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From: momitch (firejoke@aol.com)
Date: 1/22/2001 4:55 AM
Subject: Komet Questions

Is the new Komet amp similar in topology to the Trainwreck Express, i.e. gain stage > tone stack > gain stage > gain stage > PI? Also, I'd love to know the pot and cap values in the tone stack. I understand if this is "secret" info that cannot be revealed. Thanks in advance!

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From: Daver (bluefire@voyager.net)
Date: 1/23/2001 1:09 AM
Subject: Re: Komet Questions

I'd also like to know more. Like what part of the amp does the fast/gradual switch affect?
Daver

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From: Rebel420 (giorfida@drifteramps.com)
Date: 1/23/2001 4:34 AM
Subject: Re: Komet Questions

I would bet dimes to dollars that the fast/gradual switch is doing a tube/solid state rectifier switch, or throwing a resistor in to give some sag...

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From: momitch (firejoke@aol.com)
Date: 1/23/2001 5:46 AM
Subject: Re: Komet Questions

I wonder if the fast/gradual switch might change the amount of feedback to the PI? I think the only rectifier in the amp is the 5AR4. I noticed in the pictures at the site that the bass pot seems to be a 250k with the wiper connected to the terminal that is not connected to the mid pot. This is a different type of connection as compared to the standard Fender wiring of the pots. How does this affect the function of this pot?

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From: Dave B. (the3burns@earthlink.net)
Date: 1/23/2001 8:41 AM
Subject: Re: Komet Questions

It looks like the fast gradural switch is located behind the first preamp tube. I'm guessing it's switching 1/2 12AX7 in parallel with the first stage via. a large resistance (100k)under the cathode of V2A.

Just my .02

DB

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From: Steve A. (steve_ahola@yahoo.com)
Date: 1/23/2001 9:06 AM
Subject: Re: Komet Questions

DB:

I'm guessing it's switching 1/2 12AX7 in parallel with the first stage via. a large resistance (100k)under the cathode of V2A.

Can spell this out for us in detail? Like exactly howit is wired up and where the 100k resistance fits in.

Thanks!

Steve Ahola

P.S. Even if that isn't the trick circuit used in the Komet it does sound interesting! (Just reading about it before, I thought that it had to do with the NFB, but we already know all about that— I would think that Ken had something else up his sleeve.)

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From: momitch (firejoke@aol.com)
Date: 1/23/2001 3:13 PM
Subject: Re: Komet Questions

Steve, what do you mean when you say "I thought it had to do with the NFB, but we already know all about that"? Are you saying that Ken has done something special with NFB circuits in past designs? If so, I'd love to know more about it. I heard the sound samples; the amp sounds

great, but I wasn't floored. I'd have to be completely floored to ever part with that much money.

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

Date: 1/24/2001 6:45 AM

Subject: Re: Komet Questions

Momitch:

I thought it had to do with the NFB, but we already know all about that...

There have been 15 zillion threads here on NFB... go into the archives and type in "NFB" to see what comes up.

AFAIK, with the original Trainwreck amps, Ken Fischer never did anything revolutionary with the NFB loop and presence control... he had his amps sounding really great without getting into some of the tricks mentioned here (like adding in a switched 100k pot to change the NFB resistance from maybe 2k2 or 5k6 to +100k). In any case, no one has mentioned anything particularly outstanding about his use of NFB.

I heard the sound samples; the amp sounds great, but I wasn't floored.

At least with the real Trainwrecks it is supposed to be a transcendental experience to play one... it isn't just how it sounds to a listener but how the amp responds to your own playing nuances.

I'd have to be completely floored to ever part with that much money.

So how much did you spend on your car/truck/SUV? 😊

Maybe you drive a clunker like me, but most people spend \$15k to \$40 for a set of wheels to get from Point A to Point B, and think that it is excessive/obsessive what I spend on my guitars and amps— it all has to do with one's priorities...

Still, if I was to blow \$3k on music equipment, it would go a lot further if I spent it on tranny's and other components rather than a single "store bought" amp...

