EASY DOES IT

The devil is in the details. And the details both large and small are obscured under more detail — most of which can help, some of which may hurt.

ENTER
THE EQ GUIDE TO GETTING IT

100 TIPS

by everybody who's anybody in modern music to help you dig your way out of the morass of music production ephemera. Everybody complains about the rain. We're just doing something about it.

DIG IT.

GETTING IN

ITCHING TO GET YOUR PROJECT STARTED? YEAH. WE BET YOU ARE. AND YOU CAN. RIGHT AFTER YOU DO WHAT WE TELL YOU. YUP. DO WHAT WE TELL YOU AND NO ONE WILL GET HURT.

TRIP THE TUNING FANTASTIC

BOB HODAS (rhymes with YODA's) knows more about tuning rooms than any one individual has the right to. He's analyzed and corrected studios for everyone from Sony Music Entertainment to Abbey Road Studios and his most recent projects include an acoustic renovation of The Record Plant's SSL-4 and Flea's home studio. He had wanted us to call this "6 Cheap Sirloin Tips" but we decided that while they *were* free they were in no way cheap.

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1. BUILD YOUR ROOM AROUND THE BEST SPEAKER/LISTENER SETUP FOR YOUR SPACE. Why are you in this business? Audio! A studio should be a listening space, not a gear showcase. Clients will not come back to you if you have the coolest gear but their CD does not translate when they take it home. Many of a room's serious bass problems can be solved just by getting the speakers and listener in the right position. Finding the proper positions can be difficult and time consuming even with good measurement gear, and the process is too long to explain here. An inexpensive alternative ($100) that can achieve, at a minimum, a 75% solution is RPG Inc.'s Room Optimizer program. It can help calculate the proper speaker placement for rooms with parallel walls (your basic home studio).

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2. SYMMETRY. If you don't set your speakers up symmetrically in a room, they will wind up with different frequency responses due to speaker/boundary interference. Your speakers are fairly omnidirectional below 200Hz. So a lot of low energy is coming off the back and sides of the speaker. The signals that bounce off the walls and ceiling are going to mix in with the direct speaker signal. This delayed bounce will cause comb filtering. The time delay and thus, frequency of interaction is dependent on the speaker distance from the walls. If the left and right speakers are different distances from the walls, the cancellations will occur at different frequencies. Different frequency responses means that the speakers will sound different and also mess with your imaging. Bass is the foundation of building any mix so it has to be correct, and boundaries significantly affect a speaker's bass response. Symmetry also applies to your equipment setup. Low frequencies are sensitive to gear placement. For example, if all of your gear is piled up on the left side, the left speaker will have a very different bass response than the right. So try to distribute your gear evenly around the room.

3. FIND AND TREAT YOUR FIRST ORDER REFLECTIONS. High frequencies will act the same as the bass described in Tip #2. The difference is that they are more directional and above 400Hz will be subject to simple geometry. This means that you can use a mirror to find the reflection points. Invest $30 in a 2'x2' plastic mirror. Have a buddy sit at the mix position while you place the mirror flat against the walls and ceiling. Move the mirror around until your buddy sees the left and then the right speaker reflected in the mirror. Have your buddy slide side to side across the console to cover the entire mix area when looking in the mirror. Mark these areas so you can treat them. For the side walls and ceiling an inexpensive solution is a 6 lb. density, 2" compressed fiberglass, such as Owens Corning 705. The fiberglass should be covered with a fabric that is acoustically transparent. Go to a fabric store and pick out something with a very open weave. You should see some light pass through and if you hold it over your mouth you should be able to easily blow through it. Only treat the areas where you saw the speakers, or slightly larger, and don't over do it. An over-damped room will sound like the life has been sucked out of it since you will disproportionately damp the high-end reverb time.

4. PUT YOUR SPEAKERS ON STANDS, NOT ON THE CONSOLE. At this point I want to mention the evils of console reflections. The console and worktable are subject to the same reflections as your walls. Now I realize that you can't do this if you have one of these all-in-one workstation pieces of furniture, but you should be aware of these tight reflections bouncing into your face. If you have the freedom, move the speakers back on stands. Use the mirror again for this. If you sit at the console and can see the tweeters in the mirror, you're in trouble. Move those speakers back so you see no reflection in the mirror (usually about 8" behind the console).

5. BASS TRAPS CAN HELP OR HURT YOU. There is no rule of thumb for bass traps. Many times trapping a corner is just what you need to control a room bump, but I've also seen corner traps put big holes into a room response. Sometimes you would do better to cut the corner off with a hard surface or leave the corner as is. In some cases the trap should be in the ceiling and in some cases on the back wall. I personally believe in measurement and experimentation to get the best results. I don't think you can do it just with tones so I'll recommend renting an RTA and a flat microphone (don't use your favorite vocal mic). Experiment with treatments and do some listening too! The ears are the final judge in all of this.

6. GATHER AS MUCH KNOWLEDGE AS YOU CAN. This space is too short for any in-depth advice. The NARAS Producers & Engineers wing just published a guideline for setting up 5.1 mix rooms. While not perfect, there is a lot of good information in there. Read the articles on my website at www.bobhodas.com. I am way behind on getting current articles up there but I'll be putting more up as we get into the new year. Read your trade mags. You may get frustrated by conflicting opinions in the studio design trade the deeper you get into this, but hey, it's not a perfect world.

7.

GET A LEG UP ON IT. There are probably certain setup things you do with any sequencer each time you use it. So why do them every single time you start a certain kind of project? Outside of bad home training? Use a program's "template" feature, and if it doesn't have one, then just save certain basic projects according to type.

8. PRE-PATCH. Nothing kills inspiration like waiting for the engineer to set up the recording chain (or taking time to patch things in yourself, if you're wearing the artist *and* musician hats). So plan ahead. If you're going to be overdubbing electric guitars, set up any DIs, re-amping boxes, tuners, and so on, ahead of time, so all you have to do is plug in and hit record.

