Subject: Juvenile request
Posted by Wayne Parham on Fri, 04 Feb 2005 23:30:19 GMT
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I have a little request. When we get around to doing a power amp, how 'bout making one with tubes that glow. Mercury vapor power supplies and 2A3's for outputs would give us a groovy light show. Silly as it might be, I miss the blue glow from my 2A3's when running other tube amps.

Subject: Put down the iron, walk away from the Stoetkit and .....
Posted by colinhester on Sat, 05 Feb 2005 00:38:49 GMT
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get some fresh air. BTW, who has extra oil plugs just sitting around?.....Colin

Subject: Re: Put down the iron, walk away from the Stoetkit and .....
Posted by Manualblock on Sat, 05 Feb 2005 01:09:09 GMT
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I like the idea of 2a3's and vapor tubes myself, why is that juvenile? I say we go with it. However I think Douglas likes less well known tubes.Colin; by oil plugs you mean the caps?Also did you get my E-mail, I would like to see those files if at all possible.

Subject: Just being a goof....
Posted by colinhester on Sat, 05 Feb 2005 02:05:45 GMT
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- I like the idea of mercury rectifiers and the 2A3 myself. I was just being silly.- It should have said freeze plugs, not oil plugs. Wayne made reference to it under the FS Audio forum regarding the build.- Yes, both virgin files (not down loaded onto my HD) were sent on to you from my email. They should have been attachments.....Colin
http://audioroundtable.com/FSAudio/messages/155.html

Subject: Re: Just being a goof....
Posted by Wayne Parham on Sat, 05 Feb 2005 14:15:31 GMT

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You actually were right. Those plugs go in the end of the lifter oil passage. The only time they're ever used is during a complete build. The machine shop has to remove them to do their work, so you have to press new ones back in. But I had a few lying around and found them to be just perfect for cutting thules in the Stoetkit. Worked just like a thimble. Cheap too - You can get 'em at auto parts stores for less than a buck.

Subject: Re: Juvenile request
Posted by Damir on Sat, 05 Feb 2005 18:02:06 GMT
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SE 2A3 (6B4G, 6A3) power amp would be rel. easy, IMO - with typical OP (Uak=250V, Ugk=-45V, Ia=60mA, Ra=2k5, Pout=3,5W), we need about 32Vrms "input" from the driver for the full power. With our high-output "Guinevere" line stage, we can comfortably use one - tube driver with active load, say again 5687, or ECC99, E182CC, or something from 6SN7 "family", say 6J5GT single triode.PS would be little more complicated, say LCLC for B+ of about 300V, motor-run caps again. For the input tube/driver additional LC (or RC stage). With active (DN2540 again) load, about 300V or little less is enough B+ for the above tubes. I can draw the schematic, even breadbord the prototipe, I`m sure that Doug can give some ideas, especially with Hg-rectifiers (I don`t have the experience with those).All in all, IMO - project easy enough to build, but "good enough" (with good transformers - "Heyboer" again, or...?).PP 2A3 is another option, maybe better - but little more complicated, especially phase splitter/driver - it`s hard to do it "right" simple. Probably larger/separated B+ for the driver is in the order (400V or so, even larger), and probably 2-stage is requied.Just some thoughts, we`ll see...

Subject: Re: Juvenile request
Posted by Manualblock on Sat, 05 Feb 2005 18:08:32 GMT
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Your talking my language; I'm getting all tingly! Have Heybouer wire the output trans inter-leaved on a potted c-core with 40 gauge secondary; damn the cost, full speed ahead! Big fat choke loaded with mercury vapour's Power supply on a seperate chassis and output stage on mono-blocks.

Subject: Re: Juvenile request
Posted by Wayne Parham on Sat, 05 Feb 2005 23:41:29 GMT
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How 'bout a simple SE 2A3 with mercury vapor PS?

