Vintage Marshall Tune-up Guide

By Ken Fischer

In this article I'll try to cover the basics of maintaining or restoring a vintage Marshall amplifier to perform to original factory specifications. In some cases I'll include upgrades — both factory recommended or my personal tricks and tips. If you own a vintage Marshall, or just have an interest in these classic instruments of tone, I'd strongly suggest you obtain a copy of *The History of Marshall* by Michael Doyle. It's not only a history of these amplifiers, but contains all kinds of highly useful technical information, schematics, and specifications on all of the various models. Keep in mind when working on vintage Marshalls many of the original parts are very difficult or impossible to find. In many cases you will have to make do with the best possible substitute parts. Don't forget that the people at Marshall have always stood behind their products and are a valuable resource for certain parts and information.

The Marshall book I mentioned also lists good sources of parts, tubes, *and* information so whatever you do *please don't call me!* Also, I *don't* sell parts.

Step One

Determine if your amplifier is stock. This article is about factory spec amplifiers only. If you have a hot rodded Marshall and you don't want to return it to stock operation, I'd suggest talk to your mod tech before trying anything contained herein.

Disclaimer:

Guitar amplifiers contain lethal voltages even unplugged. If you are not qualified to work on amplifiers, refer your service needs to a qualified technician.

Ken Fischer, Trainwreck, nor *Vintage Guitar* can not be held responsible for damage to people or equipment caused by using the information in this article, or any information included in recommended reading materials.

That out of the way, I think that you will find there are very few twenty- or thirty-year-old amplifiers that contain 100% original parts. Most have had a repair, mod, circuit added (such as master volume), and that's to be expected. Also to be expected is parts do wear out. What's not always expected is that certain parts can "wear out" even if the amplifier was never used. If you have an amplifier that has 100% original parts, and has never been touched you might want to consider that in that particular case the amp may be worth more to a collector working poorly but untouched, or even not working and untouched, than the same amplifier properly repaired and set up. We've all heard the case of a vintage Stratocaster with factory original strings selling for huge sums of money. Of course the guitar can't be played with the original strings, and a fresh set of playable strings would drop the guitar's value by thousands. This also happens with vintage guitar amps. If you do have a 100% original, untouched guitar amp the choice is yours. Collect or play, it's up to you.

Electrolytic Capacitors

Commonly known as filter caps, bias caps, bypass caps, power filters, and so on. These are electrochemical devices and have a limited life span. When I referred to parts that can "wear out" without being used, electrolytics are one of that group. They can, "dry out," leak, short out, "open up" (that is, act as if they weren't connected), leak electrically (act like a partial short), fail under voltage, change value and have a host of various problems.

The electrolytics used in guitar amps typically have an expected life of around eight to twelve years. Many twenty- and thirty-year-old amps still contain many original electrolytics, but if these are removed from the circuit and tested for all their original design parameters, they almost always fail to meet their specs. Many people hate to change these parts unless they fail completely because the new part often changes the sound. This is true, but if a quality part is used the amp may regain its original "as new" sound. If economy parts of low quality are used it's to be expected the sound will change for the worse. Also old electrolytics may fail at any time, taking with them a valuable part that's no longer in production. I myself replace any electrolytics in the amps I own at the twenty-year-old mark. I can only tell you what I would do, you can do the same or not.

On any Marshall I own I change *all* the electrolytics on my amp that are twenty years old or older. Being 1995, this means any 1975 or earlier model would get fresh electrolytics from me. My favorite brands are Mallory, Sprague, and Cornell Dubilier. In the late Sixties, Marshall started using double section 50 mfd at 500 volt caps. The current brand used by Marshall is LCR. Personally LCR is not my favorite, but you can no longer get the Erie or Hunts brands, which were my personal favorite dual 50's in older Marshalls. For complete instructions on changing your electrolytics refer to Gerald Weber's article on page 32 of the July 1995 issue of *Vintage Guitar*.

Now with a fresh set of electrolytics we can get on to other important Marshall tune-up items.

Ground Circuits

Most ground connections in older Marshall amps were mechanical, as opposed to solder, connections directly to the chassis. The first Marshalls, just like my amps, used an aluminum chassis which can not be soldered to. The grounds get soldered to a terminal which is connected to the chassis with a nut and bolt. This system works fine, but as the amp ages, the grounds may suffer from corrosion or the bolts and nuts may loosen from years of vibration. It would seem that solder connections to a steel chassis would be better, but in fact, I've found more soldered grounds broken by vibration in black face Fender amps than loose grounds in old Marshalls. In any case, clean and tighten any loose ground terminals in your Marshall amp. On amps that use dual 50 mfd filters, a loose ground on a preamp ground gives you double notes.