Steve Ahola

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From: momitch (firejoke@aol.com)
Date: 1/23/2001 3:19 PM
Subject: The Fast/Gradual Switch

Now that I think about it, the standard design of a Trainwreck Express leaves half of a 12AX7 unused. If the Komet design mirrors that of the Express, then the earlier post about the fast/gradual switch adding another 12AX7 section to the preamp in some way really makes sense. On a separate note, a standard wiring of the bass pot in a Fender/Marshall style tone stack uses only 2 of the terminals: the wiper and the "low side". On the bass pot in the Komet the wiper is tied to the "high side" of the pot. How does this affect the performance of the pot compared to the "traditional" wiring?

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From: Dave B. (the3burns@earthlink.net)
Date: 1/23/2001 8:32 PM
Subject: Re: The Fast/Gradual Switch

OK,

Another way to do the fast/ gradual switch:

two 12ax7 stages each with own plateload, cathode load, & decoupling cap. Tie the grids together.

Next, DPDT switch: short both pairs of end contacts together.

The middle contact of one side of the switch goes to coupling cap V1A, The other middle contact is signal out.

Connect the other decoupling cap(of V1B) to one of the shorted end connections. (maybe add a 1 or 2 meg resistor to ground there also).

So in one position you have one gain stage out and in the other position you have both stages to signal out.

Plate and cathode loads remain the same. Tailor each triode to your liking.

Think it'll work?

DB

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From: Steve A. (steve_ahola@yahoo.com)
Date: 1/27/2001 5:14 AM
Subject: Re: The Fast/Gradual Switcheroo

momitch:

Now that I think about it, the standard design of a Trainwreck Express leaves half of a 12AX7 unused.

When the early cloners here complained about their amps being too harsh I figured that a good use of that extra triode would be a switchable cathode follower as in the Mesa Boogie Maverick (still my favorite amp that you can find at GC, etc.). The rhythm channel has a fat/bright(?) switch that toggles the connection to the BF style tone stack from the anode of V1a to the cathode of V1b. I figured that it would be a cool addition to the basic Express design...

So all of the guesses here have been wrong... maybe we can write them up on a list and see what is left. 😊

As for trying to build exact clones... I think that we should all borrow freely from whatever sources are available** in the creation of our own amps. If you expect it to sound exactly like X, Y or Z, you will probably be disappointed. But using some of these ideas as a starting point, you never know what you might end up with...

Leo Fender borrowed freely from the Western Electric circuit in developing some of the tweed amps; Jim Marshall borrowed freely from the 5F6A design in the creation of his amps. And Randall Smith borrowed freely from the BF Fender design in creating the Mesa Boogie Mark I. All copies to some extent, but all unique in their own right.

BTW can anyone explain how Fender came up with their BF amp design? The tone stack has similarities to their brownface amp, which itself has some similarities to what Premier and Magnatone was doing in the 50's...

As to the Fast/Gradual switch in the Komet, if it is just some stupid trick, the secret will get out sooner or later (like the Dumble 22M/.05uF local feedback loop). But if it is an integral part of the design, it would not be so easily copied.

How to build a Trainwreck or Komet:

...
...
...

Step 30: Have Ken Fischer fine-tune the amp. 😊

--Thanks!

Steve Ahola

** "whatever sources are available"

Many AMPAGERS have been coming up with neat tricks in their own amps and have chosen to keep this information to themselves for proprietary reasons. That is cool... there are plenty of

other ideas around that we can screw around with! (But if you guys want to give us some hints to further our education, we are all ears!)

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From: Dave B. (the3burns@earthlink.net)
Date: 1/23/2001 4:15 PM
Subject: Re: Komet Questions

OK, this is pure speculation but here goes.

Some builders claim greater touch sensitivity by having both halves of the input preamp tube wired in parallel.

One way you might do this is both plates sharing a common plated load resistor (47k to 100k?) then lifting one of the cathodes by placing a 100k resistor at the grounded end of that cathode's resistor/bypass cap and using a switch to short that 100k resistor out. (similar to a fat switch, gain boost).

