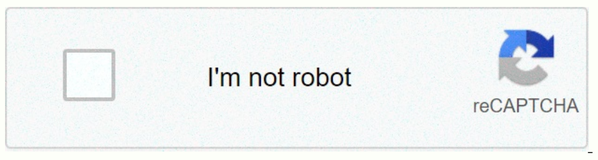

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Trainwreck express amplifier schematic

2W Trainwreck Express Idea to build this amplifier came after we watched an amazing YouTube video of Glenn Quickendell with his Trainwreck. I do not need the power of the original Express, so I went with the 2W version as published on AX84.com. Parts Already had some 12SN7GTA pipes NOS Raytheon, so it makes sense to use them and use 12.6V voltage heater for all pipes. The preamplifyable pipes are JJ ECC83s and for phase inverter I have Electro Harmonics 12AY7. Filter caps are all JJ (one axial and two boxes), asday bypass caps are sprague atoms and connector caps are ERO/Roederstein MKT1813 tubular film-coated caps. The caps in the range are silver mica, and the ceramic cap 1nF is MuRata. Signal resistors are a metal film, a mix of nice brown Dale, several Xicon and Beyschlag. The feed resistors are metal oxide. All plate resistors are rated 2W for lower noise. Output transformer is a 5WPP model from Music Power Supplies. It is assumed that there is a better bass for hi-impedance tubes than Hammond due to higher inductance. The power transformer is custom-made coiled (as usual) by Trafomat. There is a 250-0-250@70mA HV secondary and 12.6V@1.3A heater secondary and is wound on the 80VA core wire. All rectifiers are ultra-fast UF5408 tofts. Mods Surprisingly, there are no significant modifications to this: 12SN7GTA output tube, should perform the same syncine; 12.6V working with a heater. Preamplifiers are connected with pins 4 and 5 with a pin 9 unconnected. Boiler of the heater is applied to pin 9 of the pipe PI; two 2x32uF can caps instead of 47x20x20x20uF to cap (did not have those in stock when I ordered parts); Ferrite grains of the input lead must filter RF; 33uF 160V Panasonic radial boiler caps and heater biases instead of 10uF should not change anything. 25uF as a bypass cap instead of 22uF. For electrolyte caps, these are within acceptable limits. I like the chassis used on my Black Box Pre. Although it does not look particularly good, it is very nice to work with and allows each panel to be removed separately. I have the same box, a little higher for this project. The pipes, transformers and board are mounted on a metal panel that is attached to the chassis from the inside. Thus, you can see only jacks and buttons from the outside, the upper panel must be removed to gain access to pipes and tranches, and the bottom panel covers the board. This makes a compact construction that is easy to wear, which is important to me. The layout is about the same as in the project file with several changes that make sense to me as this chassis is less. The output jack and impedance shall be moved to the front of the chassis, the melting socket IEC, the power switch and the lighting are on the back to hold as far as possible, signal signals. These ERO clutch caps have a line that (hopefully) marks the outer edge of the foil. I contacted him (input) to help you with the noise. Heaters are twisted tightly together with the help of a workout. This is a great way to twist the cables well and evenly. Just take two straight pieces of wire, twist them several times and mount the twisted end into a drill head. Someone hold the ends of the wires and use the slowest speed of the drill. Also, having 12,6V heaters means that the current equal is reduced by half compared to the original, so the radiation from the heaters should be further reduced. The pre-amplifyed middle pins are connected together and grounded with the nearest chassis bolt. As the middle pin passes through the socket, grounding it can help with shielding between two triodes. Maybe capacitors are mounted using horizontal nails. This is a great way to save the builder from drilling huge holes needed for vertical installation when space allows. Most of the terminals that go on the board are carved through the nearest unused hole, as shown in the photos below. This helps relieve tension and improves reliability. The shielded Teflon wire is used for input jack for V1 grid and from volume control to V2 network. It seems to help with the noise level. Pictorial Click on image to see more details. Results It works almost from the first attempt. Pp5W's secondary output transformer has the opposite orientation that was expected, so the NFB is actually positive feedback. That made the amp spew like hell. I had to recalibrat the NFB to go to the output jack sleeve instead of 8ohm crane. This also means that the amount of NFB will change when the impedance is not set to 8ohm, but this does not affect me, as I use it with only 8ohm output. I wanted to wait until I got used to the way this amplifier sounds before posting conclusions. My usual reaction to a new amplifier or pedal is not to like it. It takes a while to dial a sound that I like and get used to what it has to offer. I'll look at a few different aspects that define what an amplifier sounds like: Gain: it's more than expected. It gets dirty with sound control, which is set almost everywhere, especially with humbuckers. I found that with amplifier strength control of 30-40% can nail some nice classic tones – Led Zeppelin with humbucker equipped guitars and SRV/Hendrix tones with single coils. Support: many of it, especially at higher