10.

SCRATCH OUT A PASSWORD/AUTHORIZATION CODE FILE. If you lose a password or authorization code for your software, don't expect much sympathy from the manufacturer. Create a file that contains all this crucial information, along with info like passwords to user update areas, then place this file in a folder that contains any other needed files (like HTML files used to register software). Make this folder "Copy Protection Central" with all the data you need to install and authorize software. Save this to CD, and buy a USB thumb drive that's dedicated to holding this data. Print out the file of passwords as an additional safety measure. You'll be glad you did.

11. DO SOME DRY RUNNING. During a mix or recording session with the client sitting over your shoulder is not the time to learn how a new piece of gear works. Take time in between sessions to practice with it — run a variety of tracks (drums, guitar, vocals) through that re-issue "vintage" compressor at different settings, feed a guitar cab with a direct "reampable" signal while repositioning a new microphone, or whatever, and be sure to record the results so you have an audio record of how things sound at different settings.

12. POWER UP OLDER GEAR PERIODICALLY. We all have them: Those pieces of older gear we once loved, don't use, but can't bear to sell. However, if you want them to continue to exist, power them up from time to time, work the controls, plug things into the jacks, you know: do the do. Moving parts like to move, and corrosion can build up in connectors unless they get some exercise.

RUN AND GET BACK UP.

If you have a piece of hardware with an internal fuse, you know that it will go at the worst possible time. Make life a little easier by attaching a replacement fuse inside the case, so that when you open it up to access the fuse, there will already be one there. If the equipment doesn't run too hot, you can just tape the fuse to the side with duct tape. If you're concerned about the fuse coming lose and wreaking havoc, then drill a hole, attach a dummy fuse holder with a screw, and insert the replacement fuse into the holder.

9.

100 TIPS

13. KNOW YOUR BANDS. Not frequency bands either. Get to know the artists as well as you can. Collaboration is about people — the better everyone knows everyone the more honest everyone can be in the process. If you're on an out-of-town session, stay with the band. Share toothpaste.

14. THE BUCK STOPS HERE. Going back and forth over decisions can be a huge time-suck. Figure out who the producer is to avoid any power struggles. One person calling the shots can streamline any process. Stiff upper lip, soldiers.

15. I MIX ALONE. Mix the song until you love it, without anyone looking over your shoulder. Then email an MP3 to all the band members, A&R, and so on. Have the band elect one member as the liaison to communicate their wishes to you. Tell the A&R to get a real job.

16. COMPUTERS MAKE MUSIC. The biggest blessing and curse is the ability to endlessly rework a song. Make sure it's a good song in the first place — that'll save time!

17. AND TO CYNICALLY SIMPLIFY, REMEMBER TO: not get creative, develop presets for your recording, mixdown, and mastering phases so you can get through a lame project as quickly as possible, and if the band is no good and you're not looking forward to the session, get someone else to do it. These might make me sound horrible, but they are eminently practical.

18

GET... OUCH! CUSTOM CABLES!

Do you have a piece of gear that depends on some weird cable that's made by the manufacturer and no one else? Buy a replacement, now, and put it in a safe place.

19.

REPLACE BATTERIES. A battery that's leaked all over your gear will likely ruin it, because the chemicals inside batteries are highly corrosive. If they just attack the battery connectors, that's bad enough; but if a PC-mounted battery (*e.g.*, for backup) leaks over the board, that board will die a premature death and will be almost impossible to fix. When equipment isn't going to be used for extended periods of time, remove the battery. Your gear will thank you for it.

20. IF YOU'RE NOT GOING TO PAINT THE TOWN, AT LEAST PAINT YOUR PLUGS. Buy a set of enamel paints with a wide variety of colors at a hobby store, and put a dab of paint on each end of your patch cords. Ideally, each cord would have its own color. This makes it sooooo much easier should you need to troubleshoot which connections are going where.

21. SO HOW OLD IS THAT BATTERY? With battery-powered gear (including remotes), write the date you replace a battery on a removeable sticker, and affix it to the outside of the gear (preferably somewhere near the battery compartment). This gives you an idea of how often batteries need to be changed, but more importantly lets you know if a battery is really old and should be replaced just to make sure it doesn't leak or cause other problems.

22. GOT PDF? A lot of companies post their manuals online as PDF files. Download these and save them to a CD. Not only will this let you get rid of the paper version if you need to save space, but the document will probably be searchable — great when you need to look up a specific term to remind yourself of how it works.

