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From: JAY
Date: 5/11/2000 12:59 AM
Subject: Wreckspress

Just curious if there is any more info out there on these designs other than the "Blue guitar files?" any Wreck builder websites ? or anyone that might have interesting info on the obvious clones out there?

Thanks..

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From: BWilliamson (underdog@discover-net.net)
Date: 5/11/2000 11:56 AM
Subject: Re: Wreckspress

or anyone that might have interesting info on the obvious clones out there?

Callaham comes to mind, his is suppose to be a reversed engineering clone to the 9th degree. Allesandro Redbone schem that's floating around preamp's is real close to the Express. D.Funk in his book mentions he got a amp similiar.

I just built the preamp circuit into the bass channel of my Bassman. I got a bunch of tweaking I would like to do, but it doesn't sound too bad out of the shoot. It does have some buzziness about it, but I'm using some crappy tubes. I don't have the problem with the amp being overly bright, I did go with a couple of the suggestions from BGS site. Going to play with it a bit this weekend, I'll know more after that.

bw

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From: Mook (mookie2112@aol.com)
Date: 5/11/2000 2:22 PM
Subject: Re: Wreckspress

Don't forget the Bruno Underground 45.

To my ears, this *IS* the best Express knock-off out there.

Bruno make no bones about it. He advertises it as an Express copy.

In addition, KF recognizes it as a very good Express copy. KF suggested it to me.

Mook

PREVIOUS	EXPAND
From: Joel (joel_clark@css.mot.com)	
Date: 5/11/2000 7:10 PM	
Subject: Re: Wreckspress	

Mook,

Do you know what any of the specific differences are from the Bruno or Callaham and Steve's schematic?

Thanks

PREVIOUS	EXPAND
From: JAY	
Date: 5/12/2000 12:57 AM	
Subject: Re: Wreckspress	

It seems like the "Blue guit schem has some errors according to some of the filed posting on the very same site, details such as 470p instead of 50p in the TS and also the .001/56k appears to be wrong !?

or is it really?? who knows ? somebody on this BB must have seen the real thing, please share it,

I mean if KF don't seem to mind Bruno's clone and even say's good things about it, then it seems like it would be Ok with KF if anyone over here have some info to share (or is Bruno previlaged to sell KF's designs somehow) who knows!

PREVIOUS	EXPAND
From: Steve A. (steve_ahola@yahoo.com)	
Date: 5/12/2000 2:37 AM	
Subject: Re: Wreckspress	

Jay:

There are several versions of Express clones out there and what I have posted on my site is the one that I was given "permission" to post- not by KF himself but by the people who pass these drawings around...

I have compiled the wreknottz.txt file from posts and correspondence from various people who have actually seen the 'Wrecks or some of the better clones. And from a few people who have tried building their own (with mixed results).

From the basic drawing and all of these notes you should be able to build several versions of a 'Wreck and maybe one of them will work really well for you. The choice of tubes, trannies, and speakers will effect the overall sound so what works well in one case may not work in another.

--Good luck!

Steve "Don't shoot me— I'm just the librarian!" Ahola

<http://www.ampage.org/blueguitar/>

P.S. One of these days I plan to make a composite drawing indicating the different versions presented in the text file in different colors... or maybe click a button to see the values change!

PREVIOUS	EXPAND
From: peter	
Date: 5/12/2000 4:16 PM	
Subject: Re: Wreckspress	

Steve "Don't shoot me— I'm just the librarian!" Ahola

thanks for making the effort to compile that stuff, steve.

PREVIOUS	EXPAND
From: wreckboy	
Date: 5/15/2000 8:07 PM	
Subject: Re: Wreckspress	

I've known Ken Fischer for a number of years and own and play his amplifiers exclusively. Bruno does not have any connection to be privileged to sell any Trainwreck designs. Bruno and Callaham both have copies of the Trainwreck Express on the market. Do they sound like the

real deal? Ken knows about these and has heard them. He doesn't think very highly of these copies and has never authorized any company to produce copies of his Trainwrecks. The only authorized Trainwreck design (soon to be in production) is the Komet made in Batonrouge/LA. For information on the Komet call (225) 926-1976.

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From: Trace (voodooamps@aol.com)

Date: 5/16/2000 1:04 PM

Subject: Re: Wreckspress

He doesn't think very highly of these copies and has never authorized any company to produce copies of his Trainwrecks.

If he doesn't have any legal rights to the circuit then there's not a whole lot he can really do about it. I'm not saying I agree with or condone people building copies but it's been going on for year and years now.

Just as with anything, if there's a demand for a product but the supply is low...someone will figure out a way to fix that.

Didn't Ken borrow from Vox amps but tweaked the circuits until it sounded good to his ear? That's how I understood it but then again I've never talked with Ken one on one. I do have a tremendous amount of respect for him just as many others who come here do.

Trace

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[EXPAND](#)

From: Mook (mookie2112@aol.com)

Date: 5/16/2000 2:19 PM

Subject: Re: Wreckspress

Ken told me he's know about various Express knockoffs for years (Apollo, Cally, Bruno, etc.). He said out of all of them, the Bruno is the closest, but also proceeded to say that NONE were as good as a REAL Express.

He told me over the phone how each maker (Cally, Bruno, etc) got ahold of his designs and tried to copy them. He even said he's been inside a number of these amps to see why they sound *so bad*.

Ken might not have any legal rights to his
own design, but he doesn't have to worry
about them, cause they can't build it
correctly.

My Bruno Underground 45 DESTROYS my Callaham.
And my own homemade "Expresso" doesn't sound like
either.....

Mook

PS - As far as the Nedsel Komet, I *AM* aware
there has been collaboration on this project
for sometime, but from what I know, it's
nothing like an Express circuit. If I
remember correctly, the maker, Holger Notzel,
said the Komet had some Hiwatt sounds to it.

