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Subject: THE TWEAKER?

Posted by [Howard](#) on Wed, 30 Mar 2005 12:07:10 GMT

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Dear SET forum,I have been seriously considering three valve amp designs over the past two weeks.The Darling,<http://www.diyparadise.com/Darling.html>This is a very well liked, simple straightforward circuit, cheap parts (Great sound) but low power. A KT88 SE as suggested recently and described here<http://pmillett.addr.com/elinear.htm>and an Australian design known as The Tweaker. (No web page available) The design like the two above is relatively simple. It is a two stage using a 6SL7 to drive one of the following; KT88, a KT66, EL34 or a 6L6. The user simply tweaks the bias to suit the chosen output. (Each channel uses just 11 resistors and 3 caps)The designer Earle Weston (Melbourne) (eBay alias ehtcom) also winds his own transformers and is able to supply all parts as required. The power output will vary between 9.5-14W in pentode mode. (Approx half this in triode mode)With so much local support, design and parts supply I have decided to build a dual mono version of the Tweaker. I would like to display the circuit diagram but I should ask the owner first. I will be getting the power supply parts made up over the next few weeks. I will probably be pestering this forum with lots of questions when I start putting it all together. I hope you are all patient.Thanks for all your great advice so farHoward<http://www.eastmarinedrive.com>One of Earle's KT66 designs

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Subject: Re: THE TWEAKER?

Posted by [GarMan](#) on Wed, 30 Mar 2005 13:43:55 GMT

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"I will probably be pestering this forum with lots of questions when I start putting it all together. I hope you are all patient."Howard, I'd be disappointed if you didn't pester.Looking forward to see the design and your build.gar.

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Subject: Re: THE TWEAKER?

Posted by [Wayne Parham](#) on Thu, 31 Mar 2005 00:39:52 GMT

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I'm anxious to see this too! Please keep us informed.

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Subject: Re: THE TWEAKER?

Posted by [Howard](#) on Thu, 31 Mar 2005 10:52:27 GMT

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Dear Wayne,I will be more than happy to keep you all informed. Its certainly a very exciting design with a potential to suit all sorts of listening tastes.Earle builds them as a integrated 2 input unit. I really prefer the look of 2 mono amps.The tweaker is usually supplied with a multimeter so that the user can set bias. I would like to build the voltmeter into the chassis.Probably using the RS 1V meter. Please see the link  
RS voltmeter

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Subject: bring it on...  
Posted by [PakProtector](#) on Sun, 24 Apr 2005 15:26:59 GMT  
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everybody winds up learning from questions. regards,Douglas

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Subject: Re: bring it on...  
Posted by [Howard](#) on Sun, 24 Apr 2005 19:44:59 GMT  
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Dear Douglas,Yes indeed we do! The transformers are now wound and will be arriving shortly. Five minutes I bought some essential bits on eBay.It should be a very interesting projectHowardANY TIPS RELATING TO BUILDING THE CHASSIS?CAN YOU RECOMMEND AN OLDER STYLE 6SN7?

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Subject: Re: THE TWEAKER?  
Posted by [colinhester](#) on Mon, 16 May 2005 00:56:09 GMT  
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Curious to see how the project is going. Any progress? Can you post an update?.....Colin

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Subject: Re: TWEAKER MONO AMPS UPDATE  
Posted by [Howard](#) on Mon, 16 May 2005 09:15:38 GMT  
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Dear Colin,I have gathered all the Transformers and Chokes. These have been wound by Earle Weston down in Victoria. Over 7.00kg weight for each mono amp. The passive components are ready and these include Nichicon Muse caps and carbon resistors.I have bought at least 3 different sets of 6SL7 twin triode. I am trying to find some Sylvania types which sound nice. I have some KT66, KT88 and GZ34 rectifiers (new Chinese Valve Art, supplied by eBay user cellvalve) [http://search.ebay.com.au/\\_W0QQsofocusZsoQQsbrftogZ1QQfrppZ50QQfromZR10QQsacatz-1QQcatrefZC6QQftrtZ1QQftrvZ1QQsadisZ200QQfposZPostcodeQQsellerZ1QQsassZcellvalveQQfItZ9QQfsopZ1QQfsooZ1QQcoactionZcompareQQcopagenumZ1QQcoentrypageZsearch](http://search.ebay.com.au/_W0QQsofocusZsoQQsbrftogZ1QQfrppZ50QQfromZR10QQsacatz-1QQcatrefZC6QQftrtZ1QQftrvZ1QQsadisZ200QQfposZPostcodeQQsellerZ1QQsassZcellvalveQQfItZ9QQfsopZ1QQfsooZ1QQcoactionZcompareQQcopagenumZ1QQcoentrypageZsearch) I enjoyed using the VA KT66 in my old Quads. I have also found some nice quality valve sockets in HK <http://cgi.ebay.com.au/ws/eBayISAPI.dll?ViewItem&item=6526398855&rd=1&sspagename=STRK%3AMEWN%3AIT&rd=1> and some cheap silver plated copper (Teflon coated) wire from the US.<http://cgi.ebay.com.au/ws/eBayISAPI.dll?ViewItem&item=5772513112&rd=1&sspagename=STRK%3AMEWN%3AIT&rd=1> I still need to get hold of some switches, pots (bias) and the RS virtual voltmeters which I mentioned earlier.Chassis: It will basically be about the same size as a REFLEX photocopying paper box lid! Its probably going to be made out of a heavy grade Al (easy to work etc) the transformers supplied by Earle are already finished in his standard gold fleck paint. I would like to powder coat the chassis once all the hardware holes are drilled/ cut (charcoal grey) apparently you can powder coat Al The gold/grey should be well set off by the back lit green meters placed in the front panels<http://www.rs-components.co.uk/electronic-components-uk/590299179-RS-Components-1Vdc-Virtual-Analogue-Voltmeter-LED-Backlit--Automation-Panel-Meters-Voltmeters-Digital-Modules-Single-Mounting-Hole.html>The chassis will be fairly slow going since I am moving into the end of Term. This means lots of report and exam marking.I recently decided to delete my entire website because it was simply out of control and getting far too big. I will be adding lots of pictures to my new site once the project starts to take shapeHoward<http://www.eastmarinedrive.com>  
MY NEW WEBSITE

