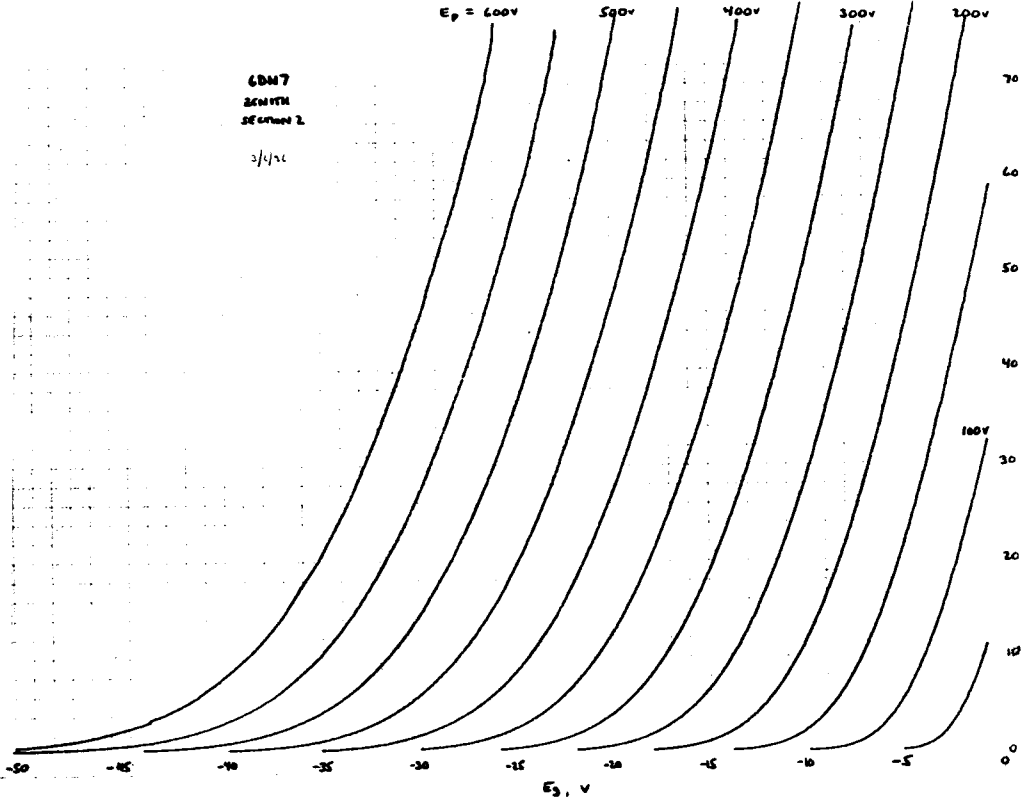
3/4/46 AM

10K LOAD
 3rd 5.0KΩ 2nd 10KΩ
 2nd 50V
 5K LOAD
 10K 4.120V
 157V RMS
 2.3V 50V

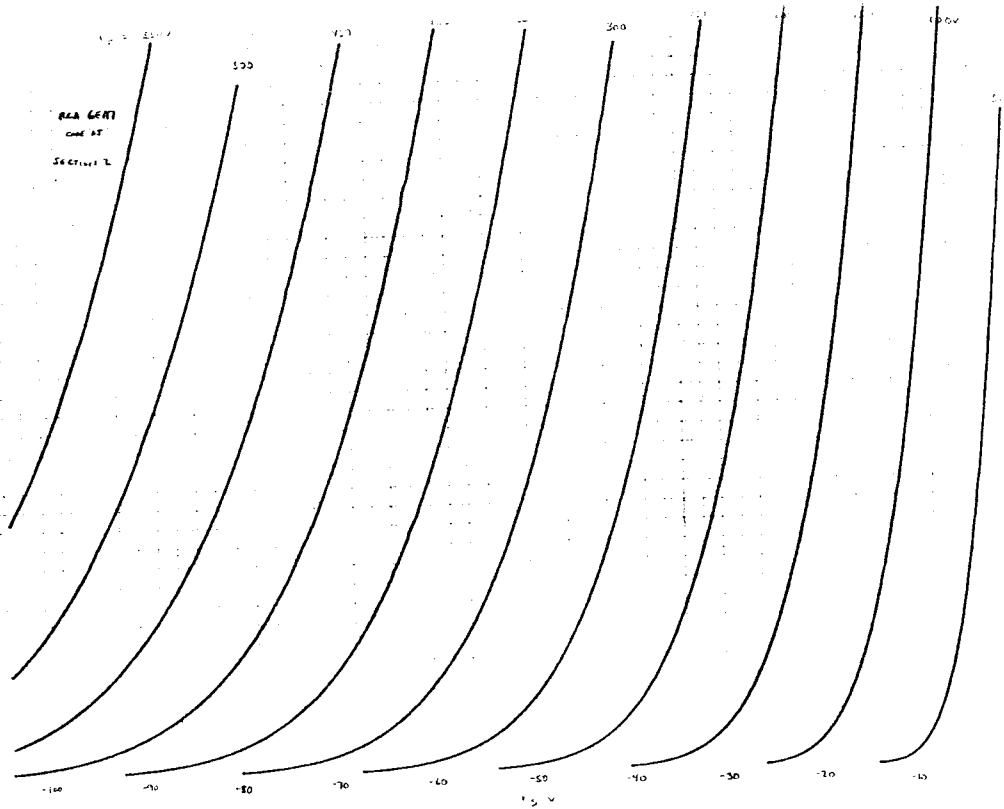


6DM7
SECTION 2

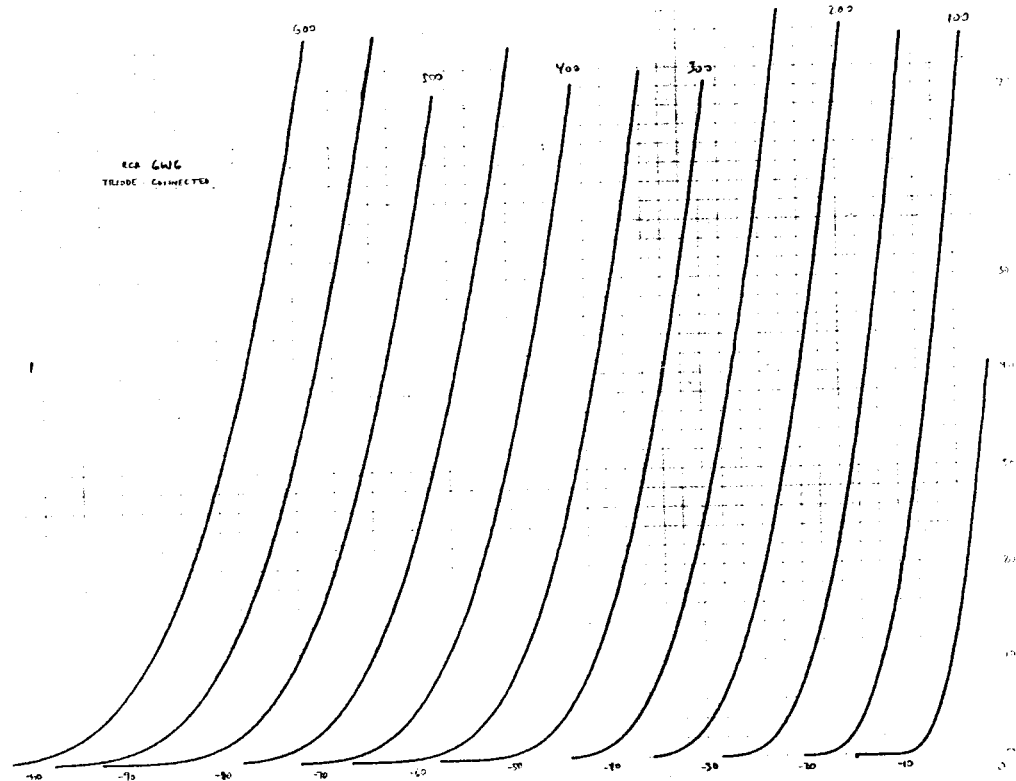
3/4/56



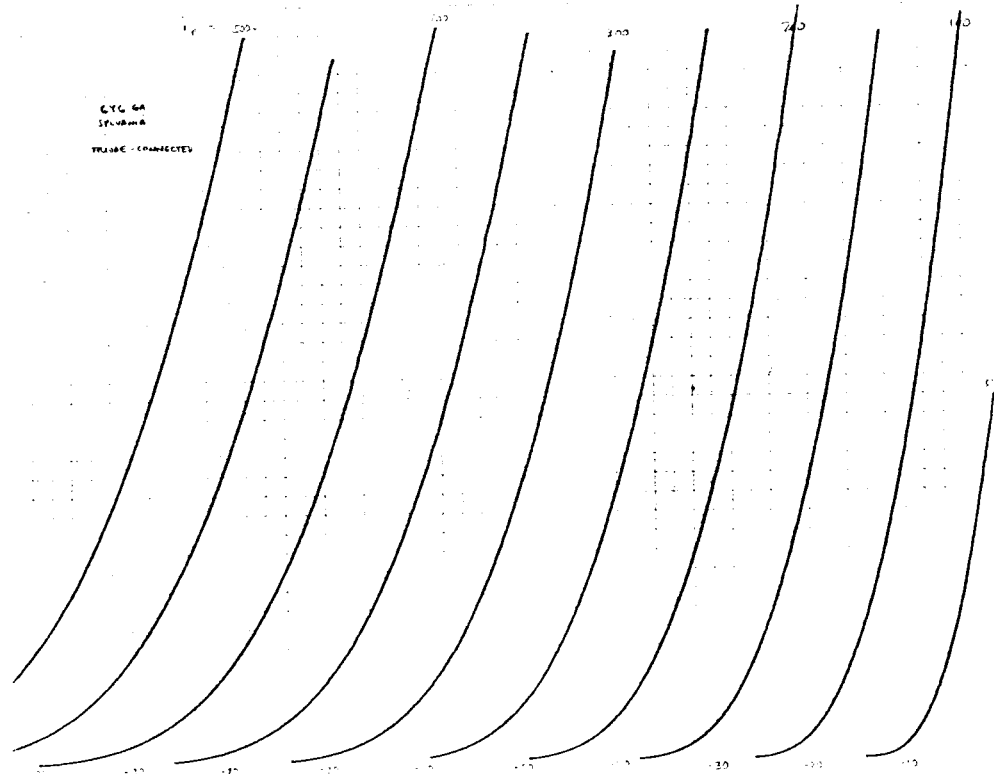
6DM7
CHART
SECTION 2



RCA 6W6
TRIODE - CONNECTED



6X4 6A
SP-000000
TRIODE - CONNECTED



still never know). Then, on a hunch, I tried a 6W6 triode-connected (sometimes used that way in TV vertical output stages); it looks remarkably like a 6CK4. A 6AU5 wouldn't work at all; it may have been oscillating or something. But a 6Y6GA did work; that one is sometimes used triode-connected also, as a pass tube in regulated power supplies. Curves for these are enclosed (these are keepers too -- I can make more).

