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Subject: Tono Preamp  
Posted by [Mark Williams](#) on Thu, 21 Apr 2005 00:46:52 GMT  
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Hi,About a year ago I ran across this preamp on the Wired State forum. Has anyone ever heard of / listened to this preamp?Mark

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Subject: More info, please.  
Posted by [Poindexter](#) on Sat, 30 Apr 2005 06:44:08 GMT  
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I am currently ( ) dealing with preamps.Where is this monster, if you please?Yerz, Poinz

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Subject: Re: More info, please.  
Posted by [Mark Williams](#) on Sat, 30 Apr 2005 12:46:08 GMT  
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Hey Poinz,I found out some more about this unit since my last post.First, it's available in the U.S. from Vacuum Tube Valley for around \$350. I think this was originally a kit sort of affair from the guys on the Wired State forum, based in the Phillipines. No kits now I'm thinking. I got surprisingly little information from the Wired State forum.A fellow from VT Valley wrote me and it seems like the thing is very nicely wired inside: Black Gates, high quality resistors, all that. This USA version is of course 110V compatible.The problem for me was there are only 2 inputs. Since I run a tuner, phono, and a CD...it was not feasible for me.Currently the guys at Wired State have what looks like a Tono 300B project going on. Worth checking out. Looks nice, but I'll stick with my 2A3 based amps.I do have a photo of the Tono Preamp somewhere and if you're really, really interested I could send it to you offline.I'm shopping around a bit for preamps -- or might be content if I could just get my Foreplay 2 a little more quiet. Then I could forget about something new.Others under consideration are the Foreplay 3 and Hagerman's ([hagtech.com](http://hagtech.com)) "Clarinet". Both look pretty nice and are supposed to be quiet.Mark

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Subject: Well, ahem,  
Posted by [Poindexter](#) on Sat, 30 Apr 2005 16:32:05 GMT  
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I have just recently gone through about six breadboards and four finished pieces, and here is the circuit I like:The problem I had with all the regular circuits was too much gain (and thus too much

hum/noise gain), and not enough drive (without a cathode follower). I fixed this by using a simple, -1dB) of 8Hz to 300KHz (!), and hum+noise low enough to be difficult to measure with a lab millivoltmeter, about 0.1mV. The number-of-inputs problem is solvable with any circuit. I do this too, because I can source a nice silver-contact toggle switch for about six bucks, where an equivalent quality rotary is about forty with a nice knob. I'm going to put this project up on my site in the next couple of days, but if you want to look at it right now, The Owner's manual is up at: <http://www.AudioTropic.net/AudioTropicMobiusUsersManual/UsersManual.html> All the technical details are in there. Aloha, Poinz

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Subject: Re: Well, ahem,  
Posted by [Mark Williams](#) on Sat, 30 Apr 2005 19:27:24 GMT  
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Hey Poinz, As Cartman would say: "That's Hella-Kewl !" I love not only the looks but the simplicity of the whole thing. And, for once on the Internet, there are excellent diagrams / schematics that are easy for even a rookie like me to follow. Tell me more about the selector switch for \$6 and also this main transformer. I'm not familiar with the company. Regards, Mark

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Subject: Parts is parts.  
Posted by [Poindexter](#) on Sun, 01 May 2005 00:25:44 GMT  
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Hey, Mark, It's all there. Go look at the parts list. If you can live with two inputs (a toggle input switch), the switch is an ElectroSwitch DPDT center-off toggle from Digi-Key whose part number is listed. The main tranny is an Amveco toroid, likewise, which shifts for the princely sum of ~\$15 in onesies-twosies. If you need your several inputs, use the Elma 04-1261 from Percy, \$34 (plus the knob of yer choice); it's a dandy. Go look at the parts list, confound' you. I spend hours making these things up and verifying that they're accurate. I'll have a better expo of this piece on my site in a day or two, but meanwhile, Yer Obeediyunt Servunt, Poinz

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Subject: Re: Parts is parts.  
Posted by [Mark Williams](#) on Sun, 01 May 2005 12:53:47 GMT  
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Poindex, Will take a better look at all this! Like I say it's very refreshing to see plans that are so well thought out. More questions to follow from me, no doubt. Regards, Mark

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Subject: Questions

Posted by [Mark Williams](#) on Sun, 01 May 2005 17:52:45 GMT

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Hi Poindexter, OK, some preliminary questions: 1) On the first schematic, in the lower left corner, there's a tube pin out shown for a 7BZ? I'm not understanding why it's shown. I thought this preamp used (4) 6AQ5 tubes. 2) Is a 6AQ5-A tube acceptable to use? 3) How does the wiring run from the power supply side (right side) to the audio side (left side)? There must be a bottom or something I cannot see in that middle section where the four tubes are located? And the wiring runs underneath that? Thanks, Mark

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Subject: Some answers.

