Recording Unhinged

Creative and Unconventional Music Recording Techniques
Sylvia Massy with Chris Johnson

Review by Mike Rivers © 2016

Forward

Recording Unhinged is a collection of articles spanning a wide variety of topics in the field of music recording and production. While a vast number of tips and techniques are sketched out throughout the book, it's not a “how to” manual. Its focus is to inspire recording engineers, producers, and artists to break away from the tried-and-true techniques and explore ways, no matter how wacky they appear, to bring the artist's personality to the forefront. While Massy is the primary writer, about half of the text is in the form of one- or two-paragraph contributions from engineers, producers, and artists with whom she’s worked and admired over the years. The list is too long to include here (about 35), but just to mention a few with whose work I’m familiar: Eliot Scheiner, Al Schmitt, Bob Clearmountain, Rick Rubin, Hans Zimmer, Geoff Emerick, Bruce Swedien, Ross Hogarth, and Paul Wolff. Photos, illustrations, and Massy's original and often humorous artwork abound. She’s evolved a studio personality that leads her to put an unconventional (and fun – for her and her artists) twist to each of her projects. In 233 pages plus an extensive index, Sylvia Massy takes the reader on an educational, inspiring, and frequently wild ride through many of her own sessions, as well as exploring the work other off-the-wall producers and engineers that she admires and has learned from.

If you want the short version of this review, feel free to jump ahead to the Afterward for the wrap-up. Otherwise, stick around and take a tour through some recording projects and techniques that are far from ordinary.

Meet The Mistress (of Ceremonies)

After reading this book, you’ll know a whole lot about Sylvia Massy, but if her name is new to you, a little background will get you on her wavelength a bit quicker. Since the early 1990s, she’s frequently
appeared in magazines such as Mix and Tape Op as both an author and interviewee, primarily in articles about bands that she’s recorded or produced. Honestly, I have little interest in hard rock music and therefore haven’t heard much of her work. Many of those articles, though enjoyable reading, went in one eyeball and out the other. I did, however, observe that she joined forces with Rick Rubin to engineer and mix Johnny Cash’s “Unchained” album, one in my own collection that I enjoy.

What really grabbed my attention was the monthly series in Mix entitled “Gear Stories” that she wrote throughout the year 2010. She’s a serious gear junkie and a collector of certified vintage as well as certified wacky recording equipment, musical instruments, accessories, and toys. She shows a thorough understanding of how they work, how they’re used, and how vintage gear relates to its modern equivalents. From these articles, I found her to be an engaging storyteller, a skill that’s often valuable to a producer. Many of these Gear Stories incorporate fascinating tales of how she obtained a piece of gear about which she writes, for example moving a large console across the country, or the history of a gadget’s previous owner.

Fun gear fact: One of Sylvia’s favorite working tools, her Neve 8028 console, along with some of her other gear treasures, appears in Dave Grohl’s documentary film “Sound City.” The console lived in Sound City Studio B where she worked regularly from the mid-1990s until 2001 when she established her own studio, RadioStar, and brought the console with her.

She has worked with well over 100 artists and gathered dozens of multi-platinum and gold record credits - just to drop a few names: Tom Petty, Prince, Bjork, and Patti Smith. Her work on Johnny Cash’s “Unchained” earned a Grammy for Best Country Album. As a graphic artist, her work is featured on the cover of zydeco fiddler Lisa Haley’s “King Cake” album as well as throughout this Recording Unhinged. She’s taught as a visiting professor at Berklee College of Music and participated in the Mix With The Masters seminars.

Cracking The Book

You were probably wondering when I was going to get here. Well, as I was reading through it, I stuck little slips of paper between pages where there was something that I thought would be good to mention in this review, and ended up with about 50 pages worth, so I’ve condensed it a bit, picking a handful of tidbits here and there to give you an idea of what, and what not to expect when you get a copy in your hands. When I write a review (most are about hardware) I try to include some technical background information so there’s something to learn even if you’re not interested in what I’ve reviewed. I’ve included a bit of this here, so read on even if you have enough books or you’re looking for secret
compressor or EQ settings, which you won’t find here. I’ll try to put my little tutorials in sidebar boxes so you’ll know they’re my words, not Massy’s.

