

Met and Meta

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Tips!

Some generous folks actually clicked the PayPal link at the bottom of the newsletter and left me tips to feed my coffee habit! Thank you!

This newsletter now goes to 37 people. That seems like a lot!

Saturday

The Quarantine Bubble, Popped

This week we've been dragged out of our comfort zone, in several ways. I mentioned at the end of my last newsletter that as soon as we turned on the air conditioning system for the first time, we got water leaking in through the garage ceiling. I filed an insurance claim and so we immediately had a restoration company send someone out to evaluate the situation — bang, our bubble popped. He did wear a mask and was doing his best to follow distancing rules, but needed to come inside the house to check for moisture in the family room ceiling, and this is the first time we've had anyone from outside our immediate household inside the house since early March. We got the kids outside or in another room and opened up windows for extra ventilation. The damage fortunately seems to be confined to the garage ceiling. So that he could see what was happening up in the attic over the garage, we turned the air conditioner back on. It's a mess when it starts to accumulate water from condensation — the water sprays everywhere up there. The drain pipes are apparently cracked and split in multiple places.

I don't know exactly what happened, but it seems like the previous repairs, done by our handyman two years ago, may have left the pipes so they didn't always drain via gravity — in other words, water could back up in the pipes. This water then may have frozen over the winter and split the pipes. But I don't know that for sure.

Because of the age of the house, the restoration company representative had to take a plaster sample, and try to get that tested for asbestos. If the vintage plaster in our garage contains asbestos, then the difficult of this operation will

be cranked up a notch, and we'll have a crew gutting the garage ceiling while wearing hazmat suits. In June.

Bizarrely, it was another June, ten years ago, when our efforts to have the cat urine-ruined carpeting in our just-purchased house in Saginaw replaced with hardwood floor resulted in the discovery of layer after layer of urine damage *and* asbestos, requiring the near-total replacement of the flooring in our family room by, you guessed it, workers in hazmat suits.

The different this time is, I think, that insurance should cover most of this. We have a thousand dollar deductible, and so the garage renovation over and above that should be covered. But our insurance will not cover repairing the *source* of the water leak — the air conditioning system itself. So we are on the hook for whatever that costs.

Insurance will also cover rental of a couple of “pod” storage containers on site, and move things from the garage into the pods, so that they have an empty garage to work in, when they start taking down the ceiling.

We're still waiting on getting everything scheduled. I have an appointment with Hutzl Plumbing & Heating. They will come out on Friday, June 5th, to climb up into the attic and see what needs to be done. The restoration company has apparently been having trouble finding a lab that can test the plaster sample, because the usual labs they work with are closed during the pandemic. It's a reminder that we have to somehow get all of this work done, with multiple workers and companies on-site, safely. I don't know exactly how that is going to go.

We were dragged out of our bubble in another way last week because one morning, Malachi seemed just fine, his usual self, but then an hour or two later Grace noticed that he was walking with a severe limp, as if his right leg were completely numb. This happens to me sometimes after I've been sitting cross-legged or in another cramped position for too long, but goes away rapidly when I get my circulation restored, and it was very strange to see it in a baby. We determined via tickling various spots that his leg was not actually numb, but it was still concerning. We wondered about the same kind of spider bites that gave me weird neurological symptoms a few weeks ago. While we were mulling over whether he needed to be seen by his doctor, which would put us all at some elevated risk for COVID-19, his doctor's office actually called us, to schedule his regular “well-baby” visit. Grace explained the situation and managed to get him in the same afternoon. We are about as comfortable with the way his doctor's office is handling infection risk as we could be — everyone is masked, and stays as distant as possible. Malachi would not keep his baby mask on well, but that's hardly surprising.

The doctor's best guess is that Malachi was playing on the children's bunk beds with his sister Elanor, and may have fallen while trying to climb the ladder, in a way that twisted his knee or ankle. So, the prescription was ice and an ace bandage and close observation — if it didn't get better rapidly, the doctor

wanted to see an x-ray. It got better rapidly. So, it seems like it must have been a minor sprain of some sort, probably of his knee. We never heard him cry in pain, or take a fall — the only real indication was the limp. He is still favoring it a bit but no longer holding that leg completely rigid.

