Subject: Can Someone suggest a good book on S.E.T.'s.
Posted by Peter Swartz on Thu, 02 Mar 2006 02:45:11 GMT
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I want to learn better how my amp works to better understand why I'm having a hum problem, etc...I've got a pair Consonance M500's and want to do some upgrades and would like to gain more technical info on the detailed working of my S.E.T. Or maybe a good website that has the info. Hell,I'm probably going to post this message and then realize that the AudioRoundTable has a link to the resources I'm looking for, Let's see, here goes

Subject: Re: Can Someone suggest a good book on S.E.T.'s.
Posted by Damir on Thu, 02 Mar 2006 12:23:14 GMT
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I don`t have any book "specialized" only for SET amplifiers, but there`re many old electronics/tube books, now on-line with valuable informations. See for example, "Pete MIllett`s Tube DIY Audio pages" (www.pmillett.com) with many "classical" books, for example, "RDH3", "Basic Theory and application of electron tubes", etc.In "new books department", reccomendable are "Valve Amplifiers - 3rd Edition" and "Building Valve Amplifiers", both from Morgan Jones.

Subject: Re: Can Someone suggest a good book on S.E.T.'s.
Posted by Manualblock on Thu, 02 Mar 2006 19:44:42 GMT
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If I may suggest you download Damirs tutorials on his SET 300b amp. They should offer a good starting point for understanding how these circuits are designed and what they do. It helped me.You can find them in the Group Build section on this site.

Subject: and then...
Posted by PakProtector on Mon, 13 Mar 2006 23:58:46 GMT
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pick the first thing you don't understand, and ask a question. When you get it answered, move on to the next...Don't worry, we won't get tired...and it'll teach us something while we're at it.cheers,Douglas

Subject: Re: and then...
Posted by Manualblock on Thu, 16 Mar 2006 12:51:59 GMT
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The hardest thing in teaching something as complex as electronics to newbies through a forum like this is to find the fundamental connections between what they understand and what they are looking to find out.Example; OPT primary winding resistance. You look at catalogues of transformers and mostly you se a few standard values; 5k/3.5k/8k/10k/ and rarely 12or 14k. Once in a while 7.5k. Now if those are the standard values and each one is somehow most applicable to one set of RP values then a begginner says hey whats the fuss, you already know what value you need as soon as you pick your tube for the output.Then loadlines; all that seems to have been done for you by many charts and experiments; just follow the yellow brick road and voila'.But I know it's not that simple when you are struggling to come up with a better set of values to co-respond with a goal you have regarding a rarely used tube or a different and not so common circuit.

Subject: Re: and then...
Posted by Damir on Thu, 16 Mar 2006 18:55:30 GMT
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Well, the operating point you choose (Uak/Ia/Ugk) for a given tube determined your primary load impedance. (The term "primary winding resistance" is better used for the "static" DC resistance of the wire).But, practice teach us that it`s only the beginning, a reccomendation.Yes, we have the "standard" SE impedances, mostly - for 300B it is about 2k5, 3k, 3k5, 5k, or so. In principle, with higher values (with the same OP) we`d have a little larger damping factor, lower distortion, but lower power.But, the main difference, IMO, is the quality of concrete device, and not (for example) 3k/3k5 difference. It is complex subject, really - there are books written about OPTs and tube/OPT interactions.The best, (IMO, again) what "average DIY-er" can do is to buy quality OPT with various taps and trying for yourself various connections / OPs. (For example, "Lundahl" LL1620 or 1623.)

Subject: Re: and then...
Posted by Manualblock on Thu, 16 Mar 2006 19:46:40 GMT
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Exactly my point. As in all things to do with physics and electromagnetic behaviour there are reams and libraries full of work done on those fundemental laws. But as an audio experimentor all we really need to know are; hey...can this output tube work with this primary winding?How do I set the load resistor?Fixed or Floating bias?How to get the three basic voltages to my output tube from the power supply?How to find Cap vs Inductor input filter values?What is global feedback and how is that done in the amplifier?When to best use these various scheme's for maximum

sound quality and whether to look at doing things like running tubes hotter for more power or cooler for less distortion. Why use a 6l6 or an el 34 instead of a KT 88 in a particular circuit?Many times I see articles written about things like say this, "What To Do With Those Old Transformers and How To Use Them In Circuits If You Don't Have The Right Transformer For The Job." Thanks But let me learn the right thing to do first before offering me choices I will never make. It just confuses things while simple explanations of why a transformer is chosen to do a particular job is really the most helpfull type of information.Statements like this:I choose the 5k primary transformer because with a 300B output tube I get this amount of power;..This amount of distortion,.. and this output impedance.How do I know this? Here's how;...Like what Damir is doing with his description of the maths involved; the changes he makes and the effect those changes have on the sound. And Douglas does when he describes the different iterations of the circuit and how those iterations can be adjusted to get another value that co-responds with a different set of results.  These are the things I think about as a novice. And also the proper way to run signal and ground wireing to and from the circuits to the connectors. As well as proper safety practice.One of the most illuminating moments for me so far is the simple recognition that you actually could wire up a simple SE schematic by running the wiring exactly as it looks on the schematic. It may not be the best option and you may get some hum but it can be done.

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Subject: Re: and then...
Posted by Damir on Thu, 16 Mar 2006 21:15:36 GMT
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Well, it seems to me that this hobby is half electronics, half "musical instrument" building...

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Subject: Re: and then...
Posted by Manualblock on Thu, 16 Mar 2006 22:43:27 GMT
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I'd say thats a fair assesment. You guys that take the time to tutor people and explain the how and why of what you do are a huge help. It's; at least to me; the real positive effect of these forums and I for one appreciate it.

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Subject: that's about it...
Posted by PakProtector on Mon, 29 May 2006 12:24:43 GMT
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as there are more parallels to that conclusion than one could draw to say, a laboratory equipment. While it may not seem so, both schools of thought are useful.There is a general sort of things to do to every cicruit, good grounding scheme for instance that can be carried from project to project. The details of what constitutes a good grounding scheme are easier to quantify as a whole...the

amp is quiet. Just like any other part of the circuit design, there are a lot of ways to get there.cheers,Douglas

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Subject: Re: Can Someone suggest a good book on S.E.T.'s.
Posted by bone43 on Wed, 21 Jun 2006 21:07:23 GMT
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Try Basic Electronics by Van Vakenburgh, Nooger & Neville originally written for the navy back in the day, its a 5 volume set "around 20.00 dollars used" very easy to follow maybe the best written for the beginer in tube electronics spares you all the math and is simple and easy to understand.There is also Basic Electricity by the same authors equally as good and a precursor to Basic Electronics.Tony

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