Chapter One is about philosophy and reassurance, both to you as an engineer or producer, and to the artists you work with. Mistakes happen, you’ll encounter instruments you’ve never seen before and have no idea how to record, how to decide when to carefully plan and when it’s OK to just wing it. The message here is that you should record music because you love music and you love recording. Don’t expect to get rich. This theme carries into Chapter 2, which begins with a “no rules” theme. Elliot Scheiner describes a setup he contrived to reduce leakage in a boxy room by putting the guitar and bass amplifiers on scaffolds up near the ceiling. It didn’t reduce the leakage much, he wrote, but the artists believed that it was so nutty that it had to work, and so the project was successful. Sylvia describes getting a long extension cord, setting up some mics, tossing a guitar and amplifier off the edge of a cliff with the volume cranked up fully, and recording the feedback and other noises on the way down. While the toss was successful, the recorded sound just didn’t fit the song. Oh, well.

Sylvia continues Chapter 2 by getting deep into gear, describing several pieces in her own collection, peppered with several of her contributors’ favorites and oddities. She begins her discussion of recording consoles with an illustration comparing them to espresso machines (Sylvia loves her coffee), going from a famous Neve down to a USB interface. She has a Neve 8038 and a Raffalo Bravado. I have a Soundcraft 600 and a Saeco Aroma. Get the idea?

Chapter 2 continues with descriptions of several studios and non-studios where significant recordings have been made – castles, the Taj Mahal, theaters, a railroad car, a cave, a mountain top, a silo. Chapter 3 continues with the theme that, technologically, where and how you record takes second place to the music and the artists. Some of the best recordings were made with the simplest of setups, live to tape, whatever works. While we don’t see or read much of co-author Chris Johnson, in this chapter he’s pictured recording a guitar direct to an iPhone.

Chapters 4 through 11 take us through techniques and tales about recording vocals and instruments. You probably already know that in order to record a good vocal, the singer needs to be comfortable, physically well, and knows the lyrics and what they mean. A good headphone mix is important, too. The chapter on vocals covers all of that, but also suggests that there are times when drastic measures are called for in order to get the ideal vocal track – making the singer angry, hang him upside down, singing while standing on a chair or a ladder.
Here are some examples: Bob Ezrin writes about hoisting Peter Gabriel up in the air and gaffer-taping him to a pillar in the studio to coax out a vocal with the emotional impact he was looking for. He was distracted by his fear of falling if the tape came loose and, for the moment, stopped worrying about his singing. One day Tim Finn of Crowded House came into the studio sick and couldn’t sing the song they were tracking, so the producer switched to a song with which his hoarse voice worked well. After recording one good take, Tim relaxed, his hoarseness vanished, and they successfully recorded the song they started the day with. While most studio vocals are recorded with the singer standing or sitting in front of a mic on a stand, some vocalists are more at home with a hand-held mic. While an SM-58 may not have the detail of a fine studio mic, a good performance trumps high fidelity. And for an unusual sound, there’s singing through a snare drum or an electric fan, or sending the vocal through a Leslie rotating speaker cabinet.

Everyone would love to have a Telefunken U47 to record all their vocals, but with some singers or songs, that doesn’t always work. There are other fine mics to try, mics that were never intended for studio and can be found cheaply in thrift shops or at yard sales, can put an edge on a singer’s voice that you just can’t get with vintage microphones or signal processors.

If you want your vocal to sound like it’s coming through a telephone, or perhaps layer a clean vocal track with a fuzzy sounding one, Massy suggests using the carbon button microphone from an old telephone handset, a trick which she learned from her father. The hookup as she describes it is a bit ambiguous. I think that what she’s describing is the battery, the mic, and the signal pins of an XLR (pins 2 and 3) all connected in series. This works (I tried it), and that circuit diagram is like what’s shown in my drawing here, but without the resistor.

The Bass chapter is pretty tame compared to the Vocal chapter, but the one paragraph mentioning acoustic bass gives a nod to the venerable washtub bass, but no tips on how to record it. Our local jug band uses a small omni mic taped to the side of the tub.