23. REALIZE THAT NONE OF THESE TIPS WILL HELP YOU. AT ALL. JACK JOSEPH PUIG (John Mayer, GREEN DAY, Goo Goo Dolls, NO DOUBT) says "none of these tips matter. They matter but they don't matter. There's a balance. A perfect example is I once did a session in a studio I had never worked in before and I wanted to prove to myself that it didn't matter what gear I used, but that the real talent was in being creative, breaking the rules, thinking out of the box and trying something you may have thought would never work. We were tracking drums and I told the assistant to grab the first 12 mics on the left and put them up . . . it ended up being the most amazing session and the song went on to be a massive hit. The SM57 is the most commonly used mic on a snare drum or guitar amp. But it's more about what you do with that microphone. These tips are important, if they inspire you to go down creative paths. Hopefully your interpretation of these tips will inspire you and that is what really ends up making the difference."
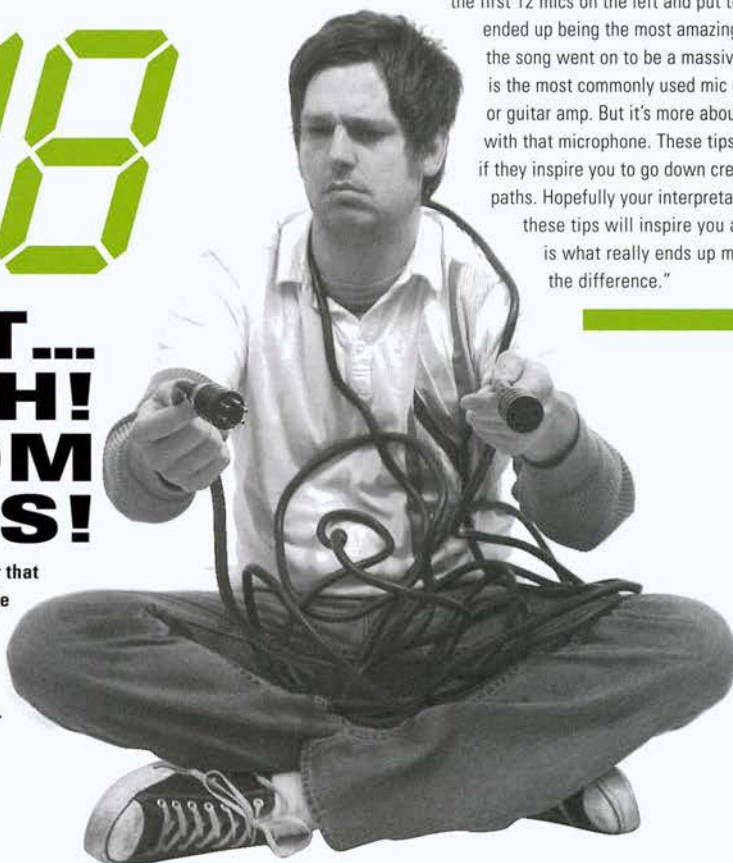
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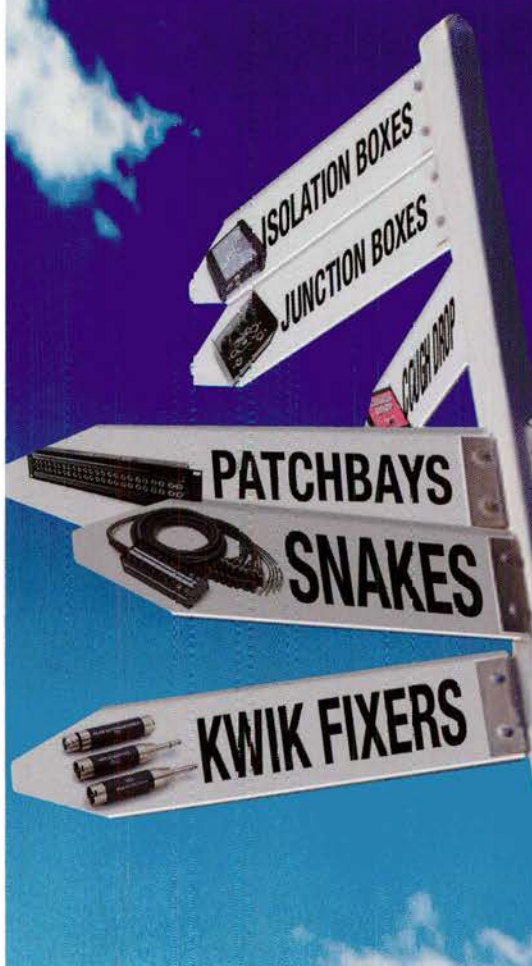
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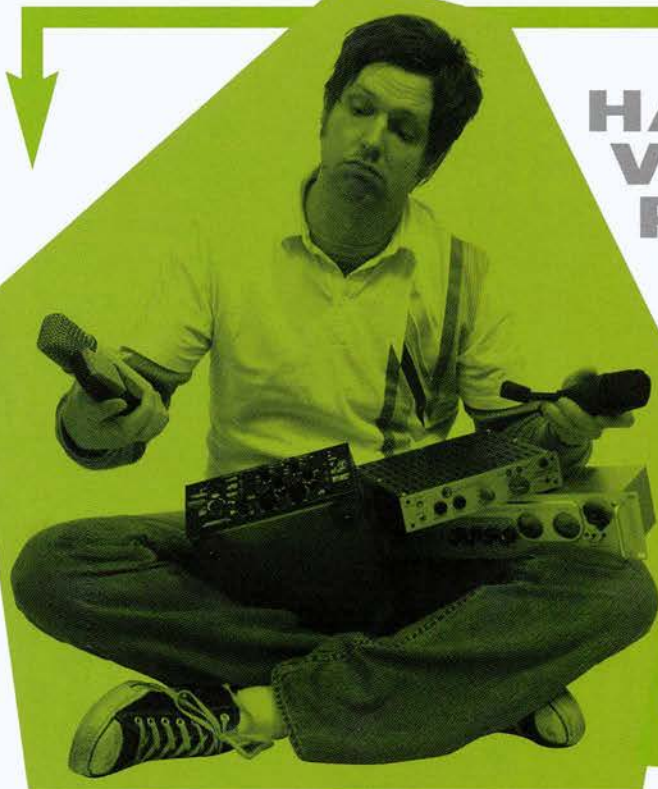
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GETTING IT UP

YOU'VE GOTTEN ALL OF THE BACK STORY TAKEN CARE. ALL THE HOMEWORK'S BEEN DONE. NOW ON TO THE SETUP.

HAVE A GOOD VARIETY OF PRE-AMPS AND MICROPHONES ON HAND,

even if they're not all Class A pieces, they'll all add character to your tracks and add dimension to your recording. Having tube gear helps!

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ROBBY TAKAC'S 7 CENTS

We love saying his last name around here. It's like firing a machine gun. Or singing that Billy Joel song. Anyways Takac, taking some time off from The Goo Goo Dolls and opening his three-room facility called Chameleonwest Studios in downtown Buffalo, NY is going to help us with our Tip Travelogue. He helps with Tips 24 through 30 and all we have to do is mention that his joint has three Pro Tools rooms with a small o.d. studios, and with each featuring NEVE, TRIDENT and a variety of outboard Pres, EQs and compressors. And what of The Goo Goo Dolls? Well, they're going to pitch a tent with a remote system in an old Masonic hall in Downtown Buffalo to record through the Summer of '05. Gotta be nice.

