Tape Op

The Creative Music Recording Magazine

Mark Howard
Bob Dylan, Neil Young, U2, Tom Waits

Annie Clark
St. Vincent, Sleater-Kinney

Andrew Sarlo
Big Thief, Bon Iver, Nick Hakim

Erin Barra
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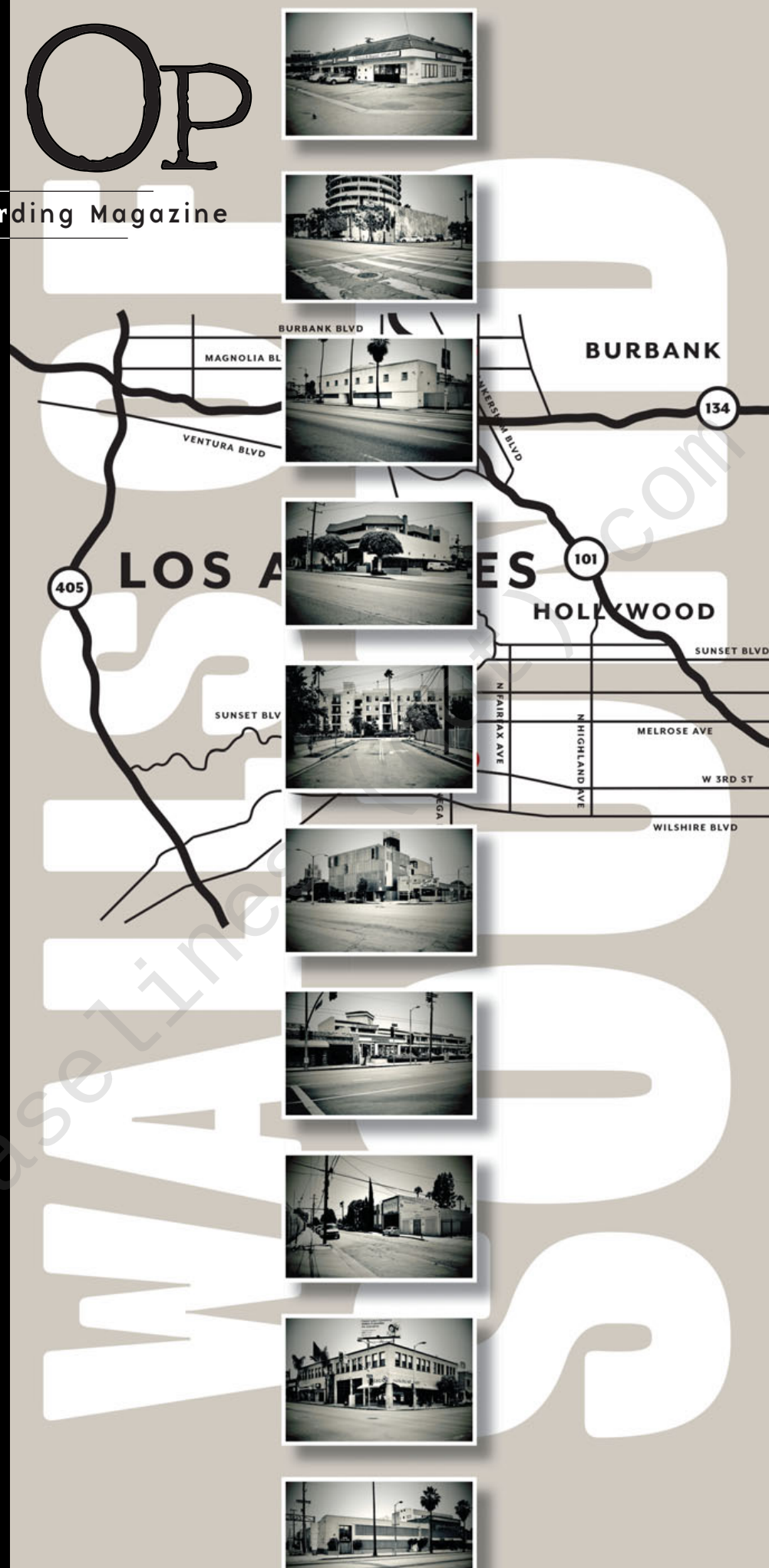
L.A. Studio Photos

Jim Heath
and Reverend Horton Heat

Gear Reviews
McDSP APB-16, UA Capitol Chambers, Retro DOUBLEWIDE II, and many more!



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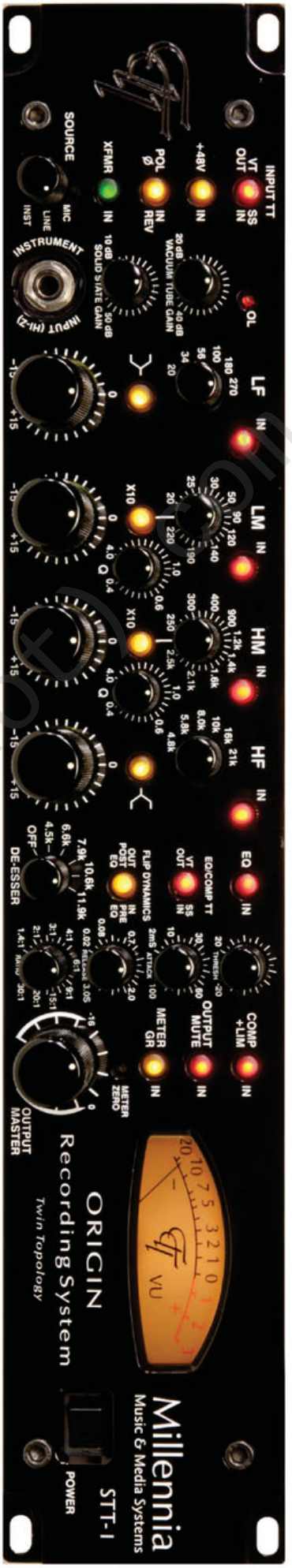
Chris Walla,
Death Cab for Cutie



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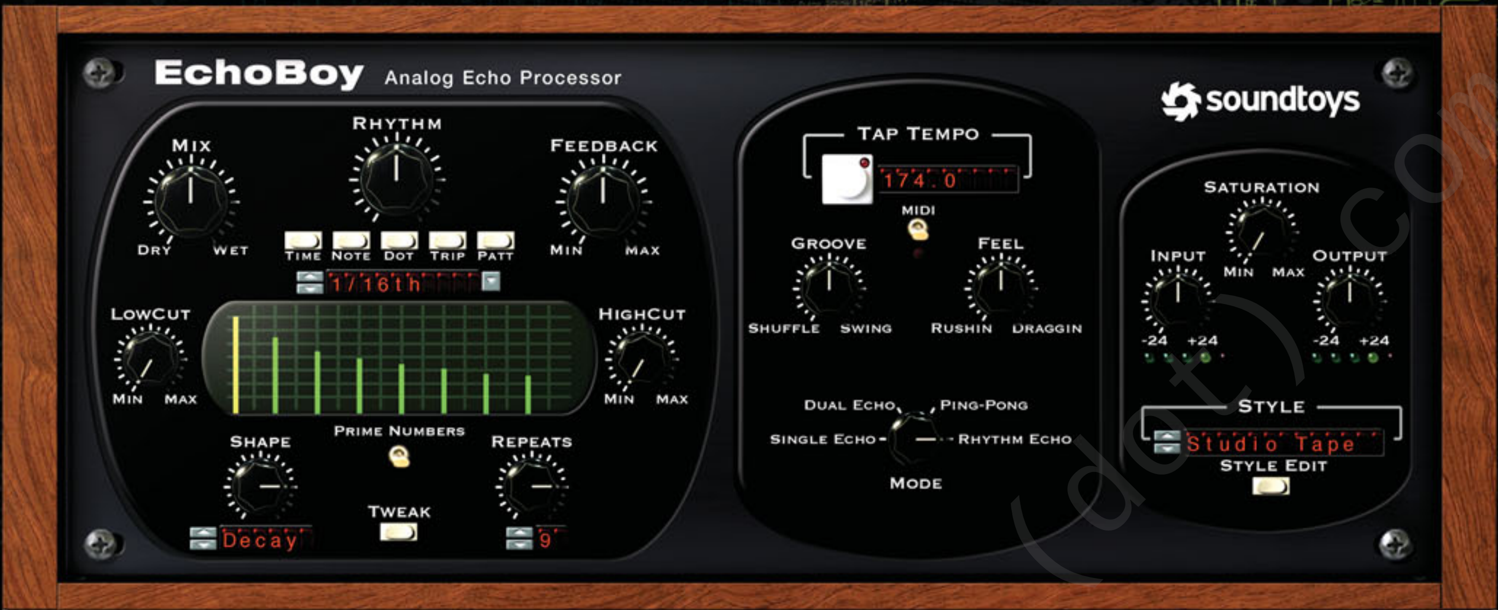

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Hello and welcome to Tape Op #134!

Larry is *Tape Op's* editor and founder; and his duties also include overseeing all the editorial for this magazine. But although I'm known as the "publisher," we always confer about what interviews we have on hand that will fit together well for upcoming issues. During the production cycle of an issue, both of us will come up with new ideas for photos and sidebars while I'm working on the design and layout. It's a fruitful,long-term collaboration.

During the final week of our production cycle for issue #133, we got word that our friend and *Tape Op* contributor Neal Casal had passed away from suicide. **It was a difficult week to get through, but it instigated discussions between us and led to some of the focus of this issue.**

Neal's death came just a few weeks after the death of musician David Berman (the Silver Jews), also by suicide, and the list of musical artists who have taken their own lives – both well-known and not so well-known – is getting too long. Contributor Justin Douglas had already submitted a piece, "Working Happy," and it felt like the right time to run it. It's the first article here, and I believe it's a good place to begin as you take in this issue. As we planned out the rest of the content, we found similar threads in the interviews we were running. Mark Howard discusses how he became physically ill from stress in the studio. Erin Barra notes how she feels happier understanding her role in helping other people with their music as opposed to pursuing a career as an artist. Andrew Sarlo discusses self-doubt, vulnerability, and how making great art can be very difficult. In his End Rant, Larry describes his struggles with feelings of frustration and anxiety when working on unattended mix sessions.

Contents:

Even Annie Clark (St. Vincent), who most artists and producers would agree has had an enviable level of success, says, "You couldn't possibly judge me harder than I judge myself," at one point in her interview. Her take on life, work, and creativity is a good example of balance. As she points out, "I've learned the benefit – and you can speak to this too – of going, 'I am working these days. This is what I'm doing. Then these couple of days, I am not working.' If I don't specifically say I'm not working, I'll work all the time. Then I don't have things to bring into the work."

So, as you read through this issue, keep in mind that music, art, and your career are important and can be life-affirming, but they're not the most important part. *You* are the most important thing, so make sure to take care of yourself.

John Baccigaluppi, *Publisher*

Memorial Paddle Out for Neal Casal in Ventura, California, September 15, 2019.
photo by Thom Monahan

This issue of Tape Op *is dedicated to Neal Casal.*
Read John's post here: <tapeop.com/blog/2019/09/23/neal-casal-1968-2019/>

Tape Op

The Creative Music Recording Magazine

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Tape Op magazine wants to make clear that the opinions expressed within reviews, letters, and articles are not necessarily the opinions of the publishers. Tape Op is intended as a forum to advance the art of recording, and there are many choices made along that path.

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LeTteRs to Tape OP

I really don't relish using *Tape Op* as a forum in which to vent, and I will endeavor to not make this a habit, but I'd like to share a story. **The more drugs a band takes as a whole,** the more difficult scheduling will be. That's before they even show up, on a day that was inquired about but never confirmed. They will wake you out of bed on a Sunday morning at 10 a.m., while you are sick with a nasty cold praying that you can get just a little more sleep between last night's late gig and the current day's 3 p.m. gig. You show them the text thread showing no evidence of confirmation, but you offer to squeeze in time anyway and even indicate that the "minimum number of two hours" charge will be waived for what will be a very short session, because you have a relationship and these babes in the woods always need hand-holding. The artist, who is self-producing (hello, minefield), then calls you "unprofessional" while you stand there in your pajamas, wheezing through the mucous factory that is your head, dealing with this Sunday morning chaos. You offer a bunch of dates in the future, and one is accepted. The assertions of "unprofessional" continue. My own professionalism is just going to ignore that and slog on with the work. I will shower and go to my live gig now, because I am lucky to even be in this crazy biz full-time, still rolling with the changes and insanity. But the formula articulated is: Drugs + Self-Produced = Chaos.

Mick Hargreaves <mickhargreaveslsrr@gmail.com>

Adapting to the constantly changing work environments that others put us in while maintaining a positive mental attitude is important for ensuring longevity in the music recording world. We have to move with grace and humility, while helping to present others at their best. And we have to take care of our minds and bodies at the same time. -LC

Hey man, you fucking hit it out of the park with the Jeff Tweedy/Wilco issue [*Tape Op* #132]. Uncle Tupelo supported Sugar for a bunch of dates, mostly in Germany, in 1992 and it was great fun. The in-depth issue format really worked this time, as it really brought us into his world.

Malcolm Travis <malcolmtravis@gmail.com>

Kudos, as always, for an interesting issue. Even though Wilco annoys the daylights out of me, I enjoyed reading about their process.

Dave Sandoval <djsandoval23@gmail.com>

So glad you reviewed this book! [*Al Schmitt on the Record: The Magic Behind the Music* (*Tape Op* #131)] Absolutely wonderful! Filled with fantastic stories and excellent advice. It was as entertaining as it was informative and educational. Thanks so much. You rock!

Mike E. Dee <mikedee12959@optonline.net>

Okay, there were some basic mistakes made. I did forget my earplugs… and I went to see the Rolling Stones at CenturyLink Field in Seattle. It's a giant NFL stadium. Probably 50,000 people there. Big setup, of course. I hadn't seen the Stones since I worked with them last in 1981. The first two-thirds of the show was loud, but okay. The mix was good. I could hear all the words, hear the little fills, the saxes, the piano, and the backup vocals. I would even say the mix was "good" for an arena show. And then something happened; the level just started going up, and up, and up. It got to the point that I should have left the show, but it was the Stones. My ears, especially my right ear, got traumatized. It hurts and rings. Why do the front of house mixers in almost every live, amplified show I go to feel the need to make the level uncomfortably loud? What is the point? Why so much low end level? **It makes me feel sick to my stomach,** even with plugs in. Why do the mixers allow their good mixes to be trashed into mush by loud levels? I just don't understand. Apparently, I am in the minority. I heard people, and not of a young age either, bragging about "not being able to hear for two days" on the way out. I just don't get it.

Douglas Tourtelot <tourtelot@gmail.com>

At Tape Op *we don't cover live sound. Thankfully, that means I never have to ask any engineer "Why?" about this, but it's a frustrating experience and I hope it gains attention in the future as it can definitely ruin a show experience. -LC*

Congratulations on yet another fab issue [*Tape Op*#132]. I loved the interviews with Jeff Tweedy and Tom Schick, and, of course, all the gear reviews. But my favorite article was your closing End Rant, "Letting the Process Happen." It further emphasized why I continue to be such a fan of the publication and of your editorial ethos. As technology continues to make it easier to make recordings, it also makes it easier to lose sight of the fact that we are making something; that recording is a creative art, and should encompass the elements of true expressiveness present in all the arts – including the elements of chance and surprise. Every one of the great producers I have worked with knows this, and has built it into their process. Thank you for reminding us to leave room for something to happen!

Richard Barone <richard@richardbarone.com>

It made me very happy indeed to see Catherine Vericolli front and center in [Tape Op] #131. She is every bit a true believer; a person you feel good about seeing succeed. I worked on the sessions where she did her first intern gig, and it was not in any way a lightweight gig. Seven albums from Megadeth's catalog from *Peace Sells… but Who's Buying?* through *Risk* (including [the side-project] MD.45) were being remixed, alongside tracking for *The System Has Failed.* Catherine downplays her own efforts by saying she did a lot of coffee runs. She did anything and everything that was thrown at her with a smile, including pulling an all-nighter packing up the home of Michael Schenker's family for an emergency move. Catherine was doing all this while she was still going to audio school. She deserves all the success that comes her way.

Lance Dean <freelancedean@yahoo.com>

It's really been a nice ride with you and your magazine. I read every word as soon as it arrives in the mail. I want to visit your studio sometime before we change our lives and can't do it anymore. Ha! Like that would ever happen. In it 'til the end; I love recording everyone live in the same room. Best vibe ever.

Rich Rock <debacle239@gmail.com>

I loved seeing the review for the Tascam Model 24 recorder [*Tape Op* #132]. Great review of the Tascam – thorough and detailed. Finally, a review for a piece of equipment that's not high-end, not a computer plug-in, and attainable for a small-time recording artist like me. I'm so old school, I'm still recording on an Akai DPS 16 (my second one). I just don't feel the need to go DAW and Pro Tools when I am perfectly happy with the Akai; one of the first digital standalone recorders (when they came out, around 2000). I have plenty of outboard effects, and actually do my mixes on MiniDisc and then copy those to a very good music CD-R recorder. I do master on my home PC using [iZotope] Ozone 7, so I'm somewhat current. I looked at these Tascams before – I panicked when my first Akai broke, but was able to find a used one. One day I'll have to get another standalone recorder; Tascam is one of the few who still makes them, and at a reasonable price.

Terry Kempler <tgkempler@msn.com>

I had to write to agree with your opening letter to the "mixing" issue [#133]. You've come back to this theme a lot; failing is nothing but a step towards greater understanding, helping others is the way to work best, knowing one's place in each work setting, and there's always more to learn. It's all about being conscious. Or as you put it, to "strive for the best work we can do in every moment… And accept every situation for what it is." That quote sounds like every Eastern or Western mystic practice I've encountered. **When I explain this to my students they don't believe me**, but they do notice I'm never in a bad mood and we never run out of things to work on. Much like Joe Henry [#129] stated, staying in the moment absolves us of boredom, losing the "magic," or blowing a take because of an overdriven mic. Maybe *that's* the drum sound now? This is what I love about our work. To do it correctly, to care this deeply, is to know. There's no time to look at a phone or dawdle with a plug-in. We have to stay abreast of so many factors. I know it's how Bob Clearmountain [#129, #84] and Tchad Blake [#133, #16] all work; use your skill set and instinct to quickly move the song and mix to a place that feels best. Many of your interviewees say the same thing; "I pull up tracks and in a short while I've found what the song needs." That song triage is important and, if you care, it's happening all the time – in lessons, lectures, studios, backstage, or in rehearsals. Even listening to music becomes a frustrating endeavor of trying to figure out a certain instrument, vocal texture, or chord inversion. But down that wormhole is everything that is the fuel that runs my whole life. Even writing to you now fills me with that elation I felt when I first heard any of my favorite artists. The fact that we play any part at all in that same field is cause for gratitude and compassion, and those are things which strengthen our work, our lives, and make this home planet we have together a little brighter. Thanks, as always, for your time and expertise and for sharing it with all of us.

Joe Reyes <joereyes.com>

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WORKING HAPPY

BY JUSTIN DOUGLAS

When I was an assistant engineer at a prominent studio – back when those two things existed – I worked a short stint with a well-known rock producer. After a long first day that featured band in-fighting, bruised egos, and a particularly shitty lunch, we were relaxing with a beer in the control room when someone said, "Whew, tough day." The producer leaned back in his chair with his feet up on the console, took a swig, and slowly replied, "Yeah, but we get paid to hang out in a studio listening to music all day."

I always keep that producer's comment in the back of my mind and pull it out when things get overwhelming. Perspective like his may not get you more clients, alleviate insecurities, or make you better or more successful in your work, but it will give you a vantage point outside of your own. Especially in those moments when the pressures of running a small business and the challenges of making art in 2019 collide. If you're reading this, there's a 70% chance you've experienced depression and/or anxiety.[1] This isn't news to anyone in music today. At some point, we've all had the "why are we doing this music thing" conversation with fellow musicians, which always boils down to value. There are the obvious culprits: The demonetization of recorded music, or the fact that club gigs pay about the same today as they did in the '70s, the passivity with which consumers regard music. But I think these are symptomatic of more acute personal crises that aren't as openly discussed. Furthermore, I believe that by identifying and addressing those internal struggles, we can achieve a state of mind where the little things, and their accompanying immediacy and threat of consequence, don't matter as much.

"Who's the most famous person you've worked with?"

How many times have you heard some variation of that question? "Famous" is the layperson's metric for success in music. Spotify plays, Instagram followers, and proximity to popular individuals are a few examples of how we measure ourselves and each other right now. **Buying into this fully means measuring yourself against others, which will almost always leave you wanting.** In reality, everybody measures success differently; we just don't talk about it. Yes, you have to be smart and savvy if you want to make any headway, but keeping an honest perspective of where you're at, as well as how far you've come, will do much more for you and your mental health than constantly wishing things were different, easier, better, or more fair. Perhaps your early triumphs – ones that garnered a sense of pride and accomplishment – are routine now. You've moved your own goalposts, and that's great. That's how we get better and stay interested; and, hopefully, relevant.

The problem, at least for me, is losing sight of both the fact that you made those achievements, and the accompanying feelings they produced, while getting caught up in others' ideas of what you need in order to be considered successful. Keep in mind that many people work an undervalued job in a crappy office with fluorescent lights and Windows 10. ***You* get to work an undervalued job in a cool-ass studio and listen to music all day long.**

So what do you need to be reasonably content with who you are and where you're at? First off, check in on your mental health. I referenced this earlier, and it's the single most important issue I'll discuss here. I believe mental health services should be as routine and accessible as physical health, and not segregated or divorced from other forms of healthcare. Making that arbitrary distinction only serves to perpetuate outdated taboos and personal insecurities. If you haven't already, ask yourself this question: "If there were someone I could tell anything and everything to in complete confidence – anything, no matter how dark, weird, or scary – and they would just listen without judgment, would that help me?" Wherever you live, and whatever your income bracket, there are resources available. I strongly urge you to look into your options. Do a quick Google search today for sliding-scale therapy in your area. After all, your ears are directly connected to your brain (it's science), so keep that shit healthy.

Define what success means to *you*. Be brutally realistic and honest, all while keeping in mind that you enjoy the rare privilege of making art for a living. Seriously sit down and think about this. Do you really need to work on huge records and have your picture in magazines? Are you sure? If so, figure out how in the hell you're going to make that happen and work your ass off. For most of us it means doing excellent work and being rewarded for it both internally and by those who matter to us. It seems obvious, but by working hard and smart, and setting realistic goals – goals you allow yourself to celebrate unconditionally when they're met – you not only take stock of what you've accomplished, but you also become more efficient. **When you know what you're good at and where you need help, you also know better where to focus your time and energy.**

Demote social media as a form of affirmation of your talents. Your pride in your own work and the support of those close to you have to be enough. **You're simply not going to get lasting external validation from social media** (and I'm including streaming services in that term) because they're designed to be fleeting. I know these are the numbers we're measured by, and we have to play the game, but in the big picture it's not that important. When your grandkids pull out a record you did 40 years from now, you're not going to say, "That one got 8,200 Spotify plays in its first week!"

Don't believe the hype. The handful of super-successful people out there had as much right-place-right-time luck as talent, and chances are their lives are as complicated and tumultuous as yours. The same applies when scaled down to local scenes. Focus on you and what's next, not what you don't have or haven't done. Energy follows attention, and that focus could be channeled into improving your craft.

Recall why you began doing this in the first place. I mean the actual first reasons, like jamming in a garage with friends or recording your first album. It was fun. Remember the excitement and joy you got from doing this before external approval and obligation became factors in your work? Those feelings don't necessarily go away, but they aren't nearly as rewarding as enjoying the process.

Exercise. Yes, exercise. Physical activity has been clinically shown to combat depression[2] and anxiety,[3] and among all the other health benefits, it simply makes you feel better about yourself. I play basketball with a handful of musicians every week. I don't particularly like basketball, and I'm definitely not very good at it, but the cumulative effects are astounding. Studies also show that frequency is more important than intensity,[2] so find something you can do to get yourself out of the house, out of the studio, and do it on a regular basis.

There is no finish line. There's no arrival or "made it" moment. Not in real life. We're conditioned from childhood to believe that one day we'll be something we're currently not, that only through hard work and sacrifice will we achieve it, and that failing to do so is indicative of a personal shortcoming. I think much of that narrative is outdated and doesn't apply to the world we currently inhabit. If you love what you're doing, you'll always be striving to do more and to do better, but that doesn't mean you have to constantly exist in some awkward state of insufficiency. Short of saying, "Live in the now," keep in mind how far you've come, regardless of where you perceive anyone else to be.

One of the few real upsides to the devaluation of recorded music is that we're freer than ever to express ourselves however the hell we want. What do you care if anyone thinks your song is too long or if they don't like the crazy effects you put on the vocals? If they're not paying for it, why should their tastes and opinions matter? That's obviously a little hyperbolic, but I'm serious. Musicians, songwriters, producers, and engineers have more freedom than ever to assert their intrinsic value through art without feeling beholden to the circumscriptions of financial backing or sales. That said, it can be really hard to convince yourself that you're enough, that you have inherent value, when all the social signifiers may suggest otherwise.

If external validation is what you need, and for most of us on some level it is, show it by constantly learning, improving, and asserting pride in your work. Others won't always see it, and some may remain hung up on the popularity game of name dropping and awards. If that's the case, you need to be able to identify and disregard it, because those markers have nothing to do with you. Most of your best work will go underappreciated or unheard, even when you shout it from every corner of the internet. That's okay; it's always been like that.

Take care of yourself, make great recordings, and have fun doing it. Realize that your process of striving to make great art adds value to this world. Your contribution combats complacency. Now get back to work.

<kingelectricrecording.com>

Thanks to Carrie Torn and Monte Holman for making the above thoughts and words possible.

1. Hu, C. "70 Percent of Musicians Say They Have Suffered From Anxiety or Depression. What's Next?" *Billboard* 17 October 2017.
2. Craft, L. L., and Perna, F. M. "The Benefits of Exercise for the Clinically Depressed." Primary Care Companion to *The Journal of Clinical Psychiatry* 2004.
3. Lake, J. "How Exercise Reduces Anxiety." *Psychology Today* 6 October 2018.

The m908 24 Channel Monitor Controller (and why we don't have any friends)

Working on a product like this, this hard, for this long, means a lot of things in your life fall to the wayside – friends, hygiene, pets, family. But luckily for audio professionals working in formats from stereo to 22.2 Dolby Atmos™, the m908 is finally here. And luckily for everybody, it's even more amazing than we thought it would be. And luckily for us, now we can go get cleaned up and have a few beers with our friends. There's some highlights below, the details are on our website or at your favorite Grace Design Dealer.

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Mark Howard
Listen Up!

by Roman Sokal

photo by Lisa MacIntosh

Born in the UK and raised in Canada, Grammy-winning veteran engineer/producer Mark Howard has traveled the globe, combining whatever vibe he conjures while oftentimes applying an experimental and spiritual edge to his recordings. For years known as the (former) right-hand man to producer Daniel Lanois [*Tape Op* #37, #127], Howard and Lanois recorded the likes of Bob Dylan, Neil Young, The Neville Brothers, U2, and many others. On his own, Howard has produced and engineered legendary music by top-notch artists such as Iggy Pop, Red Hot Chili Peppers, Nusrat Fateh Ali Khan, Tom Waits, and The Tragically Hip. In 2019 ECW Press released Mark's book, *Listen Up*!, a must-read recording memoir (including deep insight into the personalities involved), which he penned along with his brother, Chris. In it we learn that Howard is a master at creating custom studio installations and environments, a psychological cheerleader who boosts his collaborator's creativity, and is also someone who enjoys pushing the envelope of the craft of sonics – marrying technology and soul while smashing typical audio conventions. Mark's life was threatened by stage 4 cancer, yet treatments have been successful and we're lucky he's here to share his life and talent with us.

Your first studio gig was at Grant Avenue Studio in Hamilton [Ontario]. What did you get out of there, skill-wise?

Grant Avenue was like a testing ground for me. I was already recording at home, and once I got to Grant Avenue I learned how to punch in and edit; those skills that came in really handy later on in life. I learned how to cut 2-inch tape. You've got to line it up on the head of the tape recorder with a China marker. I'd mark it, pull it off, cut it with a razor blade, pull the tape until I got to the other line I cut, and then I'd glue it back together. Bang, that's your edit! Those are the skills that I got from there.

Was this after Daniel Lanois had sold the studio to Bob Doidge?

Yeah. Daniel had sold it a couple of years before. After six months, I found myself going to all night sessions, because Bob [Lanois, Danie'ls brother,] only wanted to work 9-to-5. I did these syndicated radio shows and late-night Hamilton crews who came through. Then they put me on with this guy, [Daniel] Lanois. I had no clue who he was. I ended up doing his session with Bill Dillon. He was always trying to stump me. He'd say, "Put my guitar on track 12. Do it now." I'd say, "It's already there. You can record right now." He'd say, "Really?" I was on top of whatever he was looking for – I used my own intuition. If he was talking about guitar tracks I'd be set up for it, thinking that's what they were going to be doing next. You've got to be on top of it. I treated it like a live show. As soon as people walk in the studio, you'd better be ready to record right then. You can't be setting up a sound while they're waiting.

It's like wasting time, and it could be intimidating to a client who's not used to a studio.

Exactly. Just come in and play; don't worry about technical stuff. I think I won over Lanois with that. Then, six months later, he called me up and asked if I'd help him make a record with The Neville Brothers. He said, "It's only for six months. You've got to come down to New Orleans and help put the studio together [Kingsway]." I took the chance, and Bob Doidge said, "If you leave, the job's not here when you come back." I said, "I'll take that chance." I left, and I never came back. Then Dan ended up going to Ireland to work with U2. He left me in charge of the studio in New Orleans. That's where I started making records – we opened the studio up to people. It was private before that. That's how I ended up working with R.E.M. and Iggy Pop. The first record made at Kingsway was Crash Vegas' *Red Earth*. That led into a record by Chris Whitley [*Living with the Law*] that Malcolm Burn [*Tape Op* #35] produced and I recorded. Malcolm mixed a bunch, and so did I. Kingsway went on. Then we left Kingsway, Lanois and me; we went on tour and then we never came back. We ended up in L.A. Daniel said he wanted to go down to Mexico, so I had to go scout some locations in Mexico and find a place to work out of. I brought some studio gear from Kingsway and also bought a new Amek console. I put a rig together that we could take down to Mexico. I never wanted to stay in New Orleans; I always wanted to keep moving.

When I interviewed Daniel, he was talking about how places like Mexico and Jamaica were good for clean magnetic fields.

Mexico was the cleanest sound that we got. There're no overhead wires. There's no interference. When you play your guitar through a single-coil pickup into a tube amp, it's super clean. It's amazing. Then in Jamaica, it's the same. There was not a lot of electricity flowing around where we were working, so we were getting some amazingly quiet sounds on guitar. In the city, it's hard to do. A lot of times you can't get it, because there's too much electricity, or there's a big power transformer outside of the studio. These are all the types of things you need to look for when you're building studios.

What do you use to measure? Some meter of sorts?

No, no. I used an acoustic guitar pickup. I'd plug that into a little battery-powered Peavey amp. No meters at all; I could hear the hum. I would troll the pickup along the floor in any place I was thinking of recording. You'll know right away; if you plug it in and get a hum, it's not a good place to make a record. If you troll it around the floor, you'll find hot spots. This technique worked really great for finding a quieter spot. When we were recording a tube amp and a single-coil pickup, Daniel would say, "Put the guitar amp right here. You sit right there." It's the quiet spot.

How are bigger cities for these magnetic fields?

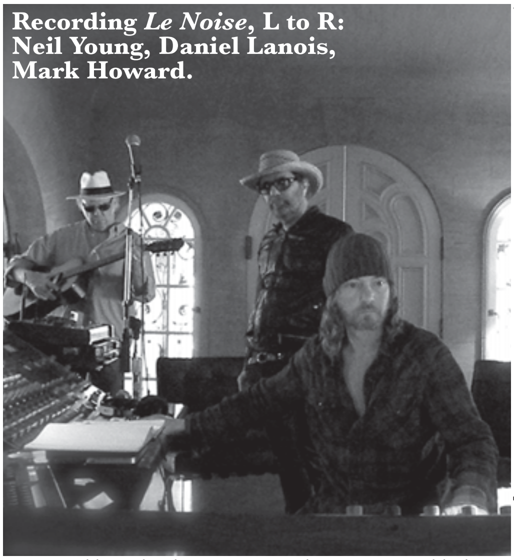
What I would do is called a star ground system. I'd nail these copper rods into the ground, five feet apart, and tie them all together. I would use that for my own grounding system, away from the house's grounding system. You want to have your own self-contained grounding, other than the house's ground. For The Neville Brothers' record [*Yellow Moon*] I had to cover up the windows with sheets of lead because of the magnetic fields from the streetcars going by. Each time they'd go by there was a big pulse in all the guitar amps. It was a funny sound.

One of my favorite recordings that you've done is *Le Noise* by Neil Young. That's just guitar and vocal, but when I listen to it on a good system it almost seems like each string has its own separate treatment.

Neil was coming in to make an acoustic record; that's what we set up for. Then, when he came in, he was like, "Well, I brought a few electrics with me." He brought one guitar that he called "Old Black" – a '53 Les Paul Goldtop that he sprayed black. He put [Gibson] Firebird pickups in there, so it's a lot hotter than what a normal Les Paul would sound like. Then he also brought in this other guitar, which turned out to be the legendary guitar called the [Gretsch] "White Falcon." It was a guitar that he lost in a poker game, and then somebody else got it. Stephen Stills ended up with it. It has this crazy history of how he got it back. He had that guitar, and then he brought in another Gibson guitar that he calls "Hank," because it was Hank Williams' guitar [a Martin D-28]. At the time, I thought, "How in the hell am I going to be able to get any of the sounds he's ever done on all of his records?" I admired him so much. It was a pretty big challenge, but I felt like I brought it to the table. I think there are some sounds that really surprised him. He loved it. It started with the acoustic; we got Hank out, trying all these different pickups. We ended up with an LR Baggs that we put through a Korg delay, and I treated it with a subharmonic harmonizer. When he played the low strings, there was this super sub-bass response coming from it.

Yes. Especially on the song "Love and War."

I had it loud. When he played it, his eyes lit up and he was like, "What the shit is this coming out of the speakers?" He was pretty impressed with that. He played it, and we did a couple of takes. Lanois was focused on filming it, and I had the job of recording and mixing.



Recording *Le Noise*, L to R: Neil Young, Daniel Lanois, Mark Howard.

I was able to do whatever I wanted. I was never told what to do, or what microphones to use. I used a couple of nice tube mics on the Gibson, along with these treatments on it. Suddenly we've got this beautiful sound on this acoustic track. That's why we had the same settings on the board when he ran the electric guitars through, with the sub-harmonizer on it. It was like thunder! We had stacked Dynaudio BM15As, so my playback sound was massive. When he hit that string and hit that chord, the whole house was shaking and rattling. He'd never felt that power before when playing the guitar.

That was going to the iZ [Technology] RADAR, right?

Yep. Neil wanted everything on tape, so it was all going onto tape at the same time and then coming back down through RADAR. But it still kept the quality. Then we came to playing the White Falcon – a stereo guitar. The top strings went to one output, and the bottom strings went to another output. I panned it left and right, so he had a technique where it was a low string on the right, and then on the left. It was pretty cool. I think it was on "Hitchhiker." I think that Neil was really excited. He'd play the melody on one part of the low strings, and he came up with a really cool jam.

Did he have an array of pedals or effects?

No pedals at all. Just one delay unit, a Korg SDD-3000, to add a little bit of echo. It went straight into a tube 1950's [Fender] tweed Deluxe amp. We had eight tweed Deluxe amps, all lined up. We went through them all, found the best two, and used those. I always recorded two amps on him, whether it was a stereo guitar amp or one guitar going into two amps. When he played, we had it blasting with the doors open, and everybody must have heard that all day.

The first tune ["Grace, Too"] off of the Tragically Hip album [*Day for Night*], or Iggy Pop's song "Corruption" [off *Avenue B*]; are the guitars tracked on lesser-quality amps?

Yeah. On the Tragically Hip record it was a small [Zinky Smokey] cigarette amp. It looked like a cigarette pack. The guitar sounds far back; it's got a sandpaper type sound. On Iggy's record he was going through a regular amp, but that sound was treated through a bunch of effects.

That, and the drums too, right?