There seem to be more ways to record drums than there are drummers. The Drums chapter offers many session tales illustrating both what’s worked and what’s failed when recording what’s usually the foundation of a rock song. She
emphasizes understanding how drummers think and how to communicate effectively with them, as well as the importance of finding the right drums and setting them up correctly in order to get the sound the producer is listening for. Massy stresses the importance of drum tuning and how it relates both to the sound of the drums and how the kit fits with the song. When under the scrutiny of studio close miking, a worn head becomes more apparent than when playing a show, so keeping fresh heads on the drums is important. On a session with the band Tool (Tool often comes up in her examples), she writes of putting on new heads for every song, and in some instances for every take – but not everyone can afford that, either in dollars or time.

Shiny cymbals or cruddy old cymbals? Each has its place. Sylvia’s Salted Cymbal recipe consists of a paste made of crushed potato chips, vinegar, and coffee grounds spread on a cymbal, and baked in the sun or left to cure overnight. This reduces sustain and tames a harsh top end. Use at your own risk, and wash it off at the end of the session.

Typically a drum kit can be recorded with five or six basic mics, but often three times that many might be set up for a big studio session. It’s rare that they’ll all be used in any one mix, but engineers and producers like to have options, and a mic not recorded is an option you’ll never have. When more than one mic in the setup is “hearing” the same drum at about the same volume level, it’s important to position the mics so that their outputs are in phase when the drum is hit. This may mean moving a mic a couple of inches, inverting the signal polarity with a switch on the preamp (or on a DAW track), or simply not using both mics in the mix.

Massy emphasizes the importance of listening to mics in pairs to determine if there’s a phase problem that needs to be corrected. She has favorite starting point for positioning drum mics so as to minimize phase problems – aiming them so that they’re all parallel to a single plane.

There’s also nothing wrong with using just a few mics if it works. The sound of the drums on Led Zeppelin’s “When The Levee Breaks” is a frequently used example, and the setup is often referred to as “The Glyn Johns Three-Mic Technique” although Glyn’s brother Andy recorded that album. As Paul Wolff describes the setup after working on a session with Andy, two, not three mics were used. He quotes Johns as saying that when journalists were visiting the studio, they’d set up extra mics. As Sylvia illustrates the setup
from Paul’s description, the two mics are about 6 feet above the floor, 20 feet apart and 20 feet from the drum kit, with the drums placed about 2/3 of the way back from the front wall of the room. Zep’s actual setup was in a large room with an ascending staircase, with the mics placed on the stairs, but whatever works is good.

Another of Sylvia’s miking tricks is to use a loudspeaker as a kick drum microphone by hanging it about an inch in front of the drum and connecting a cable to the speaker terminals. She recommends running the signal through a DI box, but connecting it directly to a mic preamp with an XLR cable works fine too.

She discusses drum damping using tape, wallets, and old drum heads. She illustrates a clever kick drum damper contributed by producer Paul Kilmster consisting of a bicycle inner tube placed inside the drum and positioned so that it rests against the head. The amount of damping can be adjusted by inflating the tube with a tire pump so that it applies more or less pressure to the head. There are many odd drums and drum setups in this universe, and this chapter includes a plethora of interesting photos and tales from the contributors.

To me, the book’s best eye candy is in the Guitar chapter. In addition to photos of interesting guitars and unusual amplifiers, including a section on tiny amps that were used on tracking sessions, there are a few interesting tips. For example, Eddie Van Halen plugs his amplifier into a Variac, operating the amplifier at a few volts under the normal AC line voltage in order to achieve a certain flavor of distortion that he likes.

In the Guitar chapter, Massey describes what, in my opinion, deserves the grand prize for the most tedious guitar intonation problem-solver. The problem: The guitarist’s grip causes notes within a chord to bend out of tune. The solution: First, tune the guitar, have the guitarist finger the chord, then re-tune the guitar with his fingers in place. Punch in the in-tuned chord – repeat as many times and for as many different chords as you need. Whew! Today you could do that with Melodyne, equally tedious for you, the engineer or mixer, but the guitar player gets the afternoon off.

In the Guitar chapter, she describes a build-it-yourself “talk box.” Tape a funnel to the front of a speaker cabinet, attach a hose to the funnel, stick the other end of the hose in the singer’s mouth, then mic his mouth as he mouths the words along with the guitar. If that sounds too complicated when you have a spur-of-the-moment studio
The Decca Tree is an array of three omni mics, two spaced about six feet apart and the third mic positioned about three feet forward on a line perpendicular to the other two mics. They’re conventionally panned left, right and center. While mics could be mounted on stands, a hanging “tree” is more common for orchestral recording. The tree is usually constructed from aluminum angle and suspended above an orchestra with the forward mic positioned approximately over the conductor’s head.