25. Drum rooms are simply pleasant-sounding cavernous spaces. These cavernous spaces exist all around us. Don't feel restricted to tracking in a studio room; explore other places for remote recordings. Room microphones on your drum set are your key to a "pro" drum sound. Use your room sounds!!

26. Great guitars, amps, and microphones are a must.

27. Crappy guitars, amps, and microphones are another must.

28. Amp Farm, AmpliTube, and Sansamp are useful on just about everything but guitars.

29. Bass amps are generally a phase-wrestling match reserved for the mix room; a good D.I. is always best to track with.

30. GET A REAL DRUM TECH !!!!!!

31.
IT'S ALL WHERE YOU PUT IT. Miking a guitar amp? Experiment with where you put the mic in relation to the speaker. Closer to the center gives more bass and a "looser" sound, while miking toward the edge of the speaker sounds "tighter" and has a bit less low end.

32.
GET A DIGITAL CAMERAS AND USE IT. They're really handy. Done a great mic setup? Shoot it, and you'll find it much easier to duplicate the setup in the future. Set up a piece of hardware and want to remember the control settings? Sure, you can write down where the dials point — but a few shots of the front panel might be easier. Recording an instrumentalist? Take a picture. Then, when *Guitar Player* interviews you and asks "Hey, what guitar was The Edge playing when you recorded U2?," you'll remember. Digital photos are the best, because you can store them in the same folder as other project data.
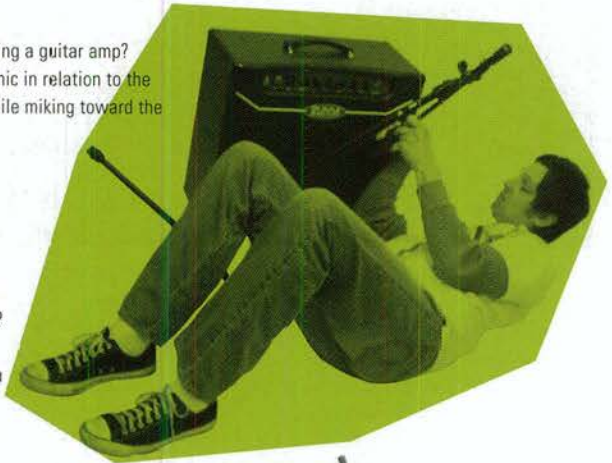
33. AVOID OPTION ANXIETY. It may feel satisfying to marvel at racks full of gear, but having too many choices — whether it's umpteen varieties of tube compression, duplicate types of plug-in effects, soft synths, sample libraries, microphones, or whatever — can become overwhelming and prevent you from actually getting anything done. If you suffer from option anxiety, limit yourself to a small subset of tools to work with. Do this at the beginning of a project, before things get out of hand. Chances are, you'll find creative ways to get more from less gear.

35. HUNTING FOR UPDATES. These days, it's not uncommon to have a bunch of incremental "bug fix" updates for every piece of software in your virtual studio. Hunting these down online after you've already downloaded them can be frustrating and time consuming. So keep all update installers in a single location, and back this up to CD-R. If the computer crashes, or you migrate to a new machine, pop in the disc, run the installers, and get on with your life.

36. BACKUP FOR THE TERMINALLY LAZY OR PRESSED FOR TIME. You probably have separate drives for your system and data (if you don't, you should — consider that another tip). And admit it, you probably get a little lax on backing up from time to time. If you don't have the time to burn to a CD or DVD, then at least create a folder (and preferably a partition) on your system disk called "Safeties." Copy the file(s) you want to back up over to this folder. Although this isn't as secure as having your backup in a separate physical location, at least if your data drive fails, you'll be able to pull a copy off the system drive.

37. DON'T TOUCH . . . OR SHOULD YOU? Manufacturers tell you never to touch a CD drive's laser lens. So I'll tell you the same thing. But I'll also tell you that wiping the lens with a soft, lint-free cloth has bailed me out a few times when my CD drive said "CD? What CD? I don't see a CD . . ."

THAT @#$%^& COMPUTER

Having problems with mysterious freezes, long bootup times for some programs, and general instability? Better make sure there isn't any cracked software on your hard drive. Aside from the ethical considerations, remember that cracked software by definition leaves out some of the original code. This can come back and bite you in various ways.

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100 TIPS

PRO TOOLS TIPS THAT COULD SAVE YOUR LIFE

TAL HERZBERG (Black Eyed Peas, NELLY, Johnny Lang, CHRISTINA AGUILERA, Counting Crows), the Pro Tools guru of all mankind, between crafting genius and throwing us out of his place, gave us some must-do tips. Ignore at your own peril.

38. **ASSET MANAGEMENT:** When I talk about data management I'm really talking about asset management. This includes track and playlist management, clear labeling of all production elements, disk management, and data backup. Consider this Engineering 101. If your assets are damaged or non-retrievable it doesn't matter if you're the world's greatest sound engineer or mixer, you're failing the very tedious and initial mission of data retrievability.

39. **BASIC PROPER BACKUP PROCEDURES ARE:** Always keep AT LEAST one (preferably TWO). And an additional Running Copy of the main data drive (updated daily using backup software).

40. **THE RIGHT STORAGE MEDIUM?** Acceptable storage mediums include cloned drives, data tape, and CD/DVD.

41. **COMPING:** When we're dealing with comping (creating composite performances from multiple takes), we live and die by our ability to seamlessly crossfade between audio segments that we are cutting between. Pro Tools offers a wide pallet of crossfade forms, and knowing how to choose the right crossfade for a given cut between two takes dictates the seamlessness of the transition. When I'm comping between multiple vocal takes, I'll use one kind of crossfade between vowels and a different kind between consonants. Other examples are: Use wider and longer crossfades when dealing with low frequency instruments such as bass and keyboard pads, versus short crossfades when dealing with percussive instruments such as drums and percussions.