Yeah, the drums were treated with this TC Electronics FireworX. I had one setting that I came up with to time the delay for drums. You could add filters and flange on it. I'd record Iggy while [producer] Don Was [*Tape Op* #113] was out. When I played it back with all these effects on it, Iggy was like, "Wow, this sounds cool, man!" Then Don comes in and hears it and says, "What does this sound like with all the effects off?" We played it, and it sounded really boring and flat. So, Iggy's like, "Stop! Stop! Put the effects on. I don't want to hear it." That's how it happened. We only used eight tracks on that record, with a Tascam DA-88. A lot of the drums were mono, and all the synthesizers were done in mono. It was lovely. One vocal track, and that was it. That record's got a certain sound because of that. I'll always love that record.

You mentioned in your book how you had 100-plus channels of RADAR and Pro Tools going for a session.

Oh, that was U2. They had a 24-track Studer machine running, and that was locked to the RADAR 24-track, which was locked to 32 tracks in Pro Tools. They had this huge console inside of the studio called Teatro. All three of the machines were fanned out in this practice hall. It was all automated with Flying Faders. They piled on all the tracks.

You tend to do drum treatments quite often.

Yeah. I've used a Lexicon Prime Time [Model 93] – an old delay that made some crazy sounds. You hear it on Neil's *Le Noise* record, where he's tapping the guitar and his voice is adding echoes to it; I'm flying it back in, doing a lot of treatments on top of everything else. The Prime Time definitely has a lot to do with those sounds.

You were saying you were going for an emotional interpretation, either at the mix or recording stage. Do you look at lyrics?

Yeah, I definitely try to get my head in the lyrics. Sometimes people come up with all different lines when they sing a verse, so I'll take out my favorite ones and get them to use those so that everything's equal – so every line feels as good as the next. Especially with Iggy Pop, he would do three takes of the same song, and he'd change the lyrics completely on every take. It was really hard to pick, because they were all great, so we had to make the decision which take was going to be with which lyric. It was pretty interesting.

How about on Bob Dylan's *Time Out of Mind*?

With Bob, I would write down the first word and the last word of every line of the verse. Every time we'd listen to it, I'd add the next word and fill it in as he went. Dylan would always look over my shoulder to see his lyrics and see what he wanted to do. He was really clever with lyrics, for sure. Sometimes he wanted to take the first verse – "Don't give the song away in the first verse" – and put it in the last verse, and then take the last verse and put it in the first verse. I had to be on top of it. It wasn't a challenge, but he tried to challenge me. There was a song called "Highlands" that's 17 minutes long. He'd say, "Go to the 15th verse and punch me into the third word." I knew what the first line was, so I let a few lines go by and then I'd punch him in. He was playing with me like that for a while. I think I was a little embarrassed when *Time Out of Mind* came out. We started the record at the Teatro studio in Oxnard, California. I was getting a killer sound there. I thought, "Wow, this is going to be amazing!" But suddenly Bob said, "I can't work here." It was too close to home. "Let's go to Miami." So, we packed everything up – all this gear – and rode motorcycles to Miami and made the record at Criteria Studios. It was, like, 15 people playing on the floor live, all at the same time, and nobody knew what key we were in. It sounded really bad! But it ended up turning out really amazing once we got out of Miami, and mixed it at Teatro. That's how that record really survived.

I knew that album totally hit me hard, in a good way, when I heard the first song ["Love Sick"], with the little treatment on the vocal.

Yeah, I loved that they were out on the floor, so I did this kind of flat vocal and a flanger on top of the voice to try some things out. When everybody came back into the control room, I played back the song. As I was doing that, I did a "performance mix" to make everything exciting, and make sure the guitars were coming out in the right parts. I had this flanger on his voice, and I printed a couple of mixes to DAT. We put that on the record, the playback mix that came from the control room in Miami. We never touched it again – it sounded so cool.

There's something about doing a mix the same day that you've tracked.

Everything [I do] is flying by the seat of my pants, all the time. I try to keep it that way. It keeps you on your guard. If you're working in the same spot all the time, you get used to doing the same thing all the time. It doesn't give you a chance to grow your sounds. My whole body of work is quite strangely different, from record to record.

Who would you say was the most receptive and experimental with getting sounds?

It really started from the very beginning, when Lanois had me work with [Brian] Eno [*Tape Op* #85]. When I started working with Eno, he would take a standard piano sound and take that out of the stereo mix. It would come out to a reverb; that reverb would send to a delay, and then into another effect. We'd get this swirled sound that's hard to do with piano. It sounds way cooler. That's how ambient music started; not by listening to the pretty Beatles.

There are a couple artists you worked with who weren't in your book. How about the experience with Scott Weiland? How did some of that come about? I think you guys took over *12 Bar Blues* from somebody else's production.

We didn't want to muscle in on their scene. I was in the control room, and what they'd do is send me all their tracks over and I would treat them. Then I would send it back over there and they'd put it into their mix. We came in near the end and finished it up. You don't want to step on anybody's work, so we had to work around it.

Avril Lavigne's debut, *Let Go*, was another. How did that come about?

(continued on page 18)

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She was 16 years old, and nobody really knew who she was. My manager asked me if I could redo all the drums and record some vocals on these tracks. It was done by a production group called The Matrix. Everything was done with machines – all the drums were programmed – and they wanted real drums on it as well. So, they came to me at this place called the Paramour Estate; a beautiful '20s movie star estate, located in Los Angeles. I ended up recording with her there, and that became the album. It was the biggest record that came out of Canada for a while, so it was pretty cool.

You worked with Feist too?

Yeah, Feist came through L.A. one time and I did a bunch of songs with her. She wanted me to finish a record, but I started to shy out of it. Too many cooks in the kitchen. But I thought what I cut sounded way better than what ended up on her record [*Metals*]. It never got heard, but she liked it. She ended up going with these other versions.

Who are some of the top players you've worked with, who have amazing tone coming out of their hands?

I'd have to say [guitarist] Marc Ribot on the Tom Waits record, *Real Gone*. Marc Ribot is, like, *man*; what he comes up with is pretty amazing. One time he had this feedback going on; it was all out of control. He was stomping on his pedals, and he couldn't stop it, but it sounded amazing on the track. He said, "Hang on. Let me try another take!" So, he does another take, and he does it exactly the same. It's out of control. He's pretty cool.

Awesome. You give a lot of kudos to these artists you work with, great ones of all kinds, but what can you tell us about Vic Chesnutt?

Oh, man. Well, Vic was an amazing writer. He had great lyrics and wrote from a perspective that nobody else does. He'd write about how lonely a grain of sand is; things that we don't even think about. He was paralyzed, and in a wheelchair, but he still played guitar and sang. I brought in Darryl Johnson, Doug Pettibone, and all these killer players to play on his record. When it came around to doing solos, he took all the solos. Having these great musicians around really pushed him to play better than he ever had in his life. It takes you to the next level.

Tom Waits?

He can't explain anything in any technical terms, so if he wants the vocal up, he'll say, "Put a little more hair in the vocal." Or if he doesn't like the drum sound, he'll say, "The drums sound a little vague." You might tune them up, and he'll say, "Make them sound fun!" Everybody's got their own little thing.

At Teatro, and at other places, you'd get the vibe going by projecting films while tracking.

Exactly. I've always been impressed with films. I think once I got to the Teatro, it was an opportunity to take it to the next level by projecting and using all these mirror balls, projecting on hot air balloons, and having multiple projectors all going on at the same time. I had this device that I got from Home Depot for turning lamps on and off in a house. I used that for turning projectors on. I could turn one on, then another one on top of it, and then put a mirror ball on. It was like this crazy place every time I played with these light shows.

What artists went further with their playing and writing in responding to the projections?

I was making a record [*Terra Incognita*] with Chris Whitley, and I would project cartoons on his chest!

You've done a good number of projects in places that weren't studios before. Is that the majority of gigs you've done, or have they mostly been in proper studios?

Every record I've made, I've done them all in installations; not permanently, but for three years or a couple years. The way I make records now, each record is at an installation.

What gear do you have now?

I'm pretty self-contained. Everything is in cases. The RADAR is the brains of the operation. That's running off of a touchscreen mixer right now. Being able to travel with just the RADAR and the touchscreen allows me to be pretty portable. I have these custom-made preamps that Bob Lanois developed early on. I took it upon myself to take them to the next level: I did all gold-pin connectors, rearranged the [circuit] board, and got 990 op amps. Sometimes the sounds that you get depends on where you place certain parts on the board. I have an endorsement with Dynaudio speakers, so wherever I am I usually have them ship me some. I've used them in Australia, Berlin, and L.A. That way I've got speakers that I'm definitely used to working with. I have a case of beautiful microphones that are all my key mics that I've been using over the years. I love Sennheiser 409s on the guitar. I like the old, square AKG D12 kick drum mic for close mic'ing the kick, and then usually a Coles [4038 ribbon] mic two feet in front of the kick drum. I do a combination of sounds, mixing between those two mics. That's how I get those punchy, organic bass drum sounds. A lot of kick drum sounds are really clicky and you can hear it in small speakers. But with this technique you can actually hear the warmth, the feel, and the punch; even in a small speaker. Then, for vocal mics, I use a lot of [Shure] Beta 58s. Usually I'll track in the room with a Beta 58 and an RCA 44 beside it. I happen to have one that came out of Capitol Studios [*Tape Op* #114] from the '40s. I've got photos of Frank Sinatra singing into it. It's really beaten up, but I haven't found another microphone that comes close to it. I grew up on [Neumann] U 47s and U 67s, as well as [AKG] C12s; all the best mics. But I got this microphone when I made Tom Waits' *Real Gone* record. We were using the [Sony]C-37A on his voice. It was sounding good, but as soon as I got that 44 on his voice, it just sounded like cream. It was like night and day. No other microphone sounds like that.

Is the 58 used for the singer to be comfortable, like how they'd be live on stage?

When I track the band, I usually have the speakers on pretty loud, so they don't have to wear headphones. Usually the singer might sing with a 58 right in front of the speakers and hear his voice as loud as it would be at a concert. That way he's singing in the room with the band and getting sound pressure from the band. That makes a lot of singers sing out – more of a performance – than when you put somebody in a booth with headphones and a tube mic. When they're with a band, they're more inspired to sing and project it out. I did it a lot with Bono. He blows up tube mics, so you've got to use the 58 and turn the track up really loud. He sings to the track coming out of the speakers, and then you get these performances out of him. I think it's a technique that not a lot of people use; not many other people than myself, Lanois, or U2. They're the only ones I've seen make records like that. Once I started working with R.E.M., Michael Stipe would be laying on the couch. I'd give him a 58 and say, "Let's put down what you're singing in the room." He'd say, "What? I can sing while I'm laying down on the couch?" I think he got a lot of cool ideas from doing that – a lot of lyrics came out of him that way. Inspiration, that's what it comes down to.

How about working on the *Sling Blade* soundtrack? That was pretty experimental.

Yeah. Billy Bob Thornton asked Lanois to do the music. At the time, we thought it was just a little art film. It had a low budget of like $25,000 or something to do the music. I had a lot of instrumental music that I'd done with Lanois from the Mexico days – all these cool pieces that I could lay in underneath pictures. As we were watching the film, I would dial up a piece of music and play it. They'd say, "Oh, we like that one!" I'd chop that down and fly the music back in underneath. There's one track on *Sling Blade* called "Orange Kay." He played that live and I came up with this disturbing sound on it – it had all these treatments on it with a sub-harmonizer. It's scary sounding. Then I did a bunch of other recordings with him where he played guitar and used this loop box called the Boomerang. I'd do treatments on top of that. We were a bit of a team. He'd play it, and I came up with things to bring those instrumental parts together. That's how all that came together. I was kind of responsible for putting the whole soundtrack together. We were mixing the movie, and Daniel put me on the job of putting the soundtrack together for Island Records. He gave me a production credit on it; produced by him and me. He didn't [give me credit] for the movie, but for the soundtrack I got a production credit. I pretty much did all the work, but that's the way [it is] when you're working under somebody. That's the way it works. They get all the credit; you do all the work. It's that way sometimes in the studio. I think that's where all the abuse started with him and me. I don't think he wanted me to go off and work with other people, because I was such an ally in his camp.

You're in Toronto these days.

Yeah. Yeah, I'm here. I live right on the edge of the Entertainment District. There are lots of little restaurants. The hospital is a couple blocks away. For a while it was four appointments a week; scans, and blood tests, and this and that. I was living in Burlington [Ontario, Canada] with my sister when all of this came down with the cancer. It was hell driving back and forth every day just for one appointment, and then to come back to follow up the next day. A friend of mine helped me put together a GoFundMe campaign. That raised a bunch of money to help me rent a little apartment here in Toronto and be close to the hospital. It helps. When you're sick, and you're driving for an hour or two to get back home every day, you don't feel good.

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Your health is doing well?

Yeah. The doctors gave me the green light. They can't find any more cancer in me, so I'm starting to get back to work. I've been putting on these concerts, helping to raise money for Princess Margaret Hospital for their research for the melanoma cancer that I have. This treatment that I'm on right now is an immune therapy, in a way. I have to go in every three weeks and sit there for an hour. This therapy that I'm on doesn't work on everybody; I'm lucky it worked for me. The cancer was in my liver and spleen, so I'm super lucky.

I'm sure a lot of positivity helps.

I kept a real positive attitude and thought, "I'm not gonna die." I've got to put up with this treatment, and knock it out, and get back to work. By having a year off and sitting on the couch, it made me dream of all these other things, like becoming a concert promoter and putting on these big shows. I did one last October at [Toronto's] Roy Thomson Hall with Sarah McLachlan, Randy Bachman, Sam Roberts, Colin James, and a bunch of others. They all came in for free, and I had a backing band. I put on this last one in Hamilton. They were all Hamilton artists. It was a tribute to all my friends and family who came from Hamilton. I raised a bunch of money for the hospital that helped me.

How about recording? Have you been tapping into the Toronto area?

I haven't made a record up here since I've been sick. I've done a bunch of recordings with some people to test things out and keep me going. I did go to L.A. and make a record for four days with these women called Mustangs Of The West. That turned out really great. I just went and did some recordings with an artist in New York. I'm inching in. I'm still in treatment at the hospital, so I can't go that far away. Even though it shows that they can't find any more cancer, they want to keep me on the treatment for the full term of the drug. It's a two-year program, and I've already done a year and a half of it. They say it's 95 percent sure that it won't come back if I do the full term. It's a scary time. You've got to keep your mind busy. In my book I talk about Lanois fucking screaming and yelling at me. After 25 years of somebody calling you all the time, it takes a toll! At the end of working with Lanois, I was going to [the] emergency [room]. Everybody always said, "How do you fucking put up with him yelling at you, putting you down, and calling you all this shit?" Even Dylan joked when I was sitting at the console, "What the fuck? Does this guy have a mental problem?" It's work, it's stress, and then I was having panic attacks. I was in the emergency room every week, like, "I'm dying." They're like, "There's nothing the matter with you!" I'd say, "But it feels like something's failing, like I'm going to die any second. I can't breathe and I'm choking." They're like, "It's just a panic attack." I'm like, "No, no! You don't understand. This is physical, it's not mental." They'd say, "Nope! There's nothing the matter with your liver. You're perfectly fine." They put me on Lorazepam.

It's a good drug, if used properly.

I know; it's amazing. I went through all that, and then suddenly I had cancer. I thought the cancer was causing these weird things, but it was a panic attack again – while I had the cancer – and I didn't even know it, so it took all this shit, as well as going to therapy.

So, how's your motorcycle hobby doing? Are you still collecting?

Yeah, I've got a couple of old British motorcycles that I tinker with. That's another good way for me to take my mind off of cancer and other things. It's like with music; when you make a record and come out of there, you're a little bit of a basket case. You're all concentrated and your brain's fried. Going for a ride or working on the bike is my meditation. I'd go on these rides with Dylan. He'd take these rides by himself, and he'd discover that by taking these rides he started to think about, "Oh, wow. I see what these guys are doing now. I understand." Where he didn't get it in the beginning. It was difficult to see the big picture. He directed all his energy into that once he got it. I've always been into bikes. I've gotten bikes for Dylan, for Daniel, and for other musicians. I think that it's good to have a release, other than music. When you work in it all the time and you come out of it, you don't want to listen to music at that time. You're burned out. If you burn yourself out with music, you lose your interest. Why are you making records at that point? You've got to try to find interesting people to work with who have great lyrics. I think that as long as they've got great songs, I'll work with them. But I'm not into trying to build anybody's career by trying to make something out of nothing.

There's a quote from the book's epilogue, "If I was on the same level musically as the most gifted musicians, I'd end up pushing ideas on them rather than pulling from them their own brilliance."

Yeah. What I see in the studio is a lot of producers push themselves [on the artists] musically. "Hey, I've got this part for you. Try this out." That works for some people, but people like Tom Waits or Bob Dylan have to find their own way. You don't want to step on their brilliance by steering them in the wrong direction or saying, "Hey, I've got this part." People try to push themselves into other peoples' music, where the artists are like, "I don't want to use that line! I like my lyrics better." I saw Lanois pull that off on a couple of people, but they weren't into it. I always thought he was a brilliant musician, but telling Bono on "Where the Streets Have No Name" – "Look mate, you can do better than that work. That's throwaway. What are you thinking? I know you can do better!" But Bono said, "No, I want to keep it." It was one of their biggest songs! Although he was trying to help him, you've got to look for the lines to cross and how to get around it. I let it become a good work ethic for me. I do have to push certain people, but I make them think that it's their idea. Once they trust you in that way, then you've got the license to open the drawers a little bit more. I'm lucky that people keep calling me to make records. Other people I know have had to seek out new careers. One thing about this industry is that connections make themselves.

<www.markhowardrealmusic.com>

Listen Up!: Recording Music with Bob Dylan, Neil Young, U2, R.E.M., The Tragically Hip, Red Hot Chili Peppers, Tom Waits *is available from ECW Press as print, audio, and e-book formats.*

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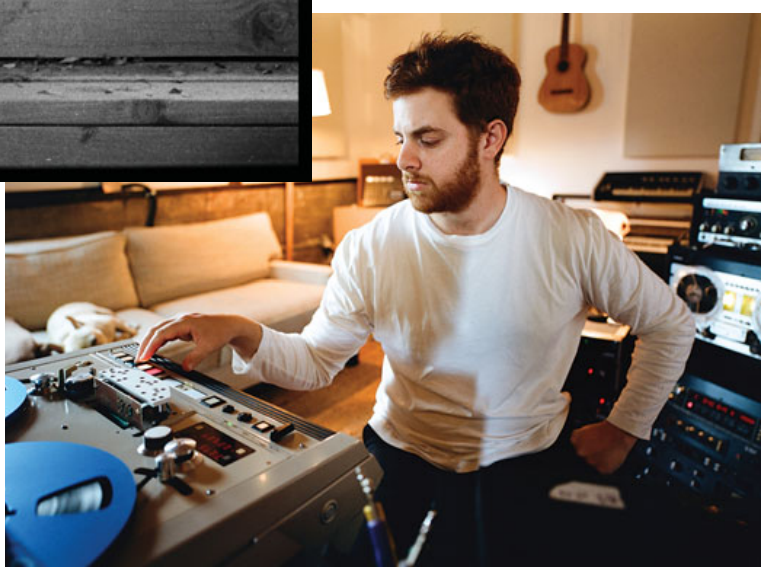
Andrew Sarlo

Sanctuary of Possibility

by Ryan Sommer

Photos by Robbie Jeffers

Andrew Sarlo's sense of being grounded, coupled with his simultaneous respect for personality and human emotion made for a unique and rewarding interview experience. Even with credits like Nick Hakim, Bon Iver, and Big Thief under his belt, as well as an already-established path into L.A.'s world of professional production, the 28-year old claims he's, "Still a baby, and I'm growing."
Taking time away from a new project, Andrew chatted with me about what it was like learning under the masters at Berklee College of Music, the emotional response that music is capable of, and what that should mean to producers.



Where are you based these days?

I moved to L.A. the summer of 2017. Right now I'm purely freelance, working out of whichever provided studios, but I definitely have aspirations to have my own spot. I want to have the ability to have folks over, but it's frustrating. I can't do that right now because my house can't really accommodate that. I'm working towards having my own room and am looking forward to that.

What kind of rooms do you like?

I like studios that are a bit contained. Where you can choose to have ambience or not, depending on where you put up a microphone. But really, I'd stress the control room the most. With a control room, you want a sanctuary of possibility. The best-sounding control room you can pull off will really inspire something you didn't think was possible. That's what makes a studio great. [I find] the playback in a lot of studios is difficult to trust. It's really hard to fight acoustics in control rooms, but if I'm in a studio where I make one or two EQ moves and I suddenly realize I'm piloting the experience super easily, I quickly see how it's the room helping me do that. If the room is making me feel comfortable and I trust it, I'm able to stretch so much further than I thought I could. It's seldom that I've been in quality rooms like that, and it makes wanting my own room even more urgent.

How did you get into recording?

I started as bass player when I was a kid. When I was 11 or 12, my friends and I all decided one afternoon that we would start a band covering Green Day. At 14 to 18, I was making really hilarious compositions with GarageBand and Logic for my friends and I to have a laugh. If you pull up the "tenor sax" MIDI patch in GarageBand you can't *not* smile. I flirted with hip-hop beats, which didn't last all that long. I would go onto the iTunes music store and go to the "electronic" music category to find cool album covers, which would later reveal themselves as Burial and Four Tet. I got very absorbed in finding out how they did it.

You ended up at Berklee, which has a great reputation.

Yeah. It's a very expensive endeavor – thank you, Dad! There is an advantage to having SSL and API [consoles] everywhere for your training, but it's insane to think people need to spend that much money to become considered "trained." It helps getting used to gear that is in common studios you may go work in but, at the same time, I would say I resent gear culture.

How do you mean?

I firmly believe the chemistry of people working together, or having peace with your vulnerability, will bring you better results than any piece of gear can. Is it even worth listening to a bad song recorded well?

What is Berklee like?

You have people like Susan Rogers [*Tape Op* #117] as your instructor. I remember we had a project to deconstruct a song, re-record it, and try to make it sound like the original recording. I picked the Bon Iver song "Skinny Love." I was doing this sound-alike with a few friends who also went to Berklee, trying to get them to sound like Bon Iver, and I couldn't get it. I went to Susan and had a mini breakdown, telling her, "This is impossible." I'll never forget when she smiled and said, "Andrew, that's exactly the point."

That's great! Should a vibe start differently for every project, or do you try and recreate acoustic fingerprints in advance for an artist based on input they gave before you start?

It's a cop out to say it's different on every project, but really, it is. There are a lot of typical processes we go through working on records, such as hearing "reference tracks," and I find there is never really "the best time" to hear someone's reference tracks. It's never like, "Before we start, let's have a listen to music you like and then everything will come together afterwards." Really, it comes down to understanding the person's interests. Not necessarily their musical influences, but understanding *them* as much as I can, and what looks good on them. These days the demo will come in and it's already sounding great. Nick Hakim is a great example. When Nick shows me a demo, it's almost a given we are going to keep a whole lot of it in the final recording because there is no need to take backsteps. I feel like that's the new sweet spot for engineers because of the advancements in inexpensive gear – to take someone's demo that has really good moments in it, and adapt to commercial-ready production – if that matters to the project or artist.

I liked your production on the Big Thief record *U.F.O.F.*

We recorded all of *U.F.O.F.* at Bear Creek Studio, outside Seattle, in three weeks while we all lodged inside the studio as well. We engineered, produced, and mixed it all there in those weeks, and I doubt I'll ever want to do that again! *[laughs]* It was a stressful experience, and it definitely was the most demanding record I've worked on yet, but it prompted all of us to be on our A-game, which was inspiring. There were obvious moments when it started to feel claustrophobic, staying and recording in the same place with x-amount of the same people around, but no one ever went full *Shining*. Dom Monks, who engineered the record, is truly the nicest person, but he even had one little episode, which was shocking. We were all working so hard that it was only natural we would feel the edge at times. But serious kudos to Taylor Carroll at Bear Creek for facilitating a fluid experience for us. He was so on top of everything we needed that it never got too painful to work. We had energy, somehow, every day. Plus, the Pacific Northwest fresh air experience, when walking out of a control room and into nature, was truly breathtaking.

Was any material born out of a creative process of using the studio as an instrument?

Tons. The main guitar on "Jenni" was James Krivchenia's idea to run Adrianne Lenker's guitar signal through three different amps, all with separate pedal chains and mic'd up in their giant live room. The ambiences at the end of "Magic Dealer" is the sound of James' Casio keyboard through a series of stereo effects, and we all volume rode different passages together on the Trident console during mixdown for that song's outro. One of my favorite things we did was James played the backbeat of the song "U.F.O.F." not only with his kit but also by pushing in and out the quarter slot of the studio's portable phonograph recording booth in the back of the live room. It's an old relic; one of those old machines that you can go inside like a phone booth and record yourself straight onto a 45. James used the quarter slot and pushed it back and forth for the whole song. It was comically perfect.

Which producers or engineers inspire you?

I do really appreciate Nigel Godrich's work. I'd also put Dave Fridmann [*Tape Op* #17] in there. Sometimes I hear one of his mixes and I'm speechless. Derek Ali, Kendrick Lamar's engineer, is prioritizing everything right. He's very athletic in his approach to mixing, and it's inspiring. In some ways I don't want to know what people are doing with their sounds; I want to cling on to music just being magical. But then I have aspirations to want to be in the same league as people I admire, so I start digesting music differently – maybe come up with a few theories, with or without evidence being accessible to me on how a song sounds the way it sounds. But I'm starting to let go of concerns as I'm getting older. I can't be working on other people's music for the rest of my life, banging my head against a wall, wondering why my work doesn't sound like Nigel Godrich. Pretty futile.

Those first Nick Hakim records you did are really special, with a personal vibe.

The reaction we got from those records validated the effort and hard work we put in. It gave me the positive reinforcement I needed to keep on doing this. We all get impostor syndrome, "Am I qualified to be doing this on a day to day basis?" If you put a lot of effort into something and it gets noticed, it puts some gas in the tank. Knowing people are experiencing the music the same way you do is massive. It's important for people to express their vulnerability musically. I carry a lot of self-doubt when I'm working on something. It's important to voice those fears while you are working, and also get grounded in the fact that most of the records we know and love were not easy for those people who made them. They say great art appears effortless, and when I listen to Godrich or Fridmann I'm like, "God damn. These guys have it figured out." But I'll guarantee you that both of them had to drag themselves through the mud to get to that point. It takes a lot of personal courage and belief in yourself to get something to a higher level.

You throw a pretty wide net stylistically, as far as artists and talent, but real authenticity seems to run through all of it.

I can go from deep cuts of not very well-known material to listening to the latest Rihanna song and love them equally. For someone to take pop music so seriously, and not credit it as functioning as a vessel of empowerment for whomever is listening, is a huge mistake. My range might represent wanting to work on music with people whose intentions are pure. It helps if the music has healing properties for its audience.

Listening to the Second Big Thief record [*Capacity*] is a hugely emotional experience. What would you do or ask ahead of time with new artists that come to you to see if they meet that criteria?

I'm super grateful because I feel like I proved some things to the external world with *Capacity*, and the band gave me the space to do that. We were all close friends for years before that album was recorded, and I have a lot of pride for what our collective energy can churn out. The way I would weigh a new, prospective gig has to do with the music, but almost more the quality of the person. For the sake of arguing, let's say I'm not into someone's previous work but I meet them and I can tell they are good people and that authenticity could ring through. That's enough criteria. Part of my job is translating and communicating a message to an artist's audience, so it's always possible that the previous translations were poor or rushed. That's part of why it can be so heartbreaking when you meet someone whose music you always loved, and it's like, "Man, that person is a bummer."

How do you listen to music? Do you start and finish an entire album critically?

It's entirely on the artist and producer(s) to make something that's worthy of attention. When I hear people say that the album is dead, my reaction is that artists and producers have to make better albums if we want the audience's attention. I get romantic about the album, and I laugh when someone says people don't listen to albums anymore. As long as music is communicating something, people can stick around to listen.

What advice would you give young, aspiring engineers/producers?

I'd say that if you want something to sound special – and you can't articulate how to do that because you don't know how – that it's a perfect time to go to extremes in your workflow. If you are tinkering with sounds and scratching your head to try and make something sound special, it may be the right time to try fully wet reverb amounts or delay throws that make you want to vomit. Try abusing a compressor, or double the whole song with a version of it an octave down. No one discovers things by looking from afar. Do something different just for yourself and what you may come across is a new sound, or you'll start to feel more and more comfortable with your own exploration. In turn, your confidence receives a boost and your brain leaves you alone. I really do feel like a baby still, and that's mainly because of my mental game. I used to get in my head way too much. Nick would have to assure me everything was going to be great, or Adrianne would call me to make sure I was feeling okay. Those things are a bit ridiculous to expect from other artists you hardly know. It's important, not only within musical expression, but in your life to get as much out of your own way as possible. Provide space for people to be vulnerable, and we all may be impressed by human ingenuity. ☮

<*www.andrewsarlo.com*>

In some ways I don't want to know what people are doing with their sounds; I want to cling on to music just being magical.

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ANNIE CLARK

DOWN THE RABBIT HOLE WITH ST. VINCENT

INTERVIEW BY CIAN RIORDAN
PHOTO BY FRANCESCO GRIECO

From the early days of touring with indie luminaries The Polyphonic Spree and Sufjan Stevens, to releasing six albums as St. Vincent and recently wrapping up production on a record for Sleater-Kinney, Annie Clark is much more than a modern-day guitar hero. Her left-of-center approach to songcraft, joined with a unique sonic aesthetic, has made her a reckoning figure in contemporary music. I was lucky to meet Annie last year while engineering Sleater-Kinney's upcoming album, *The Center Won't Hold*, while Clark produced. The two of us ended up forging a great producer/engineer rapport and have been working on numerous recording projects since then – mostly at her home studio in Los Angeles. We've joked about the creative mind-meld we've developed from spending so much time working together, so it seemed like a natural fit for me to interview her for *Tape Op*.

Tell us about how you got into recording music and your recording journey.

My recording journey started in seventh or eighth grade with a Tascam cassette 4-track. We were talking about it the other day, when we were chasing that sound. It's so nostalgic. My stepdad was into computers. My uncle was an amazing guitar player and had a science/engineer brain. My stepdad talked to my uncle and they helped me build a PC-based recording system in my bedroom – I was 15. That was when you had these massive A-to-D converters, and everything was weird and outboard. I was using Cakewalk Pro Audio. My friends in high school would call me "Missing In Action". Instead of going to whatever party at whatever dirtbag's house and smoke weed, I was in my room with this recording setup, writing songs and trying to sing along to practice Billie Holiday riffs.

Oh, wow. So you basically used the recorder as an avenue to learn and practice different kinds of music?

Yeah, as well as learn how to arrange, I think. But it was a little different. It was right at the beginning of that home studio world; a prosumer thing, but before, "Oh, I've got a Mac and it has GarageBand."

Back when there were a couple of extra steps involved...

There were a couple of extra steps involved. But it was different in that I had played in some bands too, but suddenly I could do it all myself. I think that I did more of that than jamming with people, in those days. It's neither here nor there. But yeah, it was always a more solitary confinement. What about you? How did you start?

Same thing, but playing in my garage. I was a drummer, so I relied on other people... sadly.

Yeah.

But yeah, same thing. I always had computers, but I never had the musical ability to create something all on my own. I had ideas, but then I started meeting people in high school and college who could actually write songs. The idea of starting and finishing a song was so foreign to me.

Mhmm. Is it okay to say that your dad worked for Apple?

Yeah, totally.

You've talked about how he was always bringing prototypes home. Did you ever experiment with any early Apple recording software programs?

Even though I had access to so much Apple equipment, I had this rebellious streak growing up where I would get a Windows laptop... just to try something different.

Oh, my god! What a nerdy rebellion too. I remember using Windows 98 and feeling like it was punishment. I remember going to college and still having a PC.

This was Berklee [College of Music]?

Yes, Berklee. Judge me. You couldn't possibly judge me harder than I judge myself. *[laughter]* But I got a Yamaha 16-track digital recording unit. It was big and heavy, and I remember being so impressed because it had motorized faders. I was like, "Fuck, yeah. Check out this fader recall." Great for showing off! The interface was all in that hardware box. I don't think it was particularly compatible with software. Also, I remember there was Cubase, but Apple still hadn't come out with GarageBand and Logic. I used that to make a lot of my recordings in college. When I think back to the Tascam 4-track, I feel a warmth and a vibe. When I think back to the recordings that I did on the Yamaha, I don't think of them as vibey. But maybe that was the kind of stuff I was writing at the time.

Yeah. Do you think that's the simplicity of the early days, combined with not knowing?

Yeah, it's possible that there's just so much nostalgia wrapped up in those early days of hearing yourself recorded back. "I'm making the thing that I love." But then, after the Yamaha, I got a Mac, and I remember getting so excited. I got a Mac and got Pro Tools.

Straight into the deep end.

Yeah. It was Pro Tools LE with the first Mbox. I recorded a lot of my first album on the Mbox. I did the classic buy: a preamp from Guitar Center, record, and return it. Oddly enough I did a lot of my first album recordings in my childhood bedroom with an Mbox. The same place I had started.

(continued on page 28)

Then you evolved to working with other engineers and producers. Did recording in solitude still factor into that process, or was there a real shift between the earlier work and where it is now?

It was more like a comfort level. There's still a level of comfort that is unparalleled with being able to write alone. It's really vulnerable to try to come up with ideas, because it's like you're diamond mining. It's uncomfortable to have someone be in the room watching you not hit the mark. So, as far as writing goes, I think that's still a solitary process.

How did that factor into the new workflow of making records with other people?

Well, it was always like a file exchange. I'd start an idea and bring it in. Either we'd start from scratch, or we might use some things that I recorded by myself. A real mixed bag, still.

I find it common now with artists that they feel because something was recorded at home or on an iPhone that it's not legitimate.

Right. However, sometimes the demo vocal that you record into – like an Mbox with a [Shure SM]58 is magic. I don't know. I go back to Duke Ellington with, "If it sounds good, it is good." I might bum out some audiophiles, but does it speak to the heart? Does it move people? Is it evocative? Then great, we're good. It's a lot of hand-wringing.

The evolution of St. Vincent was making records alone to making records with other people. Now you're making records for other people. You just produced an album for Sleater-Kinney [*The Center Won't Hold*].

Yeah, which you engineered. Crushed it.

Hey, thanks! But now, as a producer, you're on the other side of the glass...

I would say that the most helpful thing about my experience being an artist in studios and in the recording process is that I know how vulnerable it is to sing. I know how vulnerable it is to try ideas, and I know the ways that I have enjoyed being related to by producers, or co-producers, or whatever; and I know the

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PHOTO BY FRANCESCO GRIECO

ways that I *haven't* enjoyed being related to. So I'm able to bring that to the process; I can be really supportive and not shame anybody for missing the mark. That's the point. We're in here to try and play and have fun. Also, I don't think there's any wasted effort. "Let's go down this rabbit hole and see what happens." The best case scenario is that we break on through to the other side and there's something exciting. The worst case scenario is that we go back and realize the first thing we had was great, and we didn't beat it.

Do you find yourself ever having to withhold ideas? For instance, when you go into a project like Sleater-Kinney, who are a band, and writing their own songs, but you clearly have musical ideas. How does that communication happen?

We were all in the room together. You met Carrie [Brownstein] doing music with her for a television show. Then she said, "I met this great engineer. I'd love to use him on the Sleater-Kinney stuff." Great. We met on that, and it obviously takes time to develop a rapport and figure out where the other person's coming from and what they're thinking. I think we got into a rhythm, which was great. There wasn't any creative gulf to traverse between us. A good friend of mine said to me, "You are the most underprepared overachieving person I've ever met." Did I give any thought as to how we were going to do the Sleater-Kinney record? No! I was like, "It's on the calendar. It's this day, at this time." You show up fucking ready to work and see what happens.

We're now working together on your own music again. Do you feel any urge to want to make records with more people?

I learned a lot working with Sleater-Kinney. I think some of the most special moments were more fly-by-the-seat-of-your pants. Like the last song on the record, which is a ballad that Carrie wrote on piano ["Broken"]. Corin [Tucker] was staying with her while they were in Los Angeles recording. Corin came up with the melody and the lyrics in one morning before they walked into the studio. If anybody had said, "There's going to be a piano ballad on the Sleater-Kinney record," probably you wouldn't believe it, but that's where their instinct and heart was telling them to go. I remember it was late at night. We made the studio vibey, and they recorded it live in a couple of passes. It's heartbreaking. Try and argue with that. It's gorgeous!