The Strings, Horns, and Orchestra chapter stresses arrangement and “player management” over technology; getting live takes with full sections playing is the way to go. She explains an orchestral recording technique using the “Decca Tree” mic setup. This is the sound of the Frank Sinatra and Ray Charles big band sessions, according to contributor Al Schmitt, who’s recorded them all. You may already know how well ribbon mics work on horns and strings, and Sylvia agrees.

The chapter is filled with photos and descriptions of unusual mics and techniques that have been used creatively for recording both conventional instruments and those that a friend of mine describes as “you don’t know which end to blow into.” Occasionally you’ll encounter instruments like that, sometimes brought in by the artist who wonders if it can be worked into a song, some found in a junk shop by the likes of a Sylvia Massy, just to see what they can contribute to a track. Be prepared, and learn to listen.

The Keys, Synths, and Samplers contains more great eye candy, and offers an overview of mechanical and electronic music-making devices over the years. Mostly, recording these instruments is pretty straightforward, either direct or from a speaker or amplifier, but these older electronic instruments can be pretty temperamental or unpredictable. Fortunately, today there are modern versions of classic analog synthesizers that are stable and the only thing missing from the original sounds are the buzzes, zaps, and other warts that add (ahem!) character. Larry Crane reminds us that a classic analog synthesizer has a patch panel for interconnecting the various sound generating, modulating, and filtering parts of the instrument. This is where the term “patch” to describe a synthesized sound comes from. He likes to patch a gate with a key input into a synthesizer’s signal path and key the gate from a kick and/or snare track so that the synth

inspiration, she suggests that a similar effect can be produced by recording the instrumental track on an iPhone, sticking the phone’s speaker end into the vocalist’s mouth, and recording what comes out as he mouths the words along with the recording. Clever, but don’t try it with one of today’s oversized phones!

In the chapter about Pianos and Organs, she extols the virtues of the lowly upright piano. For the soulful ballad, or a solo jazz or classical piece, you probably want a grand, but for recording rock and boogie, a properly maintained and tuned upright miked on the lower part of the sound board is often just the right sound. And upright pianos are also cheap and (as she describes in another chapter) and can be expendable (in yet another chapter) if the circumstances call for it.
sound pulses along with the drums and then gets out of the way. Massy also uses a modular synthesizer as a processor, substituting an instrument or a recorded track for the sound generator and buggering it up with the synthesizer’s envelope and modulation sections.

Chapter 11 is about unusual percussion - anything that makes noise, some with pitch, some without. She writes of virtuoso spoon player and Seattle street musician, Artis, recruited for a solo on a Soundgarden recording. He brought in a wide variety of spoons and pieces of scrap metal that he played all over his body, beating himself while miked with a pair of U67s. Sometimes everyday sounds like slamming a car hood or door, jingling keys, or coins find their way into rhythm tracks or to add emphasis somewhere in a song. Then there are ambient sounds such as birds, a chicken coaxed to cluck on cue by squeezing the right spot, birds, a motorcycle, and a slowed-down recording of a luggage carousel at New York’s JFK airport. Last but not least, Massy and her cohorts write of monstrous percussion instruments such as one constructed from sheets of metal suspended from chains, or a steel I-beam equipped with pickups, strung with piano wire, amplified by a 200,000 watt sound system, and played with rubber mallets. Sometimes these are sound effects, sometimes they emphasize the beat of the song, and sometimes they underlay a vocal or instrumental track.

Back in Chapter 3, Sylvia recounted a session with the band Tool where they wanted a recording very loud noise and wanted to have fun making it. She thought the sound of a piano being dropped off a roof would be just the ticket. Being unable to find a cooperative building manager or an affordable crane, they recorded the piano being destroyed by band members using sledge hammers and axes, preceded by a few blasts with a shotgun. The event was miked with a pair of U87 room mics, an SM57 close mic, and a few glued-on contact mics. I looked up “Disgustipated” from Tool’s Undertow album, the song on which this cacophonous recording was used, and, in the mix, it was rather subtle, with the only clearly identifiable sound being the shotgun cocked and fired. Check it out.