Another thought is if you look at the Trainwreck pages in GW's book it Ken illustrates how to add a gain stage to an existing circuit (in series). This stage is easily switched in and out with a dpdt switch. Perhaps a parallel stage can be switched in and out as easily. I'll have to sit down and try to draw it out.

I can't believe there's some new mojo circuit in there. the rest of the amp looks like typical Trainwreck stuff.

DB

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From: Daver (bluefire@voyager.net)
Date: 1/24/2001 1:05 AM
Subject: Re: Komet Questions

The Komet website states that the Fast/Gradual switch is not an extra gain stage or gain boost circuit. Could it be a little preamp feedback thingy like the Dumble? Maybe it changes cathode resistance(s)? I wish I could go to a local music store and check one out. I still love those sound samples! 😊

Daver

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From: Shuffleswing (skilback@triant.com)
Date: 1/24/2001 7:34 AM
Subject: Ken's extra gain stage...

Dave,

Funny you mention that Trainwreck gain stage, I added that circuit to my Garnet Gnome last night. I used a internal 2W 1M pot to tweak just the right amount of volume going to the next stage. The Gnome is essentially a BF Champ design with a tremolo circuit which uses only 1/2 a 12AX7.

In fact, I can switch it in with a 3PDT switch which takes the place of the "brite" input. The 3rd pole is to switch in an extra resistor in series with the volume pot to drop the level when the boost is engaged, otherwise it was just too much of a boost!

Sounds fine, though a little loose in the bass.

cheers!

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From:	Mook (mookie2112@aol.com)
Date:	1/25/2001 5:39 PM
Subject:	Re: Komet Questions

nothing of the sort.....and there are no additional gain stages.

Everybody in this post is far off.....

Mook

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From:	Dave K (davekseattle@yahoo.com)
Date:	1/25/2001 5:52 PM
Subject:	Re: Komet Questions

How about a simple change to the B+ supply in the preamp?

Dave K

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From:	Jon (z-man1@worldnet.att.net)
Date:	1/25/2001 9:56 PM
Subject:	Re: Komet Questions

I played thru one @ Ken's a while back that was set up for Sonny Landreth. Felt most like when switched "in", it was bypassing the tone stack, kinda like having a switch to go from blackface to tweed Champ on the fly.....It was very loud and touch responsive when switched in, but there appeared to be a significant variation in tone. It was run with 2 EL34's, but felt a lot like a dimed SVT. Ken indicated that there was some potentially patentable technology (all tube, though) but who knows....I looked at a prototype chassis very briefly, nothing esoteric caught my minimally trained eye, 'cept for top quality components, and attention to build quality. I was playing around with some split rail preamp/effects designs back then, Ken just grinned when I brought up the subject.....

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From: Sonic Bloom (jsalman@fiam.net)
Date: 1/25/2001 10:37 PM
Subject: Ken's health

BTW, how is Ken's health these days? Has he recovered from his battle with CFS?

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From: Jon (z-man1@worldnet.att.net)
Date: 1/25/2001 11:53 PM
Subject: Re: Ken's health

Good Days, Bad Days. Give him a call....

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From: PinkStrat (LeoMuser@aol.com/)
Date: 1/26/2001 12:23 AM
Subject: Re: Ken's health

Hi Sonic,

I talk to Ken virtually every day and it is true that he has good and bad days. We've been joking a lot lately, so he's in very good spirits!

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From: Chris Barrow (Chrisbarrow@aol.com)
Date: 1/26/2001 11:00 PM
Subject: Re: Komet Questions

So, Jon, what do you think about the split rail idea? Maybe it's the PI. Pure conjecture, but what if he's switching in a split rail in the PI cathode for the 'Fast' switch? 'Slow' is a normal, ground referenced PI set-up, and 'Fast' is the split rail PI.

I've most commonly seen a split rail PI in tube bass amps where the speed of the PI needs to be Fast in order to accurately reproduce a bass note. Probablty also in some hi-fi stuff. I think I read recently about a Dr. Z amp with a split load PI. (Is that right? I'm not sure.)

Whadda ya say Mook? Any warmer or getting colder?