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From: Trace (voodooamps@aol.com)

Date: 5/16/2000 4:40 PM

Subject: Re: Wreckspress

*He told me over the phone how each maker
(Cally, Bruno, etc) got ahold of his designs
and tried to copy them.*

It's bound to happen to anyone who has a great sounding amp. I guess it's a matter of time
before people make a spin-off.

*He even said he's been inside a number of these amps to see why they sound *so
bad*.*

Did he comment on what he found? Just curious is all. I could be mistaken but didn't he have
his OT's custom made for the TrainWreck's? The differences fom OT to another can be pretty
much a night and day exprience (in my opinion).

*Ken might not have any legal rights to his
own design, but he doesn't have to worry
about them, cause they can't build it
correctly.*

It makes one wonder what they aren't getting right!!! (ha, ha)

Trace

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From: Mook (mookie2112@aol.com)

Date: 5/16/2000 6:48 PM

Subject: Re: Wreckspress

*He even said he's been inside a number of these amps to see why they sound *so bad*.*

Did he comment on what he found? Just curious is all. I could be mistaken but didn't he have his OT's custom made for the TrainWreck's? The differences fom OT to another can be pretty much a night and day exprience (in my opinion).

He didn't comment on what he found. He *did* say that he once took a Callaham and installed HIS (Express) trannies, and it actually sounded worse.

Ken also went on to say he used a number of different trannies (PT and OT) on all his Express amps.

Seems like the OT needs to compliment the other "pieces" in the puzzle, and vice-versa.

Mook

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From: JAY

Date: 5/16/2000 9:03 PM

Subject: Re: Wreckspress

Clearly the OT is an important tone factor in the Express, but what would be the closest OT for mere mortals, and were do I get a PT with such low voltage to produce around 325 on the plates?

Have anyone seen the OT in a Express? is it a big piece of iron or a smaller chunk? I have also read somewhere that the OT impedance varies with lower voltages, so if a Wreck has a 6k6 OT for 325 plate volts, what would that translate to when these low voltages are present, and also if I say have 380 plate volts, anyone?

Right now I have 380v on the plates and a 4300 OT with 2 EL34's, it has around 180v on the first tube, it has a 50uf for the PI and 32x2 for the rest of the of the preamp and I guess that is a bit heavy. Well It sounds pretty good exsept it is just a little bit too loud for my taste, and also a bit noisy, (all met-film resistors in there) maybe I also will try out the 220ohm resistor after the

diodes as Rob mentioned. JAY

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From: JAY

Date: 5/16/2000 9:07 PM

Subject: Re: Wreckspress

If the callaham sounded worse when the Express TF's were in there then wouldn't the callaham transformers "sound" better??

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From: Steve A. (steve_ahola@yahoo.com)

Date: 5/17/2000 3:30 AM

Subject: Re: Wreckspress

Jay:

Did you catch the "I Talked with Ken Fischer this morning" thread from last fall? That was one of the longest threads I've seen here...

In any case, one point that kept coming up was that KF really knew how to fine-tune a circuit. Once you have sketched out the basic circuit your next step is to "tweak" it for your particular hardware. The 95%/5% thing...

I believe that KF just plopped his tranny into the Callahan without adjusting other values... just to see what difference it would make. (If he had made extensive revisions it wouldn't be much of a test- right?)

I suspect that KF would end up with pretty good results regardless of the hardware that he started out with... Not that he is some "god-like figure" but that the fine-tune tweaks seem to be one of his strong suits.

The conclusion here is that anything that KF built probably sounds better than anything that Callaham built...

Steve Ahola

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From: Trace (voodooamps@aol.com)
Date: 5/18/2000 5:35 PM
Subject: Re: Wreckspress

Not that he is some "god-like figure" but that the fine-tune tweaks seem to be one of his strong suits.

Fine tuning any circuit is what makes a great tech (in my opinion of course). We've all seen some pretty poor sounding amps come across our benches! (ha, ha) With a little tweak here and a little tweak there...they sound God like!

Keep on tweakin'!
Trace

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From: rob
Date: 5/16/2000 11:55 PM
Subject: Re: Wreckspress

Mook, did Ken mention any thing about plate voltage, as I said as far back as 94 he's said 320. I do know for sure that MM has made o/ts for Ken. Pacific never returned my calls. I have Hammond make my p/ts & o/ts for me
Rob

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From: Trace (voodooamps@aol.com)
Date: 5/17/2000 3:18 AM
Subject: Re: Wreckspress

Ken also went on to say he used a number of different trannies (PT and OT) on all his Express amps.

I've heard that. It would stand to reason that there were variations on the design if there were different trannies used.

Seems like the OT needs to compliment the other "pieces" in the puzzle, and vice-versa.

Lots of times when you swap out an OT you have to tweak some values around to find the sweet spot. Same holds true for PT's...if the voltage was 400V and now it's 450V you'll notice more high end that before which of course may send you back to the tweaking board!! (ha, ha)

Trace

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From: rob
Date: 5/16/2000 11:48 PM
Subject: Re: Wreckspress

Trace, I have talked to Ken his P/T and O/Ts are custome made. He went into discussion about lamination make up and even told me what mdl has what material for the core of his o/ts. I will tell you that the lamination material is used by most transformer mfg. still today and as far back to the late 50's. What he didn't tell me was how the where wound. Thats the secret. Thats where limited band width come into play. That is the whole secret to o/ts how its wound not plastic bobins or stick wound but how the primary and the secondary layers are wound the amount of interleaving and how many layers it may or may not have.