Chapter 12 is all about producers, what they do, and how far they'll go (like destroying a piano) in order to make a recording unique without losing the artist’s vision. Sylvia classifies producers three ways, each with his or her own approach to a project. First, there’s musician/producer who often writes or arranges material, then brings in talent to record it. Then there’s the engineer/producer who creates sonic magic in the studio from what the artist brings to the party. Finally, there’s the fan/producer who’s neither technically nor musically trained, but helps bring the right people together. They can overlap; for example, she classifies her style as having elements of the engineer and fan, but sometimes does arrangements and plays on sessions. She takes the responsibility for telling the artist when a performance is good enough and when it isn’t, and when the job is complete.
It’s difficult to pick highlights from this chapter since it covers about 50 years of recording and nearly that many producers, beginning with the old school classic producer working for the record label, taking us through the rise of the independent producer and engineer/producer, and finally introducing the rebels and “mad scientists.” She details several roles that the producer may need to play and tasks such as pre-production and rehearsal to get details of a song ironed out, common weaknesses with intros and outros, managing tempos and click tracks, finding the song’s hook and making it obvious, and finding words that make the lyrics feel special. Then there are production ideas such as the use of unexpected instruments or playing a track or a sound backwards, and finally, controlling the urge toward over-production.

The final chapter of the book, consistent with the final step in the recording process, is about mixing. Sometimes mixing involves just putting up the faders and tweaking tones and balances, but all too often this becomes the place where mistakes are fixed, sometimes by editing, sometimes by hiding, and, as Dave Pensado tells, sometimes keeping a mistake and making it sound like you intended it to sound that way. He writes of hearing intermittent distortion in parts of the lead vocal while he was mixing a track. When distortion comes and goes, it’s very noticeable, so his fix was to run the vocals through a SansAmp, adding consistent distortion throughout the track. Everyone loved it. Others had similar tales of how a song evolves throughout the mixing process, often leaving out painstakingly recorded parts that just didn’t fit with how the song came out.

When Massy talks about panning, she writes of sessions where she went wild on a mix, scattering things in unexpected positions all over the sound field, and at other times, panning everything either left, right, or center, separating elements of the mix with EQ, delay, and reverberation effects. Gear junkie that she is, she describes her Studio Technologies AN-2 stereo simulator that she often applies to a center-panned vocal to spread it out a bit in a hard-panned mix. The AN-2 is an interesting piece, old enough to qualify as “vintage” (1988) but lacking the street cred of a Neve preamp or Telefunken mic.

In this gear-junkie-centric chapter, she introduces the technique of re-amping by feeding a wimpy track (usually electric guitar) to a guitar amplifier. The amplifier is tweaked to get the desired sound and recorded on another track. The new track is added to the original track in the mix, or, in some cases, replaces it.
A variant of re-amping that she’s used for beefing up a wimpy snare track is to tape a snare drum to the speaker, feed the original track to the speaker, and record the re-amped snare as a new track.

Note that the DI at the amplifier end of the chain must be passive. A signal can pass through a transformer (the heart of a passive DI) in either direction, but an active gain stage works in only one direction. These days, tracks you’re re-amping will likely come from a DAW interface with a gain control and a balanced output, so you can get away with just a single DI at the amplifier end of the run, or no DI at all if the cable run is fairly short. Unless, of course, you like the sound you get when using DIs.

She diagrams a favorite re-amp setup using two direct boxes (DIs) connected back-to-back between the recorder output and amplifier input. This provides a balanced, low impedance signal path that mitigates hum pickup through what might be a fairly long cable while giving the amplifier about the same signal level and at the same source impedance as a guitar.

This leads to a trick that she credits to Ross Hogarth. One of the things that make vintage gear sound “vintage” is a transformer at the input, output, or both. Ross attaches a couple of XLR cables to an audio transformer so it can conveniently be patched into a line level signal path. He favors using a transformer wired for 200Ω input and 50Ω output impedance (this will drop the level by 6 dB) and pushing the level going into the transformer. This adds to the “vintage distortion” sound both from transformer saturation and from the strained nearly-out-of-headroom sound of the stage driving it.