Absolutely. Now we're at your home/studio in Los Angeles. You've evolved quite a ways from a college dorm room.

It's a studio where I sometimes sleep.

I see a grand piano where a dining room table would normally be. There's a drum set where your guests would normally sleep, and the garage has been fully converted into a control room…

It was already retrofitted to be a studio. It's a spot that a musician had owned before, so the guest room was already wired to be a live room. It turned out the owners were fans, so I got the house. They saw me at Coachella once! It's been a process. I just bought a console; that is now the vibey-ist part, and it is so exciting.

Before this last run of recordings, would you say this place was more for writing?

It was more of a project studio. I did do a lot of recording for *MASSEDUCTION* in here, but not using the live room. I cut a lot of main vocals here. I wrote a lot, did ancillary parts, as well as some guitars. I forget which songs I recorded myself on for that project.

What do you think of waking up and being at the studio, working all day, and then literally walking to your bed?

That is wonderful for short stretches. I think if it goes past a little more than a week, then it's time to get the fuck out and go to a different place. Luckily I still live in Texas sometimes, or I can scoot off to New York and get the fuck out. I've learned the benefit – and you can speak to this too – of going, "I am working these days. This is what I'm doing. Then *these* couple of days, I am not working." If I don't specifically say I'm not working, I'll work all the time. Then I don't have things to bring into the work.

Yeah. I've noticed too that you're very efficient with your time. Is that just how you're wired?

I don't know if it's intentional. I think it's how I'm wired. We can talk about the Sleater-Kinney record… we were very efficient with that. We hit the right balance of them getting to explore and experiment, and also we got shit done.

Definitely. The preproduction, the writing, and the production process were almost all done in real-time.

It's all the same. It really was. The band had a number of demos. Most of them weren't full-band demos. It was Carrie writing songs, and Corin writing songs. I think they jammed a couple of them, if I recall.

Most of them were just simple GarageBand demos.

Totally. Of course, it's a very democratic process. Everybody had a say on the material. "Oh, I think we should do this or that." The best idea wins, always, ideally. Or it's the best idea that gets buried under levels of insecurity. Originally they were going to work with a few different producers and test things out. They wanted to try something different. So we booked some time at 64Sound in Highland Park [Los Angeles].

Pierre de Reeder's place [*Tape Op* #109].

We were going to tackle three songs. We did "Hurry On Home," "The Dog/The Body," and "Ruins."

Those three were mostly completed there. We recorded most of the rest of the album at Barefoot Recording [Los Angeles].

Yeah. I think we then re-recorded the drums on "The Dog/The Body" at Boulevard Recording [*Tape Op* #111] in Hollywood. The place that they did [Pink Floyd's] *The Wall*. It was a ground-up reno of that [material]. The ideas were strong, and the melodies were strong. Cool riffs, always. It was like, "Okay, how do we frame this?"

(continued on page 30)

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I learned very quickly that when you're recording something, nothing's done in vain. There's never like, "Oh, it's just going to be a scratch take." I enjoy that because it kept everyone on their toes.

Good, yeah! I have no patience, which is going to be a sweet way of framing that. I think Carrie and I joked at the studio, like, "Why aren't you reading my mind and doing it perfect the first time?" Yeah, that's never been my strong suit; patience.

Hah! Well, it was very involved, on everybody's part.

I liked that there was a lot of great input. When Carrie or Corin were doing vocal takes, we were all in there listening. Whoever wasn't doing the vocal take had strong reactions, like, "Yes, that was the one!" That's the thing; you see it with anything where it is a live performance. You *know* when it's the one. Maybe that takes a long time to cultivate. "Okay, the ghost walked through the room. That's the one. Great. We got it."

It also takes years of experience to be comfortable with making that decision. Some people are crippled by this anxiety or doubt, and it can go on forever.

Indecision becomes your decision. I've seen that – I've seen cautionary tales.

Firsthand, from your own experience?

Yeah, for sure. I've seen that. It comes down to not having the patience. I want to decide. Then I don't have to make that decision again. I can make other decisions.

Did you ever encounter pushback to that approach from people who've you worked with?

I don't know. When I was doing records with John Congleton [*Tape Op* #81] or Jack Antonoff – not to be so blue collar about it – but time is money. We're in the studio. We're here to work, and this is what we're doing. Someone like John is super-efficient and fast. Same with Jack; super-fast. There hasn't been a whole lot of pushback, I don't think.

I wouldn't disagree. What's next for you?

What's next? Generating material. There is one thing I was thinking about today: part of the indecision/decision world, and chasing the tail, is if you're tweaking so hard about going so far down the rabbit hole with the sound and not getting there, it's very possible that the problem is with the song. It's an arrangement issue, or a lyrical issue. The Sleater-Kinney record, and the process of doing that, my main thing was just the songs. "Let's make sure that these songs are solid." They're a band with so much energy, excitement, and anger; just kinetic. It's this funny thing where Corin could sing *anything* and it would sound fuckin' awesome. It would sound totally powerful. That's such a gift. So let's make sure that we're not slacking in any way, shape, or form on the songcraft side of it so that the voice can shine even more.

Sleater-Kinney are a rock trio – two guitars and drums [Janet Weiss] – and this record is a lot more than that.

Yeah. There are some dirty, dirty synthesizers on it. One thing you hipped me to was that Rheem organ. The cool thing about Sleater-Kinney is that it's two guitars, and nothing really fills out that low-end. There were a couple instances where it was like, "Yeah, we want a little bit of low-end," but we just wanted to feel it and not have it be a featured moment. Not have personality. Totally utilitarian. That Rheem was so helpful with that. That's from the '60s; it's not a modern sound, like, "Cool, we put a bunch of [Roland] 808s on a Sleater-Kinney record!" At 64Sound, when we were looking to track something, the band kept saying words like "corroded" or "corrosive." A couple of times I had to pull Carrie back and say, "No, no. This is a beautiful moment. Let there be beauty for half a second without 'corroded'. Yes 'corroded,' 100 percent, but just not here for a second." Luckily we have that kind of relationship where I can tell her anything. But you pulled out that Electro-Harmonix Micro Synth, which is that sound on "Ruins," which is just so gross. One of my favorite moments on the record is in the second verse where it breaks up. "Okay, magic!" Also having Corin or Carrie unplug or plug in her guitar; getting the sound of the jack. That was the fun thing about "The Center Won't Hold" too. We muted a Marxophone in an echo chamber, and it happened to be the exact tempo. "Okay, kismet." When I think back to making that record, it was just fun every day. I think there are a lot of people who fetishize pain and struggle in the process and think that it's not anything if…

…if you don't lose blood, sweat, and tears?

Yeah. I'm thinking about producing. I mean, writing is painful. Writing is a rending process. I get that. We should feel free to explore and chase; but [we should] also fucking get shit done, because time is money. I never made records with squillion dollar advances. It was like, "I've got these days, and we're going to do some shit." ☮

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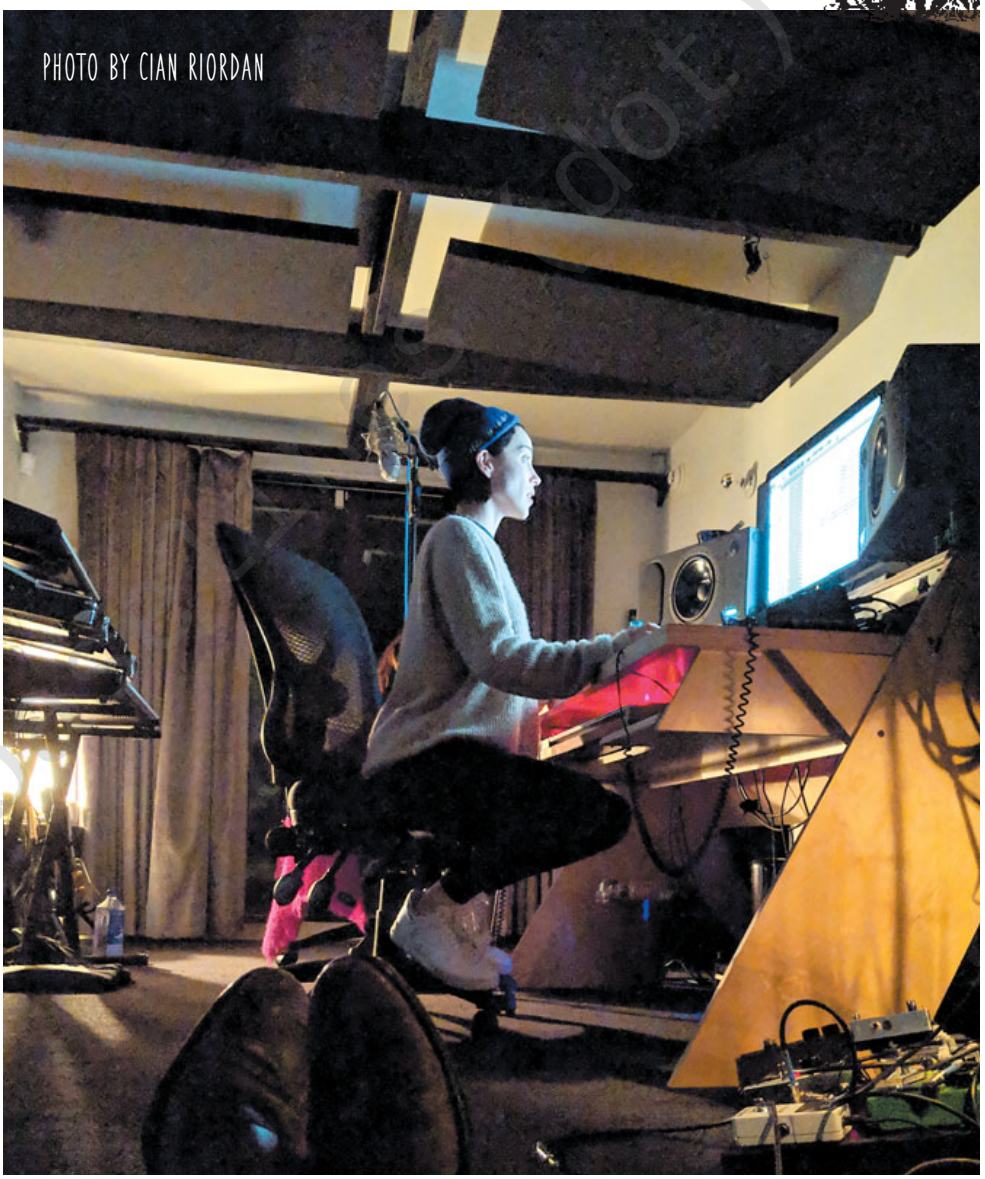

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ERIN BARRA

THE DREAM I NEVER KNEW I HAD

BY AINJEL EMME

Erin Barra – nicknamed "Mamma Barra" by her many clients and students due to her nurturing, hands-on approach – is a woman of many hats. She is the founder of Beats By Girlz, an organization dedicated to educating and empowering young women in music technology. She is an Associate Professor at Berklee College of Music, a board member of Women In Music, and a private instructor whose curriculums are available online for free at Coursera and ROLI. She is also an accomplished recording artist, songwriter, and producer with five independent albums and 20 years of experience in the music industry under her belt.

You're not only a producer, songwriter, tech specialist, and educator, you're also a musician!

Yeah, I would use that word. Yes.

And would you say that audio has always felt like a calling?

No. I mean, in retrospect it makes a lot of sense, but I never really thought I would get into tech at all. My father's an audiophile. We always had a listening room, and he was a pro audio dealer. He put together systems, home automation, and listening rooms for wealthy people. I was constantly surrounded by audio culture.

Pro sound wasn't a foreign concept to you growing up?

No, not at all. I mean, my dad would buy me an RCA tape player with two speakers, and we'd wire it up together for fun. But it never occurred to me that I'd do that for a living. The entire time before I got into music tech I was always on the reproduction side, never on the production side. I was always a listener, as opposed to an engaged participant in the process. In terms of a career, I always thought it was going to be on the content creation side, either as a writer or composer. I had gotten a songwriting and piano performance degree from Berklee, and I had aspirations to be a singer-songwriter; which is a role I played for many, many years. I was unhappy with not being in control of what was happening, and feeling frustrated that I wasn't really able to dictate my sound. After I graduated, I decided to figure it out.

I totally get it. You were ready to be the mistress of your own destiny!

Yeah. It was a money thing too. I've always been a person that, once I figured out what I wanted to accomplish – whether it was make a record or see an idea to fruition – once I have identified what it is that I need to do, *nothing will deter me*. For me it was a point at which I realized that I needed to get closer to my goal. Obviously the solution was that I need to be the one behind the computer. It wasn't even an arduous or long process. I was so focused, and I had an actual task that I was trying to accomplish. It was so different than classroom learning, in that I experienced it in a really tactile way that has served me well.

Most of the women I come across in production start on the other side of the glass creating music, and have aspirations in that vein. They tend to move into production or audio from there. Would you say that was your case as well?

Pretty much, yeah. But I mean, this is usually true of anybody in the music industry. You enter with one goal, and then you land so far away from that goal! *[laughs]* Even if you wanted to be in management or film scoring, it never happens the way you imagine it. The pathway of people going from content creators on the compositional side to more on the production side – I think that's probably a reoccurring theme amongst *people* – it's a gender-agnostic concept. But, you're correct that there're not a lot of women who consciously choose these specific career paths. I mean, there are so many reasons why. My postulation on it is that it's the same three things: Lack of mentorship, culture in the classroom, and the evolution of our culture in general – how we perceive women in specific roles. I don't think I have anything brand new to say about that. I feel like it's something important and that something needs to be done about it. And I think *that's* where I have more interesting things to say, as opposed to rehashing why it is the way it is.

I like that you're going beyond the "why" and you're focused on the, "Well, what can we do about it?" That really is the next and most important step. I think we're doing that right now, which I think is extremely gratifying.

It's happening *so* much more. I literally am contacted three to four times a month by some big time organization – whether it's Spotify or the Recording Academy – that's trying to get their gender parity ducks in a row. In some ways it's fantastic, and I'm excited that this is a topic that everybody wants to talk about, but with that comes a lot of opportunities for us to undermine ourselves, or not band together and amplify each other. It's a pivotal moment for us. I really want to make sure that we do this properly.

That's an excellent point, because it really is about community and progress. It gets hard to know which efforts are genuine.

Yeah, I definitely feel that way. I think it's up to these people who have the resources and funding to speak the loudest, to do their due diligence, and make sure that they're reaching out the community of people who have been doing this the longest and know how to talk about these issues. People who know what the problems are and have ideas for solutions, rather than doing some, "Oh, we have an equity crisis so we're gonna do some marketing around this," but not *actually* engage the people who are on the front lines. We have to centralize our efforts, and it can't be centered around trends, brands, and marketing. There are plenty of organizations doing the work: we [Beats By Girlz] work with young women in composition and production, and Girls Rock Camp [Rock 'n' Roll Camp for Girls, *Tape Op* #77] is a huge music organization with chapters everywhere. Terri [Winston, #78] from Women's Audio Mission is focused on studio engineering, and Karrie [Keyes] from SoundGirls.org works in live sound.

But there's also still a sense of gatekeeping and competition; even in our community, where it feels like there's only so much space available for women.

Yeah. It's difficult. I think any underrepresented group feels this way – it's not just women – that there's a smaller slice of the pie that we're all competing for. But that's highly self-destructive.

What was your impetus for starting Beats By Girlz?

Well, I was at the tail end of my career as an artist, and I'd already been doing a lot of freelancing. In retrospect, I would call it teaching, but really it was more like producing other people's live shows. I was a pretty straight ahead singer-songwriter, in terms of the genre. Maybe some slight electronic leanings, but not really in any definitive sense. I started working for other singer-songwriters and other artists who wanted to replicate my stage setup at the time. I had this very intricate live rig; I was playing a lot of keyboards and doing a lot of singing. Then I started working for Ableton; I was getting a lot of traction working on this other side of the industry, helping people do what I'd already been doing. It was the reality that people were starting to view me more via the lens of technology. For me, it was really seeing my social media posts. People would go bananas over me talking about how I was doing something. Or responding to pictures of my gear. But then I would put up a post of my new song or something, and nobody would engage with it!

Ugh. Ain't that the brutal truth!

I think this is the truth for a lot of artists. It's like their brand is more of a touch point than the music. Getting people to listen to music is difficult! One day I was like, "All right, if this is how the world views me, and this is the sign that I'm getting, then I'm going to step into this role and actively decide to do this." Through that I started talking about where I could have the most impact. How did I see that coming to fruition, and how could I engage people I was already connected with in order to make it happen? I was releasing a record, and with it I chose to raise money to start Beats By Girlz. Through that process, I was eventually picked up by a really large non-profit and they incubated the program right away. I didn't even finish the fundraising before we were overly-funded! It was totally crazy. It was so much reaction right away. It really all came out of listening to the community and to the truth, as opposed to my version of reality. [*laughs]* It was powerful. Meanwhile, it was personally difficult to make the transition; to mentally let go of an identity that I had created for myself and worked so hard for. There were a couple of really tumultuous years where I was confused about what I wanted, or who I was, or where my power was. But now, since I've kind of "given it up" and started doing things in service of other people, I'm so much more powerful and I'm so much happier. I really feel like I'm making a huge impact on a lot of people, and it's way better than the dream that I had. It's the dream I never knew I had.

Ms. Barra/(continued on page 34)/Tape Op#134/33

It's funny what ends up being successful, isn't it? It's like when we were talking about careers earlier.

Yeah! It totally is. Every five or six years I try to redefine what success is for me. When I created Beats By Girlz that was a really pivotal moment where I changed that definition and widened it. My perception of success wasn't narrow anymore; it was wide open. Everything good happened after that moment. Having gotten to where I am now, I've started to redefine what those parameters are, and one of them is being wholly satisfied with where I am. Because that's when you actually feel successful. I want to *feel* it. I think that's hard for women in particular.

What is Beats By Girlz up to at the moment?

As an organization, this year we're really focused on helping regional groups of women who want to start their own chapters. It's really not for the faint of heart. There are a lot of obstacles that come with it – finding space, identifying potential funders and partners, getting access to technology, establishing teacher training skills and resources so they can accomplish the tasks, and finding other regional women who are interested and want to help. It's a lot. We're releasing new curriculum to all of our chapters, and we're taking a bunch of our teachers to Moog for training for synthesis teaching. We're also really focused on partnerships that are going to bring value to our chapters. We've partnered with iZotope [*Tape Op* #82] and we're doing a lot with their software in the classrooms – some amazing, machine-learning AI [artificial intelligence] that makes making music super fun – and it's totally aligned with working with K-12 students. So right now we're growing, and a lot of our effort is managing that growth because it's happening so fast.

You're an Associate Professor at Berklee College of Music. How has being affiliated with Berklee helped you to further your work to benefit women in the music making community?

Berklee is a powerful home base for me. I feel like I'm making a really big impact. It's not that much different than when I was teaching middle school girls, it's just a different level of understanding and learning. But it's about being able to be a role model for these young women. I'm housed inside of the songwriting department at Berklee – the composition department – where 60% of our majors are female, and they're mostly vocalists. In addition to audio, there's this dearth of women instrumentalists. A lot of them feel disenfranchised because they don't have the chops to do a lush accompaniment to their songwriting, or they can't play the guitar, or whatever. Through technology, they find empowerment – especially through a program like [Ableton] Live, or an instrument like Push, where they can instantly access these tools. It's like, "Oh, you can really do this. This is so exciting! Here's Push; here's how you play it!" They love it, and I love being able to be a role model for them. I've been at Berklee for five years now, and those have been huge years of growth for me and for the community at large. The "cred" helps; it definitely doesn't hurt what I'm trying to do.

You're also on the board of Women In Music?

Yes, I am! The organization is growing rapidly. They're doing a ton of chapter expansion, talking about how to create content for people all over – not just in these key industry cities – so I'm hopeful for what they're going to be able to accomplish. My personal role is on a lot of special projects. This year I've been the primary investigator on new piece of gender research that we partnered on with Berklee. We did a survey of women in the American music industry and got a lot of responses about it. We have some really interesting data about their careers and their lives. Hard data about how they feel about their careers. The paper debuted at this year's South by Southwest. I think it's going to be really instrumental in the future. As a person who writes about gender issues in the music industry, there's very little research. When the USC Annenberg [School for Communication and Journalism] Inclusion Initiative launched [with the paper "Inclusion in the Recording Studio?"], everybody now had these tools to say, "Less than two percent of producers are women" or, "This many women have been involved in *this* task that surrounded studio work." And that never really existed before. So when people start talking about these issues, they're gonna come across this study and they're going to have tools and numbers to back it up. It's not just this anecdotal observation, or a cultural thing that you have to assume is true. This is the real deal. I think this will be the main, outward-facing thing that WIM does this year.

That's great. Having accessible data is so important, because it's very easy to *downplay* the disparity of women versus men in audio. But you can't argue with the numbers. You're not going to show it to someone and have them be like, "Women should step up and try harder!"

Exactly. *[laughs]* What our study found, in terms of the research, is not what you'd expect. I think when people think about a qualitative and a quantitative survey of women, they're going to get some document that says, "We've all been sexually harassed, we're not getting paid enough." Some dismal illusion of the way that things are. But really, the overall response is that women who are working in the American industry are actually satisfied with their jobs. They love being in the music industry! They're not this miserable, sad group of people. We're happy, we're thriving. I mean, yes; there are issues. But we love our work. It's not all negative.

The culture has definitely been changing. This generation of women who are going into audio today aren't going into the industry thinking that they can't do it because they're women.

Right. But I think that's true for men, too. This is not an industry anyone goes into thinking it's going to be easy.

You have to really want to do this.

I was comparing and contrasting a lot of the data that we have on our alumni in general – and Berklee is not the place you go if you want to make a million dollars. A few of our alumni are wealthy and doing well, but the vast majority of people who get music degrees are not in it to make big bucks. The general income is somewhere between $30,000 to $40,000 a year for a person working in the music industry. But they're happy to do it. Women *and* men. ☮

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Greg Laswell

Writing, Recording, Golfing

by Larry Crane

Chad Calhoun

The career of songwriter Greg Laswell may seem atypical, yet it fits in with how the music world works these days. From early on in his solo career songs seemed to magically get placed on popular television shows and films like *True Blood, Grey's Anatomy,* and *Glee*. For a guy who was making records at home, it's been an interesting ride. I interviewed Greg over the phone when his album, *Next Time*, came out in 2018. He's since released a second, beguiling collection of cover songs, *Covers II*, and is likely hitting the golf course right now (when not writing and recording songs, or on tour, of course)!

How did you end up recording and mixing all of your own music?

My very first record [*Good Movie*] was kind of an accident. I was setting out to be a producer and a recording engineer for other artists. That's where all this started. I had a band in college [Shillglen] that was a glass ceiling sort of thing. We did as much as we could. Everyone started getting a little less serious about it than I was. I decided to break off. My initial goal was to start producing other artists. Long story short, I went through a divorce and then wrote my first record and recorded it, and here we are.

So your recording career got derailed?

Yeah.

You'd been in a band and had been writing and working on music before. Had you planned on subverting that, to a degree, and focusing on production and recording?

Not really. I'm not really entirely sure that I am good at it. I know how to make my own sound, I think. I like the ability to do ten tracks of bass guitar and then make people believe I'm a really good bass player. Or a drummer. The rest, I fake. But I love the process of being alone in the studio and making really embarrassing mistakes where no one can hear them and then keeping the good parts. I've always enjoyed that studio experience.

Is the studio an extension of the way that you express these songs, as opposed to saying, "I just wrote a song. Now I'll take it somewhere else"?

You know, more and more. Not as much in the beginning, but now there's no distinction between the two. I write and record at the same time. For instance, for *Next Time*, I don't think I finished a single song without recording it at the same time. I didn't finish writing "Royal Empress" and then say, "All right, now it's time to record it." I was recording and writing it at the same time. I was singing lyric ideas and recording my vocals as I was writing them. There are some B-sides on all of these songs where the lyrics are completely different from what they turned out to be.

Do you do phonetic phrasing, searching for the melody, when you're working like that?

Yeah, which can be a trap sometimes. A thing like a nonsense phrase or a nonsense word that does not exist, but I get hooked into the sound of that word, and then I have to find something that sounds like it. Meanwhile, I'm supposed to be a good lyricist, but if people only knew the truth! *[laughs]*

Well, rewrites and editing. It's important.

Of course. Every song is rewritten at least five times.

Do you find yourself spending a lot of time restructuring how many verses, or where the chorus lands, and parts like that when you're working?

No, not really. The arrangement has always been one of the more natural parts for me. On the rare occasion I'll go back and adjust or add a bridge. But with this last record there's very little of that. Songs just fell out. And I made a conscious decision to keep everything extremely simple, chord-progression wise. I think there's maybe one song that has more than four chords in it. The rest are four chords or less. There're not a lot of bridges.

It's an easy record to live within, as a listener. It's easy to get absorbed by it. Maybe that simplicity's a part of that.

I think so. I was talking about some pretty heavy subjects on this record. I think subconsciously I wanted to make the listening part of it easy on people.

On your Twitter feed you said this was one of the more difficult records to write and record. In what ways was that manifesting itself in the process?

I think a lot of the record, like a big chunk of it, was dealing with the loss of my dad. I think of all of the records that I've done, maybe this was not the one to do completely alone, if that makes sense. While in moments it was cathartic to write and record these songs, it was also a time in my life where I probably shouldn't have been alone, or isolated. I'm stubborn, so I had to see it out once I made the decision to do that. I feel like I decided to run a marathon and then didn't really think about training for it at all. A quarter of the way through it was like, "Oh, fuck! I have to finish this and I'm not prepared."

Would it be really disruptive to you to bring someone in part way, say a co-producer or what have you?

I don't know. I don't think so. It was more about being stubborn. I don't think it would have been disruptive, but I had to go through it alone. For the way I approach music, there's something that's more honest when I'm completely by myself than when someone's in the room. I wanted to be completely alone in the moment so that the most honest version of myself would be easily accessible.

We all seek approval, and that can make us less honest or less vulnerable.

Yeah, I think so.

When you start writing, especially on this album, are you starting with a set rhythm and keyboards? How do your songs start getting sculpted?

There's no real rhyme or reason to it. Sometimes it's as easy as going through folders on my computer. There's one called "Ideas." Some of them are months and months old. I'll listen back to them and think, "Oh, I forgot about that. That's cool. I'll finish that!" Other times I sat down and there was a keyboard sound that I found and started playing around with, and then it goes from there quite effortlessly. Other times it's like, "Oh, I want to write a song in 136 BPM," so I did that. There's no real singular method that I've found. It's all over the place. Often times, I'll go through voice memos on my phone where I'm singing nonsense during a drive, and it's like, "Oh, I remember thinking that was a cool idea. I'll flesh that out."

Do you find yourself capturing a lot of raw, simple ideas?

I do. I never sit down to write a song. I sit down to shop through ideas that I've had.

Were there extra songs that got thrown out during this album?

No. For this record, I wrote and recorded ten songs. Two or three records ago I was turning in 15, and we'd chisel it down to ten or eleven; but for this one I literally turned in ten songs.

This album also has the "Next Time (Piano Version)" extra take of one of the songs. Is that something that happens frequently, or is it just a version you really liked that you also wanted to present?

Well, that whole thing was born out of the tour before the last tour I did, which was me stripped down. I find myself "covering" my own songs, you know what I mean? Especially for this record, and the one directly before this record, *Everyone Thinks I Dodged a Bullet*. I did that much in the same way I did this record. I didn't write these songs on guitar and then produce them. I produced them and wrote them at the same time. It was fun for me to go back and deconstruct them. It brings out a different performance. It almost changes the song, especially with the song, "Next Time." If you listen to the two songs side by side, I feel like it's possible to get two different interpretations of it.

I missed the backing vocal; the little melody.

Oh yeah, Molly Jenson. She's amazing. She's been on so many of my records.

With her parts, is she coming in and singing something you've already written out, or are you throwing ideas around together about that?

Greg & vocalist Molly Jenson

Chad Calhoun

We've worked together so many times now. She came to the studio in California, and we worked there. She came over one night, and we both threw on headphones, "Hey, sing this." She'd sing that part, and it's like, "Yeah, that's cool." Or, "Try this." We write the parts as they come.

Are there any other vocalists or musicians who showed up on this record?

No, she's the only one. Actually, even on my last record, I had my friend Colette [Alexander] play cello on it, but this is the first record that I've done entirely on my own. There's no one else on it, except for Molly.

How did you build up mixing skills along the way?

I obsessed about it. Once I set my mind to something… I don't really do many things. The things that I do, I really obsess about them. I don't really do anything outside of music and golf! I obsess about both of them. People are like, "Oh, you want to go on a hike?" I'm like, "No, I don't!" I want to write a song. I want to be in the studio. I want to dedicate three hours to 7 kHz and what it does for me.

Those are obsessions that give you the 10,000 hours.

Yeah, exactly. I treat golf much like I treat music. Every once in a while I have the audacity to think that I've figured it out, when I clearly don't. It keeps me going. I think that's why I love both things so much. There's no real true arrival in my efforts. There's no destination of, "Oh, I know what I'm doing." There's always something that you can learn.

No one ever finishes a record and thinks they've got it perfect. You've got to abandon it at some point.

Absolutely! Oh, my gosh, if it wasn't for my manager, I'd still be working on *this* record.

What kind of a recording situation do you have now?

I own a house in Arizona and I rent a place in Corona del Mar, south of Newport Beach in California. The house that I own in Arizona is a three-bedroom. Two of the bedrooms are my studio. One is the tracking room, and then one is my console, and the computer, and all that. Two rooms in my house, and then I have the master bedroom. I think I'm going to change that soon. I feel like I need some separation from it. Especially when I'm working on a record, it's difficult to have a life – especially the way I approach things – when my work is right there.

You can't escape it.

No, you can't. Even when I want to, it's looming. If I get up from watching TV and go to the bathroom, I'm passing my studio. I feel guilty because I'm not working. But the benefit of it is that if I wake up at two in the morning and can't sleep, then I can start working immediately, pretty effortlessly. It's always been in my home; I've never had a separate space where I work. It's always been in my house, wherever I was. It was in my house in New York, in San Diego, in L.A. I did a few records in Flagstaff, [Arizona,] but my studio has always been in my home.

What part of Arizona do you live in?

In central Phoenix. I love it. The area that I live in has really developed a lot. There are amazing restaurants. I'm a golfer. There's no better place to be, as far as golf courses go.

What equipment are you using to record these days?

You know, it's depressing. I used to be a gearhead. I had a [Universal Audio] LA-2A, an [Universal Audio] 1176, an Eventide Harmonizer, and a Lexicon PCM91; all the iconic gear. Then Universal Audio came out with their UAD platform plug-ins; I A/B'd them, and they're so good. It's crazy! And it's depressing, because I love blinking lights, and meters, and knobs, and all of that. The sexy part of the recording studio is all *that* bullshit. But man, they've gotten so good. I think reverb was the last thing that made me go, "Wow, I think we've finally arrived." There's a Lexicon 224 plug-in. I've always been a reverb snob. They have the EMT-240 plate reverb. This is a record that's been all inside the box. I have a Dangerous Music monitoring system, so some mixes go out that I bring back in on the 2-BUS; but even then, I found myself not using that. The plug-ins have gotten so damn good. The API EQs are outrageous; they're so good. I was a plug-in snob for years and years and years. People were like, "Whoa, check out this Waves plug-in." "Eh, not good. Not close." And I was right. But with this, they're [UA] nailing it.

Greg, Shep, & Joey Tracy Bremmeyer

So you mixed in the box on this record?

On this one, yeah.

How were you working before on previous records?

I still use all my same preamps going in. But when I was mixing before I was going out and hitting an [Universal Audio] LA-2A, or a pair of [Empirical Labs] Distressors. Even an EQ. Then coming back into the box. I started staying inside the box on the previous record too, but not as much as this one. On this one, I never came out. Once I was in, I was in.

Interesting! Do you find that makes the process a little easier in some ways, or is it also that you're not committing to sounds?

Yeah. I think I was working really quickly on this one. I wanted to get it out. I didn't want to spend a whole lot of time doing this record. It's like the holidays. I love the holidays, but I can't wait for them to be over.

(continued on page 40)

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What would be the difference between this and your very first solo record, as far as the technology and the work environment?

Well, my very first record was on [MOTU] Digital Performer with a Mark of the Unicorn interface. A lot of it was MIDI, but I did a lot of recording of amps. I recorded a real piano. There was a lot more actual audio recording. I was pretty green at the time. I spent so much time obsessing about the EQ of the fucking snare drum, when it doesn't really matter. Now, when I'm recording and mixing, if it sounds good I move on. I don't spend a whole lot of time taking my mixes all over the place and listening to it in my car or on my buddy's speakers. I don't do any of that anymore. I think the genre of music that I do doesn't make that a necessity. It's slightly on the indie record side of things, where I don't have to sound like whoever's big now.

A lot of your music has been used on television shows and movies. I assume that's providing a steady part of your personal income?

Oh, for sure. It always has. It's been the strongest part of my career. I don't make a ton of money on the road. I turn a profit, and not even really from record sales anymore. It's all from online streaming royalties. My placements have sustained me over these last ten years as well. I've been very lucky, in that respect.

Are the placements usually songs from the album? I gathered you sometimes have to write to order a little bit for films?

The big majority that have been used have been songs that have already been written. There's a song called "Off I Go." *Grey's Anatomy* came to me years ago and they said, "Hey, we want to use a Greg Laswell song, and we want it to be like this one that we already used. Can you write another one? We don't want to re-use that one." So I wrote "Off I Go" and recorded it. They used it for the season finale. That ended up being the genesis of my next record [*Take a Bow*].

That's pretty nice in a shifting music business to have something that's stable to help get by.

Absolutely. Within my career, the whole paradigm has completely shifted. This is the first record that I'm not printing. I'm not getting CDs made.

Nothing? LPs or anything?

No. I think we'll do vinyl at some point, but I'm not doing CDs. There are no physical copies. It's bizarre. It's funny that, as musicians, we're still expected to turn in our product in an album form, yet it's not consumed like that anymore. People buy songs they like, unless they're a super fan; then they'll buy the record straightaway. But it's weird that if you go on iTunes, there's this popularity bar next to each song. You can tell which song has been bought more than others. It's bizarre. Gone are the days where you buy a record and bring it home. If you don't like it on the first listen, but you've bought it, so you listen to it a couple more times, and then, on the third or fourth listen, you discover it's one of your favorite records of all time. Or song seven, when you've skipped it the first few listens, it then becomes your favorite song months later. Some of my favorite songs on records, on iTunes, are the least popular.

That tells us something about ourselves.

I guess!

We're a little more knee-deep in the music. Have you been releasing music in between albums, one-offs or odds and ends?

Not yet. This is the first record I completely self-released. I have my publishing deal still, but this is the first one without my record label. It was difficult to do that before. If I wanted to up and write a song and put it on iTunes, there were a bunch of hoops we had to jump through. Now I can. I think I'm going to get into that more. If I want to write a song and put it out there in the world, I can do it. I released a cover of "Silver Bells" just because I wanted to. I put it out there and tweeted about it. "Hey everyone, check this out!" I think it's never been more difficult to be an independent artist, and yet it's never been easier at the same time. ☮

<greglaswell.com>

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Mixing It Up for Kids

What Makes Recording Children's Music Unique?

by Beth Blenz-Clucas

Since the technological and industry shifts in the '90s, a golden age of independent family music has grown up. No longer do parents have to suffer through simplistic, repetitive musical dreck. Artists and recording pros are pumping out well-crafted music for kids in almost any musical style. Children's music today can range from the usual nursery rhymes to hard-driving rock, hip-hop, and electro-pop. The sky's pretty much the limit in terms of subject matter, and producing this kind of music can be liberating and fun. Conversations with a few influential and pioneering producer/engineers and self-producing artists can offer some insights into how varied the approaches and philosophies can be.

Liam Davis rehearses backstage a recent Grammy nominees concert in New York. Richard Clucas

Liam Davis

Liam is one of the pioneers of the current "kindie" scene. The producer of three Grammy-nominated albums for Chicago-based Justin Roberts, Liam is also the multi-instrumentalist member of Justin's Not Ready for Naptime Players [aka NR4NP] and composer in his own right. Liam recently moved his workstation from an off-site studio to a large space in his home. There, he tracks songs "from the ground up" for songwriters and other projects. Roberts says, "Liam is a rare type who is able to adapt his style to realize the vision of the artist. I look at all of the albums he has made with other groups and solo artists, and they are all unique."