EASY STREET & HOW TO FIND IT **JIMMY DOUGLASS**

(Timbaland, THE NEPTUNES, Mary J. Blige, MISSY ELLIOT, Justin Timberlake) gives you highly detailed directions, scribbled on the back of a napkin, to the avenues of ease.

42. **SIMPLE MICS, SIMPLE MIKING TECHNIQUES, MINIMAL EQ, AND COMPRESSION.** And if you must marry the effects you love on something, go back and record it on a separate track because where its ends up being mixed may not have the plug-in or gear you used to get it.

43. **GETTING THE BEST PIANO SOUND IN THE WORLD:** Start with two U87s and go through the Neve pre amps on the board. Put each mic through an 1176 and a Pultec EQP1A. Run back and forth to move the mics around the various holes in the piano to see what kind of sound's coming out of the top and bottom. I get the optimum sound near one of the holes. This is my roll n' roll sound that I really like. I use the 1176s and just do basic compression going in. For the EQ I use something I picked up from the British guys a while ago… on the top mic I add a little bottom, at around 60 to 100 cycles. On the bottom mic I cut the low end and add a little top end… about 7 to 10k. This gives me a psycho acoustic illusion because the low end is now bright and present whereas the high mic is now a little warmer and richer, not brittle, so it smoothes the high lo. left right thing. I play with the compression on both sides to see which one I need. And that's what I do if I have time to really play around with the piano and get an amazing sound. I would also set up two U47s in the room. Place them far away left and right room, and then super compress those as well. When possible put them on separate tracks. and blend them later to taste at the mix.

GETTING IT ON

IT'S MARVIN GAYE TIME. THEY'RE LOOKING AT YOU. YOU'RE LOOKING AT THEM. SOMEONE'S GOING TO BREAK FIRST. SINCE IT'S YOUR JOB, WHY NOT MAKE THAT YOU, WISE GUY? YEAH, YEAH: START IT UP.

44. **DELAYING TACTICS FOR THE DIRECT APPROACH.** Taking a direct and miked signal from the same source? Don't forget that the miked signal will be delayed a bit. because sound had to travel through the air to hit it. Remembering that one-foot delays sound by about 1 millisecond, nudge the direct sound a little bit late to compensate.

45. **REVERB DIFFUSION: GOOD FOR DRUMS.** Percussion sounds get along best with reverb if the diffusion setting is relatively high. Otherwise, you'll hear discrete echoes that can give the dreaded "marbles bouncing on a metal plate" sound.

46. **TIME SURE FLIES WHEN YOU INTERNALIZE.** If your synthesizer or digital keyboard part isn't sitting well in the mix, use the instruments' internal EQ or effects to help shape the sound to suit the other tracks.
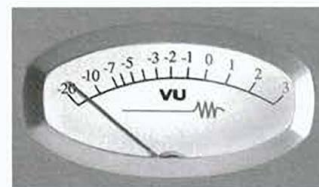
47. **HYPE THAT VOCAL PERFORMANCE.** When you feel a singer is really starting to hit a groove and that the next take might be *the* one, bump up the volume in the singer's headphones a tiny bit — like one dB. This will hype the sound just a tiny bit, and might bring out an even better performance.

48. **WARMING UP THE OLD STUFF.** Run any vintage keyboard or any sampled vintage keyboard through a tube amp such as a Fender Twin or through a tube preamp before going to tape. This will add warmth to digital samples and will make a real vintage keyboard part sound more musical.

49. **THE RIGHT METER FOR THE RIGHT JOB.** If your metering has a choice between average and peak settings, use peak when recording drums, percussion, acoustic guitar, or anything with strong transients. These instruments have a relatively low average signal level, but high peaks that can distort if you're not careful.

100 TIPS

50. CHOOSE METER DYNAMIC RANGE APPROPRIATELY.
If your meters have adjustable dynamic range, use a really high dynamic range for tracks so you can see if there's any low-level noise or crud. Use a lesser dynamic range for your master bus so you can see what's going on in that all-important top 10-20dB of the dynamic range.

51. THE CHEAPO HARDWARE CONTROLLER. Haven't checked out the joys of using a hardware controller? Don't forget that a lot of gear in the typical studio can generate MIDI control signals suitable for realtime control over a sequencer, plug-in, and whatever else. For example, a synth usually offers more than just a mod wheel, like foot pedal control, one (or maybe more) assignable data slider, and so on. These will provide at least some degree of realtime control until you move up to a serious hardware controller.

52. DOUBLE-CLICK TO DEFAULT. Quite a few software programs have "knobs" that will return to their default positions if you double-click on them.

53. DON'T DRIVE MORE THAN NECESSARY. Enabling lots of drivers within a host program for multichannel sound cards wastes a lot of computer resources. If you're recording a stereo instrument and don't need more inputs, turn off the unused ones. Ditto for outputs.

WHEN TO PUSH "EJECT" WITH DIGITAL TAPE.
If you still use digital tape like ADAT or DAT, always eject a tape at the beginning, the end, or in a space *between* songs. Should any tape damage occur while threading or unthreading, your song will be spared.

-54

JOEL HAMILTON IS NAILS
Working out of Studio G in Brooklyn, with everyone from Sparklehorse, Frank Black, and Ludacris to Swiss strongman Rollie Mossiman, Hugh Masakela and Lubricated Goat, Hamilton takes neither crap, nor prisoners. Forthwith his...

55. THINK SMALL. The current trend is to record a lot of tracks and then when you go to mix, deciding what not to use in the mix. When I first started recording in the late 1980s, I was given the opportunity by a couple of people to work within a very limited format. It was a 1" 8-track Studor machine, with a rack of fine pre amps, a very nice Neve 12-channel broadcast board, and a grab bag of microphones. It really taught me the principle of simplicity.