Posted by [Poindexter](#) on Sun, 01 May 2005 20:31:51 GMT

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1) The basing of the 6AQ5/6005 is 7BZ. That's the size (miniature 7-pin) and pin assignment. Not all are actually 7BZ, though; some have the control grid to both pins 1 and 7, and some only to pin 1, by my research. I suppose that would be a different base code. All the ones I have gotten have pin 7 hot to the grid, but I don't wire to that pin; only pin 1. 2) 6AQ5, 6AQ5A, 6AQ5W/6005 that I have gotten are all exactly the same (from the same manufacturer). It seems to me that the 6AQ5W/6005 are a little less microphonic and a little more uniform in their characteristics; it's probably a selection thing. I'm trying to decide if they sound better or not. I think maybe slightly. 3) Bless you, my man. You know, not one person in four ever flashes on that little detail of the implementation. I am a forty-year maker of musical instruments, aircraft, sailing yachts, and this stuff. The umbilical wiring (B+, circuit ground, chassis ground, heaters) runs through the chassis wall. I will bring one of these to your house, and with a magnifying glass you will not find how I did it. You have just appeased my (considerable about this stuff) vanity, so if you beg me, maybe I'll tell. Yer admirer, Poinz

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Subject: Re: Some answers.

Posted by [Mark Williams](#) on Mon, 02 May 2005 20:20:19 GMT

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Hello Poindexter, Gee, I'd much rather come to your place to see how that umbilical wiring runs from one section to the other since I see you live in beautiful Hawaii! It's still cold here in Pennsylvania! I'm guessing you split one of the long pieces (the back one) lengthwise, run a groove or grooves with a router make a space to house the wiring, run the edges on the jointer to clean them up, then glue the two back together? That's how I'd do it. Practically invisible if done carefully. So, that middle section is indeed open all the way to the tabletop, then? And, all you see is the tubes? Cool idea! I love the looks of this preamplifier. I also like the fact that the transformer is cheap, and the hum level is very low. I found 5 or 6 good 6AQ5's in my tube stash

too. The fellow who used to sharpen my saw blades was a TV repairman and he gave me a bunch of his pulls. I may try to build one of these with your help. I've never built any electronics from scratch, only kits. Lots of speakers, but no electronics. Presently, I use the Bottlehead Foreplay 2 preamp. I like it just fine, but I can't seem to quiet it down. I forgot to ask what beautiful tropical wood you were using? Koa? Wish I had a barn full of it. I understand now about the pin out diagram for the 6AQ5's. I didn't know they had a certain number code too...7BZ. I guess I thought each numbered tube just had it's own pin out diagram. All the best, Mark

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Subject: Re: Some answers.

Posted by [Poindexter](#) on Wed, 04 May 2005 16:25:39 GMT

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Hey, Mark, I'm guessing you split one of the long pieces . . . Close. It's hard to describe briefly. I'll look through my photos and make up a small webpage with the procedure on it, if you're really interested. I'm sure you can get one together scratch. It's not an elaborate circuit; and in all honesty, the divided chassis is a cosmetic feature; it's the physical separation of the PS and audio circuit that keep the noise down. I'll help you as much as I can. The chassis is Jarrah on this one, an Ozzie hardwood that's much used for floors and decks. She's a gum tree, mate. &nbsp; sometimes use Koa, but not for pieces going out of Hawai'i; it's getting too rare. I sometimes also use Padauk, Zebrano, Wenge. Yah, each tube type will have both a basing type, and a bulb type. These define its physical characteristics, which have to be dealt with by the implementation guy. Aloha, Poinz

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Subject: Re: Some answers.

Posted by [Mark Williams](#) on Thu, 05 May 2005 22:01:48 GMT

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Hey Poindex, Yes, I'd love to see additional frame construction and wiring details. There's certainly no hurry. Since I travel during the week and am only home on weekends, my projects are often stretched out longer than what I would like. Oh, Jarrah wood. Nice! I've heard some of these tropical woods can be difficult to glue because of the oil content. Are you using any special glue, or regular "carpenter's glue" (alphaic resin)? I'm afraid I'd be stuck using walnut, cherry, or possibly maple. Those are the common ones here, along with oak, but generally I don't favor the grain pattern of oak. I often just stain it black. I was poking around on eBay for 6AQ5's and noticed some Russian ones that were 9 pin, not 7 pin miniatures. Interesting. So, that basing type is important to mind. I had no idea. I just thought a 6AQ5 was the same, with the same pin-outs, etc. no matter what. I'm curious as to why you selected this particular tube since it appears no manufacturer is making them new. Sonics, I assume? Regards, Mark Mark

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Subject: Some more answers.