How did you get into producing and mixing songs for Justin Roberts?

Justin was writing songs for his preschool classes in Minneapolis. They were all very folky and acoustic, and I said, almost as a lark, "We should record these." It was back in 1997, when nobody was really doing indie kids' music – it was basically us, Dan Zanes and Laurie Berkner. We really had no road map; we just jumped in. I did spend a lot of time finding the sweet spot for Justin's voice, tweaking the signal processing to make sure the vocals were inviting and intelligible. We wanted every lyric to be heard and for Justin's storytelling to be the focus, so I was putting the vocals up 1 to 2 decibels from where I would otherwise. That was the album *Great Big Sun*, and it did so well that we just kept on.

You and Justin were really trailblazers in the genre. Did you have a guiding philosophy from the start?

We never wanted to talk down to kids or dumb anything down. Justin isn't afraid to deal with serious subjects, and my job is to support the emotional narrative without exploiting it or getting cheesy. His song "Sandcastle" is about a kid losing his mom. I put a little banjo in the instrumental break to add some hope and whimsy; to offer some balance. There's a meditative element to some of Justin's songs, and we want to honor the contemplative moments in the mix.

But a lot of Justin's newer albums feature big, raucous anthems.

Yeah; along the way, Justin started writing bigger and I kept trying to get away with shit. For "Brontosaurus Got a Sweet Tooth" I put a slap delay on the vocal, which we'd not done before. Justin was apprehensive – we'd been keeping everything close and dry, but I needed the vocal to sit right in the track. I asked him to trust me, and in the end he told me he was so glad I did that.

So, your approach has changed as you've produced and mixed several of these albums?

For sure. The touring band was growing, and we wanted to take advantage of the bigger sound. I'd managed to bring in a world-class drummer, Gerald [Dowd], and that was a game-changer. Now we can do anything! Justin might write something that sounds like Fleetwood Mac or Elvis Costello, and I'll treat the drums a certain way, or I'll see how much fun we can have in the mix without going too far.

You can go too far?

Well, with "My Secret Robot," we had a vocoder intro. I also brought in an avant-garde cellist (Fred Lonberg-Holm) and had this really long outro. We thought we had jumped the shark, but families dug it. The "Recess" mix originally started with a giant slab of power-chord rock – we perform the song live that way – but for the recording I knew we had to ease into it. I recorded the voices of a bunch of kids at a playground, and then the Lowrey organ track launches. I added a school bell and a reverse cymbal crash, and finally those aggressive first chords. It wasn't diluting the effect, just recognizing how young kids would be entering the song.

So, that's not to say you dumbed it down?

Never. We always want to respect the listener. We didn't dilute it, or tame the guitars or drums or anything.

<liamdavis.com>

Dean Jones relaxes with his dog Scout. James Fossett

Dean Jones

At Dean's straw-bale No Parking Studio in the Hudson River Valley, several of family music's top songwriters have honed and recorded their songs, most notably the Grammy-winning The Okee Dokee Brothers. Dean has also led his own kindie band, Dog on Fleas, since 1999. As a testimony to this freewheeling producer/engineer's genius, artists return to Dean's studio again and again. Over the years he has been nominated for six Grammys and gained a cult following for his zany and eclectic style. Portland's Red Yarn (Andy Ferguson) says that being in a tiny studio space forces productive focus, "Dean has such an agile and easygoing approach. In two days, we tapped out 12 basics." Latin Grammy winner Lucky Diaz appreciates Jones' love of vintage sounds saying, "Our strength in working with Dean is giving him carte blanche to let him be free to do what he hears," said Diaz.

(continued on page 44)

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You've said that your first kids' album was terrible. Why?

Listening back to the songs, it was trying too hard and not knowing that there are no rules. I definitely have to tell people, "You don't have to do the toothbrushing song. You can do any kind of music, on almost any topic. The only rules are that you don't really write songs about bad relationships."

What else did you learn over the years?

On my second album for kids, somebody mentioned that there were a lot of solos and that the songs were kind of long. I learned that kids don't care how good you are at the guitar, saxophone, or whatever. Any solos I put in now are very much just for breathing room. I think of building a track in terms of color, or almost like building a sculpture. You want to keep kids' attention. I'm always thinking of the arc of an album, as well as new sounds. I'm thinking, "Oh, they're gonna hear a mbira for the first time," or a baritone sax or whatever. I'm always curious to throw in things that will perk somebody's ears up, so they're inspired to ask, "What is that sound?"

Artists tell me they like working in your straw bale studio. What's it like?

It's about 500-square feet. There's no control room; it's all one room. We might do drums, bass, and guitar live in the room and then send someone outside to sing a scratch. I have a two-seater outhouse that doubles as an iso booth. There's a pull-down attic for isolation as well. We might put a guitar amp or mandolin player up there. Every song is a new story. I'll ask, "Are we going to have bleed?" or, "Are we going to have the acoustic guitar in same room as the drummer?" Mostly we're going for the live energy.

What unique tools do you use?

I'm trying not to want more and more things. I love the mics and preamps I have, and I could always dream of having more. But then I think, "Maybe I should get a new instrument instead." My early studio experiences were with crabby engineers who were more concerned with the microphones than the people. I try to have instruments and things lying around to inspire the artists to try something new. I recently got a little cavaquinho *[small Portuguese string instrument]*.

Was that for a particular track?

No. I was listening to Tom Zé – he's probably my biggest inspiration. Maybe that little sound will work its way into something unique. Recording for kids is really the same as recording anything else; it's your aesthetic. I'm scrappy. I am thinking of the mix as I go. I put a couple of drum mics up; I hear it and think, "That's pretty much going to be the drum sound." I don't think it's different just because it's kids' music.

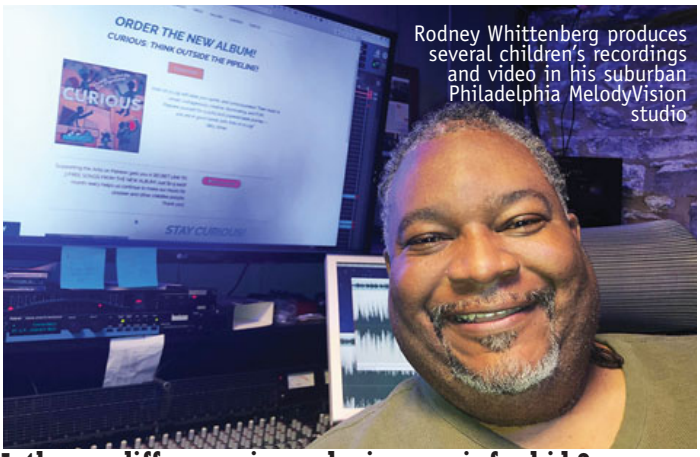
In general, is there something different about recording songs for kids?

Kids process sound differently from adults. So, for instance, compression. A lot of things you hear are just squashed. There's maximum info, just a wall coming at you. Kids need a little more space around things, or they just tune out. I like to leave the mastering job to the mastering engineer and have them leave some dynamics.

<www.dogonfleas.com>

Rodney Whittenberg & MelodyVision Studios

With his Philadelphia-based audio and video production house, Whittenberg has produced dozens of children's albums and music videos for children, including the civil rights album, *We Stood Up*. He has also worked with bands like Two of a Kind and Grammy-nominee Jonathan Sprout. While most of his work is producing music and film for grownups, he enjoys the children's genre and is currently developing a documentary about the history of children's music. He recently produced an eco-musical album, *Curious*, for the group Ants on a Log, who say, "Rodney was great at helping us decide what was funny versus cheesy. This came up often in regards to sound effects. A door creak should sound daunting, but not too scary. A science kit should sound real and also discernible to non-science people."



Rodney Whittenberg produces several children's recordings and video in his suburban Philadelphia MelodyVision studio

Is there a difference in producing music for kids?

It always depends on the artist you're working with. For example, the Cat's Pajamas band leader Janet Schreiner is a musical theater devotee, so that involves a different approach. You've got three-part harmonies and songs that are musically all over the place, from Broadway to rock, to 1920's jazz or a Mardi Gras march. You've got to be on your toes in terms of mic'ing – and it's a challenge to make the album cohesive. When I worked on the recent Ants on a Log album *Curious[: Think Outside the Pipeline!]*, I envisioned it as a radio theater project. The duo [Anya Rose and Julie Beth] are used to performing together, interspersing dialog with singing. So, if you've got them in the same room, you may have one good take. But if someone makes a mistake (unless you can isolate the vocals), you may have a do-over. It's drawing a line between how to capture the sound well, while also making it sound like a live performance. I recommended that we separate the spoken word from the recorded songs. Some of the recording they did on their home system, and some we did at my studio. Some of it was them playing live, and some of it was overdubbed.

Do you try to please both adults and kids?

I'm lucky that all the artists I've worked with in this genre are sensitive to how the music is recorded and who will receive it. I think of Pixar and how amazing they are at sticking things in there for the adults. The main thing is not to dumb it down. Some artists think that they can't deal with certain subjects because they will scare kids, or that they can't handle serious issues. I've worked with kids enough to know that they are smart. It's a missed opportunity not to delve into hard subjects; it's all in how you present things. You can be honest without being graphic.

That was certainly true with *We Stood Up*.

Right. We talked with John Lewis about what it was like getting ready for the march on Selma, and what he was thinking about when he knew he might be beaten up and land in jail. And, who better than Andrew Young's grandkids to interview him about his work?

Do you have signature production style?

My focus is always about the artist. If you took five recordings that I've produced, you would hear different things. My role is to help the musicians be their best selves, and the recording should sound like them.

What are some of your favorite tools?

There's no rule for mics. I use the best mic that fits a particular singer. When David Heitler-Klevans (of Two of a Kind) comes in, I get unbelievable sound from him using my [AKG] c414, but I use something else on Jenny (Heitler-Klevans). In general, learning the equipment part of production is relatively easy. The ability to create an interesting and compelling story is almost impossible. People don't always pay enough attention to that part. One of the downsides of having so much technology so easily available is that songwriters start producing before the song is completed. I can be guilty of that and I have to discipline myself. Now I know that a lot of modern music, they are one in the same; the production is so much a part of the song. But not everyone is great at everything. Really, a good song should stand on its own with just the vocals and chord progression.

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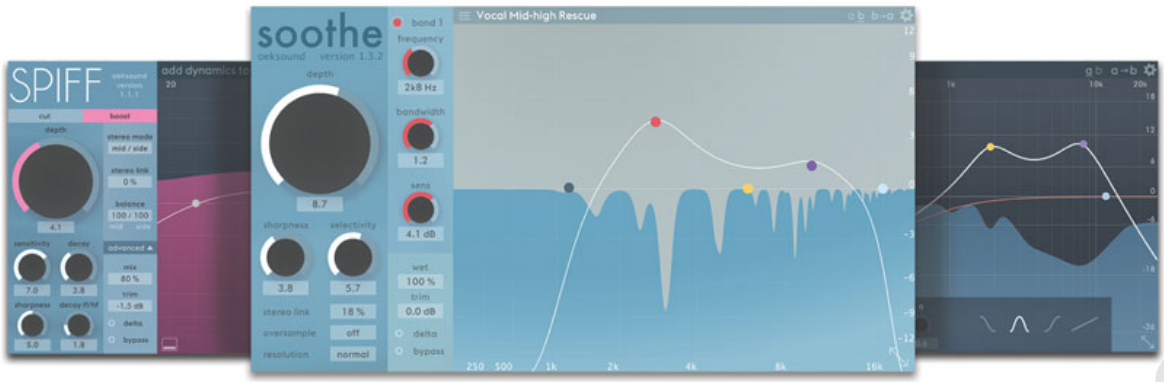

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Cathy Fink (l) and Marcy Marxer (r) produce many of their own Grammy winning children's music as well as others'. 📷 Michael G. Stewart

Cathy Fink

Cathy and Marcy have won two Grammys as well as multiple nominations for their children's albums. Traditional folk stalwarts, these always-touring artists produce their own albums now. They've also produced for Tom Paxton, Bill Harley, Si Kahn, and Ella Jenkins. Their most recent kids' CD is *Zoom a Little Zoom*, a reimagining of Hy Zaret's science songs.

How is recording children's songs different from performing them live?

In other genres, you are expected to stick to the sound – country, rock, bluegrass, R&B, whatever. Since this is "kids/families" the actual musical styles are wide open. Every one of our albums includes multiple genres of music on purpose. We want to expose kids and families to that wide palette of musical fun and taste. We hire real musicians to play real instruments. The string section isn't MIDI; it's string players. The same with the horns, drums, and everything else. In a live performance, you have the audience to play with. On the recording, you need to figure out how you are going to inspire that audience engagement without having the audience right in front of you.

<*www.cathymarcy.com*>

Dominic Fallacaro

Dom's productions and performances have been featured on numerous albums, as well as across film and television. Currently, he is the Musical Director for *& Juliet*, a new musical featuring the music of Max Martin. He produced Tim Kubart's Grammy-winning album *Home*, and also Tim's *Building Blocks* record. His works have been featured on *Sesame Street* and the Sprout Network (NBC Universal). Kubart says, "I just give the keys to Dom. I write a song and ask him, 'What do you hear?' We finish each other's sentences."

How did you get involved in children's music?

I went to school for jazz piano, and I had my first job out of college in 2009 doing Mommy & Me classes for young kids in New York. Tim was the guitarist and the leader of that class. It was one of those random strokes of luck that come your way. Tim said, "I'm recording this children's record. Do you think you'd want to play keyboards on it?" He'd been writing songs with Matt Puckett, one of which was "Superhero." We went up to a studio in Connecticut, where I recorded all my keyboard parts for the record. After that, Tim and Matt were recording backing vocals. They kept going to this one section over and over again. I asked if it was okay to chime in and then said, "I think that the note you're looking for is this one." That kind of worked. It was the start of our working relationship.

What kinds of things are different from recording non-kid's music?

As a producer you're always about the lyric, but here there's a special focus on the message of the song. You could have all the dense and complex sounds you could ever use, but if you're masking the message of the song, or if the lyric of the song is unclear, then it doesn't really matter.

Have you changed your tools for doing this over time?

I'm always trying to expand my vocabulary. In this genre, you don't have to feel constrained; you don't have to do XYZ because it's "children's music." I keep the lyrics in mind, and then I make it sound as full and contemporary as possible so it's just fun to listen to. You have to stay focused on what the song is about.

Can you give me an example of how you set up the recording sessions in a particular way?

For the new album *Building Blocks*, Tim, Matt, and myself went to a cabin in upstate New York. I brought a functional but scaled back rig – my computer, a bunch of guitars, a MIDI controller and just one microphone. Every day, for a week, we'd meet in the morning, talk about a song and the idea we wanted to jump into. We'd talk over melody sketches and some rough lyrics. Then, I'd take those ideas and say, "Okay, come back in two hours and then tell me what you think." I'd work on the production ideas while they finalized the lyrics and melodies. It was together and apart, together and apart, all day. For the song "Block Party," it all came together so fast. We knew exactly what the song was. The production starts very simple, with just the piano; half of the lyrics were there, and the rest we needed to fill in. I'd dress up some of the drums, and then add guitars and bass. We went from deciding to do a song about a block party to a pretty good demo in a couple of hours.

Why do you think that was?

I always like to be able to work fast. It was a sign that everybody was working on the same frequency. You ride the initial wave of excitement, and you don't want to put down any barrier between the idea and the song that you're trying to make. You're trying to really be a conduit for the artist's idea. Typically, we start with a campfire approach, with either a piano or acoustic guitar – the bare skeleton – and build from there. Then we're making more choices about flavors. "Building Blocks" has a mix of vintage and new, from a Roland Juno 60 synth along with plenty of software synthesizers. The drums are a mix of going into a studio and

Dominic Fallacaro in his Brooklyn, NY, studio. 📷 Maggie Svoboda

meticulously recording a drum set in a very proper, old-fashioned way and then using samples to supplement. Sometimes we're alternating between tracks from a real drummer and my samples and programming. Or it's the rhythm that a drummer played replaced by samples that I put down; and then other times it's both working together. Finding those combinations and that level of detail are what's really exciting to me. I don't think that's specific to the genre of children's music. It's more trying to get a certain overall vibe. At the end of the day, the song still works around a campfire or performed live with a small band. The record is free-standing. I want to make a record that is as massive and exciting to listen to as possible, while also knowing the skeleton is still something that's playable by humans. I'm bouncing back and forth from a bedroom producer aesthetic and the very old school studio "make a record" aesthetic. I try to use the real analog pieces over software plug-in emulations if I can. It really takes a village, because we also recorded the 80 third graders from Tim's elementary school on one of the songs, which involved a DIY mobile rig setup. Plus we recorded a full string session, along with gorgeous Steinway grand piano.

Brady Rymer 📷 Jayme Thornton

<dominicfallacaro.com>
<www.timkubart.com/bfast-studios>

Brady Rymer

This three-time Grammy nominated songwriter (also known as a member of RCA Records' jam band, From Good Homes, as well as a bassist with Laurie Berkner's touring band) likes the fact that he can step into his home studio to lay down a track whenever an idea hits. His newest album *Under the Big Umbrella* offers exuberant layers of horn-laced sounds that he produced with the help of Dave Darlington at Bass Hit Studios.

What's unique about recording songs for kids?

For this latest project, I was talking with families and kids about song ideas and lyrics before recording. So, it was fun to produce the songs with them in mind, thinking about their energy and cool instrumentation. I've heard from kids and music teachers that they love listening to and examining the layers of a recording. They notice the small things (a percussion instrument, or a slide guitar, or trombone), so I don't hold back. If I hear something in the song, I add it! That might allow me to get pretty colorful and wacky with sounds, if it works. On the new song "Thank You for Being You," I played around with a lot of little sounds that gave it a Beatles feel – the backwards guitars, mellotron, glockenspiel, and making the drums sound kind of trashy. We compressed the heck out of the drum fills.

How do you usually produce a song?

They're all a bit different, but usually I work from the bottom up, establishing the groove to make sure it feels right. I think, no matter who's listening, it needs to feel good! Then I love to sing, play along, and sketch the tune out. I'm originally a guitar player, so it's fun adding guitars. The Jeff Lynne/Tom Petty lots-of-layered-guitars approach has been fun lately. For this project, I sent the roughs to Dave and we sweetened them up, adding some final touches and mixes at his studio.

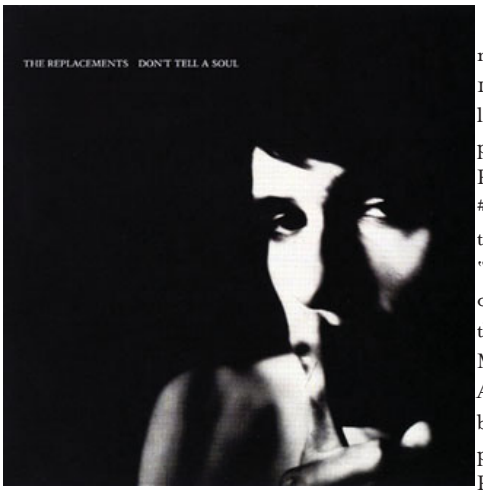
<www.bradyrymer.com>

Listen to the Kids' Music Grows up Playlist on SoundCloud: https://soundcloud.com/bethbcpr/sets/kids-music-grows-up-playlist

Beth Blenz-Clucas is a Portland-based music lover and publicist to many artists working in the family music genre. She helped produce Portland's first children's music festival, Building Bridges, in September 2019. When she's not jumping around at a kids' concert with a bunch of toddlers, she is pondering why the best children's music doesn't get the same respect as children's literature.

~~Remixing~~ Restoring The Replacement's *Don't Tell a Soul* with Matt Wallace

by John Baccigaluppi



When The Replacements released *Don't Tell a Soul* in 1989, many of their fans felt like the record was too polished and too pop. Producer Matt Wallace [*Tape Op* #128] took a good portion of the blame for the band's "selling out." But what a lot of people overlooked is that the record was not mixed by Matt, but by Chris Lord-Alge. Rhino Records (owned by Warner Bros. Records, parent company of Sire Records, which originally released *Don't Tell a Soul*) recently released The Replacements' *Dead Man's Pop*, featuring remixes of *Don't Tell a Soul* by Matt Wallace. The mixes are a revelation, and the record feels like a very different album, with new parts and song sections that were not on the original release. Matt remixed the record in the box, via Pro Tools from a transfer of the original 2-inch, 24-track tapes, using minimal, mostly older (Bomb Factory, McDSP, Valhalla), plug-ins, and treated Pro Tools as a tape machine. In addition to the *Don't Tell a Soul* remixes, this four volume album also has outtakes from Tony Berg's [*Tape Op* #121] work with the band at Bearsville Studios, some live tracking that Matt did in the studio (including a few songs with Tom Waits!) and several live sets.

I'm generally not that interested when bands release remixed versions of their back catalog or include lots of alternate versions of the songs and other minutiae. I feel like the statement the band made at the time was a moment in time, and revisiting it often seems a bit pointless, especially on records that were made with a decent budget and a fair amount of time in the first place. *Tape Op's* editor, Larry Crane, made an excellent point in issue #130 ("At the Feet of the Masters") on how these albums can be great learning tools, but I rarely find them enjoyable to listen to. But in the case of *Dead Man's Pop*, the remixed version is much better than the original version and it's been on regular rotation at our house. I called to chat with Matt about the remixes, and found it quite interesting.

Great work on *Dead Man's Pop*! It sounds like a whole new record.

Thanks, I think so. That was the goal. It's like a whole new record, but actually, it's the original record, which we always intended. It's literally a once-in-a-career opportunity for me to be able to go back and finish a record the way that I originally envisioned it. It was really something to be able to do that. It's very rare that I can go back and say, "Oh man, I didn't get that right! What can I do to improve upon it?" This time I got to go back and do it the way that the band, Paul [Westerberg], and everybody had envisioned it. This was the way that we wanted it to sound originally. I think this approach to the mix would have kept most of their fans, because the one that was released was obviously quite a bit more polished. But, of course, the Chris Lord-Alge mixes got them on the radio. Fair enough, that's what happened. But it's not the way we wanted it to sound. I'm really, really fortunate.

Was that the prevailing thinking then from the label, that it needed to be on the radio and that was the be-all, end-all of the record?

I think so. They were always pushing for the band to have more success than they did. *Pleased to Meet Me*, as good as it was, I don't think got as much radio play as they wanted. When we worked on *Don't Tell a Soul*, they were pushing for that. I hadn't been known for anything except for Faith No More's *We Care a Lot*. I made a total rookie mistake, when we were at Paisley Park and the band wanted rough mixes so that they could hear what we did. The label wanted mixes to hear if I could mix it, but I didn't think about that at the time. I rough mixed the entire record on one Sunday – the entire thing – which means I spent 45 minutes per song. Obviously I couldn't do any real mixing, or any nuances. When that got turned in I think that completely tipped the scales, to, "Oh yeah, we've gotta get someone like Chris Lord-Alge to mix this." We never had pressure to make a pop record, but we definitely had pressure to spruce things up a little bit and make them a little more listenable. I think having Chris on board was what that did. In a perfect world I would have said, "Have somebody else mix the album – me or somebody else – and then have Chris mix the singles." That would have made sense to me, but I didn't have enough juice at the time to say anything, and we just had to roll with it. That's what happened.

As I was listening to it for the first time, it felt like 30 or 40 percent of the record just got muted out. A very liberal use of the mute button.

That's exactly what happened. That's typical of Chris, though. He's mixed stuff that I've worked on where labels wanted him to do it. He's really good at weeding through. If you and I were working on a record and we spent three days on a guitar track, we'd be like, "Oh man, we *have* to use that guitar track!" He'd be like, "Nope, mute. It doesn't fit the song." And I'd say, "But we spent three days!" And Chris would say, "I know, it doesn't fit the song." Some of what he does is


Laurie Nelson

Matt & Paul Westerberg
David Konjoya

judicious editing, which I think is good, but in the case of this band he unfortunately got rid of a lot of what the fans would call the "charm" of the band – the little guitar pieces and vocal things that I felt were what was endearing about the band. I believe that there could have been a way to keep that endearing quality and still have a record that could get on the radio. At least let most of the album have that endearing quality, and then maybe clean up the singles. But again, nobody asked my opinion.

Yeah, I felt like a lot of little vocal things I was hearing were new.

Yeah, it's all there now. Part of it was that the band had a lot of bluster, and there was muscle in some of those songs with the guitars, but if you listen to Slim's background vocals they're really, really quiet and very tentative sounding. Same thing with Chris Mars. To me, that was a flavor that was really important to include, along with Tommy and Paul who are just walking out there swinging their dicks. They're very confident. But having Slim being more gentle, and having Chris sing more gently, I thought was very important, because the band is really a yin and yang push and pull between tenderness and aggression. I thought that was something that was really missing from the original version of the mix, so I'm happy that it came together so that we were able to do it the right way. I just kept it incredibly simple. I didn't do any tuning or put any drums in time; none of that. It's just pretty much the way it is. On occasion there would be a guitar chord that was way off time, or a guitar chord that was wrong, but that was very, very minimal. I think the whole thing was 98 percent the way it was, and I just did a couple things every once in a while if something was just egregious. Generally it's just them doing their thing and just me unmuting things and going, "Hey, here's the band!" It was pretty cool.

It's like a restoration.

It was a restoration. That's a really great way to describe it, because that's very much the way that I think it felt. It's like when they restore the Sistine Chapel or whatever they do. It was very much a restoration. I think that's a very accurate word for it.

Another thing that was interesting on the new mixes was the ending of "Anywhere's Better than Here." That got completely edited out, right?

Yeah, a lot of stuff did. Also the tempo of "They're Blind" got bumped up. I had forgotten about that until I put up the master of "They're Blind," and I was like, "Oh my god, this is a lot slower! This is a different version!" I thought it was actually a different version, and I never thought we had done a second version. Then I realized, "Oh, they just sped it up." They sped it up considerably, whereas the song "I'll Be You" was sped up a little bit, "They're Blind" was sped up quite a bit, almost a quarter tone or something. I put it back to the original tempo, which feels much more in keeping with the whole aesthetic of that song and, I think, the intentions Paul had at the time he wrote it. I think that track turned out really beautifully.

How did this project come about, and how involved was the band?

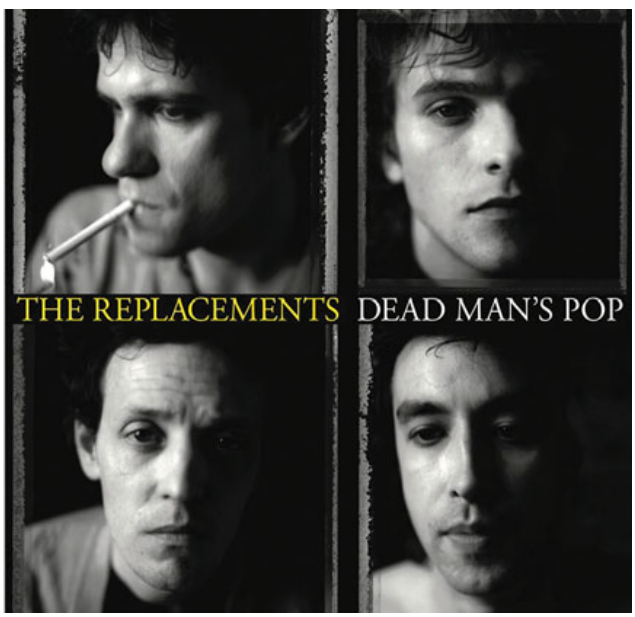
The band was actually very minimally involved. I talked to Paul Westerberg about the mixes at the time, and even over the years, so I knew what he and Tommy and all those guys wanted. We were all very likeminded. So basically I just did my thing. I don't think Paul heard any of it until it was already done. It actually came about because of Bob Mehr, who wrote this biography on The Replacements called *Trouble Boys* that was released a couple of years ago. He's always been the torchbearer of this band. I think that while doing that book, he ended up speaking with Chrissie Dunlap who was Slim Dunlap's wife. It was his first record with the band. When he talked to her about it, she said, "Well, I've got all these tapes in my basement." He said, "What do you mean?" He realized that they were from the *Don't Tell a Soul* sessions. I think they were primarily 1/4-inch tapes, and they were a lot of the stuff that I rolled when Tom Waits and the band were playing live in the middle of the night. That's where they had my original rough mixes. He transferred those and called me up and goes, "Hey, we have your original rough mixes." He said that they had a great sound or vibe to them, even though they were quite rough. He asked, "What do you think about the possibility of releasing the record the way that you and the band wanted to do it?" So over the course of two or three years Bob had such dogged determination. He kept going back to the label saying, "Hey, what about this?" He'd connect with me every six months and say, "I talked to the label and they think they're interested." Then six months later, he'd say, "It's postponed another six months." He basically kept pestering them, and they finally said, "Yeah, I guess we can do this." We put together a budget and a plan, we dove in, and we did it. Bob's really the guy who made it happen. He had a vision. I mixed it, but it was really his baby, so I really tip my hat to him.

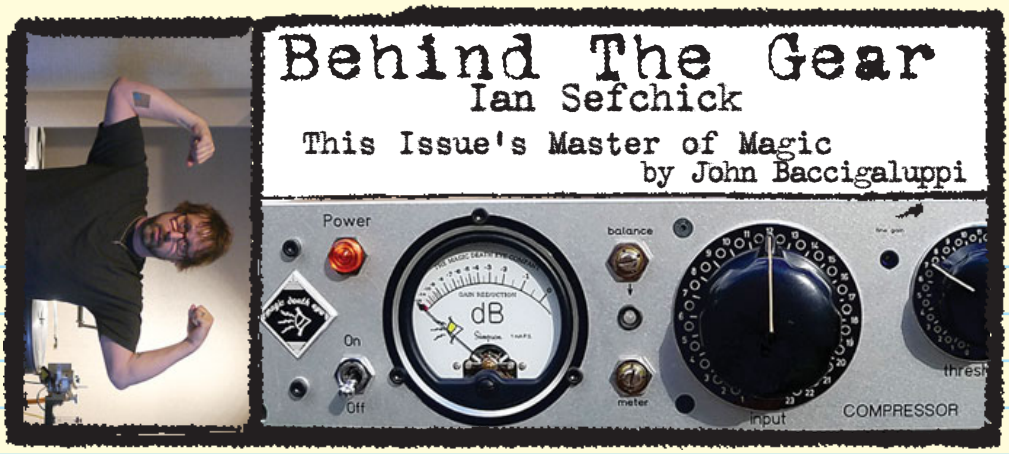
Wow. What about the song "Portland"?

We tacked that on the end of "Talent Show." It was one of those songs that was originally done when Tony Berg started the record, and they were out in Bearsville. I guess that was a way for them to include "Portland" without actually having to do it, so we just tacked it onto the end of "Talent Show." I think it's kind of a joke, because they had done a show there [December 7, 1987] and they couldn't play their instruments, so they promised they'd go back there and play again. I think that was why that whole song was written. It was like, "Hey, we're really sorry Portland, and we'll make it up to you," kind of a thing.

I don't think I've heard that song before, but I really like it.

If you listen to the entire album in progress with Tony Berg, I think that's been released. They just mixed versions of where they were at. He was trying to make a record with them, and I think they were obviously being The Replacements and drinking and tearing stuff up, so I think that it came to an end after ten days or something like that. ☮





Behind The Gear
Ian Sefchick
This Issue's Master of Magic
by John Baccigaluppi

One of my favorite bands in the early aughts was Creeper Lagoon. I saw them live several times, and they were always amazing. They put out two great albums and then seemed to disappear. Then a few years ago I saw their singer, Ian Sefchick, on the cover of *Mix Magazine* as part of an article about Capitol Studios (*Tape Op* #114). Last year, Creeper Lagoon held a reunion show at Noise Pop in San Francisco and I connected with Ian. We later met up at the famous Capitol Records tower, where he works as a mastering engineer. He also makes really great compressors in his garage in Burbank, under the name Magic Death Eye!

How did you go from Creeper Lagoon to end up mastering at Capitol? I was always a fan of your band, and then it seemed like you guys sort of disappeared.

Well, I'll try to make it short. Creeper kind of fell apart. It was that stereotypical thing of everybody hating each other. Narcissistic craziness and drugs. Me and Sharky [Laguana] couldn't get along. The final straw was when we in were in London. I was at the end of my rope from touring nonstop for over a year. We were in the hotel restaurant and I said, "I quit... for real this time." Sharky brought a napkin up to my hotel room and said, "Fine. I get the band van, you get the Pro Tools rig, and we're done." I said, "Fine." I signed the napkin and flew home the next day. That was it.

And now he runs a van rental company, and you work with Pro Tools!

Exactly. Well, at the time it was a good deal because that was back when a Pro Tools rig was still worth a good amount of money. It was probably a $15,000 setup that DreamWorks had bought us. And yeah, Sharky literally used that van to start his van rental business [Bandago]. He was parking it on a street in San Francisco and trying to keep it alive. He eventually found an investor, and he's doing really well now. It was really cool when we had the reunion to have our lives reconnect with our families. We hadn't talked the whole time before that. Anyway, I slummed around in San Francisco for a while, and I kind of lost my mind. I moved to L.A. because I needed a new start. San Francisco was full of dangerous familiarity. I couch surfed around L.A. for a while and slowly got my head screwed on straight. I started another band for a while called On The Speakers. We toured with some cool bands like Built To Spill, French Kicks, and Ben Kweller. We even played a show with Death Cab [For Cutie]. To be honest, I was getting tired of the whole thing. I was touring sober at that time, and it really felt like a day job. At around the same time, I met my wife who lived in Alabama. We started seeing each other, and she eventually moved to L.A. We lived together and unexpectedly got pregnant. At that point I was like, "Well, time to get a real job!" It was a sign. The universe wanted me to grow up. After getting turned down at Guitar Center – they said I didn't have enough experience *[laughs]* – I ended up working at an electronics junkyard in Sun Valley called Apex. I worked there for five or so years. This is where I developed some deeper electronics skills. A lot of the guys who came in there were studio techs. I already had electronics experience from building tube guitar amps as a teenager, so it was an easy transition to building and working with recording gear. At Apex we had an abundance of vintage tubes and transformers. I could build whatever I wanted and I had guys to help me. That got me deeper into the gear building and gave me my tech chops. Meanwhile, I'd started jamming with a guy who was an intern here at Capitol Studios. One day he called me up and said, "Hey, they're looking for a tech at Capitol, and I just recommended you." I came in for an interview, showed the head tech some of what I'd been working on, and got the job. In L.A., it's always about knowing somebody. Once I started working here, it was pretty natural because I'd already been in the studio environment for many, many years. It was cool because all of a sudden I was working on the other side. I'd see these rock dudes come in; in sessions, stressing out and being narcissistic. I was like, "Been there, done that." I had a great couple of years working with Jon Brion [*Tape Op* #18] and Greg Koller. That got me really deep into gear, because they're gear fanatics. Jon Brion's a very talented producer. They have very eccentric tastes in gear, and they have a lot of it. They have one of the original Curve Bender EQs from Abbey Road. We would have late night listening sessions where I'd do mods for them and bring it back to the studio. We'd sit there and go, "No, that sounds too peaky or distorted." I'd go work on it some more and bring it back. I was in a spot where I could immediately make changes to electronic circuits, as well as have really talented mixers and producers sit with me and tell me why they did or didn't like things.

How did you end up cutting vinyl?

I started servicing the lathe for Ron McMaster, who is the senior cutter – the only cutter here at Capitol for a long time. He told me one day after working on his lathe for months that there was another lathe in storage. It was a [Neumann] VMS 66, and Wally Traugott had worked on it. Wally Traugott cut the first version of *The Dark Side of the Moon*, Fleetwood Mac's *Rumours,* and tons of albums in the '70s. This was the lathe that he cut all of those albums on, so I begged the management to bring it out of storage. This was right before vinyl started coming back. They were hesitant. I said, "Just give me a closet." I literally set it up in a closet. I put it back together within three months or so; re-capped it, totally restored it, and started cutting. As soon as that happened, all of a sudden Ron started getting way too many orders to deal with himself, so I started taking those on. That was the beginning of my mastering career here, around four or five years ago.

How many years were you a maintenance tech here before you started mastering?

About half and half; so, almost ten years total. When I was doing maintenance here, I was mastering at home. I was doing a lot of indie projects. I got my chops down in parallel with my tech jobs. It all fell into place. By the time I got my room here, I was ready to go. It took me about three or four months to learn my room and really get comfortable with it. Mastering is a very subjective art. I joke sometimes that a mastering person is a person who couldn't make it in mixing. Kind of like an audiophile who can't play an instrument. Gotta be the authority on something, right? But seriously, since the advent of the software-based "look ahead" limiter, you really don't need all the fancy shmancy analog gear to make a great master.

