VALVE

VINTAGE AUDIO LISTENERS AND VALVE ENTHUSIASTS

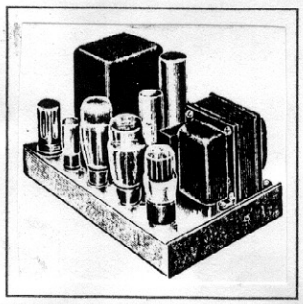
it's not a gang, it's a club

"I guess they figure it don't sound good if it ain't painted black."

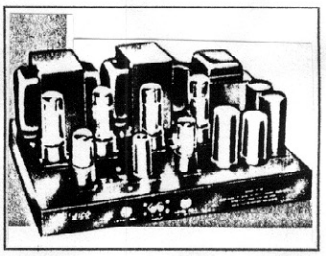
A sampling of tube amplifier prices from the October 1993 Stereophile Recommended Components list:

Air Tight ATM-2	$6995
ARC Classic 60	$3995
Sonic Frontiers SFS-80	$2895

Yes, the price of admission to the world of euphonic, liquid midrange is plainly exorbitant. Handcrafting, limited production, and hype all work to drive the price of new tube equipment ever higher.



But what about used gear? There was some great stuff produced in the 50's, 60's and 70's. Luckily, a fair amount of this vintage gear still exists, and guess what --- most of it goes for less than three grand a piece!



Some representative vintage amp prices I have come across lately:

Harmon Kardon Citation II	$650
Eico HF89	$450
Dynaco MkII - a pair	$375
Fisher 50A	$255

And these are dealer retail prices. A little patience and determination may turn up prices far lower than this.

OK, you say, I bought an amp.

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so i built this williamson amp --

Last winter I had one of those dream calls to an estate sale held by the widow of a man who had been active in amateur radio and hi fi since the late 30's. Three carloads later I found myself exulting over N.O.S. 2A3's, 50's, 45's, 807's, signal generators, variacs, shortwave rigs, ceramic tube sockets, etc.

And one output transformer, a Stancor A-3885. Now this transformer was not listed in my 1962 Allied catalog of things most holy. But the specs were 9000 ohms primary

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this is a sample of a newsletter from a new club forming for vintage audio collectors and tube buffs.

it's a club - from p.1

But wait a minute, you say, there's old capacitors in there, I don't have a tube tester, and I don't know how a HF 89 should sound.

That's what VALVE is all about. I've been playing with audio gear since I was 15. I still have the Ampex tuner, amp and preamp that a dear friend let me use to find out about high fidelity back then. Since then I've met many people interested in vintage gear, be it vacuum or solid state. I've bought, bartered, borrowed, built and befriended, but I never found the venue for information exchange that the antique radio clubs and new equipment-oriented audiophile clubs had.

So here's an attempt to get all of us vintage audio collectors, users, hackers, scratch builders, and b.s.'rs some sort of organization.

Any club needs some basic components to work.

First is a place to meet. I am happy to volunteer my shop as a starting point. This year I plan to convert a 12'x20' garage next to the workshop into a LEDE listening room /showroom. It should be able to hold a dozen or more people for starters. So we just need a president to preside at the meetings.

I now have a photcopy machine and desktop publishing equipment for production of a newsletter. So we just need an editor and stamps.

I have software for tracking names and addresses of members, so we just need a membership chairman.

I would be happy to coordinate the assemblage of loaner test equipment for member use, so we just need volunteers to give presentations on repair and mods.

I have also begun to build a reference library of schematics, tube manuals, magazines and texts, which could be used and augmented by members, so we just need a librarian.

A lot of you folks out there have experience with these types of positions, so be prepared for a phone call from me leaning on you to volunteer (hint - unless I hear from you first).

If we get enough membership we could do some righteous equipment comparisons using member units.

Sharing homebrew construction projects and experiences would be another great area to explore.

This doesn't have to be a 'tubes only' club either. I would enjoy talking vintage 78's, building speakers to match amps, matching solid state components to tube components within a system, and I know you have some interesting ideas too.

Oh yeah, solid state is vintage now too. And hey, if you think old tube gear is a good deal, people are practically giving away excellent solid state gear from the 70's and early 80's. I guess they figure it don't sound good if it ain't painted black.

So let's do it!

Call me at Classic Radio of Liberty Bay, 206-697-1936, and increase my feedback.

Write to me at 1127 N.W. Brite Star Ln., Poulsbo, WA 98370-8241 and give your bias.

Or stop by my first Sunday of the month swap meet and give me direct output.

Remember, valves operate in a vacuum state, clubs don't.

Dan Schmalle
February 1994

Dan is owner of Classic Radio of Liberty Bay, specializing in restoration and custom modification of antique radios and vintage audio equipment.

williamson - from p.1

plate to plate using 6L6 tubes, at up to 35 watts output.

Well that sounded pretty much like a Williamson transformer except for the slight weight difference. Most transformers advertised as suitable for Williamson amplifiers weighed in at 6-7 pounds (Williamson's own look like they probably beat that by a good margin). This little transformer weighed a puny 4.75 lbs.

But hey, I had it, I had a chassis, and I had some 5881's looking for work.

The amplifier chassis had used 6L6's and had a 400-0-400v power transformer.

So now all I needed was some 6SN7's, caps, resistors, etc.