Subject: you don't want to see what *I* thik is complex...
Posted by PakProtector on Sun, 06 Feb 2005 11:42:46 GMT
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an' I'm not gettin involved in no steeeenkin', hafff assssed SE amp.To take the position that a single stage of 5687 can drive a SE, leaves a fairly simple(for all you newly created CCS experts) long-tail-pair/differential amp phase splitter to run it from.Since we're probably going to make our own custom OPT of between 5 and 7k a-a for loading the 2A3's it is no big deal to put in a pair of 10% E-Linear driver taps on the plate winding and again run with a super-simple single stage L-C B+.and then ther's the op point. Lower voltage means you can run more current w/o exceeding the plate rating. The input voltage requirement will be lower, but so will the phase splitter's ability to generate it. A -50 volt bias indicates a drive requirement of 100V p-p, which is possible with a resistive loaded 5687. A DC-tolerant PP plate choke might be indicated here in order to achieve maximum output voltage swing on min B+.With a PP choke, I'd be quite tempted to use a 6BX7 with mu=10. I am getting IT ideas as well. Phase splitt with an input tube working as a split-load. 12B4 will give performance like a 1:1+1 IT in that position. Feed a second pair of 12B4 riding a string of LED as a common cathode load bias arrangement. Load with the Lundahl 1660 PP:PP and you could even get some grid current with the 2A3 power stage. I bet it would overlaod very gently with such a driving arrangement.Guinevere will comfortably supply 10-15 vrms to the imput...regards,Douglas

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Subject: Principle schematic
Posted by Damir on Sun, 06 Feb 2005 13:18:55 GMT
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LCLC PS for the 2A3, (can be even simpler, say CLC :-)), plus RC stage for the driver tube. Driver tube has CCS load (can be anode choke as well). P is hum-cancelling pot, cathode bias is from Rk (+Ck bypass). I ommited "standby" switch (for pre-heating).For the 2A3 values of the output stage are:R3=220k, R4=1 kOhms, P=50 Ohms/2W, Rk2=750 Ohms/10W, Ck2=47-100 uF/100V, trafo Ra=2k5, B+ = 300V.V1 and the components - depends of the tube used (we`ll see), the same as of V3/secondary /Ufv3 voltage/current.Ufv2 is 2,5V/2,5A and Uhv1=6,3V/1A.

Subject: Re: Principle schematic
Posted by Wayne Parham on Sun, 06 Feb 2005 14:11:42 GMT

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I like that. I think it might make a nice power amp that's fairly simple to build.I think I'll probably build something like that when I build the Guinevere. I'll probably forego the FET CCS on the driver tube and preamp, maybe add it later. That's how I built the Paramours too - First with a resistor in the plate circuit to B+ and then later with the CCS.I like how the 2A3 sounds, and I like the glow. One of these times, it might be fun to build a 2A3 push-pull amp too. Lots more oomph, and that's important when playing orchestral music or other material with a lot of range, even with 100dB+ horns. But for starters, I like the SE 2A3. It's simple and it sounds good.No harm having both an SE power amp and a push-pull amp group build project going at the same time.

Subject: Re: Principle schematic
Posted by Damir on Sun, 06 Feb 2005 15:33:01 GMT
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Of course. I`m slow and don`t have too much time, but I hope that soon enough I`ll breadboard the simple version of that amp. I have a few 6B4G and other parts, except DN2540. But I have the parts for MJ350 based CCS (from M. Jones book, similar to C4S-Bottlehead). Probably I`ll try 5687, E182CC and 6J5GT for the driver.For those who likes "passive" solution, I noticed "Lundahl" LL1667 line of anode chokes, for example 7ma/580H, 10mA/405H, 15mA/270H - just what we need, but the price is not low...To be continued (I hope :-))...

Subject: Re: Principle schematic
Posted by Wayne Parham on Sun, 06 Feb 2005 15:47:03 GMT
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I'll try those Lundahl chokes first, then maybe go with a CCS and compare the difference. Thanks!