Back to Work

I heard this week that my furlough from my employer, Thorlabs, will end — I'm to return to work on Monday, June 15th. Oddly enough, my first day with Thorlabs, in 2015, was also Monday, June 15th, five years ago.

I wrote on Facebook that I have many mixed feelings about this news. In the midst of horror and sickness and death, this has in many ways been a wonderful chance for me to unplug from work and connect with my family and my home, in ways that I haven't really had access to, in over a decade. Twice while we lived in Saginaw I found myself abruptly unemployed, and so was unplugged from work, but at the same time had to contend with difficult job search processes and extremely stressful financial situations — coming very close to defaulting on mortgage payments.

This time I was actually *furloughed*, not laid off. This exact situation has never happened to me before. I had to make the decision early on as to whether I was going to attempt to search for work — either temporary work, or a new job. I had to try to weigh whether I felt that it was likely I would actually be re-hired. I decided to, provisionally, believe that I would be re-hired, and so I was not going to spend my days looking for work — a sort of leap of faith, but one based in part on weekly reports from my Thorlabs manager on how sales of products manufactured in our Ann Arbor Ultrafast Optoelectronics division were going.

It also became clear that finding new work would likely be difficult, given the enormous number of layoffs.

So, as a result, this has actually been a sabbatical, of a sort, for me — something I've long wanted and needed. The chronic scarcity of both time and money we've experienced in the past decade has meant that I have pretty much *never* had any substantial vacation time to spend with my family the way that some workers, especially workers in other countries with mandated paid leave, do. This includes time off for the birth of my children — there's never been much. I think I was away from work for three days when Malachi was born, and the situation has been similar for the births of the other children. When my mother lay dying in 2007, spending time with her in Erie, Pennsylvania required that I use all my available leave and then some, essentially “borrowing” paid time off that I had to pay back by working overtime as soon as I returned.

This weird, tragic, and also productive and joyous “sabbatical” in 2020 would not have been possible, if not for a few special circumstances:

- I had received a Federal tax refund early in March, of about \$5,000, and much of that was still sitting, un-spent, in a bank account, because although

we had plenty of things to spend it on, including major needed car repairs, we hadn't got around to figuring out what to do first.

- I am a “homeowner” (that is to say, I don't really own a home, but pay a mortgage instead of rent). This meant that I was able to ask for, and receive, 3 months' forbearance on mortgage payments, allowing me to keep most of our money in savings while we figured out what was going to happen next.
- The bank which held owns almost all of our consumer debt is a small credit union and was very cooperative in suspending payments for a couple of months.
- Because of our unusually large family size, my Federal stimulus payment was substantial — \$5,900.00.
- I was able to start receiving the “enhanced” state unemployment payments, with an extra \$600 per week included, over and above the usual maximum of \$362 a week.
- Grace, now quite experienced at navigating the systems to obtain food benefits, was able to get us signed up for SNAP payments once again, which again because of our unusually large family size, was quite generous.
- We also received a few generous gifts from friends, which helped us keep up with bills and avoid burning through our savings.

I'm well-aware that renters, and people who got much smaller (or no) stimulus payments, and people who haven't been able to collect unemployment or food benefits — in fact, *most* people — have been hit much harder than we were. We've been enormously privileged, in many ways; it appears that I'll be able to pay back the whole three months' worth of mortgage payments that I did not pay at the beginnings of April, May, and June. We should be able to start making regular monthly mortgage payments again at the beginning of July. I did put all the medical bills on hold, and that has led to some bills going to collection, which will ding our credit, but we should be able to start paying those. And we should be able to restart our regular monthly debt payments, without ever taking a hit to our credit for missing a payment.

And so I can see the end of my “sabbatical” coming, very soon, and now I'm looking around, in a bit of a frenzy, trying to figure out what projects I can complete and how to best make use of the remaining days. Once I'm back at work, even if I can work at home part of the time, I'm going to be very, very busy — all the projects I was working on three months ago are still there, and they are now months later than they already were. And there are new urgent projects.

It's going to be weird. I'll be wearing a mask, in the building, when I'm there, or at least when I'm in a part of the building near other people. I'm not really going to treat this as an end to my “lockdown.” I won't be going out to breakfasts the

way I often did. I'll be wearing "quarantine clothes" and "quarantine shoes" and changing clothes and washing up when I come from work back into the house. I will probably not be using the communal refrigerator or sitting at the conference table to have lunch with my co-workers at all. I might wind up bringing in a cooler, or a mini-refrigerator to put in my work area. I won't be taking a quick trip down the street to the liquor store for a sandwich.