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Subject: Re: TWEAKER MONO AMPS UPDATE  
Posted by [Howard](#) on Mon, 16 May 2005 09:36:34 GMT  
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Dear Colin,I am sorry the URLs don't appear to work hereHere is a picture of come collected parts

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Subject: Re: TWEAKER MONO AMPS UPDATE  
Posted by [colinhester](#) on Mon, 16 May 2005 12:49:12 GMT  
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Isn't ebay a great resource? You can find anything! Please keep us posted on your progress. Can you post a schematic of your amp or send it to me?I put my amp on hold. I decided I needed

some more efficient speakers before I went to a low power amp. Right now I'm trying to assemble a pair of Altecs with the help of a few AudioRoundTable members. As soon as these are done I'm back on the amp. Sorry to see you took your old web site down. There were so many cool projects.....Colin

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Subject: Re: TWEAKER CIRCUIT DIAGRAM  
Posted by [Howard](#) on Tue, 17 May 2005 05:37:50 GMT  
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Dear Colin,I am pleased you like the content of my old site. I am sure a lot of it will reappear as time goes by. Here is the Tweaker circuit. Earle was happy for me to publish it. It is being revised all the time. My mono amps will have some changes to the one shown here. I have only shown one power amp channel to help cut down on image size.Valve sockets arrived today so one step closer to starting.Howard

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Subject: Re: TWEAKER CIRCUIT DIAGRAM  
Posted by [colinhester](#) on Wed, 18 May 2005 03:41:04 GMT  
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Howard, Sorry I didn't see your post earlier. This is a very interesting amp. Could you please re-post schematic in the Group Build forum. I think there are a few of us out there that might consider building this. Please keep us posted on your progress.....Colin

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Subject: Re: TWEAKER Construction page  
Posted by [Howard](#) on Fri, 20 May 2005 08:26:44 GMT  
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Dear Colin + other SE fansI have started a page for this project. I have my card model plus Earles pictures of the original being builtHave a good weekendHoward  
Tweaker construction page

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Subject: Re: THE TWEAKER  
Posted by [Earle](#) on Tue, 05 Jul 2005 08:47:32 GMT  
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Hi Howard. Hope your amps are coming along well. I lashed out and bought myself a HP8903a audio analyzer. Best money I have ever spent. Some test results from my own Tweaker Mk4 are as follows;KT88 in triode mode, @1 watt with 1k 0db ref. -3db 15hz to 37khz. -6db 11hz to 57khz. Distortion @ 1watt 0.29% (4.7% at 1/2 pwr) Maximum output 10watts. Hum level 1mv. Signal to noise 103db hum removed. KT88 in Ultralinear mode -3db 22hz to 45khz. -6db 15hz to 67khz. Maximum power 16 watts. Hum 1.2mv. S/N 102db hum removed.The signal to noise is very dependent upon driver valve choice. The best result was from a NOS Sylvania Angle plate 6sn7. A Chinese no name 6sn7 returned similar S/N but frequency was down -3db at 13khz.One of my favorite valves, a Sylvania 6SL7WGT was quite noisy with a S/N of 67db, go figure.EL34 triode mode -3db 15hz to 41khz and -6db 11.5hz to 62khz.EL34 UL mode -3db 23hz to 52khz and -6db 16hz to 76khz.The installed valves were Valve Art 5AR4, Sylvania 6SN7 angle plate and new Valve art outputs.I've been working on a (shock horror) push-pull amp. The transformers I have wound using the same technique I developed for the SE iron. They test very impressive out of circuit. -3db 7hz to 58khz. In circuit they should perform similar as the bias current is self cancelled. The top end may go a bit higher due to the ul taps.The attenuator xformers are coming along as well. I'm happy with the test results and will now work with taps. I plan to have only 12 taps with a +3db boost tap to add a bit of gain to a passive pre.Cheers. Earle.

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