Well, what do you need?

You need a good, treated room, full bandwidth speakers, and taste. Those things aren't easily had these days but, I have to say, a lot of the mixes I get from great mixers are 99% there. It's almost like I'm one extra stopgap between the mixer and the public. "Is this good, dude?" "Yeah, man; it sounds great. I'm gonna put a dB on it with the [FabFilter] Pro-L2 and give it to the label." Most professional mixers want you to do the most minimal changes to the songs. They worked their ass off getting everything perfect, and the last thing they want is for some mastering guy to put a smiley face EQ on it and slam the shit out of it. I might add a dB of 15 kHz shelf from a tube EQ. That adds something special to where the mixer will go,

"Damn, what did you do? It sounds amazing." Then the mastering guy thinks he's a fucking star. All that work: the songwriting, the tracking, the mixing, the drama... and I think *I'm* the star.

Mastering is a pretty competitive business...

Definitely. There is a lot of glory [in it], and not much art. It's like a CEO that makes a bunch of cash for making the right decision. I make decisions based on what I think sounds good. All the major label work that sounds amazing, that's the mix. It was like that to begin with. I know I work at a major label; big mastering houses that get big artists and have budgets for promotion, to wine and dine producers and A&R. It's business. There are people who have talent and can make great decisions, like Bob Ludwig [*Tape Op* #105]. I cut lacquers from his masters and they always sound great. I'm not knocking individuals; I'm just pointing out some ridiculousness that goes along with my profession. I was in the trenches and I lived every aspect of the music industry. When I was mastering at home, I did a lot of projects for free and most of it was terrible, mix-wise. I had to learn all kinds of tricks to try and fix big problems from amateur mixers. Then I would get blamed if it didn't sound like a professional release. The old adage that you can't polish a turd applies. But the more successful you become, the less you actually have to do that because your clients are better mixers. I do want to say that there are some important rules to follow if you're going to master audio professionally. You don't want to hurt the audio in any way. Mastering guys should take an oath, like doctors. You need to understand gain staging and signal integrity. You need to know your reference level and make sure all your converters are calibrated properly to that level. And if you're gonna have analog gear, make sure it's Magic Death Eye branded. *[laughing]* I mean, if you don't have a handle on that, stay in the box. Theoretically, if you know your room and have [Steinberg] Cubase with a [Waves] L2, you can master like a pro. If you have an ear and it translates to all the other ears, on all the other systems out there, why not? I mastered the last Gregg Allman album [*Southern Blood*], mixed by Bob Clearmountain [*Tape Op* #84, 129]. Don Was [*Tape Op* #113] produced it and basically said, "Bob said, 'Don't fuck with it.'" I sweated over that. But I did what he said and I didn't fuck with it because it sounded great like it was. I made the decision to add a bit of level and let it be. Maybe I put a half dB of high end on it. So, yeah; in an alternate universe, some dude in his bedroom could have done that on Cubase. And I got nominated for a Grammy for that.

Are there certain plug-ins that you use quite a bit and are excited about?

Yes. FabFilter, every day. They're my favorite plug-ins. Can I plug my own? *[laughing]*

Sure, go ahead.

I released a plug-in of my mono compressor. I found a brilliant German named Christian Siedschlag who has a small plug-in company named DDMF. His plug-ins sounded amazing, so I contacted him and we started to work together. I sent him a hardware unit; he did some wizardly modeling and popped out an amazing version of the Magic Death Eye mono compressor. It took a year of back and forth to get it right. I pushed him to model every detail. And yes, I use it to master sometimes. It's one of those plug-ins that you can put on anything and it works. Yeah, I'm biased, of course; but anyone out there can download the demo and prove me wrong. *[laughing]*

You've got an interesting setup here.

Oh, yeah. This is gonna be my new product; an A-to-D converter. I'm really stoked on it. It's pretty simple. A hand-wound transformer directly connected to the A-to-D chip. No filtering electronics. No op amps. Technically it's considered "wrong," but sonically it's so right. Converter codecs these days are very advanced. Even cheap ones beat the noise floor of the op amps feeding them. They all up-sample now.

None of them sound like shit now. Back in the old days, some of them did.

Yeah, but now they have it down. The technology has surpassed the supporting circuitry regarding dynamic range. Now, in mastering, of course you're pushing everything. Different converters do sound different as you clip them. I can push ridiculous amounts of level into this chip, and it doesn't sound terrible.

Are you cutting vinyl on everything you master?

I do both. If I get a big major label job from, say, a Universal artist, it will usually be a name brand mastering house. Then I just cut it. Some projects that I get from producers, like Rich Costey, he likes me to cut [lacquers] from the unmastered mixes he does. I always like doing it that way because, number one, the record's different than the digital release. I also get to have a little bit more control with dynamics. I often also do a little limiting; but I do not crush it like the digital masters. I think you come out with cooler-sounding vinyl that way. I wish most people would do it like that, but I often just get the digital masters to cut from.

You're just cutting?

Yes. You have to do a lot of things to be able to get it onto the vinyl so it sounds as nice as the digital master. Regarding the vinyl, I would say at least 60 percent of my work is being a skilled transfer guy. A lot of the more indie work I do is where I have the most fun. I'll master it, and I'll cut it. I get some great-sounding mixes from smaller studios. I don't have to do much mastering. I put it to vinyl, and it's great. Beautiful-sounding music.

Do you ever cut straight from tape to the lathe?

No. The only person who can do that here is Ron, because you need a console that has eight paths of audio.

I remember back in the day where people would have two paths, and then they'd switch settings on the unused path between songs. They'd write everything down, and reset it during the song.

That's exactly what you have to do. But that's really 8 mono tracks. You have a stereo program that gets cut. You have a stereo preview that tells the head how fast to go as it's cutting. It's a one second ahead audio preview. That's four channels there. Then you need a whole other set of those to crossfade over so you can EQ in between songs. So, four stereo paths. You need to have a special console set up to do that. To really do it right, you need a Studer because the Studer tape machine's the only tape machine that has a preview and a program head, as well as a tape extender loop to make the perfect one second delay. I have it in here, but I haven't used it yet. Ron has one downstairs, and he has the actual console. I built a transfer console that's still in the tech shop, three-quarters of the way built. When Ron leaves, I can pick that up. That's a whole other ball game. Honestly, transferring the tape into the computer and then cutting from the computer, I can tell you I would be able to make a better vinyl than if I had to use all analog gear and transfer. It's way more magical and mojo-y; but, at the end of it, if I'm allowed to use my software de-essers and precision EQs in the box from the tape being transferred in there, I can make sure that it sounds as close to the tape without the noises and weirdness you'd have if you were trying to do it all analog.

I remember the days when I was a kid driving down here to get music mastered and watching those guys scramble to reset the EQ between each song. I thought, "Man, that's stressful."

It is stressful. Ron's really good at it. I have to pick that up. I haven't had to, because he's been able to do it. I'm ready to do it. I have all the equipment, but I haven't done it. He showed it to me and I understand how it works. I'm gonna have to practice it a little bit. The thing about cutting vinyl is that you can't get any more analog than that cutter head scratching a groove into acetate. I don't care what you put into it. Even if you have analog before that, you're not adding any more analog.

Well, you get the purists who say that once there's been conversion, it's ruined!

Purists are ridiculous. I saw this guy on YouTube explaining why modern music is awful. This blanket statement. He said there're only two guys who wrote all the pop music for the last ten years. It's the same lyrics. Then he started talking about compression and dynamic range. It was funny, because the video was done with the most sterile elevator background music. They've got a guy with a polo shirt on, and they kept switching to these Hallmark card pictures of people laying in the park with headphones on. It's the most homogeneous video ever, and they're talking about how music's homogeneous. It's like, you can't tell somebody what to feel. My daughter listens to the worst-produced pop songs ever, and she loves them. Yeah, a lot of today's pop music is awful, but that's just advertising noise. There's so much good music underneath all the advertising and marketing.

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Mark Hornsby: Serving the Song

by Jeff Touzeau
photos by Erick Anderson

When you're young and picking a career, everyone always tells you to "do what you love." In the music industry however, sometimes such lofty platitudes aren't enough to pay the bills – even if one possesses all the necessary skills, passion, and drive. Producer/engineer Mark Hornsby built his career on a key piece of advice from his uncle, who is still working as an engineer in Nashville. This advice wasn't a meaningless platitude, but rather lucid advice for a budding engineer who was already doing what he loved, "If you want to stay busy, and have longevity, you've got to diversify." Hornsby took the advice to heart, and since then it has led him to work on a vast amount of projects – not only keeping him gainfully employed, but also leading him to work on a host of various projects from King Crimson, to George Strait, to Bootsy Collins. Hornsby recorded and mixed Beth Hart's Live at *Royal Albert Hall* album last year, as well as recording, producing, and mixing gospel artist Russ Taff's latest comeback album, *Believe*. Generally, Hornsby's philosophy on any project is to get the artist into a frame of mind where they can be comfortable and 'hit record' – while intuitively following the natural flow and technical demands of the song. As a mix engineer, Hornsby gained much of his critical listening skills early in his career while working as an assistant at Seventeen Grand Recording, one of the first 5.1 mix facilities in the country. Fast-forward roughly four decades and thousands of projects later, Hornsby is at the top of his game at Fort Wayne, Indiana-based Sweetwater Studios, the commercial studio arm of retailing operation Sweetwater Sound. Sweetwater is inspiring and reshaping a new culture in Fort Wayne – formerly a sleepy rust belt town built primarily on industrial manufacturing. Hornsby has been a key part of the studio's operations, looking after all of its recording projects and MasterClasses.

Sweetwater Studios has attracted Anthrax, Robben Ford, Eric Johnson, and Jordan Rudess – just in the last year. Can you talk about the big picture in Fort Wayne and what is driving this?

I think Sweetwater, as well as Chuck and Lisa Surack personally, are the driving force behind all of it. I came to Sweetwater as a visitor in 1998 while I was living in Nashville at the time, and honestly there wasn't a lot going on in Fort Wayne. When I visited, I was driving around wondering, "What do people do here?" Of course that has all changed now.

What was the main industry back then?

It was kind of a fall-out industry town, so you had all these old abandoned factories. Downtown, there's a 300-acre GE plant that has been abandoned for years. Manufacturing was a huge thing here up until the '80s, and eventually they closed it all down. So much of the area became depressed through the '80s and the early '90s, and then it started to come back. Now the GE campus is being repurposed into living, retail, and green community park space. There is also a river walk being constructed downtown where the rivers come together. Sweetwater has been a major engine for job growth and culture here. The company has grown roughly 20 percent each year since the mid 2000's. That's a pretty impressive growth rate; and just last year we hired about 700 people across all the various Sweetwater companies. Now Sweetwater is the largest privately-owned company in Northeast Indiana – and about 80 percent of the people working here are musicians. This is having a real impact on the arts. This has definitely bled into the community at large.

What was the main fuel for the business when Chuck started it?

Well, it started as a recording studio. He never thought about retail in the beginning at all – he was just trying to make some extra money while playing in various bands around the region. His start in retail was when he bought a Kurzweil K250 and he wanted to make his own samples for it. Ray Kurzweil told him that he couldn't do that, at that point. So, Chuck reverse-engineered it and started recording *his own* samples and used them in the recording studio. After all that, Chuck became a Kurzweil dealer. But he was just making samples and having fun while selling some keyboards. When the online thing came to be, Chuck got the Sweetwater Sound domain and he was on top of it.

How have the studios evolved there since they began?

Today's studios opened in 2008 and were designed by Russ Berger. Back when we opened, we were mainly doing corporate work for regional clients. What we now offer now is a very boutique and high-end service for recording clients around the world, all the while offering opportunities for our customers to become better engineers and musicians. Our studios are now very balanced, in both of those camps.

Fort Wayne seems vastly more open and approachable than other traditional music cities.

That's true. Other music cities still have labels, and there are all the politics. For example, if you are working on a pop country record in Nashville, there are still people who say, "If you are doing a pop country record, it has to be done *this* way," according to whatever imaginary formula that happens to be popular last week. Up here in Fort Wayne, that doesn't exist. We are isolated from the labels and everything else, and just really focused on the artists. We figure out what the goal of the project is, what the resources are, and work backwards from there. The main question is how can we reach that goal as efficiently as possible for our clients? The real opportunity is how we can engage people, find out what they are doing, and how we can help them.

Was moving to Fort Wayne a risk for you? That's a big change, coming from Nashville.

I was already gainfully employed, globetrotting, and working in many different genres of music. I spent my 10,000 hours staying diverse. My uncle [Ronnie Brookshire], who is also a producer and engineer, who still lives in Nashville, told me early on that if you want to stay busy, and have longevity, you've got to diversify. You can't go to work for one producer, one label, or one genre and expect that the work is just going to keep coming. Every gig comes to an end, and everything ebbs and flows. One thing goes out of style just as something else comes into style. My uncle was really a great influence on me in saying, "The more diversified you are, the better." If you can go from jazz, to blues, to hard rock, then that makes you pretty unique – most people in this business don't do that. I happen to have a wide variety of musical tastes since I was a kid, and it's served me well.

What was the first thing you did after coming on board at Sweetwater?

I realized we were flying in musicians on a regular basis to help out on our recording sessions. When you start to do the math on that – adding up hotels and airfare – you figure out, 'Well, we'd save money if we just hired people." But we needed diverse people because we have so many different types of projects. So, I called up some people I had been working with for decades: Phil Naish, Nick D'Virgilio, Don Carr, Dave Martin. They've all made their mark in different genres of music, which makes them an interesting rhythm section. But behind the scenes, I've worked across many different genres of music with this group of guys.

So, getting in some musicians to support your sessions on a regular basis was important?

Absolutely. The talent of all these guys was really important, but probably less important than their heart and their attitude. They are all team players, and their number one goal is, "How can we make this project the best that it can be?" All in all, it makes a great team to execute what we wanted to accomplish here. They all went through the same phase that I went through on their first visits, but then they came up and worked with me a couple times. Once you work here and absorb this place a dozen times a year, people want to stay. It's all about the players. And Chuck had this vision of the studio, "I want to make this a destination."

And these guys also support your MasterClasses, right? Tell me about those.

The recording classes seemed to make sense. We have a great facility here to do these, and I had done Pro Tools certification classes for Avid for years. One thing I was never a fan of was a classroom with just laptops – how does that teach people how to make music? That only teaches people the features of software, which is fine if you are just transitioning into Pro Tools or something similar. But what really lights people up is getting to experience what I get to see every day – building a song from scratch. I don't take that for granted, and I'm very grateful for that. I think once a class participant sees that firsthand, it changes their perspective and they learn that. While the gear and the technology are both important, if the guy or girl can't play drums, the microphone choice doesn't make a difference. Musicianship is what matters most and the quality of the musician is in the eye of the beholder. That said, if you play a song for ten people and ten people say it sucks, then it is probably an indication that it sucks.

What kinds of people attend these classes?

I've done almost 100 of them now and I've interacted with customers who are just starting out, to customers that have been recording for 50 years, to people that are retiring and want to get back to their passion. I also have attendees that went to college, hated it, and are seeking some real-world knowledge. We have also had professional musicians who are on tour and who want to record their demos better – including some big-name artists. It is all over the place. The common denominator with all of them is that they are impressed that the actual sound of a guitar, for instance – including the reverbs and delays – are coming from the musicians themselves. It's recorded that way, not reinterpreted later by someone else in the editing or mixing process.

It's not just about playing with gear. You are interacting with customers and teaching them how to read an artist's intention.

At an early age, they teach you that music is the universal language. When I started playing guitar at age 13 and started thinking about what I wanted to do with my life, it always came back to music. Because if I can help people do this well, the by-product of what they are doing has the potential to reach so many other people. We are all fans of different artists, and that is one of the reasons I like doing these workshops. I know how to approach a lot of different types of music. People come to these workshops, we teach them, and then they buy more gear; or different gear than they had. Our sales engineers can help them navigate these choices.

That's a cool way to get a practical education, since some people have other careers or don't have time for a long commitment.

There are many great universities, and if you are out of high school, that is an excellent option if you've got time. You can go explore and take classes as an elective, if you want. You've got that window in your youth to figure out whether you want to invest two or four years to do this. Most people don't have that luxury – music and music production for them is a hobby *and* a passion. And that is okay. If you are a working musician or audio engineer, if you work full-time in the music business and that's how you make 100 percent of your income, you are in the top five percent.

You have more gear than anybody could want here. It's like Christmas Island. Is there a downside of having too much choice?

Paradoxically, having so much choice takes the equipment out of the equation and puts the focus on who is on the other side of the gear. The obsession over all the expensive gear is either for people that have a really expensive hobby, or people who work professionally and work on projects that are getting high exposure. When I am talking with people about equipment, it's a conversation over a beer or a cup of coffee. It's not a big deal. Most people don't listen to a record that I've done and ask me, "What's on the snare drum?" They just enjoy music and don't think about the behind the scenes. They are listening to the songs and the performance. I can be picky and precious about my own workflow and how I like to bring sounds together on a technical level. But I am not precious about a whole bunch of technical things. I just like to get a bunch of talented people in the room and see what they think. I want to hear where the *musicians* are coming from. I'm an orchestrator, an arranger. I bring people and projects together and then I find places to put projects. Above any gift that I have, that's probably at the top of the list. The rest of it just comes organically.

You've recently worked with Russ Taff on a worship record and, of course, there are many fans of this genre. What was that like?

Well, Russ has already won six Grammys and fifteen Dove awards – he's a legendary Christian gospel singer. When I started working with him, he was fresh off of coming out as an alcoholic and dealing with those issues. I ended up doing a recording workshop with him here at Sweetwater Studios simply because Phil Naish and I were fans of his, and we started working on songs. Eventually it turned into this really beautiful album. Meanwhile, he's got a documentary that came out [*I Still Believe*] about his battle with alcohol, which we didn't know about when we were starting the album. Both projects happened to come out at the same time, and everybody in the Christian music world stood by him. We worked on that album for three years. It took so long because of his schedule and all the other things he had going on. But, in the end, it turned out great.

Which studio did you end up mixing the record in?

At Sweetwater Studios C. That's the smallest room here. I like the speakers being really close to me. Also, there is just something about that room because when I got to Sweetwater, I re-did that room first and I got used to it very quickly. I work extremely fast in there and know the room really well. Plus, Studio A is always booked – there is always somebody in there tracking a rhythm section. So, I will go into Studio A, mix some things and then take it back to Studio C and finish it; or I will mix something in Studio C and take it into Studio A and listen to it. But for me, I don't need a lot. I mean, I used to mix records on a laptop in hotel rooms and nobody was the wiser!

Do those rooms translate with each other well?

Absolutely. All the rooms have ATC monitors so every room has the exact same midrange, as well as the exact same tweeter and crossover points. So, you can go room to room, and it sounds the same. Studio C is a smaller room –it's got the ATC 25s in it – but 150s would probably be too much in that room. Technically speaking, when you go from the smaller speakers to the bigger speakers, there is more low end, but every room has the appropriate amount of low end for the size speaker and the size room - so, they really feel almost the same.

What was it like to work with a gospel legend?

When I was growing up in East Tennessee, my uncle turned me on to Russ Taff. Russ was the first contemporary Christian artist that I listened to and realized that this genre of music doesn't have to be corny. Initially, he achieved success in the '70s with the Imperials, a very famous gospel group, and then he went on to become a solo artist. As he got older, he started singing Southern gospel with The Gaithers. Russ will tell you *Believe* is the "full circle" album for him that brings everything back to zero. In the studio, Russ was is a really funny guy; he's got some great jokes and stories, and he's a delight to be around. I like people that can get in there and work hard, but also take the time to laugh. Making music is fun, right?

Is there a 'contemporary' Christian sound? How do you break stereotypes?

I think that some producers who only work on Christian music will probably sit down and talk about how they are completely focused on the message. But I don't think of it like that – I think it is very emotional music that has a point to it, not unlike a love song, or someone being down in the dumps. The only big difference is that there is a third party involved, which is God. And also belief. When someone writes a love song, it is a pretty lateral playing field. You've got a guy or a girl telling a story about a breakup, or how much they care about someone – and people relate to that. But in worship music there is the 'God factor.'

What makes a good worship album?

The best worship albums I've ever heard are the ones where people went in and didn't try to make it one thing, or not make it another thing. Take the music for what it is and create a comfortable environment for your artist. One of the songs we first recorded was one of his earlier hits called "I Still Believe." He sang the daylights out of it, and it's just a rockin' song. Then there was another song written by Marcus Hummon called "When I Hear Your Name" – it features a nylon string guitar and an almost Peter Gabriel-ish breakdown thing in the middle of it. It is this open, ethereal praise song that would make anybody of faith close their eyes and just ride the wave with Russ. From a recording point of view, we've got to have our ducks in order, so we have a track that Russ can vibe off of and deliver a meaningful performance. From a mix point of view, you've got to go there as well. It's a little more produced-sounding than a Marcus Scott record, for example, which is just a live band in the studio.

Do you ever have to keep it from going over the top or a put a lid on the exuberance of the praise element?

That can happen with some younger Christian artists, but Russ has made 30 albums and he's not a kid – he knows how to make an album; what works and what doesn't. Another song on that record is called "Isn't The Name of Jesus" – it's piano, vocal, and strings recorded at Abbey Road. When we originally conceptualized the whole thing, we had written the string chart; but, at that point, we had just programmed it so he knew where the parts were. But after I went over to Abbey Road and cut a live section orchestra on it and brought it back, all the real dynamics were there. Immediately Russ said, "I've got to re-sing this with the real strings." That is an example of presence of mind and maturity as an artist.

Why Abbey Road for the strings?

I do almost all of my orchestral recordings in London because there are 10 or 12 working orchestras there, all of them whom are familiar with working in a recording studio because there are a lot of studios there that do orchestral work. We don't have that in Fort Wayne. We've got a great orchestra, but over there everyone is used to working in a studio, playing to a click track, and all that. It's just a different world. If it is less than 100-pieces, I'll use Studio Two at Abbey Road – usually, my string sections are traditional first, second violin, viola, cello, and then I always add double bass – and being a bass player myself, I am pretty particular about the bass parts and what's going on in the low end. I make sure the bass parts on the track and the double bass of the string arrangements do not walk on top of each other.

How do you manage retakes or overdubs with these orchestras, and how friendly are they to work with?

They are very friendly, especially if you are working with them in a way they are used to. The conductor I work with almost all the time is Rick Wentworth, who works with Roger Waters, Danny Elfman, and others. Rick, myself, and my good friend and arranger John Hinchey have a great chemistry together, and most type of re-record situations we work out as a section. If I recut a section, I recut

everybody – I don't cheap out and pop in a cello or change a part, because in that room it's really not about the direct mics, it is about the Decca tree and the room mics. That's where I am getting most of my sound. I can't just be popping people in and out of record. It needs to sound the same as the room, and it has to be real.

How do you assimilate these sounds into a coherent mix after having recorded parts in different environments?

It's about creating music that gels with how I hear things. Strings to me is about the space that you've recorded them in, but most importantly, it is about the players. Whether I am recording in Sweetwater Studios or Abbey Road, which are both phenomenal rooms for very different reasons, I try to eliminate the technology and the distractions so we can just hear the players in their unique space. In general, I am favoring room mics and I am using little to no external reverbs. When I mix, I might use 10 or 12 different plug-ins on an entire mix in conjunction with some outboard gear. But most of my mixes are what it sounds like if you just turn up the faders on what I've recorded. It's a very old school approach, which is very committal. Instead of turning knobs in the control room, I will go out and stand in front of the guitar amplifier and ask, "Why is this not working?" I try to figure it out. If I can get myself, the guitar player, and the artist to say, "Yeah, it sounds really cool," then I just go for it and record it that way.

What is your approach to tracking instruments? Do you DI very often?

It varies instrument to instrument. I hardly ever use EQ recording or mixing bass. Instead I switch basses – Dave and I probably own 15 or 20 basses. Meanwhile, I am EQing the drums, I am moving mics, I am compressing, and I am sculpting the drums. But with the bass, I am swapping them out wondering, "Do we need a 1950s Fender that's got a single coil in it? Do we need a Jazz Bass, a P-Bass? Or do we need something active with a little more growl? Do we need a fretless? Do we need an upright? Do we need to switch basses halfway through the song, or keep it on during just a certain section of the song?" Rhythm acoustic guitars are almost always dry for me, whereas the keyboard parts – whether they are acoustic piano with reverb or a room mic, or pads that come out of synthesizers or virtual instruments – can be really big and luscious because they create depth. I am always blending really dry sounds that are in your face with really spacious sounds that are not across the entire mix, which creates depth.

What about double-tracking?

If I double-track something, it's usually very obvious and for a reason. It might be in your face and very aggressive. If I am doing a rock thing and I double-track the rhythm guitars when the intro hits, the guitars are loud and they are in your face. They are dead on doubles of each other, and it sounds like a big wall of angry mass.

Go big or go home.

Yes, but I don't just do it for the sake of doing it. There is always a method to the madness. I've had people send me projects to mix over the years where they've got 35 guitar tracks on the chorus and I've deleted 31 of them, send it back to them, and they've said, "Oh, my God; it sounds huge!"

You talked about a minimalist approach to recording. Can you tell me how this approach translates to your mixing?

I guess I'm a little selfish. All I'm doing is getting a sound in my head of what I want to hear and then going after it. When I finally get there, I stop. You used the word minimalist, and that implies that I throw up microphones, hit record, and smoke a cigar. It is really quite the opposite – I get really compulsive on the drum tunings, the drum heads, how the snare drum is cross-talking to the first tom, and how does that sound in the bridge when the bass player plays a note that rubs against it. Are those two things working with or against each other? What is the delay time on the guitar? Even if it says it is in tempo, do I need to speed it up a hair to get it out of the way? I do it all very quickly, but I get ruthless on the tracking floor about what we are using, and which mic gets switched out for this and that. I get to a place to where when I hit record and play it back, it all feels good for me and the artist.

What takes the most elbow grease and finesse?

<<<<Ian Sefchick from page 51

Is Ron still here too?

Ron's here, but he is retiring. *[Ron retired in September of 2018.]* He's had a 35 year career in vinyl mastering. There's gonna be a big party. It's going to be great. He taught me a lot. Everything I know about how it was done in the old days. I brought in and added my own modern ideas – what I knew about plug-ins, and applied that to what he taught me. We came up together with a really cool mix between modern and vintage, as well as the ways we could make vinyl sound better. Now there's going to be a new mastering guy here named Kevin Bartley. He's going to take over for Ron. Ron and I are training him. The legacy lives on!

When Ron leaves, do you become the main mastering guy?

I guess so! Kevin is going to be working in Ron's room, so he may be thought of as taking over that kind of sound. We're going to keep the room vintage. My setup is a little bit more modern. I have my own way of doing things. Ron's room definitely has a sound.

Wow, that's a cool progression. Now the gear: How did the Magic Death Eye gear come about?

Magic Death Eye came out of working with guest engineers recording at Capitol. I started modding so much of their gear, and I was working on the other house engineers' gear at Capitol. I would build it, they'd start using it, and they'd buy it from me for cheap. After a while I was like, "Well, I'd better start actually putting a name and a faceplate on this." They looked really funky. I'd build them out of anything I could find around. Old computer chassis, or whatever. I suppose it was cool that way, but that's how the custom thing carried over to Magic Death Eye. I also don't care about changing it up midway through. The stereo compressor I built first had a clipper in it. Then it had a limiter. Now I've settled on having a really nice wet/dry feature on it. Everybody that I sell these things to I consider family, and I service my products for free forever. I have a personal relationship with them, like I do with you. I enjoy that the most. When somebody's interested in buying a compressor, they usually have heard of me through somebody else, another friend. We become friends talking about it. I like to think of it as a custom piece of gear that can change. It's a little community of people who use it and appreciate it. And I don't have to make tons of money off it because I have a day job. I'm able to use things like vintage Bakelite knobs that I get off eBay, and I don't worry about having to make a hundred units and selling them for super cash. I should be selling them for twice as much as I sell them for, if I was going to make a living off it; but I'd rather keep it really cool.

You're building each one by hand then, right?

Yes, definitely. By hand, in sunny Burbank, California.

So, your weekends are spent in your garage, soldering. You have no life. [laughter]

My daughter plays water polo, and I try to make it out to her games whenever I can, but that's about it. I don't have a life. Most partying I do is watching Netflix with my wife at night. *Goliath* has been good this season. ☮

<http://magicdeatheye.com>
<https://www.capitolstudios.com/services/engineers/>

Tuning stringed instruments. I am fortunate that I work with professionals, but even then it can be difficult. Some people have perfect pitch. I do not. But I have wicked good relative pitch. I can spot an out of tune guitar a mile away, and that's the moments where I get in the weeds. If it is a rock 'n' roll track, there is a little more forgiveness, but if someone is not playing the acoustic piano, and the keyboardist is playing a Roland or a Nord, some of those samples in those instruments are pitched to where they are pretty dead on 440 Hz. I am not trying to sterilize the record, but I am really sensitive about one thing rubbing the wrong way against something else on the track. Acoustic guitars are notorious for that. You can strum a G chord and it can be great, but then the guitarist plays something halfway up the neck and all of a sudden it sounds sharp.

One of the big records you did last year was the *Beth Hart Live at Royal Albert Hall* project. What stood out for you on that?

I got to work on that through Nigel Dick. Nigel was the director and the guy who said, "You guys have to meet Mark." So, my colleague, Thad, and I hopped on a plane, went down to Houston, and saw Beth play live down there. We met with Beth, her husband, and her tour manager, and we said, "We'd really like to work with you on this project." We really wanted to showcase who she was and what she could do in the iconic Royal Albert Hall. So, we did it. I do a lot of work with Nigel and he is a phenomenal talent. He has a lot of faith in me, and vice versa.

Was there a standout element on that record for you?

Yes, I got them to let me *not* fix anything. If I can get a record label to do that, I can play you a track that will make the hair on the back of your neck stand up. Beth's got great pitch; she's a phenomenal singer, and she's a good piano player. But there are points in that show where she goes a little bit sharp, you know, when she's really going for it. Well, guess what? Her guitar player is not perfectly in tune half the time either. It's rockin' blues, so who cares? Beth, in particular, wasn't very demanding; but she would want more reverb, and all the typical stuff. She walked away from the project in its entirety for a month or so to focus on other things, then she'd be online and listen to the videos after the fact. She was blown away by the sound and very complimentary to what we had achieved. Royal Albert Hall is a cool-sounding room; very lively. If you "fix" everything on the stage, there goes your room mics. There goes that moment in time, in that place.

So, you ultimately helped make the record sound more human by not fixing all the imperfections.

Sometimes doing the right thing is the hardest thing to do, even if it puts you at odds with somebody for a little while. You'd be surprised – a lot of people pay me to work on their records and then they want to disagree with me. And I'm like, "Well, why did you hire me?" I am just going to be straight-up and honest, but that doesn't mean that I won't fix anything. The great thing about the technology is that if everyone in the band slows down to hit that last note, and the bass player is just a hair off from the kick drum, I go in there and nudge that. It is the right thing to do. But my philosophy on all of this is from Walter Murch, who did the sound design for *Apocalypse Now*, *American Graffiti*, and a whole bunch of other things. He believed that if something is off and it distracts the audience, you've missed the mark. So, if the audience is watching a movie in surround and something in the right rear channel doesn't sound right; if it makes someone in the audience turn their head for a moment and wonder, "What was that?," then you just broke the veil - and that is a no-no. That is the stuff I obsess over when I am mixing and mastering a record: are all the S's dealt with, is there an audible click track bleed on the outro? Anything that would make somebody listening on a set of headphones open their eyes and think, "What was that?" I am constantly trying to eliminate all these little technical distractions because when you add them up, they can be a big deal. But when it comes to the actual performance, I just try to box people into a comfortable place to where they can perform freely, so we can pick the best parts and move on.

Did the commercial success of the *Beth Hart Live at Royal Albert Hall* album surprise you?

No, not at all – everybody I played it for was blown away. If they already knew who Beth was, they said, "This sounds amazing," and if they didn't know who Beth was, they said, "Who is this, and where can I get a copy of it?" As much as we are homogenized by society – especially in music – I think as a culture we still respond to people who truly have a gift, and people like Beth don't come along every day. ☮

<www.markhornsby.com>
<www.sweetwaterstudios.com>

Jim Heath is Reverend Horton Heat

by Larry Crane

Photos by Thom Jackson

Reverend Horton Heat has been pushing the rockabilly envelope since 1985. Lead singer and guitarist Jim Heath is certainly the focal point, but his pal, Jimbo Wallace, has been slapping the upright bass alongside him for most of the ride. The album *Whole New Life* had just come out when I dropped in at Portland's Doug Fir Lounge to meet Jim before the (excellent) show to talk about almost 30 years of making records.

With Reverend Horton Heat, you're not trying to totally imitate the past with your recordings, but you're trying to maintain the energy of that kind of era. How do you see it?

Right. Well, you know, this is kind of a funny thing. When I was younger, everybody in Texas wanted to be Jimmie Vaughan, but a lot of us were slicking our hair back and playing that old '50s style; trying to cop some of that instead. Stevie Ray Vaughan, his brother, kind of flipped it. He took the blues and made it more aggressive and turned up. That was kind of my thing about rockabilly. Let's use it as a platform.

Your first record was done live to 2-track after previously tracking it multitrack in the studio?

Well, the thing is the liner notes on that album were actually done before they figured all of that out. A couple of songs that weren't recorded straight to 2-track got on the album. We had done most of the songs so many times that finally we just went straight to DAT. But it was a really good studio called Crystal Clear Sound in Dallas. They're kind of an unsung studio, but man, for some reason that studio always got the best sounds. It was crystal clear, just like the name! We worked a lot with Ed Stasium [*Tape Op* #98]. I learned a lot about recording from him. He's very helpful.

What kinds of things did he bring to the table that you learned from?

One of his tricks is that he listens very close to the toms and the snare drum tuning before every song. I'd never seen anybody do it. He'd tune the toms and the drums to the pitch of the song. If you're paying that much attention to all of the things, it adds up to being something really great. We did one session with him in three takes. It was 24-track 2-inch tape. It was one of those drum things. Scott [Churilla (drums)] and him got together – they wanted the drums to be perfect. Ed's splicing the tape, and he has the studio engineer running 50 yards down the hall with this tape. Ed's slicing it, and then he's putting it in. The next thing you know, 15 minutes later the first part of the third take is the first part of the song. The middle part of the song is the second take middle, and the last part is the first. It took him 15 minutes. Quicker than you can do it on Pro Tools.

And examining all the options.

Yeah, that's right. That's probably one of the big problems with Pro Tools; you've got too many options. The way I approach my Pro Tools is that I only have so many options. I leave in guitar flubs. Some of them I'm getting good at fixing, but I do it more like the old-style tape splice thing. Sometimes I'll do the take of the whole band, and I'll do a "tape" splice. I'm actually starting to like that sound.

You can hear something change? Ambient cymbals cut off?

Yeah. That's kind of one thing about the '50s – they did a lot. People have this misconception about the '50s, like, "Oh, they just went in and did one take all together in the room." Well, kind of; but they would bounce and redo the vocals to make sure the vocal was good. I love my Pro Tools rig, and what I really love is my Universal Audio interfaces. I hate to sell you something here, but the plug-ins are great. They're getting better and better. The thing the average public doesn't realize is that when you talk about tape versus digital, tape is a million different things. Those Studer decks sound so good! My thing for going for tape is that I have Pro Tools. I don't need a Studer tape deck. What I need is an old Ampex. So I have two old Ampex machines. I'm trying to work with them now, but that's hard.

Parts, repair, maintenance, and calibration.

I'm slowly learning how to get the calibration up to speed on that. My MRL test tapes and my tones. Ed told me that they do that every day at those major studios. So that's what I'm up against if I'm going to keep the tape thing alive. In some ways what I want out of a tape sound is for it to sound kind of screwed up. I'm looking for that little warble that those old motors had, and I'm looking for that distortion. A little bit of that sound, whatever it is.

The last few Reverend Horton Heat records have been self-produced and self-recorded?