There is no magic bullet to o/ts you have to have the right specs and the right winding of the primary and secondary to get "super fantastic output o/t that nobody else has!!" My question "How did you come up with it?" We pulled the old ones apart and looked how they are wound. If you wanted a particular o/t but wanted higher or lower wattage find the mfg and ask them to make some up for you to your specs but using that Magic o/t as the model for the winding. You will have to be prepared to make a sizable investment as most have minume orders. We can reverse engineer any thing it just depends on how much you want to spend! Oops politically correct term now is "engenerring influenced"

Hope this helps,

Rob

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From: rob
Date: 5/17/2000 12:10 AM
Subject: Re: Wreckspress

Hi all, just a couple of quick things:

1 Thanks Steve for the great job with schematics!!!

2 Of all us express builders here how many are building this on open back caps and who on closed back? This will greatly affect the tweaking off the circuit. Open backs will need more bottom end larger cap values .001---.002 and closed backs smaller values so they don't mud out. I think this might solve some off the tweaking problems if we know what each others doing or working with. Theres alot of info here but we might be able to disregard some off it if it pertains to open back cab and your working on tweaking it for your fav 4*12.

I'm using a Marshall 4*12.

Hope fully this will speed the tweaking process up for all of us.

On your marks, Go!!!!

Have fun

Rob

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From: peter

Date: 5/18/2000 5:43 PM

Subject: Re: Wreckspress

I agree, open/closed will make a big difference. i have been using mine with a marshall 4x10 (closed). The 0.002uF/150kohms coupling network is in my view the part of the circuit that affects the tone the most, and at the moment those particular values sound good to me.

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From: Steve A. (steve_ahola@yahoo.com)

Date: 5/19/2000 1:45 AM

Subject: Re: Wreckspress

Peter:

If you care to post the details of your amp here (or email them to me privately), I will draw them up for our growing collection of DIY clones. If you could include the voltages throughout your amp that would be even better.

Thanks!

Steve Ahola

P.S. In addition to the open/closed speaker question (and also 4-10's vs 2 or 4-12's) I think that the choice of pickups is important, too: single coils or humbuckers, vintage-style or high output...

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From: Mook (mookie2112@aol.com)

Date: 5/12/2000 4:04 PM

Subject: Re: Wreckspress

Actually, I'm working on that now.

Here are a few quickies:

Callaham has alot of filtering, whereas the bruno does not. Supprisingly, the bruno is quieter.

The Callaham uses 99% carbon films and 1% ceramic. The Bruno uses an "equal" (and seemingly strategic) placement of metal oxide, carbon film, carbon comp, and ceramic. The Bruno uses carbon comp for plates.

The Cally uses Sprague atoms for filters and OD 715s for signal, and Cornell Doubiler (sp?) as bypass caps.

The Bruno uses Sprague atoms for filters (however the 1st filter is LCR) and OD 715s for signal. The bypass caps are Sprague, too.

Both use Proprietary trannies.

Both have very neat wiring.

Mook

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From: JAY

Date: 5/12/2000 10:15 PM

Subject: Re: Wreckspress

What about that 50p EQ cap, I noted that you (Mook) used that in your clone on the "homebrewsite,

And it seems like you really are into this type of amp-design, and seems to have some valuable info on these amp designs so Can I asume that this is a correct value for at least one Express version?

OR??

I mean someone claimed on the "wrecknotz" that KF corrected the value to a 500p and 250k pot

,
or am I wrong?

JAY

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From: BWilliamson (underdog@discover-net.net)

Date: 5/12/2000 11:46 PM

Subject: Re: Wreckspress

as I'm remembering, one of the in the know folks mentioned the 50p--1M for the treble. We went with it because of KF suppose super knowledge of Vox amps. I believe most have changed it to 500pf per original schematic since most had problems with amp being too bright. Try both the 250k and 1m, 1m suppose to knock some more highs off.

bw

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From: Steve A. (steve_ahola@yahoo.com)

Date: 5/13/2000 9:37 PM

Subject: New 'Wreck drawings uploaded...

Jay:

After reviewing all of my notes I came up with two new drawings for the Trainwreck Express:

http://www.ampage.org/blueguitar/wreck_1.gif

http://www.ampage.org/blueguitar/wreck_2.gif

The first one is largely based on the information from the "Mystery Man" (who has looked at a few real 'Wrecks). So the first schematic should be close to what Ken Fischer actually built. 500pF treble cap/250kA treble pot and a .002uF cc/150k grid load resistor between the second and third stages. It was suggested that KF had used 715P's for the early amps and 418P's for the later amps.

The second schematic is evidently based on clones built by Callahan. 50pF treble cap/1M treble pot and a .001uF cc/56k grid load resistor between the second and third stages. The different values in each design are colored red to make them easier to see. (The bias supply circuit is in blue since it is just a typical Fender design using a PT with a separate bias tap.)

Some of the values in the power output section are tentative since they were never spelled out. Like the grid stoppers going into the EL34 power tubes; I had originally drawn them in as 1k5 but I changed them to the more common Marshall value of 5k6. While KF evidently used a 47k NFB resistor, I'm not sure whether Callahan used the same value. And likewise for the 10k resistor from the PI cathodes to the presence control.

So if anyone can fill in some of these details it would be appreciated. And if someone has built a 'wreck clone that works really well, post the details here and I will draw it up.

--Thanks!

Steve Ahola

P.S. Here are the PDF versions:

http://www.ampage.org/blueguitar/wreck_1.pdf

http://www.ampage.org/blueguitar/wreck_2.pdf

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From: JAY

Date: 5/13/2000 10:14 PM

Subject: Re: New 'Wreck drawings uploaded...

Great Steve! And also thanks to the "Mystery man" and others who have contributed with this info.

JAY

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From: JAY

Date: 5/15/2000 1:42 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Just Built the Wreck, and found it very noisy especially when playing around with the 56k-150k resistor, when using 150k/,002 it was very noisy but great gain, 56k/,003 tamed it a bit and less high frequency noise. the high-end spectrum is no problem with me,kind of like it but the hissy noise is annoying.tried alot of different grounding paths but the noise dont want to go away,especially when i turn the volume down on the guitar then the the amp turn into a FM radio kind of, skipped the 820r resistor and then it was a little better, the noise seems to be especially present around the ,002/150k junction and also the around the2,7k grid resistor. Any comments or suggestions?