Posted by [Poindexter](#) on Mon, 09 May 2005 02:44:07 GMT

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Jarrah is dry, hard, brittle. It glues up with PVA (I use Titebond II) very well. Walnut, Cherry, Maple are noble woods; do not say 'stuck'. Maple is one of my all time fave woods. The 6P1P is not a 6AQ5, any more than the 6AQ5 is a 6V6. It's a mystery to me why these two devices have been touted as equivalent on the auction sites; since they do not even have the same basing or envelope. I sympathize; I have been corresponding with a gentleman in G. Britain about his Svet (real, St. Pete) 6AQ5's for a week now, and they are actually not, they're 6P1P's and will not fit my gear. Strange. I did not select this tube, it selected me. I was looking for a line amp tube with lower (about ten)  $\mu$ , and lower (about 2K)  $r_p$ , and saw it in the tube manual. Beam tube, but I've been using beam tubes and pentodes in triode since day one, so hey. Looking on the vendor sites, I saw that it shifts typically for \$2-5, so how could I lose? First guess, whooda think it would be so fab? I got quad of brand-matched quads from Alltronics, and they made de Poinz look so-o smart. Don't tell, now. Poinz

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Subject: Got some e-Bay tubes coming...

Posted by [Mark Williams](#) on Mon, 09 May 2005 21:06:59 GMT

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Hey Poinz, In addition to my little "TV repair guy" stash of 6AQ5's (don't know how many, if any, of those really work), I won an e-Bay auction yesterday for about dozen of mixed brand 6AQ5's yesterday. Cheap, cheap...only \$8.50 plus the shipping. So, I'm all set! Now I just have to get you to reveal any additional construction / wiring secrets, then start ordering stuff. I will check out Alltronics. Have not heard of them. I figured that those Russian tubes were not really 6AQ5's since they were 9 pin miniatures, not 7 pin miniatures. Appreciate your continuing help and advise! Regards, Mark

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Subject: No secrets.

Posted by [Poindexter](#) on Sat, 14 May 2005 04:04:41 GMT

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I've decided that a central theme of my commercial offering will be just this. If you're a DIY guy, I'll tell you everything I know about how to get the best out of the circuit. Nothing will be held back, and I hope you will treat me similarly. I do sell these as a (very small) business, and so you may rely upon Wayne (who has demo'd this very piece at The Show) to scold me in public if I huckster the commercial offering in the guise of DIY advice. It's a simple circuit with a simple power supply, as you have seen. It performs in my (not-unbiased) view, remarkably. Monster soundstage, high and natural color of timbre, intergalactic black background, bandwidth (+0, -0.5dB) 16Hz - 150KHz. Don't forget to let me know (preferably through this channel) how you get on. Aloha, Poinz

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Subject: Absolute Polarity (Phase)

Posted by [Triode\\_Kingdom](#) on Sun, 15 May 2005 05:49:25 GMT

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It was interesting to see a mention of this in the manual. And you're absolutely right, phase (polarity) is not always maintained during recording. In fact, because I nearly always test my new amp/preamp designs in mono, I am painfully aware of just how bad the situation is. Typically, when testing/tweaking new designs, I add both channels of the source (usually CD) through resistors in order to capture all the music. However, I have several CDs for which this technique cannot be used. One example is a Yardbirds CD that appears to have been recorded with the L and R channels exactly 180 degrees out of phase. Either channel alone sounds fine, but when mixed, total output amplitude decreases about 9-10 dB. Several other discs suffer from audible frequency response anomalies when the channels are mixed into mono. This usually manifests itself as a significant reduction of high frequency content. When listening to a particular Steve Miller CD for example, everything above 5 kHz or so virtually disappears when the channels are combined. These defects are more difficult to detect when stereo transducers are used, because cancellation from out-of-phase signals is incomplete (or in the case of headphones, nonexistent). Nevertheless, this issue points out how poorly source material is being produced and processed these days, and how important it is to select programming carefully when evaluating a system. Sorry, I know this doesn't have much to do with the preamp under discussion, it just caught my attention.

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Subject: Re: Absolute Polarity (Phase)

Posted by [Poindexter](#) on Sun, 15 May 2005 19:34:31 GMT

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Yah; in the hippie days, a lot of space rock was intentionally mixed with one stereo channel reversed in polarity to give an acidy sound. At least this you can deal with, if you want to go to the trouble. The problem is multitracked recordings where the individual tracks can be in both polarities, so the stereo final product is irredeemably mixed up. The thing is, in these huge mixing boards, the signal may go through ten or twenty op-amps, which can invert or not, and I don't know if there's any standard for this in the construction of the boards, so the engineer is sort of stuck; how's he to know? It might only be the little purist recordist who uses practically no electronics (and those made by him) between the mike and the tape who can control this. I think it makes a difference, which is why I mention it. It seems to show up most in transients, like drum whacks, which sound more natural if they're in correct absolute polarity. Poinz

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Subject: Re: Absolute Polarity (Phase)

Posted by [Damir](#) on Mon, 16 May 2005 11:37:16 GMT

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On some pro mixing-boards there are phase-meters, but today`s multitrack recordings hardly can be 100% mono-compatible, ( synths, multieffects, samplers, etc). Snare drum recorded with two mics (up & down) must have lower mic out of phase; then recording with more mics must be carefully checked for mics placement/phase, etc.

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