On some early metal face 100 watt Marshalls they ran the ground from the power diodes to the front of the chassis. The amps have an AC buzz you can't seem to get rid of. The Trainwreck trick is to move the diode ground to the main power filter ground terminal, or just to the back of your amp and the buzz will be gone. Another old Marshall ground problem is that many grounds run to the back of the controls, and the controls complete the ground path to the chassis. On some amps they run a wire from the ground buss on the back of the controls to a terminal on the chassis. If your ramp doesn't have this

GIB529 J-200, 1995, Mint, natural, AAA grade flame maple back & sides, OHSC $1,895
GIB530 Dove, 1994, Mint, ebony, NAMM show model w/doc, 100th Ann decal inside, Gibson confirms only 18 shipped that year, OHSC $1,895
GIB531 Dove, 1994, Mint, natural/cherry, flame maple back & sides, 100th Ann decal inside, OHSC $1,795
GIB532 Dove, 1994, Mint, natural/cherry, flame maple back & sides, 100th Ann decal inside, OHSC $1,795

FENDER

FEN501 Stratocaster, 1956, VG, sunburst, tremolo, 100% original w/strap, clean, real honest player wear, OHSC $CALL
FEN502 Stratocaster, 1975, NM, black, maple board, 100% original, OHSC $CALL
FEN503 Mustang, 1966, NM, blue, tortoise guard, new replacement pu's, OHSC $CALL
FEN504 Strat Std 40th Ann, 1994, Mint, red/rosewood, engraved plate, head stock medallion, OHSC $625
FEN505 Strat Std 40th Ann, 1994, Mint, white/rosewood, engraved plate, head stock medallion, OHSC $625
FEN506 Strat Std 40th Ann, 1994, Mint, black/rosewood, engraved plate, head stock medallion, OHSC $625
FEN507 Strat Std 40th Ann, 1994, Mint, sburst/rosewood, engraved plate, head stock medallion, OHSC $665
FEN508 Strat Std 40th Ann, 1994, Mint, red/maple, engraved plate, head stock medallion, OHSC $625
FEN509 Strat Std 40th Ann, 1994, Mint, white/maple, engraved plate, head stock medallion, OHSC $625
FEN510 Strat Std 40th Ann, 1994, Mint, black/maple, engraved plate, head stock medallion, OHSC $625
FEN511 Strat Std 40th Ann, 1994, Mint, sburst/maple, engraved plate, head stock medallion, OHSC $665

MARSHALL AMPS

MAR501 JCM 800, 198?, Mint, Lead Series, 2 channel, reverb, mast vol, EL-34's, 50watts, virtually unused $645
MAR502 Silver Jubilee, 198?, Mint, 2553 model, 50 watts, plastic still on face plate $CALL
MAR503 Silver Jubilee, 198?, Mint, 2x12 cabinet $CALL
MAR404 JCM 900, 1994, Mint, 4100 model, Hi Gain Dual Reverb, 2 channel, 100/50watts switchable, 5881's, in original shipping box $745
MAR405 JCM 900, 1994, Mint, 1960A model, Slant Cab, 300watts, stereo/ mono switchable, in original shipping box $495

FENDER AMPS

FEN512 Deluxe Reverb, 1965, Mint, black face, new tubes only $CALL
FEN513 Deluxe, 1970, EX, silver face $595

ADAM'S WANTED

*Martin D or HD-28's must be brazilian rosewood
*B.C. Rich Iron Bird w/ inlayed logo
*Music Man Eddy Van Halen Model
*Gibson ES-335 Dot nice sunburst
*Fender Blonde Showman 12 or 15's
*Fender Mary Kay Strat
*Fender Jaguar an original player, condition not important
*Gibson Les Paul Standard, Reissue, etc... Flame Tops cherry sunburst preferred
*Gretsch Western amp 6169 model
*Kramer American Floyd Rose Sustainer 1988-89? pu/effect/guitar
*Gibson Les Paul Custom 35th Anniversary
*Always any quality Gibson, Fender, Martin, etc...

WANTED/SELLING- CALL OR MAIL IN

MAILING LIST
It's still free, so just call 904-734-0984 24hrs
be sure to give your name & address!

Thank You!

Adam's Guitars!