J

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From: Steve A. (steve_ahola@yahoo.com)

Date: 5/15/2000 4:59 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Jay:

What sort of voltages are you running to the plates? I've received a lot of email on these amps since you started this thread and one person told me that should have maybe 325vdc going to the EL34 plates. I have recompiled the drawings (5 so far) and here they are:

http://www.ampage.org/blueguitar/wreck_0.pdf

http://www.ampage.org/blueguitar/wreck_1.pdf

http://www.ampage.org/blueguitar/wreck_1a.pdf

http://www.ampage.org/blueguitar/wreck_2.pdf

http://www.ampage.org/blueguitar/wreck_3.pdf

-- or --

http://www.ampage.org/blueguitar/wreck_0.gif

http://www.ampage.org/blueguitar/wreck_1.gif

http://www.ampage.org/blueguitar/wreck_1a.gif

http://www.ampage.org/blueguitar/wreck_2.gif

http://www.ampage.org/blueguitar/wreck_3.gif

You might also want to check your lead dress (since you are picking up radio stations). To determine where the noise is coming from you might try muting the grids of each tube stage, one at a time.

--Good luck!

Steve Ahola

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From: JAY

Date: 5/15/2000 11:12 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

I got 385v on the plates right now (old 50w marshall PT), I will check out your new drawings, thanks again Steve and all contributors, and of course Ken Fisher for such a cool amp design, by the way steve the layout of the amp is very much the same as some blackface bassmans bass channel with one extra Triode half after the typical blackface pre-amp, change some values there and voila, even the .1 PI input cap is there!

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From: rob

Date: 5/15/2000 9:34 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Jay put a 220 ohm 25 watt aluminum resistor(the ones with the fins on them) right before the first filter cap: diodes, resistor 220ohms and first filtes cap. That will drop your voltage down for the whole amp. This will get you alot closer to the wrecks real voltages. If you don't like it take the resitor out and your back to square one.

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From: Steve A. (steve_ahola@yahoo.com)

Date: 5/16/2000 1:42 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Rob:

Thanks for the suggestion! I suppose that 220 ohms is about as high as you want to go before the plates- right? (Much higher than that and it will become "squishy" as the voltage drop would increase even more with the load, I believe.) Maybe someone could post the highest value resistor in that position which they think would work with a 50W amp and a 100W amp... just for future reference.

If the 220 ohm/25W resistor doesn't work for Jay he could pull it out and try increasing the value of the other PS resistors. IMHO you can drop the B+ voltage going to the PI and preamp tubes fairly well with higher-valued PS resistors since the current drawn by the 12AX7's is only a small fraction of what the output tubes are drawing. The B+ voltages going to the power tubes is probably most critical when you have the amp really cranked up (when the power tube distortion becomes more prominent than the preamp tube distortion). But that is just my own observation...

Another way to get all of the voltages down to the proper levels would be to add a reverse

biased power zener to the PT CT. In many amps the results really don't justify the hassle of adding the power zener but apparently the voltages on the Express are very critical to its sound...

--Thanks!

Steve Ahola

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From: rob

Date: 5/16/2000 4:14 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

I only recomed this with diodes I have used it with a tube rec. and it did not get mushy. If the voltage of the first pre amp tube drops to low it will get mushy or even worse odd harmonics that sound topendy but brittle. The 220 resistor should get him in the ball park for an amp thats running 375-395v. Something in the range off 600 ohms for about 480v.

Don't forget the thermal grease this resistor will get hot!!!. I would only recommend this as a temporey solution until you could find or have made proper p/t for this amp.

Maybe I should put a kit together p/t and o/ts and all the parts and you do the soldering??? Or just sell the p/ts.??

Have fun,

Rob

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From: rob

Date: 5/16/2000 4:30 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Steve, In regards to dropping the power supply resistors to the pre amp this will warm things up BUT will not solve the power amp problem. As i said befor the Express is to give you the dialed down Marshall effect that means that the output trans is not being used to its maximum range. If we take a 100 watt Marshall drop the voltage with a variac so we are only putting out 65 watts flat out nob's dimed .We have not exceded the bandwith off the o/t theo/t does not exhibit any off the typical charistics off an amp been run flat out. There is no saturation or the top end been slightly rolled off. We still have full band width. Thats why the first EVH album has the clangy chime in the top end.(Yes I know all about records and mastering but you have to get a good sound to start with) Full bandwidth. Grab a Marshall Variac it down to 90 volts and you'll here it. I don't recommend Variacs except for testing or bench work. Give it a try spend the money and get the proper p/t to give the correct voltages you need. A bit long winded but hopefully I explained why just dropping the pre amp will not give the express sound.

Rob

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From: JAY

Date: 5/16/2000 12:54 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Thanks Rob for all the details!

I am curious though, some info says that the Express has around 410v supplied from the PT, is this wrong or did perhaps KF use different PT's for different amps?

JAY

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From: rob

Date: 5/16/2000 11:26 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Jay, as far back as nov 94 Guitar player I think it is Ken Fischer said his Express ran at 320 volts on the plates. The statment was in the form of what was the best voltage to run EL34s at. The participants where Andy Marshall THD I belive and Harry Kalob and Ken Fisher as usual Ken had a diffrent opinion. The othe two said 480v dc.

Where the 400- 420 volts come from I don't know, possibly that some of the info has come from modified marshalls or people thinking that a marshall or deluxe power supply would be correct.

With any amp voltages are critical. The simpler the amp the more critical. The express is bleeding edge!!! (computer speak)

Hope this helps,

Rob

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From: Joel (joel_clark@css.mot.com)

Date: 5/17/2000 6:14 PM

Subject: I didn't see this in that magazine.

Rob,

I looked through the nov 94 issue and I could not find this article. Are you sure this is the issue that it was in??

Thanks

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From: JAY
Date: 5/17/2000 7:43 PM
Subject: Re: I didn't see this in that magazine.

It is another issue or maybe even in a Guitar world!, I also did see this article.I did try to relocate my mag but couldn't find it, I let you know if I do.
JAY

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From: rob
Date: 5/17/2000 11:36 PM
Subject: Re: I didn't see this in that magazine.