- -

56. OLD DOG, OLD TRICKS. I was recording this band called Crash Vegas in the late 1980s. We'd already filled up seven of the eight tracks and we still wanted to do a vocal and some background vocals. But we only had one track left to work with. I didn't know what to do. Then one of my mentors — who came from the 4-track world — said, "In the old days, we would bounce the bass and the tambourine track together." And I said, "Yeah, but what if you want less tambourine later?" And he said, "Well, that's easy. You just cut the top end out, because that's really not going to effect the bass. And the same goes for if you want more bass." It was this kind of pragmatic minimalist approach.

The experience sort of led me to believe further in this certain mentality that it is a good thing to commit yourself to something and stay with it, rather than come back to it a second or third time. That way, you come up with a real piece of work, rather than a bland kind of mix — which is unfortunately what I've heard a lot of in music. To be honest, I think that things have improved over the last few years, but there was a point in the mid-1990s where every rock record was mixed by like two people. And all of it sounded the same because they were all using the same EQs and the same compressors. That all didn't go down very well with my revolutionary nature.

Even with the band I'm recording now, The String Cheese Incident, their manager was like, "Why are you only using 24 tracks? We have 52 inputs..." And my answer was, "I'll tell you why —

TOP 10 THINGS TO NEEDLESSLY COMPLICATE YOUR LIFE

64. PUTTING 2 MILLION MICS ON ANY GIVEN SOURCE. Nothing makes a simple rock recording really get unmanageable quicker than overprinting every single sound. Use your judgement. Will you really use the CB mic through the distressor and the LA2A on this roots rock band? Was that decision for the band or you?

65. HAVING CRAPPY WIRING. I am constantly amazed at what passes for wiring in a "studio." Wiring is easily the most boring thing to buy for the studio, and yet it makes an ENORMOUS difference in the sound of your room. A good patchbay, well done with decent wire, will get all the sonic goodness you hoped for from your new snazzotron 2000 to the listener! You can always patch up 30 feet of cheap mic cables to the pre-fader insert point on your console if you miss the wheezy, squeezed grain of the old wiring you had....

66. PRINT WAY TOO HOT TO TAPE. For some reason, every engineer I know (including me) goes through a renegade cowboy phase where doing things TO THE EXTREME becomes the norm. If you think that transient information is just for suckers, then by all means keep on rockin' the crap out of the JH24's output electronics. But when you chill a little and hear how punchy the snare gets, and how much oomph the kick drum has when it is not pasted to tape, you go "oh, wow." Tape is an amazing thing, and should be preserved at all cost for many reasons, but use it wisely.

67. GET REALLY SCARED ABOUT EQ, COMPRESSION, OR REVERB. Amazing how certain clients come in and you would swear their big brother used to beat them with an 1176 when they were kids. Maybe it was an EQ, or a Lexicon 480 bit them when they were young.... People have all sorts of hang-ups about certain techniques used to make them sound good. Used with good judgment, and good taste, under the right circumstances, these things actually HELP them, and you, get a good mix

happening. Try to be as diplomatic as possible, and show how good it can be. If you make someone look great, they always come back.

68. USING ADVERTISING AS A GUIDE FOR USAGE. I see so many people using the mic that is "FOR THE BASS" and it sucks. Listen to what something gives you when it is at the edge of acceptable parameters. That seems to be where "character" really lives. I swear that is what makes something a classic or not, how it reacts to being

because we're only going to 4 tracks for drums. If we have 6 vocals— we're going to comp them together and put them down to one track. And when we go to mix the record, it's gonna sound *done*. That's why." I'm still immersed in that same simplistic mentality that is far more concerned with creative decisions than technical nonsense.

57. COMPRESS? OR NOT? I'm a firm advocate of using good, clean analog pre amps and going straight to tape. And I don't use a lot of compression or EQs while recording.

58. BEST = LEAST. With SCI we're using the RADAR format. I'm still a huge fan of tape — that's the format I prefer. But the location we're recording at is a beautiful house in the middle of the hills. So it wasn't practical to drag a tape machine all the way up here. The RADAR functions very much like a tape machine. It has a 24-channel transport, you can arm tracks that you're recording. . . . You don't have to stop recording to punch someone in on another track. It doesn't distract me from what I consider the ultimately important thing in the song: the performance.

59. LEAST = FEWEST. One thing that I've got an opposition to these days — not just in music, but in the modern world — is this emphasis on having lots of options. My attitude is that I firmly believe I'd rather have one piece of equipment that does its job passionately than 10 things that it does *not* do very well. A computer is a multi-tasking format. And there's this whole corporate push to get people to multi-task. But this multi-tasking is not something I want to be involved in. I want to use *one* machine that does *one* thing and that is: record music *really* well.

A great guitar only does one thing: it's a great guitar. So why have a recording environment that's any different. *I* don't get it.

60. FUTURE SHOCK. I'm fairly worried about the way things are going now because, I mean, *everybody's* got Pro Tools....*everybody's* got an Mbox. My concern is that the aesthetic is getting lost. I find that one of the places where a strong aesthetic still exists is with rap music. It's the one area that I find kind of exciting in that they've gone the other way. They don't try to fill every track that's available. Instead they'll do like five tracks, and a couple with vocals. I mean *that's* where the rock and roll still exists for me.

61. DO NOT LAUGH AT YOUR BANDS. When we were 17, we started recording with Don because he was the first guy to take us seriously. We were in one other studio before then and the guys at the board were laughing at us WHILE we recorded. Yeah, we weren't great, but we were serious. AND we were paying them.

62. DO TRY ABSOLUTELY ANYTHING. When we started recording with Don, all he had was a half-inch 4-track reel-to-reel and a homemade board. The control room was a boiler room. We only had the most basic separation schemes, and would run two snakes up the stairs into the backyard. HR from the BAD BRAINS did all the vocals in the backyard. You could hear neighborhood kids asking him "what are you doing mister?" The fidelity wasn't there but it was PUNK, and good songs and power were there and what mattered.