...quality & collectable instruments
PROMPT SERVICE GUARANTEED!
904-734-0984 24 hrs
FLORIDA

GIBSON

GIB501 Les Paul Standard, 1980, EX, gold top, pat#, moderate flame in neck, warm clean, screams dirty, fast player, one piece mahogany, OHSC $1,395
GIB402 Les Paul Standard, 1989, Mint, cherry sunburst, 490's, true deep cherry, OHSC $1,245
GIB503 Les Paul Standard, 1989, Mint, cherry sunburst, PAF's, nicely flamed top, looks like cover of American Guitars, OHSC $CALL
GIB504 Les Paul Standard, 1989, NM, cherry sunburst, PAF's, very flamed top, '59 appts, looks like pp 159 of American Guitars, OHSC $CALL
GIB505 Les Paul Standard, 1995, Mint, h.c. sunburst, 490's, two piece plain top, OHSC $1,395
GIB506 Les Paul Standard, 1995, Mint, ebony, 490's, OHSC $1,195
GIB509 Les Paul Standard, 1995, Mint, red wine, 490's, very flamed top, factory mistake, better than a plus top, mounds of tight angled flame, OHSC $CALL
GIB510 Les Paul Standard, 1995, Mint, red wine, 490's, very flamed top, factory mistake, better than a plus top, OHSC $CALL
GIB511 Les Paul Classic+, 1995, Mint, h.c. sunburst, 490R/500T, quilted top, finish hangs on the edge, must see, nice, OHSC $1,795
GIB512 Les Paul Cls Pre+, 1995, Mint, h.c. sunburst, 490R/500T, very flamed top, OHSC $2,395
GIB513 Les Paul '59 HCR, 1992, Mint, h.c. sunburst, PAF's, very flamed top, tags, 1st year of Historic Collection production, special promo model, possible Gibson doc., no guard?, no holes!?, OHSC $CALL
GIB534 Les Paul '59 HCR, 1995, Mint, orange sunburst, PAF's, very flamed top, OHSC $CALL
GIB515 Les Paul 40th Ann, 1991, Mint, ebony/gold, P-100's, "...aged plastic parts", Ltd Edt Ann Decal, ebony board, 12th fret engraved inlay, only 300 made, Gibson 'prod. profile' documents & color promo ad, OHSC $1,695
GIB416 Les Paul 40th Ann, 1991, Mint, ebony/gold, P-100's, "...aged plastic parts", Ltd Edt Ann Decal, ebony board, 12th fret engraved inlay, only 300 made, Gibson 'prod. profile' documents & color promo ad, original shipping box, Gibson Rep said last one sold, OHSC $CALL
GIB517 Les Paul Deluxe, 1977, EXF, natural/chrome, mini hb's, 3 piece maple top & neck, volute, nice player, Gibson confirms only 12 shipped that year, one piece mahogany OHSC $1,195
GIB518 Les Paul Deluxe, 1991, Mint, gold/chrome, mini hb's, Hall Fame Edition, OHSC $1,295
GIB519 Les Paul Custom, 1976, Mint, cherry sunburst, pat#, 3 piece maple top & neck, volute, reflector cap knobs, very Pearl Jam, OHSC $1,495
GIB520 Les Paul Cust SG, 1990, Mint, white/gold, 3 PAF's, slim neck, OHSC $1,295
GIB521 SG Custom, 1993, Mint, white/gold, 3 PAF's, fat neck, OHSC $1,095
GIB522 ES-330 TD, 1965, EX+, tobacco sunburst, P-90's, OHSC $1,495
GIB533 ES-335 Dot, 1983, Mint, cherry/nickel, PAF's, very early Clapton vibe, OHSC $CALL
GIB523 ES-335 Dot, 198?, Mint, ebony/nickel, PAF's, color no longer available!, OHSC $1,345
GIB524 ES-335 Dot, 1989, Mint, white/gold, 490's, OHSC $1,345
GIB525 ES-335 Dot, 1995, Mint, natural/nickel, PAF's, ABR-1, grainy & flamed, OHSC $1,895
GIB526 ES-335 Dot, 1995, Mint, natural/nickel, PAF's, ABR-1, plain & flamed, OHSC $1,895
GIB527 ES-350 T, 1992, Mint, tobacco sunburst/gold, PAF's, single rounded cut away, thicker body, Gibson confirms only 212 shipped that year, last year of regular production?!, no longer in production?!, too bad...it's gorgeous!! OHSC $2,195
GIB528 J-200, 1994, Mint, natural, AAA grade flame maple back & sides, 100th Ann decal inside, OHSC $1,895