Wants: serial numbers and dates of W. E. 555 horn drivers. I'm writing an article on the 555 and want to know when the last one was made, so am looking for any serials over 55,000 or any with dates stamped on the driver, and any serials for 555W drivers. Also would like to know what a 555W cost, if sold rather than leased as part of a theater system. I guarantee not to bug anybody to buy his 555 if I hear about it; I already have enough of them. I wouldn't have believed it a few years ago, but they sound great.

Wow. Thanks, Alan. That scoop on triode connected 6W6's being like 6CK4's has me kicking myself for chucking some a while ago.

George Wright has been telling us to be logical and realize that TV tubes were the last, best designs made, using the best materials and tightest tolerances. They definitely deserve to be used in some radical experiments.

And now I will spill the beans. Last year we found that there were 1100 6CK4s at Antique Electronic Supply, with a price of \$5.20 each. Interestingly, they are labeled Raytheon. I got a quad of Sylvania's from them to build my amp, when they were only \$4.20. I also have one pretty worn out Zenith version. I am stunned that you saw 16 at a swap. I have been looking for almost two years and have turned up only one. To those of you who panic and hoard, please remember to save me a few, as I think I may have the only working 6CK4 amp around these days. - Dr. Bottlehead

chokes and one tube amps

Dear Dan:

Re: Audio Tales of Terror: In my past couple of letters, I'm not sure I've adequately communicated that I somehow managed to convince my wife (while disassembling the monster crate in our driveway) that those massive 15Hy chokes were a crucial element in my upcoming big tube amp project... so, I'm now trying to come up with construction techniques that utilize those chokes as the main building truss for the power supplies (no chassis will support them) ... any hints?