63. RECORDING VOCALS IN A VOCAL BOOTH IS CREEPY. I was having a real hard time recording vocals on this one song, "the Argument." I started thinking that recording in a booth was not really working for me. So I tried it just sitting at the board. It's awkward but singing live is awkward sometimes and it worked. So that's what I do now.

IN THE STUDIO & HOW TO DO THEM...EVERY SINGLE TIME.

abused or used for something the ad would have never led you to. There is a lot of useful information about your gear that lives just south of "acceptable usage."

69. LET AN INEXPERIENCED BAND DICTATE YOUR PACE. This will negate any of the hard-earned lessons you have learned about when and how to do things every time. Stay focused. Try not to let the guitarist standing over your shoulder psychically make you keep pushing the guitar faders up.

70. TALK ABOUT A FOUR-MINUTE SONG FOR 30 MINUTES. What a nasty trap to fall into. Forget about getting a great take by analyzing the snare part for 30 minutes solid. Why not hand out brochures about "what rock sounds like" as well? Doing another take of the song with a few little key points in mind takes four minutes (duh). It is easy to get caught up in a very academic discussion disguised as "important" to the session. In my experience, this leads to

boringly dutiful takes.
71. OVERTHINK THE PROCESS OF RECORDING AT LARGE. I talk to people all the time about this. People analyze every tiny little aspect of recording, and then play me some sterile, crappy, one-dimensional recording with no character and certainly no life. Have a plan, but don't be afraid of deviating as the situation calls. Let the music dictate your every move, rather than the neurotic pianist or the spastic guitarist or the drunk drummer.

72. HAVE LOTS OF PRECONCEIVED IDEAS. If you can't shake what you THOUGHT would work, it is hard to get to what ACTUALLY does work! Be prepared to do things you never thought would be good, because every single session is different. Start with your way of doing things, of course, but be ready to backtrack and re-evaluate your position. When you can't do this anymore, get a Zildjian jacket and a fanny pack with gaff tape on it and start blaming "kids these days."

73. DON'T MAKE A DECISION. Don't decide anything. Let every one of these "easy-to-go-along-with" things carry you into a world of hell, where the sounds are pretty lame, and the process is no fun for you or the client. Making decisions requires experience and know-how, two things that cannot be purchased at your local retailer. Try and be dutiful to the band or client but be true to your own goals as well. After all, they are paying you to make them sound good.

100TIPS

74. HOW TO MIX A FILM SCORE... When you mix a film score, you want the orchestra on a set of tracks, the bass and the percussion on a set of tracks, your synths on a set of tracks, and your high percussion and your low percussion split up on anywhere from 8 to 32 tracks. When I deliver these stems, they should just be able to put their faders in a straight line and hear my mix exactly as I heard it. That way, if a helicopter is drowning out the percussion, they can bump it up. Or if a guitar or other solo instrument is making a line of dialogue hard to hear, they can pull it down a little bit. So I print in stems using an environment I set up in Logic.

75 ...WELL: When Hans Zimmer asked me to write some music for *Black Hawk Down*, I made just one limitation for myself for the project: no synths, no samplers, only Logic, no outboard mixers, and no outboard effects. I would write the music entirely inside of Logic. It was the first time that I had done a virtual studio project. And it was probably the first big movie to have music done entirely without any physical instruments. The music never passed through an external wire. I just mixed it inside of Logic, generated a 24-bit music file, then put it on an iPod and took it over to the music editor's room and off it would go."

76. WHAT TO USE TO DO WHAT NEEDS TO BE DONE: For the movie *Traffic*, I wrote a ton of [Cycling '74] Max apps that ended up creating a lot of the textures and rhythms in the film score. I kind of built this DJ system inside of Max using Max and the virtual Virus software instrument. But with a lot of projects, I'll sketch something out in Reason. I can be on my laptop at my dining room table, building some rhythms and bass lines. Then I'll solo each track, bounce it out and import the whole lot into Logic. Then I'll start chopping, flipping, flanging, and stuttering, and then start organizing it. After that, I'll put it up to picture and look at ways to have elements move in and out, or to stop, start, or shift around. Sometimes I'll pitch shift something. You can come up with your own ways of taking one whole system of working — like in Reason — and going in a direction that it couldn't go once it's in there in Logic.

77. USING SOUNDTRACK AS A SAMPLER: I've been using Soundtrack a lot. It's so quick, dirty, easy, simple, stupid, great. I'll know the tempo and key that I want and I have one Mac lightpiped to the next, so I'll just put together combo platters. I'll mix a tabla with a guitar and together they'll create this cool thing. And I'll build a little sampler of ideas — two- or four-bar ideas. Then they all port over to Logic and get chopped up into bits. I use it like a live sample library, like a sample library that doesn't exist until I click on a button. I find it very useful.

GETTING IT DONE

THIS IS THE LIGHT AT THE END OF THE TUNNEL PLACE. THIS IS THE MAGICAL SPACE WHERE EVERYTHING IS SUPPOSED TO BE FIXED. THIS IS "IN THE MIX."

78. THE FREE WINDOWS SPECTRUM ANALYZER. To analyze how a song's energy is distributed over the audio spectrum, open Windows Media Player and go *View > Visualizations > Bars and Waves* for three spectrum analysis screen options. There's also an oscilloscope view. (Note that to see visualizations, you need to check "Digital Audio" under Playback Settings at *Tools > Options > CD Audio*.) None of this is calibrated; still, it's useful to see how your music compares to commercially available CDs. And if the bars stay at the top a lot, you know there's a ton of compression being used.

80. SENDS: DON'T JUST SET AND FORGET. A person commented after hearing a mixes that used a lot of delay on voice, that the delay never seemed to "step on" the vocals or muddy things up. This is because we like to vary the send control in real time to pick up just the end of phrases, so that when the phrase stops, the echoes continue — but just before the vocals return, the send goes back down. This is an ideal application for a control surface, but the patient among you can draw in curves for the send level.