Yeah, the last couple. More or less. We used a studio called Modern Electric Sound Recorders in Dallas. He's [owner Jeffrey Saenz] got a lot of nice vintage gear in there. The new record was going to be completely done by me, with the drums and everything. A bunch of the record before that was that way, but our drummer quit right when we were about to take the time to work up a new album. We just cannot take three months off all the time. We've gotta plan three years ahead of that slot. Instead of spending three months to record, we were getting a new drummer. We got RJ [Arjuna "RJ" Contreras], and RJ is a North Texas State guy. He charted the demos. I didn't want to ask RJ to come into my ratty little place and record the drums. We had to work quick, too. He charted out the songs, and we went and recorded basic tracks at Modern Electric. Jimbo did great. We only re-did one or two of his bass parts from that session. We did ten songs in two days with RJ, and there's the record. I went to my little studio and started doing the guitars, and the voice, and whatever.

Were you tracking with live keyboards on those songs?

No, the keyboards Matt [Jordan] did his parts at his house. He sent the file to me, and I just put it in. Isn't that funny?

You've been in the band with an upright bassist for decades. I'll tell you, as a recording guy, it's a difficult instrument to capture.

It's so difficult.

Especially with slap bass. You've got boom downstairs and clicks up top. You're trying to capture midrange articulation; but also, when that slap comes in, it's going to be a different level. What have you learned to help you capture and present it the right way?

Well, I have to work with Jimbo with what he wants to do. Sometimes he wants to have a little amp with him in the room. The direct signal sounds kind of farty or something. Then they put a good Neumann microphone right there by the bridge. It's beautiful. It's crazy how much low-end comes off it.

I put my ear up against it just trying to see where, listening around the F-hole and the bridge to see what's going on. You hear that. It's a monster.

Yeah, it's amazing. In a lot of the old pictures from the '60s, you see an Altec "birdcage," the 639, right there where the bridge does that. A lot of times that was live in the room. That's one of the things about this new record. They didn't have iso booths there, so they had these big gobos around Jimbo, but the mic on the bass is still picking up a lot of the drums. The room with the drums is pretty dang beautiful.

Does it work well in that space?

It worked real well. It can be really okay. On a lot of old records, that's how they did bass. A friend of mine, Danny Baker – [known as] Unknown Hinson – his dad was a studio guy back in the '50s. He played guitar and bass. He did a session in New York City where it was a full orchestra pit with a real orchestra, a really high ceiling. They had a scaffolding built up like 20-feet with the microphone up there. He climbed up there; they used a pulley and got his upright bass up on this scaffolding, way up high. That's genius! That's the way they isolated that mic to get enough low end on the recording.

Well, don't tell Jimbo. He's going to want to be the highest guy in the room now!

We'll have to tour with Jim way up there.

On a pedestal! You also deal with the issue of the bass moving. In the studio it's like, "Can you hold it still?"

Yeah. The closer the mic is, the more any little movement is going to matter. If you can back it up a few, it doesn't matter as much. So you have that leeway. In a real-world good recording, you really should have the bass in an iso booth. We did that for a long time. But it always amazed me. I'll tell the guys, "Get a direct signal; mic his amp. But put a Neumann, or some nice mic, on the bridge." I think it's a little bit simpler than what people think. But now, with Pro Tools, I'll do the options. I'll record three tracks. One direct, one amp, one mic; but the main sound is the mic. I just started going to the "birdcage" on his bass recently. It's pretty neat. It's got more low-end than you ever imagined. But I've got some pretty good people helping me. John Peluso [Peluso Microphone Lab, *Tape Op* #96] – those mics are beautiful. I use the Peluso P-67 on Jimbo's bass quite a bit. Most of those sessions on this album and the last, that's what was on the bass.

(continued on page 60)

What kind of process do you follow through with, as far as mixing on the last couple of records?

Well, it's probably pretty easy. I usually try to make it so that I don't have that many tracks. Like I said, I'll leave guitar flubs in there. But my mixing process, since I don't have that many tracks, pretty much starts as soon as we finish the take. As the band is in there listening back, I'll create a master fader and throw on the Universal Audio Ampex [tape] modeler plug-in – and maybe a light compressor on it. So it's already starting as we're going through there. That's what's great about Pro Tools is the recall. I really like the sound of the '50s. The goofiness of it, in a way. They only had one take, so a lot of times you could hear the engineer turning that knob to make it louder. "Oh, here's the solo!" All of a sudden, it just fades in quick. I like to do goofy fades with Pro Tools. I'll program it in there.

Like a guy pushing the fader up?

Yeah. Sometimes I'll make it kind of screwed up to sound like that! It's a lot of fun, really. I like on Pro Tools how you can do a fade by drawing it in there at the end of the track. I like to do the quick fades like they did in the '50s. End of song. They're fading down before the guy's done singing.

Oh, yeah. It's crazy sometimes how fast some of those are on the masters.

They were trying to save space on the 45 and trying to save time to get it on the air for more chance of airplay. If it was too long, they wouldn't play it.

That's true. One of the things I found interesting on the recent records is your use of stereo. The drums are very stereo, the ride cymbals are over on the right, and there's kind of a spread. But sometimes the ride cymbal feels close, and there's a room sound on the drums, so you get front to back, as well as a little width.

Well, I'll usually mic all the drums, and then I have a big boom stand with an overhead that I put up. I built my own [AKG] C12 clones. I don't even really know what you call it, like an X-Y maybe? I don't know if that's what it's called, where there're two stereo.

If they're kind of pointing towards each other?

They're kind of pointed towards each other, but away.

There're a lot of different variations; but yeah, X-Y typically.

That gives me a really good spread. But sometimes I can't remember what I did on all that. That's kind of my go-to thing. My room where we record at is not really that little. I have a control room separate from the live room. But it's very dry. I know the best studios are the ones that have the best-sounding rooms. At the same time, I like working with a bunch of vintage-sounding spring reverbs. A lot of times when I cut the vocal, I'll cut tracks. There will be the vocal, and then there's a spring reverb I have rigged up. I'm getting that effect right when I cut it. That's not ever going to be a plug-in.

Is it going into your headphones too so you can hear it?

I can do it if I wanted to, or I can adjust that however I want it. I usually like to sing a little bit dry. I pull one side off so I can hear my voice more in the room.

Some of your mixes, on some songs the vocals are very dry and right up front. Really clear and present.

Right; well good, excellent! That's a compliment. Us rockabilly guys, we put slapback echo on everything. It's like, "Well, don't put it on there now, because I'm going to put it on the whole damn mix later."

What kind of echoes do you like using for slapback?

Well, I'm about to start rigging up one of my Ampex machines to see if I can make that happen, but I hate to have those things running all day.

I know. I've done those records where you have to keep going in and rewinding the echo deck.

Right. I want to have that sound to tape to mix to. That's the main reason I really have the tape machines going now is to mix to. I can just mix real quick, bounce it back in, and then I don't have to wear that machine out.

That makes sense.

But those Ampex machines are pretty bulletproof. They're military-grade. But my main one now that I use most is the Universal Audio Echoplex plug-in. I set it at about 160 ms; one slap. That gets an approximation of what the Ampex is doing, whatever Sam Phillips was doing with the Ampex thing. Another thing that's really been good for me with Universal Audio is the Ocean Way Studios [room reverb plug-in].

Isn't that amazing?

It's very amazing. For a guy like me, I can record in my really dry room, and then add the sound of Ocean Way Studios and Bill Putnam. It's a lot of the sounds of the old records that I like. The room sound is what they were getting. A lot of times the snare drum sounded so good because it was away from the vocal mic, and the vocal mic was picking that up.

I was looking through all the people you've worked with and places you've recorded before. There's a flexibility to what you're doing. Like you said earlier, it's not super rigid or conformed to an old style.

Right. We recorded with Al Jourgensen and Gibby Haynes. That was crazy.

How does Al Jourgensen make sense to work with Reverend Horton Heat? I love that.

He and Gibby Haynes were friends. Gibby Haynes produced the album before that. Our next album was a co-deal between Interscope and Sub Pop. It was really Interscope's baby. They dumped a lot of money into it. Al showed up at one of our shows in Chicago and said, "I want to produce you guys." We said, "Okay!" The session got a little bit out of control. It got to a point where it was completely out of my hands. It was all Al being in there for nine days in a row.

Doing what?

He spent days and days and days flying around a steel guitar part on one of the songs. That was in the early days of digital. At the end of the day, we ended up remixing some, but we did keep some of his mixes. I appreciate that Al brought what he does to the band. It's something different.

Was he using sequencing or anything really different for you guys?

Oh, yeah; I don't know what he was doing! He was always going, "Okay, quantize!" I'm thinking, "Oh, okay, I'm leaving now because I don't want to be here listening to this." It was a different session, but I appreciate him bringing his thing to the band. Thom Panunzio was good to work with. He was a really, really nice man. He had so many great stories. It was a great experience. We worked really well with him.

Was he more of an overview producer, like arranging?

He was more of an overview type thing. It's funny. A dear friend of mine, who just passed away almost two years ago, is a guy named Tim Alexander. Not from Primus, but he played piano with Asleep at the Wheel and won a bunch of Grammys for arranging.

He played on a lot of your songs.

He was one of my best friends. I could just call him and say, "Hey man, come on over and help me arrange this song." He was a beautiful guy. He'd go over to Jimbo and say, "You know, Jimbo, on this particular type of turnaround you could do this on the bass." Jimbo would be like, "Oh, wow; thanks a lot!" But his approach with all of us was so nice. He helped arrange a lot of my songs over the years and taught me so much. Yeah, I think most producers used to be more arrangers and into that. Now they're like sound or audio guys, it seems like.

Right. Do you feel like someone like Ed Stasium was in between that? He's a great musician too.

Yeah, Stasium; he's a great singer and a great musician too. He had some great ideas for the arranging thing too. Yep, he was a good one at that. We've worked with so many people, in so many studios.

I know, I was writing names down.

I don't remember all their names!

Paul Leary [*Tape Op* #94] too, with Stuart Sullivan [#94], right?

Paul and Stuart. They got a little fed up with me. That was the early days of Pro Tools. In the old days of the Studer decks, the 24-track, you'd punch in. "Okay, let's punch you in on that." You could make it sound pretty natural, but it still was never quite right. Now, with Pro Tools, you can have three continuous performances and comp them. To me it's much more natural-sounding than the punch in. With Paul and Stuart, I found out, "Oh, all I've got to do is sing it three times and go play golf? All right, man. I'm going to go play golf, and you guys can be in here doing this." I think they got a little bit perturbed with me on that aspect. But listen; both of those guys are very good. Very, very good. I'd love to work with Stuart and Paul again.

Yeah. Stuart's recordings always sound really good to me.

Stuart Sullivan is very good at what he does. Paul is great at what he does too. They were tag-teaming on the whole sound and arrangement type of deal.

What was it like working with Gibby Haynes? We think of him as the frontman for the Butthole Surfers.

He's a Dallas guy. I got to know him over the years. "How about you produce our new album?" It was funny. They had a little ratty demo studio, and we went in there with him and Paul and did the demos for that album. The demos sounded pretty good. We were saying, "Well, this is going to be something!" Then Gibby wanted to do it in Memphis, so we did it in Memphis at Ardent Studios [*Tape Op* #58]. Ardent gets a great sound. It's a great room. So, that was a real fun vibe. It was a lot of fun working with Gibb. He's a very fun person. He brought some cool ideas to the table that I wouldn't have thought to do.

Did you ever really butt heads with anyone who was producing the band with you?

I did butt heads with Al a little bit. I want to git 'er done. I don't want this all-day-for-nine-days-straight thing. Al knows what he does, and he was trying to lend that to us. I really appreciate him doing that, because he was trying to give us what he knew to get the sound that he wants to make. He was helping us to get that. So, I appreciate it. But no, the worst session I ever did, which I was totally unprepared for, is when we were on tour. They called me up and said, "Hey, Brian Setzer wants you to come in and do 'The House is Rockin" with him. Maybe sing a background harmony, and maybe play a solo in there." I said, "Wow, that would be great. When?" They said, "Well, tomorrow!" We'd been on tour. I was dog tired. I was not prepared for the session. When you're not prepared, it's like a nightmare. If you're not prepared for a session, and you walk in, and it's Allen Sides [*Tape Op* #106] and Phil Ramone [#50]… I was sitting there going, "Uh-oh!" I hadn't really even had a chance to rehearse the song. It was a nightmare. The only good thing that came out of it was that I got to hang around with Phil Ramone and Allen Sides!

Yeah, a brilliant engineer.

Yeah. The old guys have some great stories.

You mentioned earlier that you built a C12 mic clone?

I've built several of those CAPI API clone preamp kits and they sound great. They're so much fun. I had to learn to test it and all that. Then I started modifying those mics from MicParts.com. You know, modifying cheap mics. They sound really great. That led me to building these tube mic clones. I've built two C12 clones, and it's a lot of fun. It feels really good when you put one of those on somebody, and they say, "Wow, that's the best sound I've ever heard on my voice."

"I built it."

I've built those, as well as some other pieces of equipment. Just getting into the whole maintenance thing, too. The cool thing about getting better at soldering is that I can build my own cables. If you're a project studio, you've got to have those Mogami Quad cables to eliminate noise. Those are so expensive, so I make them for a lot cheaper. That's been a real plus.

Have you ever made your own guitar cables?

Oh, yeah. It saves a lot of money, if you want to use nice cables. And I do. But yeah, there's some other DIY projects too. I've built re-amp boxes. It's fun. But at the end of the day, man, those cables saved me a fortune. ☮

<http://www.reverendhortonheat.com>

Tape Op Gear Reviews

Apogee Digital
Apogee Native FX plug-ins

Hey, look! Unique low-latency plug-ins from Apogee Digital, the same folks that have brought us such stellar hardware interfaces over the years. Though it may strike some as a late entry into a crowded market, Apogee clearly have given these plug-ins the same time and attention to detail that has earned their hardware such a solid reputation industry-wide, while at the same time developing a flexible platform to build upon.

Available for Mac OS X 10.12.6 or higher in AUv2, VST, or AAX format, these plug-ins run natively within your Mac DAW – no additional hardware or external DSP required. That said, if you DO own Apogee hardware like an Element Series or Ensemble Thunderbolt [*Tape Op* #105] audio interface, you can take advantage of the external DSP processing available through those boxes to help reduce overall CPU load and latency. Note that Apogee hardware users get many additional benefits, like channel-linking and DualPath Monitoring; Apogee's solution for recording and direct monitoring through the plug-in path.

Supported DAWs include Logic Pro X, Pro Tools 12 (or PT "Ultimate"), Ableton Live 10 [#126], and Cubase 9.5 (VST 1 & 2). Logic users get a few extra integration points/bells/whistles, but I used native plug-ins within Pro Tools and Ableton Live for my testing.

The modeled plug-ins available include emulations of the Universal LA-3A Leveling Amplifier, and "officially licensed and endorsed" emulations of the Pultec EQP-1A and MEQ-5 Midrange equalizers. Additionally, you get Apogee's ModEQ 6-band EQ plug-in, and a nicely designed workhorse compressor called ModComp.

All these plug-ins can be instantiated individually, or loaded into the Apogee FX Rack (itself essentially a wrapper loaded as a separate instance) – users get both plug-in versions at the time of purchase. Loading plug-ins into the Apogee FX Rack has the convenient benefit of instant chain recall and external DSP allocation if you own compatible Apogee hardware (I wish more plug-in developers would consider a similar architecture). The FX Rack also allows for A/B comparison workflows and includes a DSP load meter.

The included selection of presets is useful in getting to a quick starting line, as well as illustrating some of the more extreme potential of the software. Apogee has done a fine job designing simple and clear UX for all these plug-ins, and for the most part, they won't require a hefty amount of PDF manual-diving. More importantly, they sound freakin' great! I'm very pleasantly surprised by the character and ease of use of the ModComp compressor, which has a beautiful and musical response to mix bus and parallel compression applications. Also, the additional touches like high-frequency response contour and sidechain support help bring the modeled plugs like the Opto-3A into more modern workflows. I'm looking forward to whatever Apogee has in mind next for this platform.

(bundle pricing $499 MSRP; apogeedigital.com)

-Dana Gumbiner <danagumbiner.com>

McDSP
APB-16 Analog Processing Box

The most remarkable thing about McDSP's *APB-16* is just how simple it is to use. One of their ads says, "The Future is Here," and they're not wrong! It really feels like Colin McDowell and his team has travelled back from the year 2029 in order to bring this revolutionary tech, the world's first programmable analog processor, to us poor souls who lack a time machine. But what's most surprising to me is how well everything just works!

So, what is this thing and how does it function? APB stands for "analog processing box," which seems intentionally vague to me. You plug the single rack space unit into your computer with a Thunderbolt 2 or 3 cable (two ports on the back, which is nice), connect the word clock input to your converter, and install the six APB plug-ins into your computer. So far, this all feels very similar to using Universal Audio's DSP plug-ins, but this box costs so much more and currently only supports six compressors. Why? The answer is where it gets really interesting: the 16 dynamics processors in this thing are all analog! For under $7,000 (street price) you get 16 channels of incredibly flexible analog compression. That's $437.50 per channel, which is actually quite a good deal!

According to the website, here's how the *APB-16* processes signal: "An APB plug-in takes the input audio signal, combines it with a control signal, and sends both along a Thunderbolt connection to an APB hardware unit for processing. The control signal sets up the analog components to do the selected algorithm with all the parameter values, and the audio signal is processed in the analog domain, and then converted back to the digital domain, and appears at the output of the APB plug-in back inside the Pro Tools session." Note: Currently, the *APB-16* is designed for the AAX Native format with support for Pro Tools 12, 2018, and 2019 only.

There are zero knobs on the front because everything is controlled via the APB plug-in's GUI. You simply insert an instance of an APB plug-in, just like you would any other, and all the analog routing is taken care of for you instantly. Just like any other plug-in, settings can be saved as presets, and the APB plug-ins are all sample accurate. When you re-open a saved session, each channel is instantly recalled, including routing, settings, and even your automation. No patch cables and no need to fill your phone with photos of your compressor settings for a manual recall nightmare. The whole thing runs at 32-bits, and gain staging is taken care of – you absolutely *cannot* clip the internal converters, no matter how hard you drive the analog stage into distortion. So much care has been put into this design that you'll almost forget you're not just using any other plug-in. It simply just works!

Currently McDSP offers six compressor APB plug-ins/processes, each with its own unique flavor, but marketing is clearly teasing at more to come. Originally, McDSP's owner and lead designer Colin McDowell had no plans to add EQ processing for the *APB-16*, but now says, "I think we can nail an EQ curve (eventually). When most folks use outboard analog EQ they are looking for that EQ tone (with) a saturation component to the sound. By leveraging a digital EQ design that is also calibrated/complimentary to a saturation circuit setup in the APB-16, I think we can deliver some cool hybrid EQs to folks down the road." *APB-16's* compressors, like the analog compressors in my rack, can be clean and sweet, or nasty and aggressive – all six compressors sound great, and were designed for both utility and character. Of course, there were a few processors I connected with instantly.

I really loved the ChickenHead Compressor; it just sounds great on anything. The controls are very standard except for the Sauce button that I left engaged about 80% of the time. When compressing heavily, Sauce mode seems to open the top end in a very natural way while bringing energy to the source. The C673-A Dynamic Range Compressor is an obvious nod to the Fairchild 670, with its familiar Time Constant controls, and felt really comfortable to me. I loved mixing individual drum channels with the C-18 Compressor while utilizing its BITE control. I used the El Moo Tube Limiter on horns and bass, and particularly loved the sound of the Saturation knob on both instruments. There are other flavors of compression, including the Moo Tube Compressor and the L-18 Limiter, and I'm sure there will be even more to come. It really seems like we're just scratching the surface of what's possible with this box, and with the term "analog processing," it seems that the team at McDSP are not planning to stop with this first entry round of six compressors. *($6,999 street; mcdsp.com)*

-Scott McDowell <fadersolo.com>

Telefunken USA
TF51 tube microphone

In any discussion of large-diaphragm tube condenser mics, five models seem to get mentioned more than all others combined: the Neumann U 47, U 67, and M 49, the AKG C12, and the Telefunken ELA M 251. To buy a clean, original example of any of these microphones requires a stretch into five-figure territory, with their high cost chiefly a reflection of their utility. People buy these expensive microphones to *use*, because they simply do the job in a way that's proven elusive to replicate.

Telefunken have spent the last eighteen years endeavoring to recreate the ELA M 251 in painstaking detail, using the best available components and methods. But this review isn't about *that* microphone – it's about the intelligence gathered in the process, and how that might translate into a more affordable package like the *Telefunken TF51*.

We should be clear that "more affordable" does not in this case, mean "cheap." Although the *TF51* isn't the company's flagship model, it's positioned as a solid mid-priced microphone with some luxury appointments that can excel in professional environments. The first of which are apparent immediately upon opening the fully-accessorized case: 7-pin XLR and power cables, a compact-but-sturdy power supply unit (with pattern selector), a soft mic cover/bag, and a pair of stand mounts (both fixed and suspended). The *TF51* is part of Telefunken's new Alchemy Microphone Series, which also includes the TF29 Copperhead and TF39 Copperhead Deluxe, as well as the TF47 (a combination of design elements from the U 47 and M 49).

The *TF51*'s decidedly contemporary exterior is attractive, but I couldn't resist unthreading the base, sliding off the body shell, and having a look at what's underneath. The orderly layout and high-quality polystyrene capacitors made a good first impression, but I was most interested in three key components. Tube condenser microphones are simple devices. A special variable capacitor (the capsule) has a conductive diaphragm that, when influenced by sound, creates minuscule charge and discharge currents. A vacuum tube and transformer then boost this tiny signal's amplitude and lowers its impedance, rendering it suitable for the input of a mic preamp. Those three parts – the capsule, tube, and transformer – perform the bulk of the work occurring in the microphone, and their quality will do much to determine whether or not the microphone sounds any good. They also tend to be *expensive* bits, so if a microphone is to be both good and affordable, managing their cost in the smartest way is critical.

By examining the included 12AY7/6072 tube's mica spacers and plate structure, I quickly determined that it was manufactured by New Sensor Corporation in Saratov, Russia. While no new production tube can compare to the vintage GE "five-star" 6072A tube revered by 251 purists, this is likely the best currently-manufactured 12AY7 type. Reaching out to Telefunken, I confirmed that they improve the odds by employing a 48-hour burn-in on each tube before testing for performance with an Audio Precision analyzer. Two silicone O-rings apply pressure to the glass envelope near the mica spacers (likely as a hedge against vibration-induced microphonic behavior). This was probably a wise inclusion, as the New Sensor Corporation tubes' mechanical stability tends to fall well short of the aforementioned triple-mica GE varietal. All in all, the *TF51*'s tube strategy is quite sensible for a mic designed for accessible scale production. Those who prefer NOS 12AY7s can always experiment with alternatives – the stock tube is socketed with *just* enough room for an easy swap.

The capsule is always the tricky bit in more affordable microphones, and here Telefunken employs a similar strategy: endeavor to source the best available imported part, then apply rigorous selection methods. While the flagship ELA M 251 uses a capsule made in Telefunken's Connecticut laboratory, the *TF51* has its capsule built in China to Telefunken's specifications before being quality-controlled in house. As with the CK12 capsule that sits atop the vintage ELA M 251, the *TF51*'s capsule is edge-terminated in the Austrian tradition. However, it's only loosely based on the original, being of a different construction and utilizing a different backplate hole configuration.

Haufe, the German company that made the transformers in many original ELA M 251s, still exists (at least in name) and were tapped for a custom-spec unit loosely based on the original T14/1. Telefunken claims that some tweaks to the design were made to optimize performance, including the provision for a touch more low-frequency extension.

But enough tech-speak – what does it *sound* like? My first test drive was a vocal by indie pop artist Denitia. I'd previously found an excellent match for her voice: a circa 1972 silver AKG C414 with an *exceptional* brass-ring CK12 (*not* to be confused with the common nylon-ring iteration). I positioned the two mics headbasket-to-headbasket before carefully matching gain on a pair of Neve 31102 channel strips.

Each was very good, and I could've effectively used either, but they had subtly different identities. The old AKG C414, with its vaunted brass capsule, showed a bit more dimension and complexity as well as a top end that was airier in its extension. The *TF51* felt firm and forward, with an upper midrange that was edgier and more assertive; its bottom end tighter and more-contained. Overall, the *TF51* struck me as a bit more sharply focused and less overtly seductive. This is not a criticism, necessarily – while I chose the AKG C414 for the leads, the *TF51* got the nod for background vocal stacks. Its focused low end was tidier and effectively kept things from getting too bloated as numerous vocals were layered up.

Trying the *TF51* on other sources like piano and mono drum overhead yielded similar impressions: it's articulate and bright, but mostly a *good* kind of bright, which can be elusive in many affordable mics. We have (and like!) a pair of the now discontinued Blackspade UM17Rs, and this mic punches in the same weight class: it's one of the better options in a tube LDC for a little under two grand. If you have a studio full of five-figure vintage German and Austrian mics, the *TF51* might be justifiably overlooked. But if you need to grow a small mic locker, or step into the mid-priced tube condenser price bracket for the first time, it would be easy to do worse (and hard to do substantially better) for the money.

($1895 street; telefunken-elektroakustik.com)

-Brad Allen Williams <bradallenwilliams.com>

Universal Audio
Capitol Chambers plug-in

The eight reverb chambers under the parking lot of the Capitol Records building in Los Angeles are some of the most highly revered, and closely guarded, environments for generating natural reverb in the commercial studio world. Capitol has never given permission for impulse responses (IRs) to be made of the chambers, so the only way to get that specific sound on your recordings has been to book time at Capitol's studios in the same building... until now!

Universal Audio were given access to the Capitol chambers to analyze the spaces, take IRs, and then combine those with additional algorithmic modeling in what UA calls "Dynamic Room Modeling" to come up with four chambers in a single UAD-powered plug-in called, not surprisingly, *Capitol Chambers*. They also worked closely with Steve Genewick, Capitol staff engineer and right-hand man to the renowned Al Schmitt on many of the records he has produced at Capitol, for ensuring the proper and most broadly useful microphone positions.

The interface for the UAD plug-in couldn't be more intuitive; starting at the top, there are four buttons to select from the chambers with an associated illustration of the space below these. Under the image are the four mic choices for each chamber, followed by a slider to set the decay time of the space (moving the mics closer to or farther from the speakers in the chamber). So much easier than running down to the basement, into the chamber, moving the mics, and then back to the control room to gauge if you like the sound (to say nothing of also having to be in L.A. and book one of the rooms at Capitol!). Changing the mic selection or decay time mutes the reverb output of the plug-in; to remind you of this, the door in the image of the chamber animates showing that the room is open for adjustment; also, the Capitol Tower logo on the top of the UI blinks indicating that the plug-in is calculating the new setting – cute, but also a handy reminder.

Next in the parameters are a row of EQ knobs with a high-pass filter that ranges from 80 to 750 Hz (the de-mud knob!) as well as an Off position to bypass the filter entirely, a bass knob at 125 Hz, mid at 500 Hz, and a treble knob at 5 kHz. These last three can boost or cut by 10 dB. At the bottom of the UI, there is a Mix control with a Wet Solo button next to it for when you're using the *Capitol Chambers* in a send/return Aux configuration with the output 100% wet, and finally a Width knob that varies the output from mono (at 0%) to the full stereo picture of the chamber at 100%.

Each of the four chambers has a specific pair of loudspeakers, but the four mic choices are available within each chamber. This gives more tonal variation and flexibility beyond just being able to move the mics within the space; as UA demonstrated in their Ocean Way Studios [*Tape Op* #128] plug-in, the mic choices go a long way in shaping the sound one can achieve with these reverbs. The mics are a pair of Altec 21D small-diaphragm omni tube condensers, RCA 44-BX ribbons (figure-8), Shure SM80 small-diaphragm omni condensers, and a pair of Sony C-37A cardioid tube-condensers. These are perfect choices for providing the broadest palette of pickup within four pair of microphones.

In use, I find myself gravitating to the *Capitol Chambers* when the music has the space for it; these are dense, complex sounding reverbs and really need room in the music to be felt properly. I love them on female vocals where I want to evoke a sense of that timeless quality the classic records from the '50s and '60s can create. I also used two instances of the chambers as my only reverbs on an entire acoustic jazz album by the Seattle electro-swing band Good Co – one instance was used for sending varying amounts of the instruments to while the other was exclusively for the vocals. The *Capitol Chambers* didn't timestamp the music to a specific time or place, but helped the instruments feel like they all occupied the same room while the vocals had a similar character without being cluttered out by the instrumental reverb.

If you are a UAD user I wouldn't hesitate adding the *Capitol Chambers* to your plug-in toolbox, but if you're unsure, they offer a fully-functional demo on the UA website.

($349 direct; uaudio.com) -Don Gunn <dongunn.com>

Focusrite Pro
RedNet X2P interface

If you've been to Focusrite's website lately, you may have noticed that under the "Products" navigation menu, there is a "Focusrite Pro" tab. This tab brings you to into the realm of their RedNet [*Tape Op* #120] products. RedNet is Focusrite's implementation of the Dante standard for Audio over IP (AoIP), or networked audio. For those of you who haven't ventured out of your cave lately, a lot of new pro audio gear sports Ethernet ports, instead of USB or Thunderbolt, for connectivity. Dante (developed by Audinate) is a standardized multichannel network technology that has become a recently-accepted norm in pro audio. Focusrite's RedNet product lineup includes almost a dozen different AoIP devices, ranging from portable audio and Pro Tools HD compatible interfaces to headphone boxes.

If you haven't used any Dante or RedNet devices before, it's a good idea to head over to Audinate's website <www.audinate.com> and check out the training and tutorial videos, or even take the free online Dante Certification Course – Level I is a great introduction to Dante, while Level II will get you up to speed on some advanced topics. While you don't have to be a network engineer to set it up, it does help to learn the basic principles of a Dante network. If you can hook up your modem and router for your home network, you can easily manage a simple Dante network. Focusrite also provides some excellent AoIP technical articles at their website.

Focusrite lent me their new *RedNet X2P* interface, which is a 2x2 analog audio interface designed for the RedNet AoIP world. A few items must be in place before firing up the *X2P*. First, you must have a computer with an Ethernet port. My MacBook Pro requires an inexpensive Thunderbolt to Ethernet adapter, which works just fine. Second, you must install Audinate's Dante Virtual Soundcard utility on your machine, which will allow your computer to communicate with any Dante device on the network. Third, you need to install Audinate's Dante Controller app that allows you to set up and administer your network devices – for instance configuring what I/O is available to and from each network device. Lastly, you'll need to install Focusrite's RedNet Control 2 app, which allows you to control your RedNet interface from your computer, as well as store and recall custom setups. All of this configuration and software installation may seem like a burden initially, but these apps will work with any future Dante device so it's time well spent. All these apps are free, except the Virtual Soundcard at $29.99 from Audinate's website.

The idea behind RedNet is that the network is modular and scalable (via standard Cat 6 network cabling and switches). This means you can add audio devices at any time and the Dante Controller app allows quick setup of all

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the I/O and network communications, including clocking, audio routing and latency monitoring. For example, once my *X2P* was up and running it only took one Ethernet cable and a few mouse clicks to add Focusrite's RedNet AM2 headphone amp into my system. I intended to use the *X2P* for my portable laptop studio setup, so it would be the only RedNet device connected to my computer, but having an expandable system certainly is enticing. The *X2P* thoughtfully provides two Ethernet ports, so an additional device can easily be daisy-chained to the interface without an additional Ethernet switch (router).

The *X2P* is a tabletop interface and provides two mic/line/instrument XLR combo jacks for input, stereo XLR line outputs, and a single headphone jack. The 2-channel AD/DA converter provides connectivity via two locking etherCON Ethernet connectors. The *X2P* may be powered by PoE (power over Ethernet) or via the included wall wart power supply. On the top face of the unit is an LCD that shows the status of the Dante network, power conditions, plus gain settings and meters for the inputs and network output. The analog preamp gains are controlled by the onboard digital encoders or by the RedNet control panel software, and there are illuminated switches for each channel's input settings. The front panel controls also include a headphone volume knob, a line out level control, and an input mix knob to allow a performer to monitor their mic signal with no latency while recording. The preamps can work independently from each other or may be linked as a stereo pair. The analog inputs can handle mic, line, or instrument level, and provide 68 dB of gain in single dB steps. The headphone jack is located on the front of the unit, out of the way of the controls.

Focusrite may be most famous for its Red and ISA [#32] mic preamps, which debuted in the '80s and have remained in demand as both vintage and modern units. The *X2P* provides Focusrite's newest preamp incarnation, called the Red Evolution mic preamp. This transformerless preamp models the low frequency color of the ISA's Lundahl input transformer as well as the high frequency resonance, or Air, of the ISA mic preamps. The *X2P* allows the user to select between the standard, neutral mic preamp circuit or the Air emulation, which changes the input impedance while adding the classic high frequency resonance that the ISA preamps are famous for. Along with the selectable Air effect, the mic preamps provide 68 dB of gain, with optional phantom power and an 80 Hz high-pass filter. The *X2P* is capable of sample rates between 44.1 kHz and 96 kHz, and clocks (like all Dante devices) either internally or via a Network Master clock source.

I put the *X2P* to the test on my portable rig, first in some mastering situations where I used Presonus' Studio One [#86] to finish some singles for a client. I found the headphone output of the *X2P* to sound excellent, with solid low end, very low distortion, and capable of driving any pair of headphones to a louder-than-necessary level. In fact, I don't think I ever turned the headphone level up more than two thirds of its full range. I would rate the *X2P*'s headphone amp above even my Antelope Eclipse's [#96] built-in headphone output. The Input Mix control affects the mix versus input level to the headphones, so you have to be careful to reset the knob between tracking and mixing in order to take advantage of the best monitoring gain structure. Further, the Line Output XLRs can be set to mirror the headphone output, or play only the network (DAW) monitor source without the local (mic) input mixed in.

Next, I used the *X2P* to record voice overs into Pro Tools for a video project, using an Audio Technica 5047 [#132] – a mic that sometimes challenges preamps. I found the normal mic preamp setting to be well balanced and full sounding – definitely better sounding than the preamps in the video crews' field recorder. The Air setting added a slight, but noticeable high end boost that slightly diminished proximity effect. Both settings sounded excellent on voice over, and the high-pass filter worked well to handle noises and reduce plosives. There is no pad on the *X2P* preamp, but the preamp gain starts at 0 dB, so I had no problems – even with the 5047's hot output.

I recorded a Fender bass plugged into the instrument input and the *X2P*'s 2 megaohm input impedance gave the bass a solid low end punch and clarity that the performer was happy with. I would choose the *X2P*'s DI over my $200 passive DI in almost every situation I can think of. Experimenting with recording a variety of dynamic and condenser mics, I found the *X2P*'s preamps always delivered excellent sound. Preamp noise was never an issue, and plenty of gain was available – even with a Shure SM7 [#36] on acoustic guitar. The Air effect gave a nice option for a brighter tone, though the sound without the effect was also excellent and reminded me of the sonic size and clarity my Focusrite ISA 215 and 430 preamps. The *X2P*'s preamps provided the same sound quality and low noise at 10 dB of gain as they did at 60 dB of gain, which I can't say for other 2-channel audio interfaces.

The Focusrite *X2P* is a pro unit, and its build quality is excellent. The features and sound quality put it in a league above other small interfaces. Though the *X2P*'s list price may be a little over the average for a 2-channel interface, the flexibility of RedNet combined with the quality of the unit make this a fair price.

($749 street; pro.focusrite.com) -Adam Kagan <mixer.ninja>

BURL

B4 mic/line input card

As BURL's Mothership B80 [*Tape Op* #84] has gained popularity with serious recordists as a flexible system to build your own AD/DA converter interface, there's been need for more daughter card modules in order to add flexibility. I've had my BURL stocked with 8-channel BAD8 and BDA8 converter cards for years, and recently fell in love with the BDA4's [#131] transformer-balanced outputs. This new *B4* card is interesting; it's basically a four channel input, straight to digital with its own converters, that can act as a microphone preamp or a line level input. This device will make a ton of sense for the people that need it. I can see someone filling a Mothership B80 full of these *B4* channels for 40 mic preamp inputs (with conversion!) for tracking live events or using as stage inputs for digital consoles. Mic preamp level is set via the nine gain increase steps on the front panel knob, which interestingly is a digital encoder, meaning that preamp levels will eventually be able to be remotely controlled – this would be handy for places where the converters are in a machine room, for positioning the preamps right near a performer (imagine the tiny cable run!), or for the above live input idea. Visualize this preamp as a direct input into your computer-based platform. Think about that; no extra cables and transformers or circuitry between preamp and converter. I can even imagine setting up a Mothership B16 with a *B4* for line/mic inputs and a BDA8 or BDA4 output card for a very high class mobile or home studio rig.