I don't expect to feel that things are back to the old, pre-pandemic way of doing things, and being in the world, for a very long time, if ever.

Relationships with My Children

Last week I wrote:

Remind me next time to write about the attempts several of my kids have been making to improve their relationships with me. It's remarkable, and also frustrating, to be a father.

I want to write a bit about what compelled me to write that, and expound on the matter a little bit.

Because of the weird twists and turns of my work history, my relationships, developed early on, with my kids have been better in some cases, and worse in others. The weakest relationships are with Merry and Pippin, and I've long felt helpless to improve them, but also a bit desperate to do so. Both children were born in Saginaw during very difficult times, involving extended periods of unemployment. And when I did find work in Ann Arbor, and had to spend a year and a half commuting, which meant that I was away from home more than half of each week, that certainly didn't help matters much. For all these reasons, and the stress of moving, and establishing a new life back in Washtenaw County, and the onslaught of work and new babies, I never felt like I had probably developed a father-son bond with Benjamin Merry and Daniel Peregrine (Pippin).

During my quasi-sabbatical, I've tried hard to make various plans to do things with the kids, to help improve those tenuous relationships. This has been hard because, in many circumstances, the younger (and, sometimes, older) kids always seem to have a "heckler's veto" — they can demand attention in one of several ways, from refusing to do chores to simply demanding attention to provoking a fight with their siblings to get attention.

I've hoped that the children's garden project would be a good way to do things with the kids, Merry and Pippin in particular, but also the others. And so for days this week I was begging surly teen and surly pre-teen to help get the canoe/garden bed ready, by moving a few loads of wood chips and soil while I worked on other garden projects in my long days spent outside. This turned into a constant fight — surly teen wouldn't even come outside because it was uncomfortably hot, choosing instead to listen to a Barbra Streisand Christmas album to cool off — even on afternoons when it was cooler outside than inside. And surly pre-teen exercised his "heckler's veto" by refusing to cooperate and

get dishes and other chores from his daily task list done until evening, effectively blowing off the entire day.

Yesterday, we *finally* got the kids' garden filled up with plants — pizza plants! There are paste tomatoes, several kinds of peppers, basil, rosemary, oregano, and flowers. We finally got everyone outside and Grace gave them all a hands-on homeschool lesson in transplanting herbs and tomatoes. But even then, surly teen insisted on exercising surly teen's "heckler's veto" — not only did surly teen insist on working on surly teen's own garden bed rather than "attending class" and working on the shared project with surly teen's siblings, but at one point, while Grace was demonstrating how to carefully transplant a tomato plant without damaging the stem, surly teen barged in and interrupted to demand that Grace help surly teen with *surly teen's* transplanting project.

Sometimes, it is all I can do not to punch a kid or two right in the face. This was the equivalent of a student from a different class barging into a classroom in the midst of a lecture and demonstration to demand that the professor help the student with the student's homework on the spot. I'm still baffled by the incredible rudeness and arrogance that leads to this behavior. Surly teen, and often surly pre-teen, are both often just this rude, arrogant, and demanding. I am proud of myself for not verbally attacking surly teen, and *only* calling out surly teen's behavior on the spot and insisting that surly teen allow surly teen's mother to get back to the activity she was in the middle of. But I know that surly teen will come to me, later, weepy, insisting that I apologize for hurting surly teen's feelings.

Our daily interactions with the kids don't *have* to be this stressful and every day we try again, exercising the strange leap of faith that leads Charlie Brown to try once more to kick the football. And sometimes we see a slight improvement, a shift in self-awareness, a change in behavior. But most days we don't. As a child who grew up experiencing bullying and physical abuse both in schools and at home, I try every day not to replicate that cycle. But far too often I hear my stepfather's angry, berating voice coming out of my mouth.

Anyway.