Joel, sorry no it wasn't. June 92 Guitar Player had a review of the Express, unfortunately this does not have the plate voltage. That info came from a Dave Funk article in Vintage Guitar Vacuum tubes part VI.

VG did not date the pages but part VII has a date of 94. These were a continuing series of articles that VG was doing at the time. The article is on pages 82 & 83. There was a reference to a previous article in Nov 93 so it could be in the first couple of months of 94. I cut the articles out to save space and easier reference so I don't know the month. I checked Funks book and it was not in there. There are references to 'wrecks, but I only scanned the book quickly. The voltage is not a secret I have seen reference to the voltage in other articles. I specifically remember one that Ken gave the voltages, but can't put my fingers on it right now.

I'm sorry if I misled you that was never the intention. Unfortunately my reference stuff goes back to the mid 70's, some of the first Guitar Player mags and a pile of Vintage Guitar articles. The VG articles are cut out of the magazine and filed away for reference.

Rob

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[EXPAND](#)

From: Mook (mookie2112@aol.com)
Date: 5/16/2000 2:24 PM
Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Hey Rob (and I know who you are!),

are you saying you *don't* want the OT to saturate? If I understand correctly, in order to keep the low and high end, you *don't* want the OT to saturate. Correct?

Mook

[PREVIOUS](#)

[EXPAND](#)

From: JAY
Date: 5/16/2000 10:10 PM
Subject: Wreck clone.

What would be the best way to attach a master volume to this circuit, I really don't want to break the ,1 connection into the PI, I am thinking of something after the PI, in the style that KEN Fisher described in the old GT books, I understand that this is not a safe way to do it but I have tried it before and it works pretty good I think, I did see some where that you could make this type of master a little more safe ? some value resistor across the dual pot or some thing ,? anyone? I don't want to do the whole "Dual cap" thing, it take up to much space on the board.

[PREVIOUS](#)

[EXPAND](#)

From: rob
Date: 5/16/2000 10:35 PM
Subject: Re: Wreck clone.

Jay, the dual cap is the safest one to use. I definatly! don't recommend just using the dual pot to replace the 220k resistors.

Rob

[PREVIOUS](#)

[EXPAND](#)

From: rob
Date: 5/16/2000 11:11 PM
Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Mook, the easiest way for me to explaine this is have a square box with a triangle on top of the box,

Any thing in the square box is full band width for example o/t specs 50watts at 60hz-20k whene you cross over the line into the triangle the top or treble and bass frequenzies are diminished. Limiting the band width. In guitar speak this would equate to the top rolling off and compressing. The compression is actually due to power supply sag. The bass frequencies are also reduced but we hear the top end being rolled off first. Just the price you pay for being human! Most guitar players like to hang out about 1/2 way up into the triangle. When you hit the peak the transformer is engenneringly speaking saturated it can not function as a o/t as the electro magnetics of the stack or core are saturated .The o/t can do nothing at this point except burn the wire and self destuct. This happens more with small o/ts like in tweed champs and

valco style amps.If your luckey you might save the o/t if you shut it down quick enough. In most cases it's toast ,litrally. Large o/ts with large cores or stacks as EE refer to them as will not have this problem.

The EVH sound from a dialed down Marshall is still in the box it never enters the triangle or just creeps over BUT the power amp is running flat out WITH full band width. Can you say ring or chime on the top end. This can be a double edged sord as if you have a brite amp you might want some off that band width narrowed down to tame the ring/ brittle harshness. Can you say 135 watt twin with ultra liniear taps

The saturation you are talking about is actually limited band width. Say saturation to an EE and he will start crying if it was his o/t design.

The term has 2 diffrent meanings to 2 diffrent people. Describing sounds with words is very hard and the rest of the world does not speak "guitar speak"

Like Eddies brown sound?? 20years ago if you said "brown sound" somebody would look at you as What planet did you get off!!'

Belive me I've spent 5 months learning to speck EE to the folks at Hammond. All I can say is nice people and they will go the extra mile to help you out. There is a formula for working out saturation of the o/t core when my contact gets back from holidays I'll ask him for it. I think you need a few parameters of the specific transformer for it to work. Hopefully this has made the term saturation a little clearer.

Goodnight Kevin where ever you are!!!

Rob

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)

Date: 5/17/2000 2:16 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Mook:

Glad you stopped by since I had a question for you. After talking to KF you mentioned that he had said (in reference to the PI input cap) that 0.1uF's were used throughout. For some reason I had thought that meant "throughout all of the years he had built the amps", but I guess it is more likely that he meant that all 4 coupling caps "throughout the PI" are 0.1uF...

Your thoughts on this would be appreciated.

--Thanks!

Steve Ahola

[PREVIOUS](#)

[EXPAND](#)

From: Mook (mookie2112@aol.com)

Date: 5/17/2000 12:23 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

KF meant ONLY the caps in the PI section were .1uF

Mook

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)

Date: 5/18/2000 12:43 AM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

Mook:

KF meant ONLY the caps in the PI section were .1uF

So would that be two caps or four caps? The two coupling caps going to the output tubes are connected to the plates of the PI so would you (or KF) consider them to be part of the PI?

Figuring these schematics out based on a few clues here and there is almost like detective work... with a healthy dose of symbolic logic thrown in for good measure. I would think that if KF was referring to just the two caps on the input side of the PI he would have used the word "both"... But I may be attaching too much importance to your choice of words in your November 12th post (the 5:24pm GMT one). < grin >

FWIW one of the DIY cloners (wreck_4) used the 0.1uF coupling caps at the output of the PI and he has been very impressed with the results. Other people have mentioned their clones being too bright so maybe using 0.1uF coupling caps on the output of the PI would help with that.

Steve Ahola

P.S. So can you tell us more about the clone you built? Thanks!