Chris Barrow

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From: Chris Barrow (Chrisbarrow@aol.com)			
Date: 1/26/2001 11:08 PM			
Subject: Re: Komet Questions			

So, Jon, what do you think about the split rail idea? Pure conjecture, but maybe he's switching in a split rail PI for the 'Fast' switch. Maybe the 'Slow' is a normal, ground-referenced PI set-up and the 'Fast' is a split rail set-up.

I've most commonly seen a split rail PI in tube bass amps (Mesa comes to mind). A bass amp PI needs to be fast in order to accurately reproduce the entire bass spectrum. I've seen them in Hi-Fi amps too. I think I recently read an article or review about a Dr. Z amp with a split-load PI. (Is tha right? I'm not sure.)

Whadda ya say, Mook? Gettin' warmer or colder?

Chris Barrow

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From: Chris Barrow (Chrisbarrow@aol.com)			
Date: 1/26/2001 11:10 PM			
Subject: Re: Komet Questions			

Huh, sorry. Thought the first one didn't go through.

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From: Jon (z-man1@worldnet.att.net)			
Date: 1/27/2001 12:51 AM			
Subject: Re: Komet Questions			

Chris, what I was referring to was a split rail "voltage amplifier" stage (negative voltage about 1/2 the magnitude of the plate voltage on the cathode)somewhere before a typical LTP type PI. It's my understanding that this split rail makes the stage kinda linear, but will tend to push the

next stage along.

I may be all wrong here, but I conceptualize it along the same lines as what the Electro Harmonix LPB 1 things were doing with transistors...

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From: Frost (heiko_frost@hotmail.com)			
Date: 1/27/2001 2:01 AM			
Subject: Re: Split Rail?			

Hey Jon & Chris,

I've never heard of a split-rail before. Could you explain to me what it is or suggest an available schematic to check out as an example. Just curious for potential tweaks for my own homebrew. By the way, I have checked out the Komet amp on a couple of occasions and loved it, especially set up with KT-66's. However, I was not too impressed when the amp was set to the gradual mode, it didn't seem to have as much dynamics. The fast mode though, well for me, it truly rocked. Anyone else have differing opinions? Curious to here about that too. Take care,

-Heiko

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From: Chris Barrow (Chrisbarrow@aol.com)			
Date: 1/27/2001 3:53 AM			
Subject: Re: Komet Questions			

Jon,

I guess the amp could also switch one of the preamp tubes to a split-rail set-up. Preamp tube or PI, that stage will have a better current source and end up quicker and more linear. If the switch is in the PI, I'm kind of assuming it's not just a typical LTP Phase Inverter. Some PI's have just a single resistor in the cathode. Even a LTP Phase Inverter, without a feedback loop (think VOX), could easily be referenced to a negative supply instead of ground.

For anyone who isn't familiar what "split-rail" means, I would suggest checking out Kevin O'Connor's books, that's where I learned about it. If anyone knows a place on-line with info on split rail design, I'd like to hear about it.

I still wanna know if we're on the right track...

Chris Barrow

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From: Jason (jlc1a1@aol.com)
Date: 1/26/2001 1:24 AM
Subject: Re: Komet Questions

Hey Mook, everybody is very far off. People trying to copy a Wreck are doing so in vain. Ken's amps are very meticulously (and individually) designed according to the customer's request, and trying to copy one by a schematic is an exercise in futility. Just look at Callaham's stuff. Exact copies of a Trainwreck Express, but the sound and feel of these amps are worlds away. I have found that if you are genuine and truly interested in bettering your own endeavors, Ken is a very cool and helpful man. It is understandable that people want Trainwrecks because they are very rare and priceless gems, but with some friendly and extremely competent advice from Mr. Trainwreck, my own designs really rock! -Ken has been giving plenty of excellent advice to me for about six years or so. By the way, Ken is not only the best at what he does, he is also a first class human being who has some great stories about his life's adventures (It can't always be amp talk!). I will not say that my designs sound like a Wreck, but they are close in sound quality. Notice I say close, not dead on. Only Ken can achieve this with his own designs. What I have received is high quality design advice for reliability and tone from Ken that suits me. So I say that those of you who are like me and love to design and build, we should do so. One of the main reasons Trainwrecks sound so good are due to the fact that they are not clones of anything out there. They are totally unique and discrete unto themselves. So I say, let's design and build our own unique amps, and who knows, maybe one of us will be the next Ken Fischer, Jim Marshall, Dr. Z, H.A. Dumble, Leo Fender, Ted McCarty, Seymour Duncan, Paul Reed Smith, Harry Joyce, Dave Reeves, Jess Oliver, etc. Either way, if you like Trainwrecks, go buy a Komet. This is a first rate amp that screams quality and tone, no matter what the price tag looks like (come on - Two Rocks [junk] are \$4K for goodness sake!). Definitely a whole lot better sounding than most of the Express clones out there (which says it all)! They are the Real Deal. Anyway, keep on experimenting and striving for the best sound that suits yourself!