sound settings. After maybe 50% for volume control, it only ads more compress and maintain. It's good for the fluids that are maintained, but for rhythm. Sensory reaction: can do a pretty good clean-to-medium thing using the guitar's volume control, especially combined with Modes. With the high output terminals and the volume of the guitar, amplifiers of sound do not do much, as it becomes cleaner- to medium, just adds crunchy and groomed. In this situation, I found that the volume control of the guitar and the pickup selector switch are more important combined with Attack. Tone: it is bright, but not as much as expected from reading on the web. It should be bright to a certain extent in order to sound good with a lower input volume, otherwise it would be boring for clean rather than sparkley. Actually, the bass has to be domesticed. I keep bass control at 0-20% all the time. With higher settings sounds flubby and muddy when overdriven. Noise: surprisingly, it has a very decent noise level. There are no fluctuations at any volume levels. Trainreck is known as noisy and prone to oscillations, but I am very happy with this build in this compartment. I want to add some light observations. Obviously it worked well with some guitars and not with others, but it kept me from getting a better tone than this amplifier for weeks. When you set decent settings with the bright switch on, turning it off makes the sound boring and takes some rise. I'll turn it on right away, but don't give up and turn it on before playing with other controls. To tame the rudeness I returned to the throne, profit and presence, but recklessly held a bright switch (position 100pF) all the time. That would make the sound a little boring and still raw. With my Ibanez, the opposite seems to work better - adding a little treble, profit and presence, but turning off the key. This makes the amplifier sharp, but less sharp than with the bright switch. Update (June 2010) I had to add this update after trying amp with my Strat because it's a completely different beast! My impressions of this amplifier were that he had too much profit when playing with my Ibanez. With Strath, it's a lot more tame. The transition from clean to medium is slower and there are sweeter crunchy tones between. This is further evidence of how sensitive this amplifier is. Now I would like to try it with Les Paul ☺ Useful Links AX84 4-4-0 project page AmpGarage Forum - great Trainwreck info Ken Fischer with his Trainwreck amps If you are interested in guitar amplifiers and have not heard of Trakirk amps then you should be stuck on a desert island. Known for their no-frills design, trainwreck's magnificently gleaming and screaming lead amplifiers were handmade in the 1980s and 1990s by the late Ken Fisher. He was one of the first boutique amplifier manufacturers to enter the market and many of his design philosophies, construction techniques and circuit designs are still on the amplifier market today. An amazing collection of Trainwreck and Vox amplifiers Has three main Trainwreck design; Express, a 50W screaming lead machine using 2 EL34 output valves to generate super compressed guitar tones. Liverpool, a combination of 30W of preamplifier Express along with four-wheeled output valves EL84 to create a little mellower version of express. Ken designs the one with a single coil Rocket, super fine version of VOX AC30 Top Boost. Unfortunately, Ken was only able to produce about 100 or so amplifiers before his health deteriorated to the point where he was unable to build - this made the original Trainwrecks rarer than the hen teeth (or indeed rarer than the original designs of the Lovepedal ;) chain. Here are some demo clips of Trainwreck amplifiers in action; here they are, pretty decent sound amplifiers. But we want to know how to build them. after dummy amplifiers). The train from 1989 is Ingrid Trainwreck Express Gutshot on Ingrid Now, first the trainwreck scheme; Liverpool train scheme; Finally, the Shakerkirk Express scheme; Pay attention to the similarities between Liverpool and Express - the same preamplifying circuit different power amplifiers. Also notice how they use this third tripod cold-biased to get some real preamplifying clippings that happen in the same way as the great Marshall JCM800 (2204) does. The rocket, as you can see, is only the top boost Vox AC30 refined to one channel. In themselves, chains are nothing spectacular; The key with these amplifiers is in their construction and choice of pipes (and transformer selection - The Express uses a custom build output transformer with a 6k6 primary and Liverpool a, rather oddly, 5k2 primary (usually quad el84 amps uses a source transformer with a 4k primary coil)) - if you don't get these right factors, then you'll have an amp that sounds good, but won't sound like Trainwreck. But how to choose tubes for trainwks and tweak them to perfection? Well, it's back to reading all these forum reviews and filtering the truth out of myth and be ready to fix some serious money on NOS pipes! The following are the full BOM and Layout Files links for each of the Trainwreck valves. For a complete scheme, BOM and Express layout check out this amp garage theme; About Liverpool, check out this topic; And for the full documents of Trainwreck Rocket look here; here, and I'm going to eat.