[PREVIOUS](#)

[EXPAND](#)

From: peter

Date: 5/15/2000 4:30 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

This weekend I made some changes to my clone and

now it resembles your version 1 fairly closely:
500p treble cap, 250k treble pot,
0.002/150k between stages 2 and 3, 10k
in PI...
Plate voltage is sorta high (430 volts), I am
waiting for a transformer to arrive to try
a lower voltage....
anyway, so far this is the best sounding of
all the variations I have tried. I might
be able to comment in more detail after I try it
at band practice...

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)

Date: 5/16/2000 9:23 AM

Subject: Here's another drawing...

Along with the wreck_3 drawings, this one is *not* anything that KF or Callahan built, but a variation on the earlier Espresso schematic that reportedly works very well. To deal with the excessive brightness mentioned by many people here, the second stage uses a 150k plate resistor bypassed with a .002uF or .003uF cap (he also used a .001uF cap and 56k resistor to ground between the 2nd and 3rd stage, along with a 100k NFB resistor and a grid stopper on the first stage):

http://www.ampage.org/blueguitar/wreck_4.gif

-- or --

http://www.ampage.org/blueguitar/wreck_4.pdf

--Good luck!

Steve Ahola

P.S. If anybody else has tweaked the Express designs to make an amp that works great for you, post the details here or e-mail them to me and I'll draw them up and add them to this collection. (Extra points will be given for detailed voltage measurements!)

[PREVIOUS](#)

[EXPAND](#)

From: DavidB (v846italy@aol.com)
Date: 5/16/2000 10:22 AM
Subject: Re: Here's another drawing...

I was wondering what the plate voltage is on the power tubes in the uh Espresso? I built a homebrew Marshall that runs 380v @ around 36ma, is that close?

regards db

[PREVIOUS](#)

[EXPAND](#)

From: Trace (voodooamps@aol.com)
Date: 5/16/2000 1:20 PM
Subject: Re: Here's another drawing...

To deal with the excessive brightness mentioned by many people here, the second stage uses a 150k plate resistor bypassed with a .002uF or .003uF cap

First off let me say I haven't built this beast so I'm not talking from experience. If the plate voltage is around 350'ish then I would think that would solve the brightness problem for the most part but maybe it doesn't.

I noticed all the schematics except the versions A1 and A1A there is a .001uF coupling cap going into the grid of the 3rd stage. To me it looks like that would sound kind of bright/harsh...maybe try a .022uF?

Trace

[PREVIOUS](#)

[EXPAND](#)

From: BWilliamson (underdog@discover-net.net)
Date: 5/16/2000 9:19 PM
Subject: Re: Here's another drawing...

I noticed all the schematics except the versions A1 and A1A there is a .001uF coupling cap going into the grid of the 3rd stage. To me it looks like that would sound kind of bright/harsh...maybe try a .022uF?

It was reported that the bass got way flubby with the rest of the circuit with the .02.

Bassman Bass Channel musings:

With that said, I built the preamp circuit into my Bassman's Bass channel with good results. I was just looking for a hotter lead type channel to compliment the Normal channel. And I've ended up with a .02 in that position, figure the .001 into the driver is shaving so much off that it

isn't causing a problem with mine.

I did play with a couple of different caps and here's the results. I put a 27K to a 100K pot to ground to twist on. What I found was, with the lower setting the tone was very flat and blah. As the resistance increased I would run across a hump, where all of a sudden the amp would open up. As it increased from there the tone would thicken and get very rich sounding. But after a short time a harshness would invade the tone that I didn't like.

.0015 Polyester Cap/36K-38K

The resistance reading are where I tended to end up when I was twisting on the pot. This was the brightest of the three sizes I tried. Not painfully bright--best I could say very focused. I wouldn't personally want this one.

.0025 Polyester/54K-62K

Same deal, both resistance readings are about where I stopped twisting. The tone here seemed better rounded to lead and rhythm playing. Very thick sounding, full and rich but still focused.

.02 Polyester/6.8k--9k----Had to drop the 27K to a 1K inline with the pot

Same resistance setup as above--tone very similar to the .0025. A little beefier, but gainwise very similar. Really can't articulate much of a difference. Going to have to try these again, I honestly didn't hear a dramatic difference between the two. Most likely but I'm guessing here, I'm choking so much going into the PI with the .001 in that position makes what going on earlier kinda moot after a certain point. I'm sure there is something going on--I couldn't really hear it.

Note, this morning I played with the pot again with fresh ears. Ended up on a 5.81k as the lowest reading after the hump.

I would highly recommend trying the pots in any of your clones. Really interested to see where it falls. My reading might not be typical since the voltages I'm running are WAY high compared to a real clone.

After all said and done, one might want to set that value with a resistor that is just past the hump, and hook to a pot on the front panel for easily dialing of tones. Pot would be pretty small ie. 5K., depending on the range you find desirable.

bw

[PREVIOUS](#)

[EXPAND](#)

From: JAY
Date: 5/16/2000 10:00 PM
Subject: Re: Here's another drawing...

Yeea, I have also a pot in there for the same purpose, I have a 1k5 on to a 220k pot to ground, it is very useful to dial in certain sounds.

Jay

[PREVIOUS](#)

[EXPAND](#)

From: jason (bonej@halifax.hcc.cc.nc.us)
Date: 5/16/2000 10:56 PM
Subject: Re: Here's another drawing...

JAY,

So is this amp like a BF Fender with a superb clean or more crunchy like a marshall? All this talk has my curiosity up and I'm feeling a burn to build this thing.

jason

[PREVIOUS](#)

[EXPAND](#)

From: JAY
Date: 5/17/2000 12:55 AM
Subject: Re: Here's another drawing...

I would say it sounds a lot like a mix in between a Vox ac30 and a variac loaded 50w marshallplexi run on aprox 90v,not really Fendery, as soon as you open up the volume knob it kind of jumps out pretty early,sort of the same syndrome as the master vol on a Mesa boogie MK2,

It has a very articulate sound indeed, and it also seems very picky with what kind of pedals you put in front of it, some pedals that sounds good in other amps sounds really terrible in front of this one , I will try to put in a grid resistor and see if that cures it maybe.