This unit was not really built for a full-on pro, analog-based studio like Jackpot!, where many times we follow the mic preamp choice with a compressor, equalizer, or even summing (like pesky multi-mic'd guitar amps). All the uses above are what it was designed for. But because all BURL stuff is designed properly, and I am curious, I quickly discovered what I liked about the *B4* in a studio setting.

I first did some tests of the line input by mixing back into the *B4* and the BAD8 from my console outputs. Line input, accessed by turning the gain knob all the way down, uses different taps on the input transformer instead of simply using gain-reducing resistors as many preamps do. I really preferred the sound of the *B4* for mixing into, and I've been mixing back into it from our console ever since. The *B4* line input captured a slightly clearer signal, better width, and definitely more detailed high frequencies (but not simply brighter). Kudos must go to the new BX6 input transformer, plus there are no capacitors or integrated circuits in the discrete, all balanced, Class A audio path. Next, I needed some makeup gain while tracking a direct guitar into a rack-mounted spring reverb. Having the extra gain right at the converter, so to speak, made the task far easier.

I began using the mic preamps on the *B4* and was simply blown away. Just like the excellent BURL B1 and B1D 500 Series mic preamps [*Tape Op* #111], this is a top-quality mic pre for sure. Nasty percussion sources like tambourine and chimes, with high end, sharp transients, came through the recordings loud and clear without distortion or smearing. Guitar amps, backing vocals, acoustic instruments, and all sorts of other tracks were also thrown at it, as well as the outputs of many different types of mics, and the *B4* easily sonically held its own against the studio's array of outboard preamps.

I'm not sending this *B4* back, as I relish having four slightly higher-fi input channels, but I want the reader to be aware of what this unit does not do. There's no polarity flip button, but in most cases phase issues would be addressed post converter. There is no pad either, but a really loud mic output can be fed into the first position line level input setting, which I found works pretty well. There is no DI input, and I don't know why you'd expect one. There's 8.5 square inches of real estate on the front panel, so with four gain knobs, a phantom power button, and two LEDs (48 volt and level) something had to give; plus, in many ways the *B4* is not being offered to us as a typical studio mic preamp. The *B4* is here to solve other problems, okay?

Think about the price of this unit. You'll need the B80 or B16 chassis to support this daughter card, but at $550 per channel you get a top-level mic preamp/line input and A-to-D converter. If you bought four B1 preamps and an A-to-D converter you'd spend $5000. For me, having four high quality mic preamps that can also act as two excellent-sounding stereo inputs for mixing into is totally worth it. I love the BURL Mothership system, and the *B4* gives me even higher quality final results. BURL, once again, upped my game.

(As this issue was getting wrapped, BURL announced the BAD4M 4 channel analog input and the BDA4M 4 channel analog output daughter cards, with switchable transformers and stepped attenuation for mastering and mixing purposes. Look for our review soon.) *($2199 MSRP; burlaudio.com) -LC*

FLEA Microphones

FLEA 12 tube condenser mic

We had this mic at Jackpot! Recording Studio for a while before I got a chance to try it out, so I dropped a line to our manager and *Tape Op* contributor, Gus Berry, to ask him what his impressions were. He replied, "I love the *FLEA 12*. It's already become my go-to vocal mic. It's very forward in the high end but never gets harsh to my ear. It's also super easy to mix; it handles EQ and compression like a champ!" FLEA touts the *12* as an "exact replica" of an AKG C12; the classic tube powered, multipattern, large diaphragm condenser mic. I wouldn't know; I've never been granted the chance to use an expensive, rare C12. I do remember sitting in on some of the tracking for Elliott Smith's *XO* album, with Rob Schnapf [*Tape Op* #9] pointing to a pair of mics set up for the string tracking date and saying, "Those mics are worth $20,000 each." Hearing them up over a double string quartet and soloed, yes, they sounded amazing. But considering I started Jackpot! with $25,000, these were not exactly within my budget back then, or now!

Like Gus, I've also used this mic extensively now on lead vocals, and I have to say it's become my first choice as well – this is in a studio that has at least eight other excellent boutique tube condenser mics available. I've also used it on electric guitar amps and bass amps, and it sounded clear as could be with no internal electronics overload like many tube mics. On acoustic guitar, for rhythm in a full rock song, it was so well balanced (not boomy or spikey) that it sat in the mix without much work – not something I usually get from this type of mic on guitars. Every source I've placed it on simply works, much in the way other classic mics, like the Neumann U 47, are known for. It must have been built right, and using Tim Campbell's well-respected CT12 capsule and the same 6072 tube as the original must be part of the success. The mic's body and all included accessories, like the power supply and cable/mount, are well-made and feel solid unlike other new mics I've seen recently.

Complaints about the *FLEA 12*? Not many. The socket for the base/mic mount is difficult to line up with the mic body. I find myself spinning the mic around on the base looking for the pins to line up, and I usually have to pull the mic off and visually line up the socket and pins – set up takes just a moment longer. The nine pickup patterns (like the original) are great, but it'd have been nice to support this with clearer markings around the selector switch on the power supply. If I land somewhere between cardioid and omni I have to count the number of clicks when I'm making notes for a recall, and on first glance one might not even move the switch all the way to omni or figure 8. FLEA says they will be updating the power supply with better markings in the future.

But heck, the *FLEA 12* is a really great mic. I know it's not cheap, but it holds its own perfectly against other more expensive mics I own. Plus it's a quarter the cost of a vintage C12! The first quality tube condenser mic I ever purchased was a revelation some 20-plus years ago, and every time I find a mic that ups the game one more notch for me I'm impressed. The *FLEA 12* is simply really that good. *($4675 street; www.flea-microphones.com) -LC*

Rupert Neve Designs
551 500 Series inductor EQ

Ah, Neve EQ... the stuff dreams are made of. Famous for the 1073 and 1081. Fixed EQ points and basic controls. Warmth, silky smoothness, robust and solid lows. What if you could have all this in a reasonably priced, feature-rich, high-quality 500 Series module – the only 500 Series EQ designed by "the man" (Rupert Neve) himself? In walks the *RND 551* inductor EQ (to much applause). It's true – this EQ is a welcome guest to any party.

The *551 EQ* is a lift out of the stunning RND Shelford Channel [*Tape Op* #118], broken out into a 500 Series format, giving those who do not need the mic pre or compressor sections of the channel an option for some of that Neve EQ magic at a greatly reduced price. It has the tone mojo of its Neve-designed predecessors, but also adds some nice features like the Hi Q that can get you into more surgically precise removal of trouble frequencies. I love that the modules in this range of products are not simply clones, but new designs meant to meet the demands of modern music production while still maintaining a healthy dose of the famed gear from yesteryear.

What is an inductor EQ, anyway? This is how RND describes them: "Wires wound around a coil that provide a form of frequency dependent resistance. When they saturate, they bring out beautifully musical harmonics that give your tracks the smooth, polished sound that has made Rupert's consoles and equipment so desirable for over fifty years."

RND builds and winds their own inductors and transformers for their products. This attention to detail is perhaps the extra step in the process that delivers the A to Zed sonics that Rupert Neve is known for. It's like the chef who makes their own molé. Sure, they could use something off the shelf, and it would be pretty good and taste like it should, but because they take the extra step, their dishes have that *je ne sais quoi* – that special something perhaps not definable by words. That special something that makes it stand apart from the rest. RND makes its own sauce.

Here are the specs: The *551* has a high frequency shelf/peak section selectable at 8 or 16 kHz with continuous +/-15 dB of gain and, as mentioned, selectable shelf or peak curves. The mid frequency section is parametric, selectable at 200 Hz, 350 Hz, 700 Hz, 1.5 kHz, 3 kHz and 6 kHz, with continuous +/-15 dB of gain and a selectable Hi Q. The low frequency EQ section is selectable at 35, 60, 100, and 220 Hz at +/-15 dB of gain, and selectable shelf or peak curves. The HPF button engages a, yep, you guessed it, high-pass filter at 80 Hz. Green LEDs indicate both the EQ and HPF being engaged.

It's all a very elegant and easy to use module with plenty of power. Moving mix elements forward or pushing them back into the fabric of the soundscape with the midrange section was a treat. I used the *551* in this way on vocals and guitars with great results. Sources never sounded harsh – in fact the module tended to sweeten things up while adding a bit of sparkle and chime. Kick drum and bass benefited from boosts with the *551*. I often love a little nudge at 60 Hz on bass to help it poke out of small speakers, and the *551* delivered by adding a bit of mojo to the tone in addition to being a functional EQ. I also like a touch at 1 or 1.5 kHz to add a bit of "nose" or more note to the bass. The *551* was also great for this task – the same went for any other low frequency needs.

This EQ was always firm and thick sounding while maintaining plenty of focus. The need/desire for several more of these compact beasts was made quickly apparent to me. When I find something I like that works well for a specific track, I tend to leave it there until it no longer suits the need. The *551* fit the bill for so many sources that a full rack of them would always be in service at my studio.

I cleaned up some mud on a piano track with the midrange section by cutting a bit at 200 Hz. It achieved this result in a musical way. If there was a need to really focus in more specifically on a problem frequency the high end, the *551* is certainly up for that task as well.

As is true with many RND designs, I liked passing audio through the modules even with the settings at null. When paired with the 535 Diode Bridge Compressor [#133] the duo was a formidable chain. Often I preferred the EQ following the compressor, but configurations with the EQ had its benefits and drawbacks too. There's no right or wrong – these decisions come down to your needs and personal taste.

I love the form factor, flexibility, and cost of 500 Series modules, and I often recommend the format to my pals that have small home or project studios and are ready to move into hybrid use of outboard gear when tracking and mixing. Throw some mic pres in the rack for tracking, then replace them with some EQs and compressors for mixing. Even with a small two, four, or six space rack you can add some nice analog color to your mix. If cost is no issue and you are looking for one of the best channel strips your hard earned cash can buy, go get a RND Shelford Channel... you won't be sorry! For the rest of us, save your pennies and consider getting pieces of this mojo box one at a time in the combination of a preamp, a *551*, and a 535 500 Series module from RND. Find a source this EQ doesn't sound great on – go ahead, I dare you! Highly recommended.

($850 street; rupertneve.com) -GS

Networx
Brush Panel

Many of you have run into this situation. You have audio cables that need to connect to jacks on the rear of gear and out to the front of a rack. I've drilled holes in blank panels, filed the sharp edges, and used rubber gaskets to protect the cable. But this is time-consuming and difficult to arrange when considering the size of some XLR barrels. A brush grommet, also called brush panel, permits easy feeding of cabling while keeping dust and light out of the rack. Picture a blank spacer with the center removed. It's a big empty mouth-hole. Now imagine if there were two sets of teeth (above and below) made of soft black bristles, kind of like those on vacuum cleaner attachments. These soft brushes move to allow connectors, then close around the cable to form a barrier. From 10 feet away, they are virtually invisible. If no one pointed them out, you wouldn't even notice. I chose a single rack space unit from Networx Products, that was super affordable. This panel is perfect for headphone cables and lightweight items. Should you need strain relief or a super sturdy model, this won't be sufficient. I've seen those, but they cost five times the price of the Networx. If you want to keep a clean appearance, limit dust entry to racks, or have the flexibly to pass cables front to back; the Networx *Brush Panel* is a great find.

($10.99 for single rack space model; networxproducts.com)
-Garrett Haines <treelady.com>

Heritage Audio

Successor stereo bus compressor

Admission: initially I was drawn to Heritage Audio's new *Successor* stereo compressor because at first glance everything about it screams "Neve" – metal knobbed 33609 and 32264a models are among my favorite compressors. Having missed the boat in regards to them being reasonably attainable, the *Successor* spiked my interest, appearing to be a spin on that lineage at an affordable price. While it delivers the familiar goods in some ways, it really needs, and deserves, to be looked at as its own animal – one that offers some surprisingly modern benefits for today's workflows.

Sporting the classic combination of Marconi-style stepped control knobs and RAF (Royal Air Force) blue-gray paint, the *Successor* is a handsome unit, with a nicely illuminated meter. Faceplate layout is uncluttered and controls have a pleasantly deliberate feel to them – all in all, an inviting interface. Like those that wore the look before it, the *Successor* is a diode bridge compressor. In the past, I felt this style of compressor created an interesting and complementary detour on the path between opto and FET designs by adding a thick, chewy glue when used lightly, and taking on an aggressive but rounded character when really pushed – where a cranked FET is teeth and claws in your face, the diode bridge is a knee to the gut. The *Successor* offers much faster attack times (up to 50 µs) than vintage diode bridge designs, getting you into FET territory (though in practice, I found myself almost always preferring the 2, 5, or 20 ms speeds).

After wiring the *Successor* in, I pulled up a session that seemed like it could benefit from the tonal heft and unobtrusive, tied-together compression I was accustomed to from 32264s at low ratios. Patching it across the stereo mix insert of my console in place of my usual Dramastic Obsidian [*Tape Op* #70], I was surprised to hear the mix take a tilt towards presence and brightness, with a bit steeper of a hit to the low end than I'd have expected. Engaging the sidechain allowed some of the low end back through, though minus some of the euphonic bottom end saturation I'd been hoping for. Switching it over to the stereo room mics on the kit, I missed the ability to drive a separate limiter section with the compressor's makeup gain in order to get that crunching pop-and-bloom sound I love from the old Neves. Feeling a little flustered, it was time to admit I was working from visually implied expectations, not from listening – and that's when this compressor really started to show its worth.

I grabbed my Hofner bass, plugged into a DI, then routed it through the *Successor*. Oh man! At anywhere between 3:1 and 6:1, A2 release, I was loving it. The *Successor* offers a nice range of attack times, and I was enjoying the slowest 20 ms setting for gentle plucky thumb picked bass. Speeding it up a little and lowering the threshold gave a great gritty hold on lightly muted bass lines when using thumb or pick – I spent an unusually long time pretending to be Herbie Flowers that night and I'll credit the tone for that! Piano was likewise a hit. I love the Neve 33609 on a piano, and here's where the *Successor* most lived up to its visual cues. At the 5 ms attack with about 4 to 6 dB of compression, I got a thick, controlled sound with the top end nicely subdued, but not crushed to the point of losing articulation, finished with a nice hazy swell in the sustain. Probably not an appropriate tone for solo piano, yet achieving the sort of characteristic sound that I find just settles itself into an ensemble mix beautifully. The auto release settings are really excellent – smooth but still imparting some liveliness, and a joy on overheads; just a light touch really helped the kit feel more solid.

When the unit first arrived I was just starting a mixing project with Short Lives, a Washington D.C. area trio whose material tends towards arrangements that are uncluttered and open but tonally striking and complex enough that you couldn't rightly call it "sparse" – basically, an audio engineer's playground! For the first track, I put the *Successor* across the drum bus, a position held firmly by my API 2500 [#52] for more than a decade. This was a slower, starker tune that needed the drums to feel solid and strong yet tucked in. At 80 Hz sidechain in, 3:1 ratio, 5 ms attack, and about 4 dB reduction on the meter things sounded great but even better when I engaged the *Successor*'s Blend control (parallel compression built-in), then let a little bit of uncompressed signal back in to highlight the drummer's control and nuance. With that mix approved I moved on to the next track, which was anchored by a flat picked melodic bass line that made use of all the fretboard offered. To help keep the level consistent and assertive through the octaves, I followed the *Successor* with my Purple MC77. I'm a big fan of chaining compressors to dial in lots of reduction without feeling overdone, and the Heritage Audio certainly carried its weight here. I switched to a faster attack to get some of that nice front end grip from the *Successor*, again using the sidechain to allow the lows to carry through. While I'd been loving the auto release settings on the *Successor*, here I switched over to the 400 ms release. I probably had 10 to 12 dB of reduction happening between the two units, but the tone never felt squashed – just totally present and tough – exactly what we needed.

Most of my initial complaints with the *Successor* faded away as I became more familiar with it, though a few minor quibbles remain. The bypass switch sometimes spikes the compression in auto release settings making it a little hard to A/B if that's your thing, but you can always just roll back the blend knob for a similar effect. I tend to feel like if I'm resorting to A/B tests I've probably lost the plot and it's time for a break anyway! I do also wish there'd been a simple front panel option for varying/breaking the detector link. I typically prefer unlinked operation, but it didn't stop me from finding lots of great uses for the unit.

The *Successor* is a capable, worthy entry into the compressor field – but that's a very crowded field, full of other highly qualified and longer established alternatives. Looking at it in a traditional way, the *Successor* could very easily get lost in the fray. Where this thing goes beyond being "yet another good compressor" is in its sidechain section. Featuring 80 Hz and 160 Hz high-pass filter settings, 1 kHz and 3 kHz peak sensitivity, plus a 5 kHz low-pass detection modifier, there's *a lot* of capability here for creative shaping and problem solving. Heritage advertises the unit's ability to help suppress an overly loud snare or vocal with the midband settings, as an example. While it's always going to sound better going back and addressing those tracks individually, sometimes that's just not an option. In my postproduction work frequently all that's available for music is a stereo split that has seen any number of... *inadvisable*... processing edits rendered upstream that we're forced to live with. Any music mixer who has had to work from someone else's stems has probably had a similar experience! While the plug-in world has seen a fair bit of innovation towards contending with these issues, the hardware world has seen much less – particularly at a price point accessible to individual studios and home recordists. With units like the *Successor* and TK Audio's mid/side capable TK-lizer, engineers who are

required to work from stems, remixers, and mastering engineers are getting new options for applying more targeted fixes across program material in the analog realm. These functions may not have the long reach appeal of something like a Universal Audio 1176, but these scenarios are an evermore present part of the mix engineer's landscape and it's truly welcome to see manufacturers acknowledge them with good sounding, flexible solutions that don't require us to go into the computer. While it performs well as the vintage-inspired generalist compressor the faceplate suggests, don't stop listening there – *Successor* goes further and distinguishes itself as a modern specialist.

($1499 MSRP; heritageaudio.net)

-Eamonn Aiken <thebastillestudio.com>

Digital Audio Labs

Livemix Personal Monitor System

I reviewed the Aviom A320 & A360 Personal Mixer system [*Tape Op* #108] (quite glowingly) on these pages four years back, have been happily using that system ever since, and recommending it to anyone who will listen. However, I recently stumbled across a press release for Digital Audio Labs' *Livemix* system, and thought maybe it was time to check in to make sure the Aviom system still felt like the best fit for my studio workflow. Since I did a lot of A/B'ing between the two systems, parts of this review run the risk of becoming a contest, which I normally try to steer away from in reviews. However, it's inevitable since the systems are so similar – so that's that, and away we go.

The *Livemix* system, like the Aviom system, distributes its signals around your studio (or stage) over cheap, easy to find (or make) CAT5e or CAT6 "Ethernet" cables. The first box in the chain (if you are coming from an analog source) is the AD-24, a single 19-inch rack space unit that converts 24 channels – entering via either TRS or DB-25 connectors into 48 kHz 24-bit digital audio that runs over a single Ethernet cable to the next box in line, the MIX-16 (or MIX-32), another single 19-inch rack space unit that then can distribute the digital signal to either 16 or 32 separate personal mixers. You can also enter the whole system digitally using Dante via an optional card, but I didn't test that capability. An important distinction between this and the Aviom system is that the *Livemix* system can feed both audio and power to two daisy-chained units (or one two-user unit) per single Ethernet line, whereas the each Aviom box requires its own direct power source.

Once the 24 channels hit the personal mixer, you add a single-user CS-SOLO or the tandem CS-DUO box. These satellite modules can either sit on a tabletop or make use of the optional, extremely sturdy MT-1 stand mount, which is far superior to almost any other type of stand mount I've used for studio accessories. You can either mount it on the top of a standard mic stand, using the included 5/8-inch threaded nut, or use an integrated clamp to mount it extremely securely on the side of any extended stand or boom arm. The MT-1 screws onto the bottom of the CS unit via two large thumbscrews, which stay attached to the mount, and therefore don't get lost! There's no adjusting the viewing angle once it's attached to the stand, but the perspective seemed good for most seated or standing positions, and you can flip the mount 180 degrees and/or use a boom arm to get the exact placement you like.

As far as features, the CS-SOLO and CS-DUO modules are almost identical. Since the CS-SOLO is more basic, I'll start with that. There's a small color touchscreen taking up the upper half of the sleek, robust, rectangular metal housing, whereas by comparison, the Aviom boxes feel lighter and cheaper (being made mostly out of plastic). The Livemix CS-SOLO's screen is

where you can select, solo or mute channels (in two banks of twelve), and otherwise delve into some pretty serious monitoring control. I won't go into too much detail here, but I'll say that if you're willing to spend a little bit of time poking around on the screen, you'll have a huge amount of control over the sound of your mix. Of course, the drawback is that it's a touchscreen, and don't we already have too many of those in our lives? The benefit is that you have all that control in a very compact, uncluttered space. Once you get the box configured how you like, you can operate it (for the most part) by using only the main screen and the three hardware rotary encoders. The first encoder is for the Master Volume of the whole mix. You depress this to enter a Master Setup window on the screen, where you can set a high-pass filter, EQ, compression, or reverb for your entire stereo mix. (This is a local setting, whereas other functions, such as channel naming and per-channel processing, are global, meaning they "swim upstream" and affect the given channel in everybody's mix.)

The middle encoder is a dual-purpose Volume and Pan knob, and you depress it to switch between the two functions. It affects whichever channel (or group of channels) is selected on the touch screen. The third knob is the Me knob, which can be assigned to any number of channels to have easy and quick control over whatever the operator is performing. This is convenient and easy to use for anyone, but especially for musicians who are less technically inclined. The engineer can configure the unit so that the only two controls "The Talent" need worry about (in order to get the balance between themselves and everybody else in the right spot) are the Master Volume and Me knobs. For quick access to grouping, depress the Me knob, and a screen pops up where you can choose stereo grouping, the Me group, and one of any of five other custom groups. One slight drag in the grouping function is that you can't assign a given channel to more than a single group – meaning you can't have a pair of channels that have been stereo-grouped, and then also assigned to the Me group for example. In practice this doesn't matter much, because once you deselect it as a stereo group and add it to the Me group, it functions the same – that is, the volume of those channels track together, with whatever offset was present when grouped. Since volume is the only thing that is actually grouped, this works out fine. The other, more annoying inconvenience is that assigning two adjacent channels to a stereo group doesn't automatically hard pan them left and right – you still have to manually do that on every unit that you want the channels grouped on (because grouping is a local function). However, if you start with a MirrorMix push, it'll have grouping and panning already set up for all users; see below. There is also a USB port on each personal mixer, which is handy for saving and loading mix settings to and from a thumb drive – you can also save to the internal storage of the mixer and load firmware updates onto the unit this way. Note: I'm excited to see what other features the *Livemix* engineers develop for future firmware updates.

There are a handful of operational differences between the CS-SOLO and CS-DUO. On the DUO, which is physically the same depth and about half again as wide as the SOLO, you have to decide whether the touchscreen controls are being operated for the A user or B user by pressing a small color-coded button. (The knobs stay dedicated to each user, so both musicians can be adjusting their Master Volume or Me group simultaneously). It's a really helpful feature that all of the shared controls change color depending on who has current access to them, which decreases the chance of accidentally changing your neighbor's mix. One of those shared functions, unique to the DUO, is the bank of dedicated buttons at the bottom of the unit, which allows for quick, non-touchscreen access to any of the 24 channels. You don't get a digital scribble-strip down there to help you remember which channel is which, but it's still quite a bit more tactilely convenient than using the touchscreen. Since the CS-DUO is only $100 more than the SOLO, it might be worth getting a couple more DUOs than you think you'd need, just for the physical buttons.

I will now give you more or less a laundry list of pros and cons of the *Livemix* system versus the Avioms. Really, the main con with the *Livemix* system is that I've found the visual of the touchscreens distracting, in what I have otherwise gone out of my way to make a highly cozy studio live room environment. You can dim the screens in a number of different ways, which is really nice, but still, having any screens at all in the live room is something I've been super-reticent to add. The good news is that I think *I'm* much more uptight about it than any of my clients – who almost exclusively have been undaunted by the screens. The benefit of of the screens seems to outweigh the drawback, since you can do so much to tailor your mix exactly as you want it, despite their small size and required precision to operate.

What I love about the *Livemix* system is the digital channel naming, as opposed to the Sharpie and console tape method for required for the Avioms (and most other personal mix modules). It would be even better if I could name the channels from my DAW (which you apparently can do with a Dante setup), since using the touchscreen for naming can be a tad tedious, but if you keep a spare CS-SOLO by your side in the control room (always a good idea for troubleshooting), you can rename channels on the fly and update everyone's units instantly. This leads me to another con: there is no rack-mount version of the CS-SOLO as of this review – I've grown really fond of having the Aviom A-16R next to me in the rack while sitting at the control room desk.

There are three more simple features I really dig on the *Livemix* boxes that the Avioms don't have. The first is a stereo 1/8-inch aux input jack, for blending in a phone, laptop, or other playback device, so you can reference a song in your cans without swapping anything around. This can either just feed your own mix, or everybody in the system, via a menu option. The second is an onboard metronome that can be used to give everybody in the system a quick BPM check, or even serve as a click through a performance if you don't want to record it. The third is the Intercom button. This is a little switch that when depressed (after a short lag) activates an internal mic in the box that everybody else on the system can hear. The switch can be configured to be momentary, latching, or always on from the touchscreen menu. This is fantastic for musicians who don't have mics in front of them, or for a loud drummer whose mics' preamp gains are set too low to function as "listening" mics from the live room. The onboard microphones also serve a second function that allows the user to blend in a stereo "ambient" signal. For the record, the Aviom A360 personal mixer also has such a feature. I found that by adding just a hair of what is happening in the room around the performers helps their headphones feel less "stuffy". This function betrays the fact –

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if the brand name didn't clue you in already –that this system was designed with live monitoring in mind, especially for such things as musical theater or other large-band ensembles where most of the musicians are stationary. Another clue that this system was designed for live performance is the optional FP-2 footswitch, which I didn't test, that allows the performer to select channels, change volume, or activate the intercom switch all while keeping their hands on their instrument. I really didn't find any circumstances, however, where the *Livemix* system didn't seem well suited for the studio environment, despite its live-leaning feature set.

One last feature that's really worth mentioning – and not available in the currently available Aviom system – is the ability to monitor and control another box remotely via what Digital Audio Labs calls MirrorMix. On the surface, this seems to defeat the purpose of giving everyone a dedicated personal mixer, but there are just going to be those people who simply cannot get their own mix dialed in to their satisfaction. This feature is a number of notches above just sending them a stereo mix straight off of your DAW or console's auxes, since they can take over and tweak it themselves once you get them started. It allows you to send anyone (or everyone) a starting mix, including grouping, panning, and master output settings. You can also quickly audition anybody's mix from your own mixer, which is extremely efficient for troubleshooting headphone woes from your working spot at the desk.

I managed to get this far without mentioning the sound of the *Livemix* system, but here's what you need to know: it sounds really, really good, with indiscernible latency. And its extremely clean, with a noise floor that is almost nonexistent. That's a large contrast to the Aviom system, that does sound quite good – musicians are constantly commenting on how easy headphone monitoring is at Figure 8 Recording – but has an annoyingly loud noise floor, especially on the A320 box. Initially, I was under the impression that the *Livemix* system only had 1/8-inch jacks for the headphones, but then I figured out that the 1/4-inch jack on the back could feed either stereo headphones or a balanced mono monitor speaker/wedge. It's obviously better to have both sizes, eliminating the need for adapters for your earbuds or other 1/8-inch headphones. Silly me, Digital Audio Labs seems to have thought of everything.

Couple of tips if you buy this system: first, I wouldn't buy their CAT6 cables; you should build your own. Their cables are fine, but you'll get a much better quality cable by purchasing your own ruggedized CAT5e or CAT6 cable (such as Redco's DURACAT-6), and your own RJ45 connectors and crimp tool – don't forget an Ethernet cable tester, a whopping $9 online. Plus, you can make them to your own exact length specs (up to 100 meters)! and the cabling components are so cheap (and light! and skinny!), which is one of the obvious huge advantages of this type of digital system. Note: Digital Audio Labs recommends using only shielded cable, but I didn't have any issues using the unshielded DURACAT cable myself. YMMV. Second tip: if you need to have the MIX-16 in your control room or live room, you'll want to open it up and disconnect the internal fan. It was easy to do, and the engineers at Digital Audio Labs gave me the go-ahead, saying that you'd really only need the fan if the unit was surrounded by a bunch of other hot gear. The fan is prohibitively loud to have in a sensitive environment, so disabling it is essential unless you're lucky enough to have a dedicated machine room, in which case you should just leave the fan hooked up.

So I'll just say it: I'm buying this system and selling my Aviom system, at least for my home studio. At Figure 8 we're a little more hesitant, since our engineers and clients have grown so familiar with the Avioms (which are certainly still a very good monitoring solution). We'll probably wait a bit and make sure I don't uncover any hidden bugaboos in the *Livemix* system over the coming months, but having used the *Livemix* system for a few months at this point, I don't expect to. I think it does what it sets out to do with flexibility, grace, ingenuity, impressive engineering, future-proofing, and, oh yeah, excellent sound.

(CS-SOLO Personal Monitor Mixer $425; CS-DUO Personal Monitor Mixer $525; AD-24 Analog Input $900; MIX-16 Distribution Module $1000; MT-1 Microphone Stand Mount $30; digitalaudio.com)

-Eli Crews <elicrews.com>

FreshBooks

Cloud-based invoicing & accounting software

Money and I just don't get along. Sound familiar? We're engineers, not accountants. Though it may be a tad pricier than QuickBooks Online, *FreshBooks* is very similar and a little dumbed down for us non-accountant types. You can generate custom email or PDF invoices (JB loves the analog statements that I snail mail him at the end of every *Tape Op* issue), track expenses, create estimates, and view/export configurable accounting reports (great for tax time). Monitor your hours by project and offer many different payment options to your clients. There are tons of customizable features, my favorite being the automated payment reminders that gently (or forcefully) let your clients know they're late. All this can be done painlessly via a computer or mobile device. I use my iPhone to accept bank transfers at the end of sessions. Finish your accounting and get paid while you're backing up every night – it's not hard! *(pricing varies; freshbooks.com) -SM*

Retro Instruments

DOUBLEWIDE II 500 Series tube compressor

I have been the proud owner of the original Retro DOUBLEWIDE mono variable-mu compressor for several years now. It's a handsome, timeless, and classic-styled module that delivers character-filled dynamics control for a variety of sources. It shines on vocals and bass – where it frequently lands in my mix schemes – but of course it has other applications depending on your needs.

There are a few cosmetic and functional differences between the *DOUBLEWIDE II* and its predecessor – one being the elimination of the big silver thumb screws that were a permanent fixture on the module. I liked these as it made placement and removal of the modules easy and possible without a screwdriver. The new modules now have standard 500 Series rack screw holes. Big deal? Not really.

The attack and release speeds have new faster options, and there is now a Link switch that pairs two adjoining DOUBLEWIDE modules for stereo use – handy! The outer construction is the same grey steel that we've come to know, and the gain reduction meter is the same Simpson part found on the original, plus there is the addition of a meter zeroing trim pot on the front panel. The *DOUBLEWIDE II*, as its name suggests, takes up two slots in a 500 Series rack, but, considering what's under the hood that was no small feat.

So what *is* under the hood? This all hand-wired module incorporates Cinemag input and output transformers, with 12AT7 and 12AU7 tubes at the heart of the compression duties. The board is American made, and the edge connector is gold-plated. The *DOUBLEWIDE II* has a switch that allows the user select between Single and Double, which corresponds to attack and release times. This particular feature is borrowed from the Retro Sta-Level [*Tape Op* #66], although that unit has an additional Triple setting.

In use, Single mode is smoother sounding – the slower and groovier of the two settings. Double is more aggressive, with a faster attack and release. You can of course further fine-tune these settings with provided Attack and Recovery settings. Both settings are useful, depending on the material you wish to compress. The nature of the tubes being used for compression already makes for an onset that is going to be slower than that of a VCA-style compressor, but I still found the unit more than capable of controlling vocals and faster transients on instruments such as snare drums. This unit kills on bass. I love the way it smoothed out a bass line while adding a nice harmonic halo and tone – drive it harder for more sonic saturation.

You will be shocked to look at the meter and see how much compression it registers while your ears tell you it is just in the realm of an average "get it done" setting. It can be transparent if needed but musically audible when called upon. Some tube coloration is possible when driven hard and, in addition to dynamic control, this unit has a nice rounding effect on the top end, almost like an elusive EQ. I liked using my original DOUBLEWIDE with the new module to create a stereo pair for drum and bus processing. Note: you need two *DOUBLEWIDE IIs* to use the Link function on these new modules, but I just dialed it in by eye and ear. It really did a nice thing to overheads and as a compression bus for the drums, especially on material that was slow to mid tempo. I have a Manley Variable Mu compressor that I use frequently on my mix bus, and I especially like the Manley for groovier tracks or on songs that are more open in their arrangements. I found the *DOUBLEWIDE II* to be similar in effect but with its own tone and character – neither better or worse, just different. At a cost of under $2500 you could do *a lot* worse than pair of *DOUBLEWIDE IIs* dedicated to your mix bus, and the available Link function makes this an attractive option.

On guitar with aggressive heavy compression settings I got tracks into gooey mode but not devoid-of-life territory. At lower settings, a thin leash was applied to rein them in just a touch while maintaining vibrancy. In this mode, tracks just sounded big and open with no heavy audible compression artifacts, even though they were getting healthy amounts of peak reduction. This device, like it's older sibling, is extremely musical and easy to use without getting yourself into too much trouble – a welcome addition to the rack!

($1167 street; retroinstruments.com) -GS

JBL

Professional 1 Series 104 powered monitors

I wanted some small-format speakers for monitoring a transfer chain I set up to digitize a medium-sized pile of old NTSC videos. These videos weren't great quality in the first place, but I wanted to get a reasonable 720p video resolution transfer and make sure the audio sounded as good as it originally was. So, when the *Tape Op* guys offered a review pair of JBL's new desktop-optimized powered monitors, I jumped at the opportunity.

The *104 Reference Monitors* are part of JBL's new 1 Series, which includes only this product right now. They're designed for applications like better-than-average computer speakers, podcast production, home video production, etc. They are small and light enough to pack up and take on the road with a laptop, for times when you want to listen on speakers instead of

headphones. They are coaxial monitors with a .75-inch tweeter in the center of a 4.5-inch woofer, built into a rear-ported plastic sorta-egg-shaped cabinet. A built-in Class D amplifier provides 30 watts per channel. In my testing, they don't get loud enough to rattle or break up, but also won't fill a large space with sound waves. They are designed for close-in listening.

Because of the rear port, these speakers need to be placed so the bass reflections are optimized. If they're too boomy, move them out from the wall. If they're too light, move them toward a wall or hard surface. I found them to sound best about 6-inches away from the wall. In the middle of a desktop surface, they didn't provide enough bass for my ears. Also beware of reflected combing effects if they're aimed down towards a desk or tabletop.

The right speaker contains the control center, and the left speaker connects via a standard speaker cable. JBL includes a thin-gauge cheapo "zip cord" wire. You might prefer a heartier cable, especially if they're widely spaced and you're listening near maximum volume. The right speaker's rear panel includes an on-off switch (inconveniently placed!) with inputs for unbalanced RCA and balanced TRS 1/4-inch connectors. The front panel contains a detented volume control, a mini headphone jack (which mutes the speakers when headphones are plugged in), and a mini TRS auxiliary input jack. There is no switching between inputs, so you can only run one input device at a time. And beware of ground loops if you have something plugged into the rear RCA jacks and the front mini headphone socket. I know JBL built these things for a low price point, but a front-panel power switch and an input selector would have really improved functionality in my opinion.

That said, the main goal of little speakers is to sound reasonably accurate to the source. With drivers this size, it's impossible to sound like full-sized speakers or even studio-grade nearfield monitors. They just can't move enough air or develop enough energy at low frequencies. Still, JBL is known for mad science with little speakers and these sound damn good for their size and price. For my intended purpose and use, they certainly did the job, and readily revealed any hum from a junky cable or telltale buzz from mis-tracking on a video playback. They were also useful for rebalancing the stereophony on a poorly done VHS HiFi tape.