Re: Yet another candidate for a single tube amp: How 'bout this one?

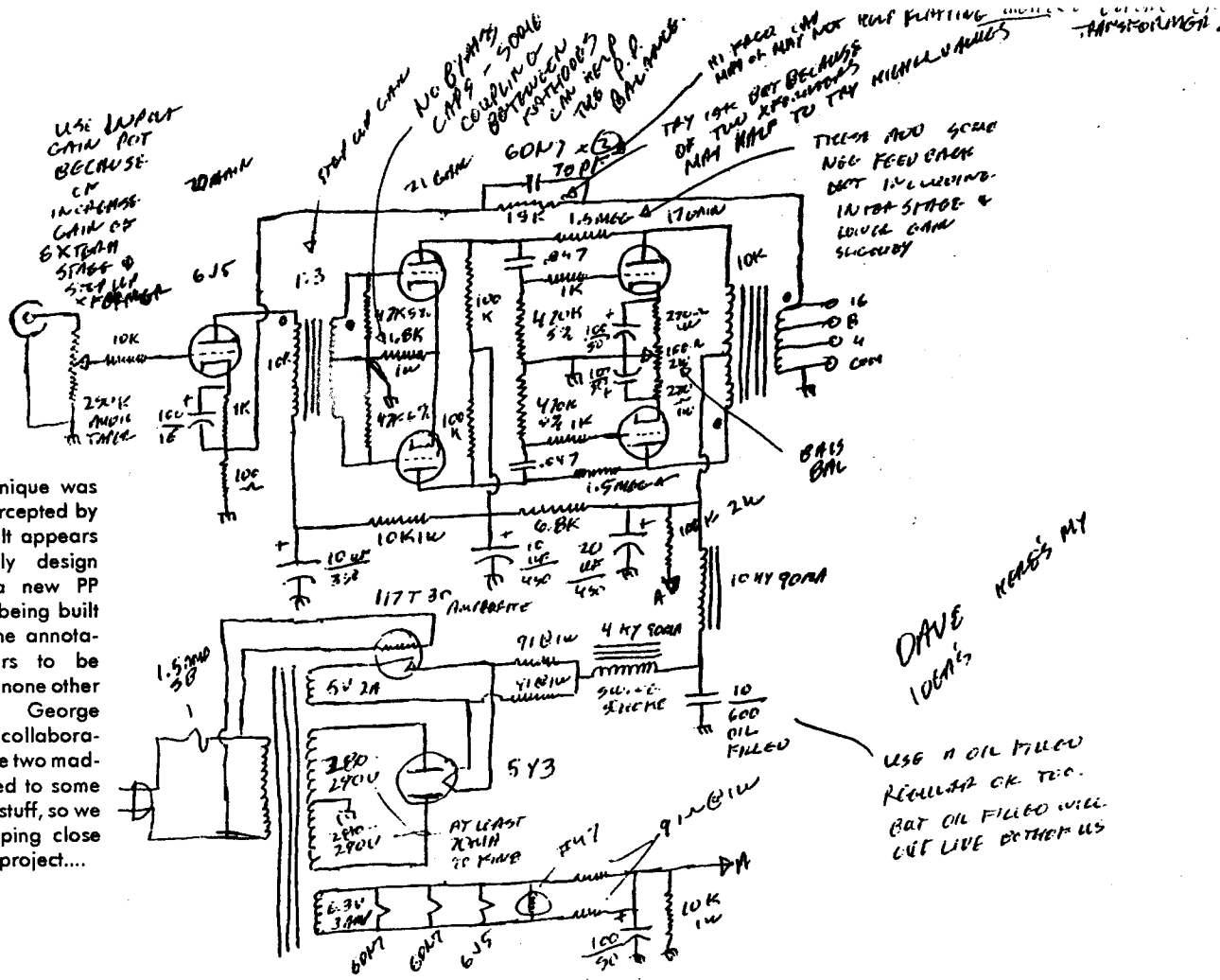
	WE416-C
Fil volts/current	6.1/1.13
plate voltage (max.)	300V
plate voltage (typ.)	250V
grid voltage	-5.4V
plate resistance	1,000Ω
transconductance	65Kμmhos
plate current (max.)	50mA
plate current (typ.)	50mA
amp. factor	250
grid-plate capacitance	1.6 pF
approx. output power	2.5W
max plate dissipation	15W
actual dissipation	12.5W
actual diss. vs. max.	83.33%