JAY

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)
Date: 5/17/2000 6:15 AM
Subject: Killer mod coming...

I haven't drawn this up yet but someone was just telling me about a killer Express clone he has built using 4 EL84's (with the November 2 + 2 power amp section from the AX84 site).

Steve Ahola

[PREVIOUS](#)

[EXPAND](#)

From: jason (bonej@halifax.hcc.cc.nc.us)

Date: 5/17/2000 12:57 PM

Subject: Re: Killer mod coming...

Steve,

I'd love to see this. I want to build an express but have no desire for a 50 watt amp and was wanting to use EL84's. Sounds good to me...bring it on.

jason

[PREVIOUS](#)

[EXPAND](#)

From: rob

Date: 5/17/2000 11:39 PM

Subject: Re: Killer mod coming...

Jason, for the record the Express is 36 watts with EL34s and 22 watts with 6V6s
Hope this helps

Rob

[PREVIOUS](#)

[EXPAND](#)

From: JAY

Date: 5/17/2000 11:51 PM

Subject: Re: Killer mod coming...

I just got some info from E.J at Mystique amps, he told me that the Trainwreck Rocket had 2 secondary taps on the PT, one that put out 315v on the plates and one that supplied 370v.

JAY

[PREVIOUS](#)

[EXPAND](#)

From: rob

Date: 5/18/2000 3:45 AM

Subject: Re: Killer mod coming...

Jay, that info is in guitar player April 94 page 132. It also is the artical where ther talking about

plate voltages on the el34 tubes. As soon as you mentioned the Rocket I new where that artical was.

Rob

[PREVIOUS](#)

[EXPAND](#)

From: Joel (joel_clark@css.mot.com)

Date: 5/18/2000 4:41 PM

Subject: Re: Killer mod coming...

Jay,

Which supply went to the preamp and which one to the power amp?

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)

Date: 5/19/2000 2:10 AM

Subject: Re: The Killer mod... is HERE!

Joel:

My impression (which could be wrong!) was that you would switch between the two Hi-V voltage taps depending on whether you were using EL34's or 6V6's. At the 315v tap, all of the power and preamp voltages would be scaled down ~15% compared to 370v tap. But that is assuming that the relationship would be linear (if not let me know!)

--Thanks!

Steve Ahola

P.S. Speaking of the Killer Mod mentioned in the title here, the details are as follows: our friend basically used the Trainwrecked Espresso schematic (50pF/1M .001uF/56k) and ran that preamp into the AX84 November 2 + 2 power amp/power supply. If I learn of any changes in values from those schematics I will post them here. He is running 205v & 209v right on the plates of the first two stages and 190v on the plates of the PI (the B+ to the EL84's biased at -12.5v- 35mA per pair- is around 300v).

BTW that combination is supposed to deliver the sound of Dicky Betts playing his 57 Gold Top LP through a Marshall on "One Way Out" from the Fillmore East album... only with our friend playing a strat! Sounds good enough to me...

[PREVIOUS](#)

[EXPAND](#)

From: JAY
Date: 5/19/2000 11:20 AM
Subject: Re: The Killer mod... is HERE!

Steve,

The different voltages earlier mentioned 315 and 370 was applied in the ^Wreck Rocket model, and that one has EL84's in the power amp, I don't think the Express had this option but I am not 100% sure.

J

[PREVIOUS](#)

[EXPAND](#)

From: jason (bonej@halifax.hcc.cc.nc.us)
Date: 5/17/2000 11:56 PM
Subject: Re: Killer mod coming...

22 watts with 6V6s

rob,

Now we're talkin'. I love 6V6's. Thanks for the info.

jason

[PREVIOUS](#)

[EXPAND](#)

From: BWilliamson (underdog@discover-net.net)
Date: 5/19/2000 10:13 AM
Subject: Another Variation

Added the Express preamp to my 66' Bassman's Bass channel. My voltages wouldn't even be close to a real Wreck so I wasn't expecting anything similiar in tone. To be honest I was looking for a notch or two up from the Normal channel. I'm quite happy so far. I did go with a .02/5.8K cap/resistor combination after the second stage. There is alot more gain available.

full schem is located here:

<http://members.xoom.com/BoxerAmps/schemstash/>

look at the rebuild.gif

A e-mail I sent out with a quick description

Buttoned up the Bassman the other day. Uploaded the lastest schem. I put on the voltages I had

with the Svet 6L6's and the 1.5K cathode resistors on the normal channels preamp. Next time I have it open I'll get the new voltage readings.

Results:

Guitar--88' Stat with a Anderson SL2 stacked humbucker (medium output)
Cab--Soldano Front loaded 2X12--Vintage 30's at a 8 ohm load

E.C. Normal Wall Voltage: 119 to 121
Power Tubes: Golden Dragon KT-66
Driver Tube: Sylvania 12AT7

Normal Channel:

Preamp Tube: RCA 12AX7A

I did a side by side wth my 66' Super reverb's normal channel and it's pretty close. The Super a bit warmer and breaks up earlier on the dial. But overall the tone is really quite close. I'm going with the different speakers and cab configurations for most of the tone differnece. But I'm pretty happy. I've been playing with pickup height again and might go back with the 1.5 cathodes to see what's going on. Going to wait till the Kinneman shows up to see what that does.

Bass Channel:

First Stage: JJ Tesla

2nd and 3rd Stage: Jolita Chinease 12AX7

I ended up with a 5.8K to ground. I lowered the pot to a 25KL and played with it some more and was able to get a more accurate tuning. I found the hump to even lower than I first experimented with the 100K pot. I ended kinda liking a high 4K+ reading, but the 5.8K was the closest value I had. Tonally, ended up with a very warm OD channel. Was looking to get it just a notch up from the normal channel so it didn't get to crazy and buzzy. I kinda pleased with myself so far--see how it holds out in the long run.