Algebra Camp

It was quite late in the day yesterday when we were finally able to put up Grace's old tent. Merry and Pippin have been begging me to spend time with them and I've also desperately wanted an "away" space that wasn't the basement, full of delicate things, where we weren't quite so easily interruptible by other kids exercising their "heckler's veto." Benjamin's been begging me to let him play *Ultima Underworld*, the vintage computer game, on my laptop. But by the time we finally got inside, it was almost 9:00 and we had to make dinner. Dinner ideas weren't forthcoming, so we settled on a sort of loaded tuna salad, with leftover celery, pickles, diced potatoes, and corn, served with crispbread. That actually turned out to be a delicious summer dinner. But, by the time we got

the table cleared, it was after 10 p.m. and I was exhausted. I also really wanted to watch the Metropolitan Opera's free stream of *La Sonnambula* with Grace.

My solution was to send Sam, Joshua, Pippin, and Merry all out to the tent with my laptop and let them play *Ultima Underworld*. Grace and I handed off both Elanor and Malachi to Veronica, and she kept them mostly busy and out of the room long enough for us to watch the first hour or so of *La Sonnambula*. And that was about all the time we could get.

Now that the tent is up, I am hoping to use it every day to play and work with the kids one at a time or in small groups. I will be holding "Algebra Camp" sessions in and around the tent, attempting a sort of intensive workshop to get the kids thinking about and working on some math topics as they are able, at their various ages and stages of learning. This will also include, as my limited time over the next two weeks allows, some possible work on programming and category theory. I have been working from the book *Conceptual Mathematics: A First Introduction to Categories* by F. William Lawvere and Stephen H. Schanuel. This is a great and mind-expanding book. Another is *Burn Math Class: And Reinvent Mathematics for Yourself* by Jason Wilkes. These are mostly for Sam, and for him I've also got some great books in storage that feature set theory, lambda calculus, and various mathematical puzzles involving formal systems and computation. We won't be able to get very deep into these, obviously, but we should be able to do a little. And for the younger kids, there are topics from Khan Academy and various middle-school textbook chapters on fractions and related topics.

I have some whiteboards, but what I'd really like is a smallish genuine slate chalkboard, preferably about two by three feet, preferably with a little tripod to hold it, and preferably vintage (and therefore well-smoothed by plenty of use).

I've also got some games lined up, including card games that use standard playing cards but require basic addition and other elementary arithmetic operations.

Maybe, just maybe, I can get a few hours to share some time with the kids this way without the constant threat of those "heckler's vetoes."

La Sonnabula, or, the Met Gets Meta

This morning, even though the kids have mostly destroyed Grace's latest laptop, breaking the hinge and creating a short in the power adapter, she and I were able to drink our coffee and watch the rest of the Metropolitan Opera's *La Sonnambula* (The Sleepwalker).

This is a creaky old Italian comic opera (actually, an "opera semiseria," not all that comic, but without the common tragic elements), but the staging moves it in modern times, in a contemporary Manhattan rehearsal space by a crew of folks who are, you guessed it, rehearsing a creaky old Italian opera called *La Sonnambula*. (As I've said in reviews in my newsletter, English majors like me eat this self-referential, play-within-a-play shit up). As the opera opens, there is

a scrim showing a cheesy set of a village in the alps, similar to the village where *La Fille du Régiment* is set. The scrim rises and we're in a dingy Manhattan loft space, as the performers, in street clothes, prepare to rehearse.

The libretto is unchanged from the original, but this means that, bit by bit, the cast can move from play-within-a-play to play, and back, with the shifts indicated entirely by mimed actions, facial expressions, and costume changes. It is complicated. Let me give you an example. The diva of this opera, “real” opera star Natalie Dessay, is handed a gorgeous bouquet of flowers by her fellow performers in the rehearsal space, where she is in street clothes, trying on shoes and a gown for the show. The flowers go into a modern glass Bunn coffee pot. The performers rehearse a wonderful marriage proposal scene. Elvino proposes marriage to Amina. In the middle of this scene, the performers, who had been rehearsing the songs from the opera, take a break from the “actual” rehearsal, but in a completely seamless transition, the “real” Juan Diego Flóres, who plays Elvino, approaches the “real” Natalie Dessay, who plays Amina, while the “real” cast who play the villagers look on, and proposes marriage, giving her a small bunch of violets, which she tucks into her décolletage. The cast continues to sing the libretto of the original opera, without a break, over the beautiful music, but it is now taking place in a new, modern, and emotionally convincing context, between two “characters” who seem much more genuine. As each act is rehearsed, the act and scene and setting is indicated on a blackboard. This seamless context-switching continues to take place, as almost the entire opera is set inside the rehearsal space. Here is a synopsis, if you'd like to read about it.