Jim Dowdy

Check out old Radio Handbooks and RCA Ham Guides for ideas on mounting big iron. There are pictures of power trannies that almost cover an entire 17"x13" 16 ga. iron chassis. Mounting the choke near the front edge of the chassis and putting the power supply chassis at the bottom of a rack with the amp chassis above it, is highly recommended.

The 416-C sounds cool. Send us a map if you try it!

This communique was recently intercepted by our agents. It appears to be early design notes for a new PP 6DN7 amp being built by Dave. The annotation appears to be scrawled by none other than guru George Wright. Past collaborations by these two madmen have led to some pretty scary stuff, so we will be keeping close tabs on this project....



letters, cont.

S.E.X. speaks

Dear Dan,

Have a few questions about your MCM speakers in your 2' by 2' mount. (VALVE, Feb. '96)

With Jim Lansing speakers and horns I find that I prefer to standardize upon 16 ohms for the speaker lines, even though that is rapidly becoming a thing of the past. Hooking two of your MCM speakers in series would theoretically give 16 ohms, but with the varying impedance of voice coils, what is your feeling about series connection?

Also, when one considers the length of a half wave one cannot help but wonder what the effect of increasing the baffle size to 3 by 3 would do.

As I prefer to drive with one 6B4G in each channel, soon to be replaced with 2A3 tubes, with the Jim Lansing ones 1/2 watt is plenty of power. If I were to try your speaker approach I would use a woofer for the extended bass anyway.

Now if I were to try your approach I would have to figure out how to get the 4" holes in the board when my small drill press will allow only a few inches of offset. Have to find someone down the road with a larger drill press!

One of these days I will retire my old Jensen speaker, it is a twelve inch one in a reflex cabinet with a small tweeter mounted in front of the cone. Bought it about 1941 if I recall correctly. Dragged it around the country!

Have just added another General Radio 1800A VTVM to my stock, together with a few wide range signal generators. The combination Shop-Library-Half Garage-Junk Room is soon to be declared a hazardous zone. If Pat could find a grenade or two I am sure that she would toss them in!

Keep up the good work.

Fred Suffield, P.E.

Fred,

Your questions about the open baffle speakers are right on. Paul and I have discussed both the baffle size issue and the impedance issue.

With a baffle size of 2'x2', the theoretical frequency where diffraction loss starts would be around 275 Hz, based on

$$F_{\text{diffraction}} = (1100 \text{ ft/sec}) / \{ (2) (\text{narrowest baffle dim. in ft}) \}$$

Going to a 3'X3' baffle lowers this to about 183 Hz. When Paul and I discussed this, I suggest using a precut 4'x4' panel yielding a theoretical diffraction loss 'cutoff' of 137 Hz, which is about where the drivers resonate. Of course a 4'x4' piece of plywood with two little 5" drivers doesn't turn up in the living rooms pictured in *Architectural Digest* too often, and a stereo pair sure wouldn't leave much room for the big screen TV to sit between the speakers in the average room.

Paul suggested taking advantage of the planar surface of the floor as a way to fool the drivers into thinking there is more baffle than is really there. A 2' wide by 4' high baffle standing on the floor would probably make a visually acceptable 'unenclosure' and might aid diffraction loss a bit, although diffraction loss is usually figured as a function of the most narrow baffle dimension. One could set the acoustic center of the speaker array near ear level by placing the drivers near the top of the baffle as well. I do not know if this would destroy the low frequency extension offered by the baffle, but I suspect it wouldn't make too much difference.