The Mixing chapter also suggests using acoustic alternatives to an artificial reverb processor. You can set up a speaker and a couple of mics in a bathroom, stairwell, or church, feeding the speaker from the reverb send bus and bringing the mic signal back to a reverb return (which could be a stereo DAW track). Digital delays, delay plug-ins, tape delay, and even sliding a track a bit along the DAW time line are effective, but the honky, hollow sound of a Cooper Time Cube is special. Sylvia describes and illustrates a similar do-it-yourself acoustic delay using a speaker, a microphone, and a garden hose. Its illustration brings to mind two other of her DIY projects, the talk box and the garden hose drum room mic.

Finally, to conclude the book, she philosophizes on when to decide that a mix is finished. She says (and this may be my only actual quote from the book): “The mix isn’t finished when the ideas run out. In fact the project is done long before the ideas run out, because as an artist, you have an oil well of ideas in your head that never stops flowing.”
Afterward

While many of the techniques and words of wisdom included in this book are applicable to any recording project, the Sylvia Massy that we know today is a rock-and-roll producer, and that’s the book’s main focus. As a fiddle-and-banjo kind of a guy, I don’t have an intimate knowledge of most of her projects. I understand the technology behind her approaches, though, and can see how it relates to other recording situations.

You might notice that there’s no discussion of mastering, loudness wars, or delivery media here. I’m sure Sylvia cares very much about what happens to her projects once she hands over the mix, but since mastering isn’t her thing, perhaps it’s best left for someone else’s book . . . or her next book. Nor do we read of the works of folks like Gary Paczosa and Bil Vorndick who have produced and engineered many of today’s top recordings of folk and bluegrass (“Americana” if you prefer the millennial term) music. But since this isn’t Sylvia Massy’s specialty, I can understand its absence here. She calls what she does “Adventure recording,” and that’s a perfect description of what she does.

The key takeaway from reading this book is that every project deserves a fresh outlook. Your goal shouldn’t be to make a recording that sounds vintage or highly detailed or pristine or lo-fi. Somebody has already done that. Do something that hasn’t been done before, and leave your fingerprints gently but effectively on the project.

Recording Unhinged is going to stay on my coffee table for a long time. I’ve already discovered when I’ve had visitors and had to leave them alone for a few minutes, that if one picks up the book and starts reading, I have to pry it away.

My Fantasy – now that I know more about Sylvia Massy

Once time travel is perfected, I’d love to return to 1949 as Sylvia’s engineer for a session with The Maddox Brothers and Rose. I’ll bet she’d really dig the band, and, having met both Sylvia and Rose, I predict they’d instantly become buddies. Perhaps after you’ve read the book, you’ll be inspired to pursue some recording fantasies of your own.

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https://www.halleonard.com/product/viewproduct.action?itemid=142105
Reference Material

If you’re inclined to look a little deeper into some of Sylvia Massy’s work, here are a few places to point your web browser:

**Gear Stories in Mix Magazine**
http://www.sylviamassy.com/press (5 articles)

**Andy Johns on recording John Bonham on Led Zeppelin IV (the "When The Levee Breaks" drum sound)**

**How To Shoot A Piano – a video from the session**
Shotgun at the beginning, Hammering begins at around 8:00, you’re on your own after that.
https://www.youtube.com/watch?v=vXGpicGYy7M

.Tool - Disgustipated (the final mix)
https://www.youtube.com/watch?v=kOvwc8_QXiY

**Sylvia Massy In The Studio with Thunderpussy**
This is about a 12-hour video production from CreativeLive that costs $100 but there are often discounts. It’s a good look into how a rock session goes and how Sylvia makes it special. There’s a free preview of the drum miking to give you a sense of how she works and learn a little, too.
https://www.creativelive.com/courses/studio-pass-sylvia-massy

**And finally, The Lady Herself**
Her web site
http://www.sylviamassy.com/

And on Facebook, of course
https://www.facebook.com/sylvia.massy

Adventure Recording – She describes some of the tools and gadgets featured in the book here
https://www.youtube.com/watch?v=2_M8ezSX5BU

**Bonus Tracks – for when we get that time machine perfected**
The Maddox Brothers and Rose (1949)
Honky Tonkin' - https://www.youtube.com/watch?v=nOFooVQCV_w
George's Playhouse - https://www.youtube.com/watch?v=SAltZ1xalWO0