When I finished using the *104s* for video transfers, I took them up to the bedroom and connected them up to the headphone jack of our Samsung plasma TV. Wow did the sound improve! Even though the plasma TV is a little thicker than the standard LED flat-screen, its speakers are wimpy and it's hard to hear dialog across the room and forget about bass-heavy sound effects or music. The JBL *104s* projected further and more clearly than I would have guessed. Keep them in mind instead of a TV soundbar.

These speakers are also a big step up verses the typical junk that comes with a desktop computer or are built into a computer monitor. Get ready to hear bass, and also get ready to hear how crappy the lossy audio attached to many online streaming videos sound. Could you use them to mix music for release? Maybe, but I'd verify what you're doing on good headphones and bigger speakers. Be sure not to overdo the bass to compensate for little speakers' inability to create low frequency energy. You also might scoop out the upper midrange a bit because these speakers can overdo it. However, they have a sound quality that a professional can understand and compensate for in their mixes. I might use them in a pinch, but would prefer to use them as a proof-of-sound alternate to full-sized studio monitors (in other words, execute the mix on bigger/better monitors but test it on little speakers like these to make sure it will work in the typical modern home listening environment).

At $129 street price, these little powered monitors can fit a lot of niches, and they punch above their weight.

($129/pair street; jbl.com) -Tom Fine <tom.fine@gmail.com>

Amphion

FlexBase25 subwoofer system

If you really think about it, choosing studio monitors is strange – they shouldn't sound like *anything*. They need to be capable blank slates. We base most of our decisions on monitors, but if everything sounds great on them already, no matter what we do, we might not make the correct decisions needed to translate well on other systems. They should be inspiring and enjoyable for sure, but they also should be nearly inaudible. It's our job to get what's going into them to sound interesting.

Seeking out exactly the right monitors for your particular space is a familiar ordeal for many of us. I've tried at least 12 different brands over multiple years, until I finally found monitors that I loved. You never really know if the speakers are right for your room until they're *in* your room, since the room itself is a big part of the sound. Without using them you won't know if you can trust their translation abilities.

After a few happy years, I began to feel a lack of low end in my beloved Amphion One18s [*Tape Op* #105]. It's not that they're inadequate, but they are a bit bass light in my opinion, and a lot of the music I am tasked to work on lately is becoming ever more bass heavy. Amphion does make monitors with two woofers, but they don't feel voiced right for my particular ears and room – they sound too low mid forward at the cost of clouded higher frequencies. I needed an actual three-way system. I needed subs.

Adding another piece to my monitoring equation seemed like a losing proposition. If the volume of the low end isn't already a locked in part of the system, aren't you just turning up the bass in the room? Like poking the loudness button on a car stereo? My control room is fairly small, so it seemed a smaller subwoofer system would pair best with my One18s. Amphion makes two stereo sub systems (BaseOne and BaseTwo), both of which have two huge towers and are quite pricey, so that was not the right fit for my space or pocketbook. Also, accelerating this thought process, I had to suddenly move to a 5.1 surround system for a television show I began working on.

Happily, Amphion recently announced a new, smaller, adaptable, and more affordable sub system, the *FlexBase25*. Its design is simple but embodies some big ideas in a compact package. It may be a mistake to simply call it a sub – it's a complete low end extension system with flexible sub management. It effectively turns your stereo main pair into a true three-way system.

It's a single *stereo* speaker tower, matched with a two-space rack amp/crossover dubbed the FlexAmp. The Class D amplifier (600 watt RMS into 4 ohms) runs cool and clean, and its face features an adjustable frequency crossover (35 to 260 Hz) that sends the lows to the *FlexBase25* tower (via supplied Neutrik speakON four-pole cable) and the rest of the signal to the main speaker pair (via XLR I/O). Additional controls include mono/stereo width, volume, and bypass. For use in a surround setup, there is also a mono LFE input.

The tower is compact (12.25" x 13.5" x 33") but is a heavy beast nonetheless (110 pounds). It's a single sealed box, sporting two side-firing 10-inch aluminum drivers. The handsome enclosure matches the charcoal and black aesthetics of Amphion's current speaker line.

Having an auxiliary system built by a manufacturer for their specific products means an easier experience in my opinion. Set up of the *FlexBase25* system took all of five minutes in my studio, and placement was simple: the center line between the two main speakers. Amphions have a well-deserved reputation for phase accuracy, and I perceived no change with the *FlexBase25* added.

So how does it sound? Seamlessly integrated. The One18s retain their characteristic sound, but with more detailed low end muscle. The center has a new pleasing solidity that I love, without disturbing the killer phantom center that these monitors have. It's like a problem I didn't know even existed got fixed! I keep the crossover frequency on the low side (<100 Hz), because as frequencies get higher, localization of sources relative to the main speakers begins to change. This is a factor of the distance between the main pair though – mine are seven feet apart. From my mix position, I can't tell what is coming from the *FlexBase25*, only that there is a more well-defined low end.

Since I also have the little One12s here (part of my 5.1 system), I gave those a run with the *FlexBase25*, and am I ever glad I did! It's a tight presentation – headphone-like clarity except out loud! The price ratio is kind of nuts (the *FlexBase25* would be 1.7 times the cost of a One12 system with amplifier and cables), but if you have the dough, adding a *FlexBase25* to them would be a huge upgrade. It could be the perfect complete mobile solution for a touring band recording live shows.

Speaking of costs, while the *FlexBase25* is a bit less than the other Base systems, it's still got a hefty price tag. But if you consider the burly amp, its sophisticated crossover, and the efficient high quality of its build, it's still a great deal in my opinion.

(continued on page 80)

Gear Geeking w/ Andy...

Ever since I reviewed a silent, ionizing air purifier almost 20 years ago [*Tape Op* #25], I've received countless requests to recommend an air cleaner for studio use. Just last month, I was asked this again. These days, I always suggest purchasing a fan-equipped filter that doesn't generate ozone — just run the cleaner during off-hours, when noise isn't an issue. I've had several **Whirlpool Whispure AP51030K** portable HEPA air cleaners <whirlpoolairpurifiers.com> for some years now. I chose this model based on positive reviews found in all the usual places, including *Consumer Reports*, and I've been very satisfied. I also own a couple of "medical-grade" **IQAir** purifiers [#47], but these are 3× the cost of the Whispure. Most recently, with the addition of a kitten in the house, I purchased a **Honeywell HPA300** portable HEPA purifier <honeywellstore.com> for significantly less than what I paid for the Whispure, even though the two models have similar ratings for effectiveness in *CR*'s lab tests. The Honeywell does a great job of keeping airborne particles and allergens at bay, but I dislike its finicky touch-sensitive controls, and it's not as quiet as the Whispure at low speed. ••• Importantly, any air cleaner will perform better if you regularly vacuum the floor and other dust-collecting surfaces. I will admit that I am an unequivocal vacuum-cleaner geek, so I will share my opinions on this subject with ardor. Dyson makes crappy vacuums, and I will only minimally consume wordcount to say that Dyson's marketing and gimmickry don't make a great product. On the other hand, **Miele** <homecare.mieleusa.com> makes the best canister vacuums. I've owned one for two decades, and it still performs flawlessly. Granted, when parts wear, OEM replacements aren't cheap; but every component can be readily disassembled with common tools and easily replaced. (Contrarily, other Miele home appliances that I've owned have been ridiculously difficult and exorbitantly expensive to repair, so I wouldn't purchase anything else from Miele.) I'd recommend getting one of the simpler, lower-cost vacuums versus the upsold ones with all sorts of over-engineered features. (*E.g.*, my wife purchased a higher-priced Miele with an articulating handle on the hose, and the stupid handle gives me less control vs. just grabbing the rigid portion of the hose — and the damn handle broke anyway.) The Miele C1 series starts at $300 (cheaper than a Dyson), and you can add a HEPA filter (which is a consumable item) at any time. Choose a kit that includes the Miele SBB300-3 Parquet Floor Brush, because this floor brush is near-magical in its maneuverability, and it works wonderfully on hard floors and under/around furniture. Equally impressive is that its brush fibers are made of a mixture of polyamide and horse hair, so they don't contribute to electrostatic discharge (ESD). Same goes for the fibers of the Miele Dusting Brush attachment. I've used mine to vacuum ESD-sensitive computer motherboards and the like. (Do not do this with a nylon brush!) ••• Another cleaning product category I'll mention quickly is touchscreen wipes. Touchscreens are ubiquitous, and sometimes, a dry cloth won't cut through the studio grime that accumulates on them. Being an eyeglass wearer and an amateur photographer, I've tried many different brands of pre-moistened wipes. By far, the best electronics wipes I've used are from **iCloth** <iclothproducts.com>. (I know, you're probably snickering at the brandname because it seems as dated as the clickwheel interface.) Three sizes are available, but even the smallest is sufficient for cleaning the screen of my Microsoft Surface Pro. Because iCloth wipes are made of actual cloth, they feel less abrasive than paper-based wipes, they don't tear, and they hold their moisture longer. I find that a 3×5-inch iCloth is more effective than a paper wipe twice its size. *–AH*

I spend long days concentrating on small details (fixing and mixing), working at pretty quiet levels (65 to 75 dB typically), so it was a truly unexpected pleasure that I was able to turn up the lows on the FlexAmp and get a much weightier experience while working at these levels. On the other end of the volume spectrum, a *FlexBase25* enhanced system is capable of being louder without becoming strident.

If you want a true three-way set of Amphion speakers, the *FlexBase25* is the most compact and economical way to get there, with maximum flexibility and no compromises.

Full disclosure: I have relationship with Amphion dating back to when I wrote to owner Anssi Hyvönen about my delight with my One18s. He used a quote from my email; "I'm tired of brutally honest – these are *beautifully* honest!" to create his brand's official slogan. I do still pay for my speakers though!

($4750 MSRP; amphion.fi) -Lars Fox <larsfox.com>

Vicoustic

Cinema Round Premium acoustic panel & Super Bass Extreme bass trap

Last winter, I set up an extra room in my house as a digitizing and restoration studio. I don't master in this room, but I still need it to sound good so that when calibrating my tape machine, adjusting azimuth, or QC'ing masters I can trust what I hear. For most of my career (lucky me!) I've had the luxury of working in rooms that had been tuned and treated by professional acousticians. I've never had to DIY, so I needed some serious hand-holding to help me understand what kinds of acoustic treatments to buy and where and how to hang them. Enter the folks at Vicoustic. Far more useful than the guy who claps his hands loudly and then tells you to slap some Owens Corning 703 on the wall, the consultants at Vicoustic walked me through every step of the process. This service is standard practice for all their customers, not just me!

I provided measurements of my home studio and a rough drawing of where my ATC monitors, console desk, side racks, and ATR-102 tape machine are all positioned, plus window and door locations. We discussed sonic and aesthetic goals, and a budget. When my budget hit the red, I got on the phone with my Vicoustic consultant to figure out the best way to trim the fat. What if we went with four bass traps instead of six? Skipped the ceiling treatment? Could my shelves full of music bios and audio books act as diffusion? (Not really.) Vicoustic answered all my questions clearly and respectfully.

They also provided me with a glossary of terms and sent me predictive acoustic models pre- and post-treatment. Since this was a welcome crash course in acoustics for me, I also used a miniDSP UMIK-1 USB Measurement Calibrated Microphone and REW (Room EQ Wizard) open source software to run some tests myself. My numbers mostly lined up with Vicoustic's predictive modeling. (I attribute anomalies to user error and the extra "stuff" that was in my room). Here are some useful terms per Vicoustic's glossary: Sound Absorption is the portion of the sound energy that is absorbed and not returned when a sound wave hits a surface. Sound Diffusion occurs when a sound wave hits a complex surface, such as a diffuser, and its energy is distributed in many directions. Reverberation Time is a measure of the degree of reverberation in a space that is equal to the time required for the level of a steady sound to decay by 60 dB after it has been turned off.

Let's talk numbers. The RT60 is the time it takes an impulse to decay from its peak down to -60 dB – an important bit of data in figuring out how to treat any room. Their modeling suggested that, pre-treatment, the RT60 in my room was around 1.5 seconds of mid-frequency reverberation time. Treatment would get that down to less than .4 seconds of mid-frequency reverberation time; a solid goal for my room. What does that actually sound like? The frequency response and reverberation time could be measured quantitatively. I wanted to know how those numbers dovetailed with my qualitative listening experience. Prior to treating the room, if I played a 1 kHz tone and moved my head around the listening position, the perceived loudness dipped all over the place. 100 Hz was even worse. You can imagine how music sounded in my pre-treated room: Confusing.

Per Vicoustic's recommendations, I ordered four *Super Bass Extreme* bass traps – high-density foam layers fronted with Vicoustic's elegant Wavewood panels, designed to provide effective low frequency absorption between 60 to 125 Hz (though maximally effective between 75 to 100 Hz, according to their literature). I also ordered three boxes of *Cinema Round Premium* acoustic panels (24 600mm panels in total). Vicoustic originally suggested six bass traps, the panels, plus one of their Multifusers for the ceiling, but, for budgetary and practical reasons, I scaled back. Also, I wanted to order the Wavewood panels because they look so classy, but they provide absorption and diffusion, which wasn't what my room required. Good to know!

I ordered the *Cinema Round* panels in Celestial Blue, a nice 'n' icy color and welcome aesthetic relief from typical black and burlap acoustic treatments. (The bass traps and Wavewood panels come in six shades of melamine wood – ranging from a dark gray-brown Wenge to an almost-white Ash Wood – and the acoustic panels come in 15 colors – from a rich pumpkin orange to an earthy green to a cotton candy pink, plus the more common black, gray, maroon, and navy palates.)

The loot arrived on a pallet, and my eyes bulged when I saw what I'd be lugging up the stairs to my house. Fortunately, everything was well-packaged and light enough for me to carry. I set up the bass traps first. They stacked easily in the front corners of my room. (Vicoustic sold me custom stackers as part of this package.)

The panels took a little more configuring. Okay, a lot. In a permanent installation, I'd measure twice, glue once, and be done. Did I mention Vicoustic *also* sold me some insanely powerful Flexi Glue Ultra, which is a plasticizer-free, quick curing sealant that does not dissolve polyurethane (foam) or polystyrene (ESP) products. This glue required serious muscle to squeeze out using a caulking gun, and, once dry, the adhesion was rock solid. Elmer's this is not. My challenge: I needed these panels to be removable, since it's likely this room is going to undergo a renovation in the near future. (Oh yeah, this whole process is a baby step toward building a mastering room from the ground up!)

Some people order or build frames for these panels. Vicoustic sells frames for the *Cinema Round* panels, but I thought about gluing the panels to strips of wood and hanging those as though I were hanging a picture, thus adding the acoustic benefit of a little space between the wall and the panel. I also considered gluing them to MDF or pegboard, which I thought might be a way to rig a removable panel for the pesky window on my right wall. Vicoustic also sells VicFix Metallic hangers, a medieval-looking metal hanger with spikes that pierce and hold the foam panels. My consultant told me his current favorite method for non-permanent installation is to glue steel strips on the panels and hang them with magnets. All this took way longer than expected, and I wound up calling for reinforcements to help me get the job done. But in the end, the panels were solidly hung, aesthetically quite lovely, and most importantly, my room now sounds much better.

What does that mean – sound better? This goes back to the quantitative/qualitative aspect of treating and tuning a room. Numbers are useful, but, like using an EQ, the numbers are just part of the information that help you make informed decisions as an audio engineer. You might think "kick drum… 60 Hz" but you will still sweep the EQ and listen until you find a frequency that addresses whatever it is you're going for sonically. Likewise, an RT60 (and other sophisticated acoustic measurements) tell you critical data about physical acoustic properties of your room and what you are (or are not) hearing. I do not discount the importance of this data, and it goes without saying anyone working in a professional room should consider hiring an acoustician to take proper measurements and advise on listening position, speaker placement, and absorption and diffusion treatment. But you still have to listen and judge for yourself. For my first DIY in acoustic treatment, the combination of Vicoustic's advice and acoustic treatments, the REW measurements, and good old-fashioned listening helped me dial in a sound that is quantitatively and qualitatively superior to my untreated room, where I can now work efficiently, effectively, and confidently.

(Cinema Round Premium Panels $699 per 8 units, Vicoustic Super Bass Extreme $599 per 2 units wood faced or $549 for fabric face; vicoustic.com)

-Jessica Thompson <jessicathompsonaudio.com>

Arturia

MicroFreak Algorithmic Synthesizer

The French brain trust at Arturia has done it again with *MicroFreak*; yet another brilliantly designed instrument that's intuitive, highly playable, and builds on some classic designs – but one that is also a unique hardware instrument offered at an affordable price. The modular world and some of the classic American and Japanese builders dominate a lot of the electronic music press these days, but for my money Arturia is developing some of the most interesting electronic instruments of this decade.

MicroFreak has some nods to a few classic synths in its topology. Its 25-key capacitive keyboard is borrowed from some Buchla synthesizers and the EMS (Electronic Music Systems) Synthi AKS. *MicroFreak*'s hybrid digital design and compact size are reminiscent of the popular Teenage Engineering OP-1, and its digital oscillator is a port of the very popular open source Mutable Instruments Plaits Eurorack oscillator. But what really impresses me about the *MicroFreak* is that it builds and improves upon its influences while bringing it to the people with a price point almost anyone can handle. This is not a boutique instrument that only bored tech company workers can afford – even a busking musician can find the money for a *MicroFreak*.

Let's start with the oscillator – the heart of any synth and a big part of what makes this one unique. Like many synths these days, the *MicroFreak* is driven by a four voice paraphonic digital oscillator. It will digitally model the basic sine, square, triangle, and ramp waves of a classic analog synth, but that's only one twelfth of the sound generation options with *MicroFreak* as it's digital oscillators have an even dozen different algorithms – some designed by Arturia with others based on the open source code from the Plaits Eurorack module. From Plaits are virtual analog, waveshaper, two-operator FM, granular formant, chords, speech, and modal oscillator modes. Arturia has also added several super wave, wavetable, harmonic, and Karplus-Strong algorithms. Much like a Teenage Engineering's OP-1 synthesizer, the *MicroFreak* has an incredibly powerful and versatile digital synthesis system. Its oscillator has four orange knobs that set it apart from the rest of the white knobs. The first knob selects the oscillator's sound generation algorithm. The other three knobs change parameters on the oscillator, which vary from one algorithm to another. The *MicroFreak* has a small, but easy to read (even with my bad eyesight) OLED (Organic LED) display that constantly follows whatever you're doing on *MicroFreak*'s front panel. Despite the oscillators' depth and complexity, they're extremely easy and intuitive to tweak – plus, I should add, a lot of fun! Being able to quickly change the oscillator's algorithm on a patch provides a very powerful way to experiment with sounds.

But what really sets the *MicroFreak* apart from many other digital synthesizers is that it has an analog filter. In this way it pays tribute to the original PPG Wave wavetable synthesizers – among the first synths to have a digital oscillator paired with a resonant analog filter. The *MicroFreak*'s filter (inspired by the popular Oberheim SEM) sounds great and has low-pass, high-pass and band-pass modes, but can also self-oscillate. *MicroFreak* has a versatile LFO with six different waveforms, plus a three-segment envelope generator that defaults to the filter envelope but can also be assigned to the volume envelope. Another unique feature of *MicroFreak* is its cycling envelope generator that can loop repeatedly, thereby creating complex control voltages that an LFO can't replicate. The EMS VCS3 and some of the Buchla synthesizers had similar envelope generators. There's also an arpeggiator and four voice paraphonic step sequencer – another nod to the VCS3. Finally tying all these control and routing options together is the routing matrix; a smaller version of the matrix found on Arturia's MatrixBrute synthesizer. The matrix is essentially a 35-point patchbay with five sources and seven destinations. The first four destinations are preset, but the last three can be assigned to any control on *MicroFreak* (except master volume and the preset selector), which makes this synthesizer extremely versatile in terms of how it can be configured. The matrix is a bit less intuitive than the rest of *MicroFreak*, but it's easy to use once you get the hang of it. Speaking of presets, the first 128 presets do a great job of showing off the flexibility of *MicroFreak*'s sound design possibilities. How useful they are in the real world will vary from user to user. Once I wrapped my head around the *MicroFreak* a bit, I found template presets 129-160 to be better starting points for creating my own patches for a particular song. *MicroFreak* has both MIDI I/O and CV outputs, so it can stand on its own or integrate into a larger system.

After spending several weeks playing with *MicroFreak* I'm really impressed. The capacitive keyboard is fun to play. If you're looking for an instrument that goes beyond the normal analog synth sounds into more experimental sonic explorations, this would be great place to start. Although they are very different instruments (especially their oscillators), I feel like the *MicroFreak* has a similar aesthetic to the Buchla Music Easel – an instrument that Arturia has faithfully modeled as part of their V Collection software synthesizer plug-ins. They both have a capacitive keyboard. They both have an internal routing that can be modified, and they both make complex and dynamic evolving sounds. While the Buchla Music Easel has more parameters available on the front panel, modular type patching, and a one-to-one relationship of knob/slider/switch to function, the *MicroFreak* has a little bit more hidden under the hood, including its digital oscillator, its many modes and modifiable parameters, as well as its matrix routing system. As I mentioned in my introduction, *MicroFreak* also borrows from the Teenage Engineering OP-1 synthesizer with it's flexible digital oscillator and OLED readout, but where the OP-1 is an extremely compact and flexible digital audio workstation with a beautiful, modern industrial design, *MicroFreak* is more of a mono-tasking instrument. I prefer Arturia's approach and the inclusion of the capacitive keyboard over the Teenage Engineering OP-1's push button keyboard. I think that people looking at the noisy side of the modular world (a la Make Noise's synthesizer modules for instance) will also find much to like about *MicroFreak*. At only $299 *MicroFreak* is much more affordable than a Music Easel ($4000), an OP-1 ($1299), or a Make Noise Ø-Coast ($499 without a keyboard). The *MicroFreak* is another soon to be classic synth from Arturia as far as I'm concerned!

($299 MAP; arturia.com) -JB

PreSonus

FaderPort 16 control surface

I recently received the *PreSonus FaderPort 16* Production Controller to review. Since the biggest difference between this model and the FaderPort 8 [*Tape Op* #119] is the additional eight channels, I won't delve too deep into the technical aspects. The main difference FaderPort 8 users will notice is in the set up. The *FaderPort 16* works with Pro Tools via the HUI Emulation standard and must be set up as two different devices in the MIDI Controllers set up window. This was easy to do and took less than 15 minutes. Downloading the PreSonus Universal Control Software is also required. I do think it is nice that the FaderPort family of controllers all still work with older versions of Mac OS – Mountain Lion in my case. Though I used it only with Pro Tools, the *FaderPort 16* has been tested and is officially supported for use with Logic, Cubase, Nuendo, Sonar, and Ableton Live using the Mackie Control Universal protocol. It should also work with other DAWs that support the MCU protocol (Reason, Bitwig Studio, and Reaper), but those have not been fully tested, so users should check with the vendors of those DAWs. The *FaderPort 16* offers additional features and functionality when used in Native mode with PreSonus Studio One [#132], and Studio One Artist is bundled with all FaderPort models.

Physically, the *FaderPort 16* has some nice features. It packs 16 fader channels into a relatively small footprint, so it won't eat up your entire desktop. I use a laptop and external ASCII keyboard, so I was not able to put the unit right in the middle of the desk, but eventually I found a comfortable spot for it. I settled on splitting my desk with the *FaderPort 16* on the left, and my computer keyboard on the right. This put the transport controls just left of center, which was convenient for left hand access.

I did find myself banking my selected tracks over to the right quite often, so I didn't have to reach for them. A handy feature for sure, but I think a FaderPort 8 would suit my needs just fine – I've already put one on my wish list! However, for those who require more active faders in their workflow, the *FaderPort 16* is obviously a welcome addition to the marketplace.

The one design improvement I would like to see are bigger Mute and Solo buttons. They're quite small and sit next to each other beneath the channel select buttons. There is about an inch of real estate between them and the top of the fader channels, so it would be nice if PreSonus could figure a way to include these buttons arranged vertically, making them much easier to identify and toggle on the fly.

In regard to workflow, I found this controller to be a great improvement for writing automation. I traditionally mix with a mouse and *hate* writing volume automation this way. Having a fader, or a group of faders, to grab and ride from start to finish is such a nice improvement in productivity for me – I don't know why I have held off working this way for so long! The faders are acutely responsive. I found you do have to have your fingertip placed right in the curve so they track the best. I'd say the faders are my favorite part. Just having them available is awesome. It's also fun to watch clients' reactions when they start moving, as if there is a ghost in the studio!

In addition to faders, automation mode switches also add value to my workflow. The more I could do that didn't involve a mouse, the more I enjoyed working with the *FaderPort 16*. Lastly, and this is more of a philosophical point of view, I liked using the controller because it made me think *more* about what I was doing. Using a mouse can make the actions within the framework of production seem singular and oversimplified, but navigating around the *FaderPort 16* to use various functions put me in a more connected state of workflow, allowing me to listen deeper and try new things.

($899 street; presonus.com)

-Ben Bernstein <benbernsteinmusic.com>

The Guessing Game

by Larry Crane

In issue #133 of *Tape Op*, I interviewed Andrew Scheps. "I take everything personally. I curl up in a ball," Andrew told me when we discussed dealing with mix revisions from clients.

I've been having a difficult time with my own emotions and the world of mix revisions. My mix sessions used to be mostly attended, with the artists and producers sitting on the couch and signing off on the mix work. At the end of the day, we'd have mixes completed, and any revisions meant rebuilding the entire mix from scratch, especially when the sessions were tape-based. Many times, we'd debate the merits of a proposed remix session, and settle for the existing mixes instead of spending more time and money. Sometimes we'd request miracles of our mastering engineers, in hopes that the final record could be closer to our vision of perfect.

These days, it seems everyone wants endless changes to a final mix. In John Baccigaluppi's End Rant, "Zip it Up," from issue #133 he discussed the satisfaction of "completion." (We're not going to rehash that here.) Once computers entered the studio, and especially when recording software got into the hands of almost any musician, the idea that drastic or minute changes could be requested up until (or even during) mastering became prevalent. This concept has become so adopted that I began to notice that clients on attended sessions were not focusing in on completing the mixes in the same way. I'd turn around from the console and ask, "How does that sound?" and receive a thumbs up or a nod. The next day I'd get an email requesting *major* changes; ones that should have been discussed in person and dealt with previously. Because they knew revisions could happen later, no one felt the urgency to sign off on a final mix. The mixing world has changed, so I've changed with it. That's all fine, and we must learn to adapt; but what concerns me is the mental state I get in during the mixing process, and what makes me want to "curl up in a ball."

The main question is always, "What does the client want?" I have no interest in sending a mix to someone that they will reject outright, but I also have to use my taste and opinions in order to bring balance and life to a mix. That's why I'm hired, right? As Tchad Blake and I also discussed in issue #133, rough mixes can be crucial. Tchad said, "Rough mixes are so important in this internet world. I want to hear where the producer and the artist thought the song was done." But many times, I'm not given a rough mix; or I'm told to completely ignore the mix I was given. Maybe I've been sent a list of musical reference points, and I have to decode how these tracks relate to the work at hand. Sometimes there's even a list of notes that might (or might not) help me make sense of the tracks. Now the guessing game begins, and the stress of not knowing if I'm on the right track starts to build.

I'll work up the mix for a song, trying to clean up sounds, bring an appropriate balance to the tracks, and apply effects and such as I see fit. I'll spend hours examining tracks and setting up arrangements that bring out the best in all the sections of a song. But as signing off on the initial mix looms, another thought enters my mind: "Will I spend time on this mix, fully investing myself in the outcome and finish it up to my satisfaction, only to receive a page of mix changes tomorrow that undo almost everything I am working on?" **If that's how my brain is reacting to this scenario, how can I move forward and do my best work?**

Many times, I'm anxious as I upload the mixes to my clients. I'm preparing myself for the worst, for some reason assuming that the person on the other end will take an instant dislike to the work I have done. I've only had a few times where clients were actually upset with my work, but somehow these are the voices I occasionally replay in my head as the files go out online. In my mind it becomes personal, as if I need to defend the opinions I used while mixing. I'll dread getting the email, with its lists of revisions and questions for me. At first glance, when the email does arrive, it will seem daunting, maybe even impossible to accomplish, and my heart rate will go up.

Then I get to the studio and look at the revisions list again. Usually it's a few minor tweaks that don't change the mix very much. In many cases the notes clarify the mix for me, indicating which parts need highlighting or what should be in the background. It's all part of the agreed-upon process, and I remind myself that I should never get worked up.

I'm trying to find ways to make the process easier on my mind. I leave more "breadcrumb trails" – ways to undo any changes I've made to the original tracks. I print vocal stems without effects in case someone doesn't want reverb or delay on their tracks. I search for that fine balance of pleasing myself with the mixes while also imagining how the client will hear it. I check against rough mixes, if I have any, and think about what makes my mix different. As always, I make sure to focus and ask myself, "What is the point of the song? What does the artist hope/want to convey?" That is the ultimate goal for all involved.

I try to remember to take a deep breath and let go of any worries. We will sort it out, and everyone will end up happy. I'll make sure of it. ☮

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WALLS OF SOUND

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Walls of Sound

In 1971, when I was 16, I used to work as a grounds keeper at a tennis court complex just outside The Hague in the Netherlands. It was a summer vacation job, and my goal was to save enough money to purchase my first two LPs. I had my sight set on *Boomer's Story* by Ry Cooder and *Everybody Knows This is Nowhere* by Neil Young & Crazy Horse. Tracks from the albums were often played late at night on Radio Caroline, a pirate radio station floating off the coast of Holland. I was mesmerized by the power of the music, and its ability to transpose me to another world, a sun-kissed Southern California.

Those first two albums I purchased in 1971 put me on a path that would lead to an enduring personal preference for what can be best described as California West Coast music. Before too long, and after my collection had grown significantly, the names of musicians, producers, and engineers alike had become familiar, and connections and relationships had started to emerge until I held in my mind a sprawling family tree once described by music critic John Rockwell as "the mythically tangled genealogy of the Los Angeles music scene." While perusing record bins, spotting names from that lineage on an album cover would make it instantly worthy of consideration.

Recording studios, too, became an item worthy of study. Seeing a particular studio name listed in the credits guaranteed a certain level of audio quality. They also gave a sense of place, of where the music was being made. "Recorded at Sunset Sound, Hollywood, California," the credits would read, filling my mind with images.

In general, the studio names were tantalizingly descriptive—as pleasing to the imagination as the sounds they produced. Gold Star, Western, Hollywood Sound, Ocean Way, Cherokee, Elektra... to me they read like pure poetry. The palm-and eucalyptus lined boulevard depicted on the center label of the old Warner Bros. releases amplified the promise of paradise. "Burbank, Home of Warner Bros. Records" it read. I imagined an environment perfectly suited for bringing to life the heavenly music that was reverberating from the loudspeakers in my bedroom.

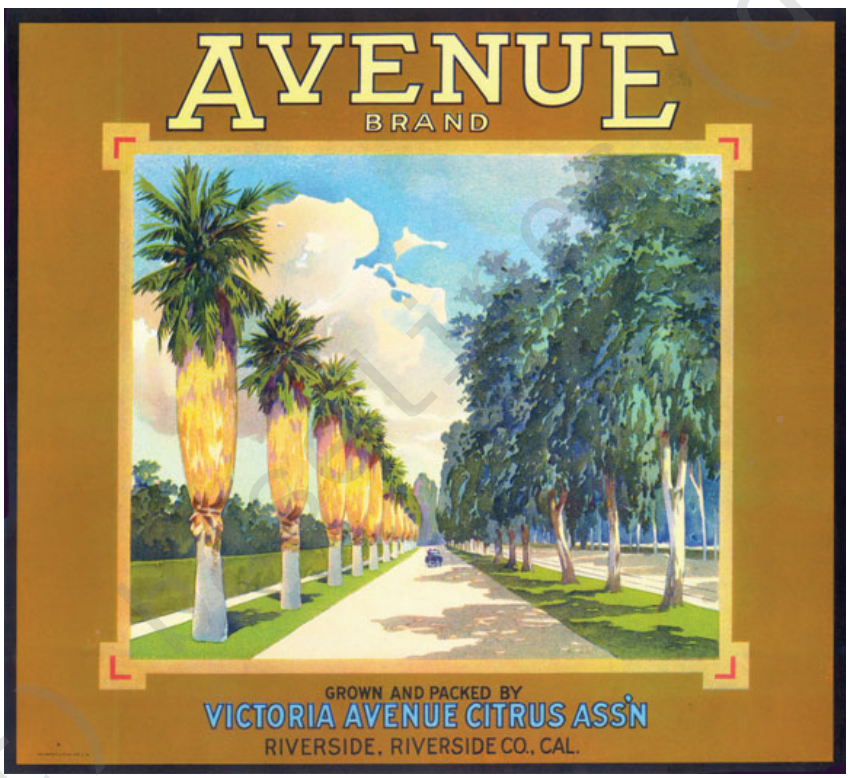
And while I've strayed far and wide musically since those first two LP purchases, I've always maintained a bias for California West Coast music, particularly of the 1970s. This was confirmed when a few years ago I analyzed my record collection. Of the 936 albums, 467 were recorded in California, with the majority produced in the larger metropolitan area of Los Angeles. More than a third, 386 to be precise, were released in the 1970s.

So after I moved to California, and whenever I found myself in Los Angeles, I would often go out of my way to locate some of the venues where this music had been recorded. This satisfied two obsessions: my curiosity to see what paradise looked like, and my desire to learn about California history by photographing it.

Finding the locations of the studios took some effort. A few had changed their names, some had been rebuilt, while others have long since been torn down, replaced by mini malls and condominiums. But all remaining recording studios had one thing in common: while their names may conjure vivid imagery, and their reputations as "temples of sound" raise expectations regarding their physical presence, most are housed in generic looking buildings, with few windows, located in unremarkable neighborhoods. The idyllic Burbank image depicted on the Warner Bros. record label, as I found out later, was fictional, copied from an antique orange crate label. Nonetheless, I was impressed. Imagine that such glorious music could be made in surroundings this mundane.

Rudy VanderLans


BURBANK, HOME OF WARNER BROS. RECORDS
LITTLE FEAT
THE LAST RECORD ALBUM
STEREO
GEMA
SIDE 1
1. Romance Dance (Barrere / Payne / Gradney) (4:04)
2. All That You Dream (Barrere) (3:52)
3. Long Distance Love (George) (2:43)
4. Day Or Night (Payne / Tate) (6:24)
Produced by Lowell George
℗ 1975 Warner Bros. Records Inc.
WB 56156 (Z)
(41 156)
33
A WARNER COMMUNICATIONS COMPANY
MADE IN GERMANY
DISTRIBUTED BY WEA MUSIK GMBH


AVENUE
BRAND
GROWN AND PACKED BY
VICTORIA AVENUE CITRUS ASS'N
RIVERSIDE, RIVERSIDE CO., CAL.

SUNSET SOUND

GOLD STAR

(FORMER LOCATION)

WESTERN

RECORD PLANT

(FORMER LOCATION)

CAPITOL

AMIGO

(FORMER LOCATION)

CHEROKEE

(FORMER LOCATION)

A&M

(FORMER LOCATION)

UNITED

HOLLYWOOD SOUND

ELEKTRA

COLUMBIA

(FORMER LOCATION)

SOUND FACTORY

WALLY HEIDER

(FORMER LOCATION)

THE VILLAGE

RCA

(FORMER LOCATION)

TTG

(FORMER LOCATION)

SOUND CITY

About the author

Rudy VanderLans is the co-founder with his wife Zuzana Licko of Emigre Fonts, a digital type foundry in Berkeley, California. From 1984 until 2005 VanderLans also published, *Emigre* magazine, the infamous quarterly publication devoted to visual communication.

Emigre Fonts have been used by bands like Radiohead and Primus, among many others, and we use their fonts extensively in *Tape Op*. Their font Base 12 Serif Bold is the typeface we use for questions in our interviews. We reviewed the final issue of *Emigre* in *Tape Op* #63:
https://tapeop.com/reviews/gear/63/emigre-no-69-the-end/

As a parallel interest to his design ventures, VanderLans has been active as a photographer with a particular focus on the California cultural landscape. He has authored a total of nine photo books, and staged two solo exhibits at Gallery 16 in San Francisco.

His upcoming book of photographs, *Anywhere, California,* will be published by Gingko Press in February 2020.

The photos in this series were all taken in 2011, except Sound City, which was taken in 2019. They were originally published as part of a type specimen booklet titled *The Collection*, published by Emigre in 2012, which featured an indepth analysis of Rudy's record collection. You can download a free PDF version of *The Collection* here:
https://www.emigre.com/PDF/TheCollection.pdf