Rock On,

Jason C. Arthur
Designer

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From: momitch (firejoke@aol.com)
Date: 1/26/2001 6:35 AM
Subject: Back to the original line of questioning

Does anyone know what value pots are used in the Komet/Trainwreck amps? I'm pretty sure the treble and bass pots are 250k, but I'd love to know if the mid pot is a 10k or a 25k. I know the bass and mid caps are .02 uF, but what is the value of the treble cap? 500 pF? Also, why is the top of the bass pot connected to the wiper in the Komet? I'm not trying to clone the Komet or a Trainwreck. I'm just interested in getting a few tone stack ideas for use in my own little 2xEL84

homebrew. Thanks!

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From: Dave H. (DHarris@VGGas.com)
Date: 1/26/2001 12:42 PM
Subject: Re: Back to the original line of questioning

Also, why is the top of the bass pot connected to the wiper in the Komet?

If the tone stack is like a Fender connecting the wiper and top end of the pot together won't change the tone. The resistance that changes the bass response is from wiper to the bottom (ccw) end of the pot. The resistance from wiper to the top of the pot is doing nothing so the tone will be the same with it shorted or open circuit. When a pot is used as a variable resistor the wiper is connected to the unused terminal so that the pot doesn't go completely open circuit when the wiper fails.

Dave

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From: Mook (mookie2112@aol.com)
Date: 1/26/2001 3:01 PM
Subject: Re: Komet Questions

Jason,

I do have a Komet. I also have 2 Express Clones (Callaham and Bruno). I've also built my own Express clone. All are diffent. All are cool in their own way.

I was merely trying to point out that the guesses about the "Fast" mode are way off. If Hogy wants to tell people the secret, he can to that.

Mook

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From: Jason (j1clal@aol.com)
Date: 1/26/2001 10:40 PM
Subject: Re: Komet Questions

Hey Mook,

I was not really answering regarding the fast/slow switch mechanism. I was trying to make the point that copying another's design will not necessarily result in an exact original. Also, the other very important point that real design advice from experts usually results in better amplifiers as opposed to the clones. You don't make new friends by trying to rip somebody off of their labor! I don't really think that Ken needs to worry about somebody cloning his amps and having them sound and feel the same as the original! I will give some credit to most of the guys on this site-at least they usually seem to give credit to the original designer. This is fine. But, come on guys! How about some new and fresh ideas on amplification! I guess that I am tiring of hearing about the Dumble and Trainwreck clones! How about some fresh meat? By the way, Mook, you sound like you do have a killer collection that could be the envy of many! When I go official, maybe you would like to hear my stuff!

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From: Mook (mookie2112@aol.com)

Date: 1/27/2001 1:47 AM

Subject: Re: Komet Questions

By all means.....

I host a yearly (in October timeframe), amp "shootout". Review results are posted at this site and many others.

For examples on past years, do a search at DejaNews.com. Search on "East Coast Shootout".

Perhaps you'd like to be included in next year's competition?

Shoot me an e-mail next summer if interested.

Mook

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From: Jason (jlc1a1@aol.com)

Date: 1/27/2001 4:23 AM

Subject: Re: Komet Questions

Hey Mook,

Seems like a perfect timeframe. Count me in! I will check out the past shootouts and drop a line.

Best Regards,