FIXING DOUBLED VOCALS.

79

With doubled vocals, sometimes the overdubbed vocal will "fight" the original vocal on an occasional word or two. Rather than recut the doubled vocal, copy the same section from the *original* (non-doubled) vocal. Paste it into the doubled track, but delay it by about 20-30 ms. Short segments (a few words) will sound fine; longer segments will sound echoed. This may work, but won't sound as much like two individual parts being played.

81. SPEAKER SWITCHING. Set up two or more monitor systems so you can easily switch among them during mixdown. That way, you don't have to wait until you *think* you've finished a mix and burned it to a test CD, only to realize it doesn't translate to other systems.

82. MONO GOOD. When you start mixing, pan everything to center, and sort out the levels and EQ. Then deal with the stereo placement. You'll find that if the mix works in mono, then it will work even better in stereo. Also check the overall mix in mono to make sure there aren't any phase cancellations going on.

83. DOUBLE YOUR (METERING) PLEASURE. Want to monitor peak and average levels at the same time on your master bus? If your metering doesn't allow this option, there's a simple workaround, assuming your host has assignable buses. Assign all the tracks to be mixed down to a bus, set its level to 0, and adjust its metering to average (RMS) response. Now assign that bus to your master bus, and adjust its metering to peak. Arrange your window so the two sets of meters are close together, and you'll be able to see what's happening in peak-land and average-land at the same time.

84. PARALLEL EFFECTS WITH DAWS. Even if you don't have an effects matrix like BIAS Vbox, don't worry. Make two copies of the track you want to process, then add one line of effects to one of the copied tracks. If the effects have wet/dry mix controls, set *all* of them to wet (processed sound) only. Next, add a parallel line of effects to the *other* copied track, again with all effects set to wet only. The original track serves as the dry signal; use the DAW's mixer to set the correct mix of the three tracks.

85. PRESET MANAGEMENT FOR EFFECTS. Preset files take up virtually no space at all — typically a couple kilobytes, if that. Because there's no penalty in saving lots of them, any custom preset I use in a song gets saved under the name of the song. I find it's easier to remember a sound that's associated with a song rather than just giving it a name like "BrightTelePreset" or whatever.

86. WHY TWO MEASURE LOOPS ARE BETTER THAN ONE MEASURE LOOPS. When you create loops, avoid one-measure loops and do at least two-measure loops. Make the second measure a variation on the first measure. That way, if you want a loop to keep repeating and sound the same, just split the loop in half, and copy the first measure repeatedly. When you want the variation to come in, use the full loop so it plays through the second measure.

87. LATENCY AS A TOOL. When it comes time to mix, increase the latency on your computer a bit, say from 5 to 10ms. This will let you use more plug-ins during the mixing process.

GETTING OUT

END GAME. THIS IS WHERE YOU WAVE YOUR PROJECT GOODBYE IN THE FULL BLOOM OF KNOWING THAT WHEN YOU SEE IT AGAIN IT'LL BE ALL GROWN UP.

88. WHY MASTERING LOVES PRESETS. When mastering with a digital audio editor, if possible, save the setup you use (plug-ins, levels, etc.) as a preset. Then if the client wants to make some changes, you can make a few tweaks rather than having to start over from scratch.

89. ALWAYS THINK 24 BITS. Save your final mastered versions in 24-bit resolution, even if the target playback medium is a standard 16-bit CD. Then apply dithering to the 24-bit file to create the best-sounding 16-bit file.

90.

MAKE A MOCK UP. A mock-up CD-R of the correct sequence of the finished product will save us time and you money.

MAKE YOUR MASTERING GUY HAPPY GUIDE

Label everything.

91

92. COMPRESSION? NOOO. People will want to know if they should give us a mix with or without compression. And mixers are under pressure to make the mix sound competitive with a mastered version of something and so they compress. Don't. When we say "compression" we mean bus compression over the whole mix that when once done can never be undone. Give us one without. And one with if you can't help yourself.

93. LEAVE MIXES UNFADED. And if needs be, include an example of a fade you do like because if the mixes have the ends faded out when we bring up the volume, the fade is shot and we have to refade.

95. DON'T SEND IN YOUR MIXES IF YOU KNOW THEY HAVE PROBLEMS. Avoid the "fix it in the mastering" phase.

96. LESS IS MORE. You want more detail out of your mix? Try not having four layers of guitars there.

97. CHOOSE FORMATS. CAREFULLY. GOD SPEED YOU BLACK EMPEROR mixed to half-inch after they had recorded to analog 24-track. But it had major problems with tape hiss. It was louder than the music. They should have mixed down to digital format or recorded it digitally. We had to use various forms of EQ to get rid of the hiss. If you want that tape saturation sound, well, we have tape machines in the studio and we can do that.

94

CALL AHEAD.

A minimum of two weeks.

100 TIPS

98.

MAXIMIZE YOUR TAX DEDUCTIONS. If you're running your home studio as a business, file a Schedule C, and have clients come in from time to time, be on the lookout for additional deductions. For example, if your studio has a bathroom and you have to replace the hot water heater in your house, then the percentage you claim for the studio can also apply to the hot water heater. Same with a lawnmowing service if you're trying to keep your house (and studio) looking nice. *Caution: Consult with a qualified accountant or attorney before taking any deductions to ensure that they apply to your situation.*

99.

DISCLAIMERS ARE A GOOD THING. If you're like many studios, you archive the work of your clients as well as provide them with backups. But make sure you give them a form letter stating that this is done as a convenience, that you don't guarantee your archives will always be accessible, and that it is ultimately the client's responsibility to ensure that all backups are functional and to create additional safety backups.

"THE KEY TO HOME RECORDING IS MARIJUANA?"

100

LES CLAYPOOL states unequivocally, then waffles a bit. "Actually, experimentation is the real key. Of course, you can and will make mistakes, but you learn from 'em. Just go for it!"