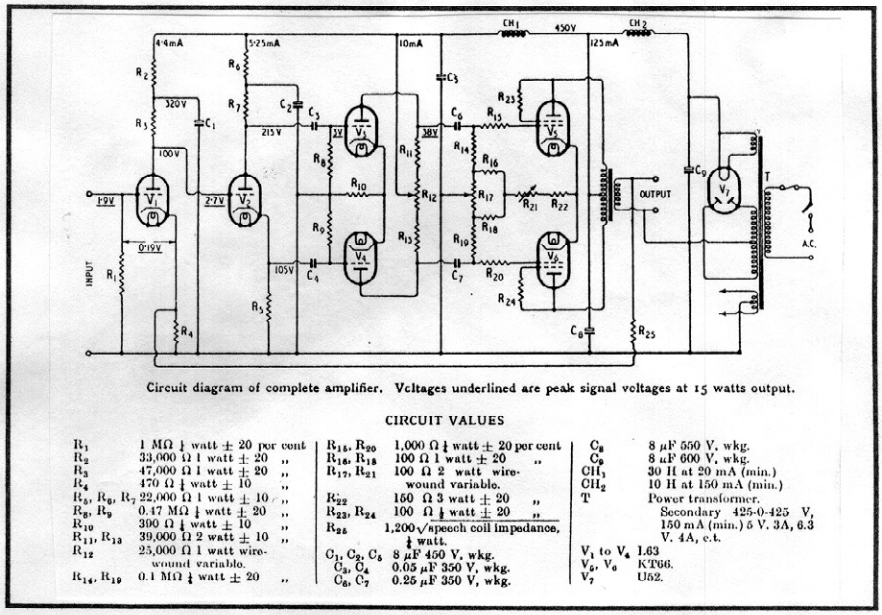
Oh yeah, and a schematic.

Luckily *Audio Amateur Publications* reprinted Williamson's original articles.

Next, being a dyed in the wool, 'don't worry, I can make it work' lunatic hacker, I figured out what changes were needed to make Mr. Williamson's amplifier work right.

One thing I should mention here is that even harder to find than output transformers are chokes of sufficient current handling to work with power tubes.

So I left the chokes out, and used a solid state rectifier.



Circuit diagram of complete amplifier. Voltages underlined are peak signal voltages at 15 watts output.

CIRCUIT VALUES

R_1	1 MΩ ½ watt ± 20 per cent	R_{15}, R_{20}	1,000 Ω ½ watt ± 20 per cent	C_8	8 μF 550 V, wkg.
R_2	33,000 Ω 1 watt ± 20 ,,	R_{16}, R_{18}	100 Ω 1 watt ± 20 ,,	C_9	8 μF 600 V, wkg.
R_3	47,000 Ω 1 watt ± 20 ,,	R_{17}, R_{21}	100 Ω 2 watt wire-wound variable.	CH_1	30 H at 20 mA (min.)
R_4	470 Ω ½ watt ± 10 ,,	R_{22}	150 Ω 3 watt ± 20 ,,	CH_2	10 H at 150 mA (min.)
R_5, R_6, R_7	22,000 Ω 1 watt ± 10 ,,	R_{23}, R_{24}	100 Ω ½ watt ± 20 ,,	T	Power transformer. Secondary 425-0-425 V, 150 mA (min.) 5 V, 3A, 6.3 V, 4A, c.t.
R_8, R_9	0.47 MΩ ½ watt ± 20 ,,	R_{25}	1,200√speech coil impedance, ½ watt.		
R_{10}	390 Ω ½ watt ± 10 ,,	C_1, C_2, C_5	8 μF 450 V, wkg.	V_1 to V_4	L63
R_{11}, R_{13}	39,000 Ω 2 watt ± 10 ,,	C_3, C_4	0.05 μF 350 V, wkg.	V_5, V_6	KT66.
R_{12}	25,000 Ω 1 watt wire-wound variable.	C_6, C_7	0.25 μF 350 V, wkg.	V_7	U52.
R_{14}, R_{19}	0.1 MΩ ½ watt ± 20 ,,				

The next slick mod was to use some really cool mylar capacitors rated 12 mfd. at 250VAC for filters. They were sold to me with the assurance that they could surge up to 700VDC. And they could.

I found that out when I switched to a 550-0-550V power transformer and accidentally surged them to 900VDC, whereupon the first cap in the chain smartly snapped and healed! A change back to the original, perfectly adequate transformer made things right with about 100 mfd of filtration.

Well now things were rolling along. The next blasphemy was to convert the heater supply to DC with about 10,000 mfd of filtration. It worked too!

Now I know you're saying "cathode stripping" while you're reading this. Well, I tried putting an Amperite 90 second delay tube in the B+, but got lightning inside the sucker right as the contacts closed and thunder from my test speaker!

I have since learned that a 1 Megohm resistor across the contact pins will alleviate the problem, but haven't gotten the relay back in the circuit to try it.

The actual amp circuit was followed exactly, using film caps, hand matched resistors and a ground buss.

I even put in a big ceramic wirewound 300 ohm resistor with a sliding tap for adjustable cathode bias.

Well, it worked! No hum, no oscillation, just nice clean sound. I haven't yet tested the amp for distortion figures (anybody have a manual for a Heathkit IM-58 distortion meter?) but it sounded very clean running my 30 Hz exponential horn subwoofer, and also very nice running a Dynaudio D28 tweeter and Peerless woofer/midrange.

The moral of the story is don't wait for the Peerless or Acro transformer that never comes. Get out and build with what you have. That way you will be a better builder when the vintage stuff comes your way!

dan