Subject: Re: you don't want to see what *I* thik is complex...
Posted by cheetah on Sun, 06 Feb 2005 19:21:24 GMT
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I still like the idea of a PP 6V6 or for a little more power, 6L6. These are good tubes. The Iron foe a stero amp is inexpensive. One could use a SE input stage and use an IT to do the phase splitting, or use a PP input stage and do the phase splitting at the input. Total cost for these, with decent parts would be approx, $500 to $600. The results would be killer.Joe

Subject: the Poinz...
Posted by PakProtector on Sun, 06 Feb 2005 22:14:45 GMT
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Poinz drew this of my E-Linear circuit. 10k a-a with screen taps at 20% for the 6V6 and a 6BQ7 up front will sound brilliant. Try it with 40% taps for 6L6's. B+ in the mid 200's and run class A bias. 807's are another option too. Or get the OPT wound with 20, 30, and 40% taps and perform your own experiments.Small negative rail for fixed bias will double as a sink rail for a CCS instead of the resistor and requisite larger neg. rail shown in the schematic.The grid chokes are just as easy to do as a proper output TX.regards,Douglas

Subject: Oh baby!!!
Posted by colinhester on Mon, 07 Feb 2005 00:56:41 GMT
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This with 807's would be too cool. I'm in.....Colin

Subject: Re: the Poinz...
Posted by cheetah on Mon, 07 Feb 2005 01:43:03 GMT
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Very Nice!I like the idea of using a smaller Bias supply and a CCS on the input. One could even use a grid choke in place of input resistor, if they wanted to go over the top.And the price: $1.90 for a 6BQ7 @ AES, @2.90 @ Uncle Neds. Matched pair of JJ's $30. @ Uncle Neds.Center tapped grid choke could be PSA-2N(nickel) from Elecrtra-Print.Joe

Subject: Re: the Poinz...
Posted by PakProtector on Mon, 07 Feb 2005 02:39:17 GMT
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tell me more of this CT grid choke from E-P please. I have one of my own design which I like. Always ready to explore new stuff though.regards,Douglas

Subject: Re: the Poinz...
Posted by cheetah on Mon, 07 Feb 2005 02:49:57 GMT
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There isn't much info at the Electra-Print site. But I'm sure Jack @ EP can give you the details.You can find out a little more @ Chris Beck's site. Follow the link attached.What I know is this, The EP amp uses this as a phase splitter. It is a center tapped choke. Core is nickle. Very nice for low drive levels. Since your amp would not use it this way, the nickle core should be a nice touch.Joe

Subject: Re: the Poinz...
Posted by cheetah on Mon, 07 Feb 2005 02:50:47 GMT
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Here's the link
http://www.geocities.com/n9zes@sbcglobal.net/EL84PSA.html

Subject: Re: the Poinz...
Posted by PakProtector on Mon, 07 Feb 2005 02:58:31 GMT
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If it works well as a phase splitter, like the interleaved improvement I worked on with MQ, it will not sound better with balanced drive from a PP source like the diff amp. there was no sol'n I found which sounded as good as the simplest wind. Making the leakage lower only hurt the sonics. The bench specs of the interleaved item did look pretty good. the sonics left much to be desired in comparisons to other applications and implementations.This was quite counter-intuitive for me. Even as I was wiring the things up, I was convinced the lower leakage wind would sound better. I was immediately dissapointed. Some fairly extensive experimentation followed and the conclusions were solidified and more clearly classified.A nickel core with a two bay bobbin, one bay reverse wound wrt the other so that the turns next to the center tap are up against the core is on my list of things to try. .007" SuPerOrthoSil is a nice Iron to wind with but its perm is not quite like Nickel...regards,Douglas

Subject: Re: the Poinz...
Posted by cheetah on Mon, 07 Feb 2005 11:06:55 GMT
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Good info!Do you have any recommendations for a good choke to use in this spot?Joe

Subject: Re: the Poinz...
Posted by Wayne Parham on Mon, 07 Feb 2005 15:18:56 GMT
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Great link, thanks!