This Bassman started off life as a AB165. I moved the Volume controls to the 2 input to make room for mid controls on both channels.

hope this might help somebody

bw

[PREVIOUS](#)

[EXPAND](#)

From: peter

Date: 5/19/2000 3:47 PM

Subject: Re: Another Variation

Doesn't that 0.02/5.8k cap/resistor kill a lot of gain, since it is driven by the 100k of the previous stage? I'm

kinda surprized to see such a small
R there...

[PREVIOUS](#)

[EXPAND](#)

From: BWilliamson (underdog@discover-net.net)

Date: 5/19/2000 9:06 PM

Subject: Re: Another Variation

*Doesn't that 0.02/5.8k cap/resistor kill
a lot of gain*

There is alot more gain on tap if needed/wanted. I think I posted earlier some findings I had with diffetrent R/C combinations and what I thought were the sweet spots. And with my voltages these might not apply to anybody but me, and my ears.

27K to 100K pot to ground

.0015 Polyester Cap/36K-38K

.0025 Polyester/54K-62K

.02 Polyester/6.8k--9k----Had to drop the 27K to a 1K inline with the pot

with the last one, I dropped in a 25K pot to get some more accurate readings. Found I could even get lower than the 6.8K. The hump was located in the high 3K range.

A real clone is in the works for me, and I will stoke that one up quite a but. Just wasn't looking for the all out tone for this application.

bw

[PREVIOUS](#)

[EXPAND](#)

From: peter

Date: 5/15/2000 2:25 PM

Subject: Re: New 'Wreck drawings uploaded...Wreck clone hissy.

if there's a lot fo hiss try changing the
first stage plate resistor to metal film
if it isn't already. carbon there will
make a lot of noise.

[PREVIOUS](#)

[EXPAND](#)

From: Mark Abbott (abbottmark@hotmail.com)

Date: 5/18/2000 8:56 AM

Subject: Steve, Why all the different Wreck clones?

Dear Steve

I am a little curious why there are so many variations upon a theme. The tone control stages are the ones that puzzle me, one amp uses 500pF and a 250K treble pot and another uses a 50pF cap and a 1 treble Meg pot. Just a guess but wouldn't using a larger treble pot offer more control over the excessive top end?

As always Steve I love your site.

Yours Sincerely

Mark.

[PREVIOUS](#)

[EXPAND](#)

From: Steve A. (steve_ahola@yahoo.com)

Date: 5/18/2000 11:18 AM

Subject: Re: Steve, Why all the different Wreck clones?

Mark:

Why so many variations...?

There have been many conflicting reports about what parts were actually used in the Trainwreck Express so I drew up each group of reports as a separate drawing. Perhaps one of those drawing would correspond to the Callehan clones...?

The last two drawings are based on actual clones built by your fellow AMPAGERS. I'm actually more excited about those designs since they are "real amps", rather than something that a friend of a friend thought he might have seen when sneaking a peek inside a real 'wreck. < grin > Another point is that the OT that KF uses is proprietary and evidently very critical to the sound of his amps. To use more common iron would require fine-tuning of the other components, which has been what these DIY-ers have been doing. Hopefully I'll get more details as to actual voltages throughout their amps along with the specs or part numbers of the transformers they have used.

I've compiled the latest versions of all 6 drawings in PDF format:

<http://www.ampage.org/blueguitar/wreckpdf.zip>

As I get more corrections and information I will be updating that file (probably on a daily

basis— at least for awhile).

--Thanks!

Steve Ahola

[PREVIOUS](#)

[EXPAND](#)

From: Mark Abbott (abbottmark@hotmail.com)

Date: 5/19/2000 9:12 AM

Subject: Re: Steve, Why all the different Wreck clones?

Dear Steve

I have noticed that all the amps shown have solid state rectifiers (not that its a bad thing), but I do recall Ken Fisher mentioning some remark about using Mullard GZ34's, (or nothing), in one of his amps.

Has anyone built an Express with a valve rectifier?

Thanks for your assistance as always.

Yours Sincerely

Mark

[PREVIOUS](#)

[EXPAND](#)

From: BWilliamson (underdog@discover-net.net)

Date: 5/19/2000 9:54 AM

Subject: Re: Steve, Why all the different Wreck clones?

but I do recall Ken Fisher mentioning some remark about using Mullard GZ34's, (or nothing), in one of his amps.

I'm pretty sure that was the Rocket, or maybe the Liverpool. Okay, I have no idea which one, but from all reports the Express is SSRectified. But I rememeber seeing something about that also, he has a standing order from some tube supply place for all Mullard GZ34's. Suppose to be the rectifier tube he likes in that amp.

Just grabbed the Pittman book, instead of retyping it's the Liverpool Rocket with the GZ34

bw

[PREVIOUS](#)

[EXPAND](#)

From: SpeedRacer (Joe@ObsoleteElectronics.com)

Date: 5/19/2000 5:55 PM

Subject: Re: Steve, Why all the different Wreck clones?

>>But I rememeber seeing something about that also, he has a standing order from some tube supply place for all Mullard GZ34's. <<

I was talking to Mike Mathews once on my lunch hour and I asked him if he ever got in Mullard GZ34's. He told me that KF had given a standing order that he'd buy every single one that came in.. must be nice to have that kinda jack! ;-)

[PREVIOUS](#)

[EXPAND](#)

From: peter

Date: 5/19/2000 3:37 PM

Subject: Re: Steve, Why all the different Wreck clones?

my express clone has a tube rectifier.
hard to say how that is affecting the
sound though, since I haven't tried it with SS.

[PREVIOUS](#)

[EXPAND](#)

From: Mark Abbott (abootmark@hotmail.com)

Date: 5/20/2000 1:23 AM

Subject: Different Wreck models.

Has anyone seen any circuits of other wreck models, stuff like the Rocket and the Kendrick built Climax?

Thanks

Mark.