In *La Fille du Régiment* and *Il Barbiere di Siviglia*, the producers dealt with the problem of chronological and cultural *distance* between the long-lost original time and our current time by leaning into the comic side of comic opera, taking things *way* over the top to make them entertaining to a modern audience. This time, because this isn't entirely a comic opera, they chose to “lean in” to the drama by doing that re-contextualizing I've mentioned, helping us actually care about the characters. There are beautiful and dramatic moments I'll mention only briefly in passing. At one point, Natalie Dessay as Amina sleepwalks her way right into the audience and sings among from among the audience. Later, she wanders “outside” the set, onto the “ledge” of the Manhattan building where the cast is rehearsing the opera. And in a particularly breathtaking moment, a sort of plank extends from the stage out over the orchestra pit, and she literally walks the plank in her sleepwalking state. The music is beautiful and her several duets with Flóres (Elvino) are also acutely beautiful.

Modern re-stagings like this are risky and I realize not everyone will like this, but for me, this one works incredibly well, and serves to make a very dumb and sexist morality play, in which a woman caught up by the appearance of impropriety is punished severely, much richer and more convincing to a modern audience. At the end, we get to see the cast switch to the “actual” finale as it “would” look if it “were” actually being performed on the Metropolitan Opera's famous stage. This finale is about as chintzy and cheesy as you would imagine,

but because of all the careful context-setting, and context-shifting, that has led up to this moment, it is also gorgeous and fun and simply has a little something extra. Amina's sleep-walking dream has become real, and this opera's brilliant staging has made the venerable Met completely "meta."

I wanted to buy a DVD or Blu-ray of this particular performance, and they list it in their online gift shop. But like all the other ones I'd like to buy, including *Il Barbiere di Siviglia* and *Das Rheingold*, it is currently sold out! I hope they will get some reprinted copies in because I'd like to support the Met by paying for some of these shows in a way that will also allow us to watch them again.

Saturday Evening

I went out with Grace and Veronica to run some errands. One of the errands involved taking three large hosta plants to our friend. We have long wanted to remove them from our yard (they came with the house) and replace them with something else, possibly blueberries or other food-producing plants. We also went into Target to get an HDMI cable to replace the one that the kids broke, and stopped at REI for a no-touch pickup of tent states that Grace ordered to keep the tent from blowing around the yard.

On the way home, Joshua called to tell us that someone had broken the tent. I told him we would deal with it when we got home.

Upon our return we found that someone had apparently yanked on one of the jointed, semi-flexible tent poles that holds the tent up hard enough to split and shatter one of the fiberglass segments. There's no fixing this with tape. It's an old tent, purchased from Sears over 20 years ago. But it was working, and now it's not. I'm trying to figure out if we can find a way to replace the tent pole. There may be little point given the prices of new tents. But I'd at least like to try.

While I was examining the shattered segment, something stung me on the thumb, and it is a swollen mess now. So I'm feeling just a bit demoralized. I was planning to spend some time in the tent with at least a few of the kids this evening. Instead I'm icing a bee sting and trying not to resent the kids that broke the tent or the kids that allowed it to happen... while we were out picking up stakes for the tent.

In the News

There's a lot of news. Protests in Minneapolis and other major cities, and they seem to be escalating and spreading. It looks like the population may be just about at its boiling point, and racist murders by police officers are just the latest provocation of many. I think we've actually been long overdue for the sort of protests that happened in 1968. I've also half-hoped, half-expected unrest to

manifest in the form of a massive march of workers on Washington, like the Bonus Army protests of 1932.

I have sort of gotten away from writing about current events, possibly because I'm afraid if I start following the news again closely, it will do only bad things for my sanity and blood pressure. So, I'm going to leave that largely to other folks, for the time being.

Sunday

I had a relatively low-key day: no errands, no arguments. Grace made bulletproof coffee for breakfast and I think for dinner, we're having a chicken dish. I was able to work on music for a few hours this afternoon. It's been a while since I was recording my daily cover songs, and I miss it. My fingertips have already started to soften up a bit from failing to practice guitar often enough.