Perhaps one could angle the baffles in toward the listening position and push them back until the inside edges touch the front wall. This would give another 'false baffle' in the form of the front



Lowther

**HIGH EFFICIENCY DRIVE UNITS
ARE NOW AVAILABLE
IN THE USA!**

- Famous "A" Series Alnico magnet and C series ferrite magnet versions
- 8 or 16 ohm option
- Cabinet plans available
- Perfect for use with all vacuum tube amplifiers, including the lowest powered single-ended units

— NEW! —

**SILVER WIRE
VOICE COILS**

**Now available for all
A & C series drive
units as an extra cost
option!**

For more information, contact:

Lowther Club Of America

P.O. Box 4758

Salem, Oregon 97302

Fax (503) 370-9115

wall. So far I have found the bass of the 2'x2' baffle to sound smoothest out a couple feet from the front wall, but this is worth experimenting with.

The impedance issue is an interesting one. I settled on series wiring for the drivers because the output transformer I found for the PSE 6DN7 amp was 2500 Ω to 16 Ω . Paul found a similar transformer that was 2500 Ω to 4 Ω , but unfortunately it was smaller, six times as much money, and sported the same ho-hum frequency response.

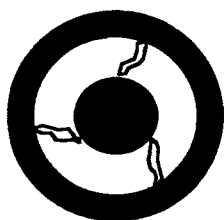
When I drive the speaker with the World Audio 6080 SE amp and measure impedance across the speakers terminals, it's flat, due apparently to massive gobs of damping from the amp. The sound is neutral and quick, but not as dramatic or exciting as when the little PSE 6DN7 amp, with some 6 dB of NFB, runs it. This amp has little effect on the impedance curve, which does sport quite a hump at resonance, but it sounds nice and warm, fooling the ear into believing it's hearing deeper bass, even though it's really just hearing more bass around the resonance point. Thus the sound of the speaker is rather amp dependent. One could certainly parallel wire it for 4 Ω if using an amp with a 4 Ω tap, and see if the lesser magnitude of impedance variation at resonance makes a sonic difference.

One other experiment we tried was to put a cap across one driver in an effort to roll off its HF response, the idea being to reduce HF vertical beaming caused by the interference of the two drivers. The result was not encouraging, as there was just too much HF information lost.

A few folks have expressed trepidation at using aluminum drivers. The description in the MCM catalog, "the aluminum cone tends to dampen harsh unwanted mid-frequencies", oversimplifies the issue, but relative to a typical paper or plastic 5" midrange driver this is true. If you depress the midrange response hump of a small driver, you get extended

bass, and particularly in the case of the aluminum cone, extended highs. Paul built a similar pair of speakers using 4-1/2" Pioneer paper drivers rated to about 12kHz, and they fell far short of the metal drivers' HF response, although they may have gone slightly lower.

I will admit the metal cones 'zing' a little now and then, but this seems to be controllable with prudent application of a damping material (like masking or PVC tape) to nodal and antinodal points on the cone. This would be an excellent place to start single ended experimentin'. I am using this mod on the Superwhamodyne prototype and it really seems to smooth a slight ringing in strings, horns and sopranos quite well. Try three randomly torn 1/4" strips applied to the cone from the dustcap to the surround angled a bit from a straight radial line:



Another idea might be to see how one could affect response smoothness with the application of treatments to the surround. I tried white glue applied to the cone/surround junction, which was described a few months ago in *Speaker Builder* as a way to eliminate the suckout that occurs around 3-5 kHz in the response of many 5" drivers. I could not measure or hear any difference, probably because the surround is so stiff to begin with. Perhaps application of foam to the first pleat, ala RCA LC1A would change the sound. My attempts at this did not yield much change, except a slight loss of bass, but you may have better luck.

As for cutting holes, the cheap and dirty

way is to draw the circles with a compass and cut them out with a sabre saw and a scrolling blade. Not that hard to do if the saw allows the blade to pivot for scrolling and has variable speed control.

One other note. I used 1/2" oak veneer plywood for my baffles and Paul used 3/4" fir plywood for his. He says he can hear the wood. I don't notice it with my speaks. It would be interesting to try other materials. One might try the 3/8" "glasscrete" board used for backing tile in showers. Tricky to cut though. How about sheetrock, maybe even two layers? Or maybe a composite of a hard material and a soft material of roughly similar densities, like sheetrock and fiber rug pad, or glass and rubber.

Hopefully we can entertain some discussion of people's experiments in the future. The quick construction of the basic design harkens for enigma variation in fine tuning.

- Dr. Bottlehead

You



are the one
we need to
write an
article for
VALVE.

Become a
guru. Send
your DIY or
historical
piece to:

VALVE

P.O. Box 2786
Poulsbo, WA 98370

mesh plate tubes



Mesh plate 27s, including a Japanese Mazda and a dome top RCA from Dec.1933, and two Perryman 45s from 1929.

Alan Douglas

Searching for the best sound is all very well, and building amps is great fun. But the fun will disappear pretty quickly if we pay too much attention to Great Truths from Self -Appointed Gurus, that only certain select components and circuits are worthy of use. Gotta distinguish wheat from chaff, the gold from the sand, the gems of the first water from the wet dreams.

It is the nature of collectors to attach great significance to trifles, and to create rarities if none exist. The latest such absurdity seems to be "mesh-plate" triodes.

Over the years, tube construction evolved with various materials and processes, each to solve a particular problem at a time. Wire cloth or screen mesh was used for a short while as a plate material in the 27 triode, for heat dissipation in the compact (for the day) electrode structure. All the tube makers used it, except for Arcturus and DeForest, who preferred perforated

sheet. However by 1934, better materials and surface treatments made wire cloth unnecessary, and it was abandoned.

Only one maker, as far as I know, used wire cloth for tubes other than the 27: Perryman made 45s that way in 1929. George Perryman was a small manufacturer in North Bergen, New Jersey, in Business from 1926 to late 1931.

Since Perryman tubes were made for such a short period, and in limited numbers, it is rather unlikely that anybody has used many in modern amplifiers: it would be interesting to know who originated the claim that they sound different. I have plotted transfer curves for two and they look like any other 45 curves, as of course they should. Keep an eye out for those NOS 300As in your neighbor's garage, but forget about mesh-plate 45s.

Uh-oh. I guess I better admit that I have listened to mesh plate tubes, thought I heard a difference, and told others

about it. Don't know of anybody claiming that they are the only tubes to use, however. I did not run any curves on the tubes I listened to.

As I recall I got a sense of a bit more delicacy from a CeCo L-10 with a mesh plate than from other 10's with solid metal and graphite plates. If I did hear a difference, I did think it might have to do with the mesh structure being a bit more lossy and less resonant.

Jim Dowdy tells me that Arthur Loesch has some mesh plate Eveready 56s.

I say if someone is panicking and thinking that they'll never achieve eargasm without mesh plate 45s (or single plate 2A3s, or graphite plate 6080s), because some bottlehead said they're cool, just relax. But if you have some of these mesh babies and haven't listened to them, shame on you. Check them out by ear and give us the scoop!

NEXT MONTH:

Part One of a construction series on the **SUPERWHAMODYNE**, a 96 dB three way speaker, chosen by **VALVE** members over A7, QUAD, and Lowther. Get the junk off that table saw and get ready to build the answer to your single ended blues!

at *Classic Audio* this month...

tube gear

Mac MR67 - really clean

two Dyna Stereo 70's

Dyna PAS3 preamp

SuperPAS preamp

Mac 1700 receiver

vintage speakers

IBL L100's

IBL L110's

IBL L36's

IBL L40's

Bozak 302A URBAN

AR 4ax

Altec 1218A

Altec 1203

Pioneer PAX30E 12"coax

front ends

Thorens TD145

Adcom GDA 600 D/A converter

Hey, I have tubes too!

matched quad 6550 (Audio Glassic)

matched pairs EL34, KT-88 "

12AX7, 12AT7, 7199 and more!

Classic Audio
7313 Greenwood
Seattle, WA
206-706-1561

cravings

DESPERATELY WANTED:

-2-4 x 25-30 mfd 1500 volt paper -in-oil caps.

-304TL sockets, caps, etc.

-detailed data/curves on 7119, EZ- 150, 3B23/RK22

-2 - single plate RCA 2A3s

-2 - mesh plate 56s

-ANY 8108/EC157s

-7 or more 2B22s

Jim Dowdy, phone/fax: 770-451-5684.

Looking for the following obscure stuff:

-304TL sockets and plate and grid caps

-6BK4 tubes

-7.5V, 2A filament transformers

-Tektronix 3A6, 3A74 plug ins, 205-3 cart

For sale, cheap: Tektronix scopes - **531**; w/manual; dual trace, wide band pre-amp, test unit plug ins. **533**, w/ dual trace plug in, needs some tubes to work. **545**, needs filter cap, small burnthrough on CRT. Dan, 360-697-1936.

For Sale: There seems to be a demand for big chokes -- boy, you couldn't give these things away a few years ago. I have a large number of UTC chokes, up to 300 mA, which I would almost give away to anyone who could use them. If you came here and picked them up, I would give them away, but there's a certain amount of time involved in packing and shipping. The catch to this is that these have been in damp storage (they were thrown out by a distributor) and have varying amounts of rust, even though they're new in boxes. Now obviously the one thing I don't want to do is unpack every one and select nice looking ones, but I could provide a rough description. Or, for a price (not outrageous) I actually could look at each one; even if they're free, shipping cost would not be insignificant, so it doesn't make a

lot of sense to ship unusable ones. Anyway, the list is as follows:

8 S34	20/4H (swinging)	300mA
30 S32	20/4H	225mA
8 S31	6H	225mA
12 S28	20H	100mA
35 R21	15/3H	200mA
24 R19	14H	100mA

Note: UTC was somewhat optimistic in their inductance spec for some of these (in other words, they lied) and I'm only quoting what it says on the box. Some of the S31s say 20H, not 6. The S-series are potted; the R-series are open frame. I have other smaller sizes, but not nearly as many of each, and I tend to use them myself. Still, no harm in asking, if you need a smaller type. Most unfortunately, the lot I acquired contained only chokes; no power or audio trannies of any kind. Dammit. Incidentally, I'm on the lookout for an LS-57, either black (die-cast) or gray. I have one of each now, and they don't match. Might also have an interest in an LS-33 (500 ohms to low Z, same size case) which I already have one of. With such a carrot dangled before me, I could be persuaded to check out any number of chokes.

Alan Douglas,

Box 225, Pocasset, MA 02559

Classified ads are free to subscribers. Ads must be submitted in writing, and will be run pending space availability. VALVE now takes commercial ads.

Available sizes and per issue price:

3-3/8"x 2-1/8" vert.(quart. page) \$6

7" x 2-1/8" vert.(half page) \$12

3-3/8"x4-1/2" hor.(half page) \$12

7"x 4-1/2" (full page) \$24

PLEASE NOTE:

Any submittals of hardcopy will be scanned to PCX format for insertion in VALVE, with the usual degradation in quality. Call us if you need an ad layout, for an additional fee.

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 bake-off; 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

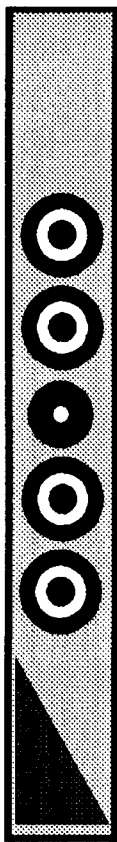
Rectifier shootout, tube vs. solid; FM 1000 recap and meters; single ended 10 amp; triode output W-4; Optimus 990 - speaker for SE?; star grounds; tuner shootout; Living Stereo, vinyl or CD?; World Audio SE integrated; firin' up - smoke checking; Brook 12A schematic; 6C33 vs. 3C33; Heathkit power transformers; 6B4's + Magnequest = SEctasy; 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.

And here's what we hope to have in 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, amps and speaks for \$275; cathode coupled SE 6AS7 amp; how to build the Superwhamodyne; improved CD tube output; refoaming AR woofers; mesh plate tubes; and a whole lot more!

coming next
issue...

Superwhamodyne!



The speaker for single ended and push-pull tube amps from 3 to 60 watts.

Fast aluminum cone mid/woofer array, concise titanium dome tweeter, and crossover free bandpass subwoofer.

40 Hz - 22 kHz,
96 dBm.

Bi- and tri- ampable, but works beautifully with a single amp.

A construction series is coming to **VALVE** starting in May, and complete assembled systems will be available later this year.

For an appointment to hear the prototype, call the atomic brains at

**ELECTRONIC
TONALITIES**

360-697-1936