There's lots I could write about the various technical difficulties I've been having with my audio gear but, honestly, it's incredibly boring. I'll boil it down. I'm constantly frustrated that even a nice recent ThinkPad laptop with a very basic USB audio interface and the latest Windows 10 updates can't seem to provide me a smooth experience in recording audio. I've spent a ridiculous amount of time wrestling with driver settings trying to get Windows to leave the audio interface powered on and not put it to sleep. I've found, via Google, three different places where I have changed settings to try to get the system to leave this thing powered up, but it still constantly shuts it off. So I'll be practicing, listening to my guitar using headphones, and the interface will go dead. I have a second monitor attached to this laptop to help my old tired eyes. It's a pretty basic, recent Dell monitor borrowed from my office (I brought gear home to work from home when the COVID-19 pandemic blew up and they told us all to work from home, then they told us to go ahead and keep the gear at our homes while on furlough, rather than bringing it back into the office).

My laptop has an HDMI output, but the monitor doesn't have an HDMI input. My laptop also has a Mini DisplayPort jack. So I'm using an Apple adapter (from my old Mac Mini) to connect the Mini DisplayPort to an old-fashioned VGA cable. It seems to work fine for the most part, except that when the laptop sits, even when it isn't sleeping and is set to not sleep, it seems to constantly disconnect from the external monitor. I'll be sitting in the next room and hear the "peripheral unplugged" sound, then the "peripheral plugged in" sound a few minutes later. It's the monitor going away and coming back. It's possible to configure the displays so that their orientations relative to each other matches their physical position. The external display is up higher than the laptop, so I have it configured that way in my Windows setting, which allows me to move the mouse pointer smoothly between displays. For some reason, after letting it sit awake for a while but unused, when the screen seems to disconnect and reconnect, sometimes Windows will put it in a different position, and then I

have to wiggle the mouse for a while to figure out how to get the mouse cursor from one display to the other. It was above the built-in display. But now it's off to the right, or so Windows thinks!

It's maddening.

Almost as maddening as the ongoing problems I've been having with MacOS "El Capitan" on my sturdy old Mac Pro. Some things stopped working. Old video clips, imported into my photo library in the mid-2000s, would no longer play. This included video clips of Sam's first and second birthday parties. There was some kind of codec problem. I tried to re-install MacOS from the El Capitan installer. The El Capitan installer apparently has a problem where it can't install any packages and the installation fails completely, leaving the computer in a reboot loop, because the certificates for some of the packages actually expired. The solution is to disconnect from the network, set the clock back a few years, and re-install, then reconnect the network so the time will be updated.

It sounds relatively simple but this problem took me hours and hours to diagnose, looking through diagnostic logs and searching support message boards.

Don't get me started on the problems I've recently had with Linux.

Because I never was able to get some of the audio stuff I was doing very reliably a few years ago to work reliably under El Capitan, I've been re-thinking my approach to handling live audio situations: streaming to Facebook, recording podcasts with Grace and/or a remote guest, and streaming to Twitch. Where once I did a lot of stuff "in the box" with Logic and MainStage and very elaborate setups involving composite audio devices or the "Jack" virtual audio device. It was sometimes tricky to get working, but with my old Apogee Ensemble FireWire audio interface, once I figured it out, it generally worked very nicely and kept working. This hasn't been the case recently on any of my computers.

So I've been thinking about doing more with hardware rather than software. For some time I've been considering buying some physical gear to handle mixing and routing audio from my microphones and instruments. I've been eyeing the Solid State Logic SiX mixer especially, although hesitant because it's relatively expensive and I really wish it had at least one more microphone channel and one more stereo input. But after learning that I will be going back to work, I decided to go ahead and buy one. It's on my desk now and I've been learning how to use it.

The SSL SiX

This thing is sort of a "prosumer" version of one of Solid State Logic's massive (and very expensive) recording studio consoles, but redesigned as a compact mixer that can fit on a desktop, with far fewer channels. It is made in China, unfortunately, and I wasn't very happy about that, but there just aren't a lot of alternatives in this category; in fact, it almost defines a category, because most high-end small-format mixers have a lot of digital features including touch

screens now. This device most definitely does not; it's full of transistors and switches and knobs and I think there probably isn't a microcontroller or digital signal processor of any kind to be found in the whole thing, unless it is there to handle power sequencing or diagnostic tests at startup, or something like that.

There are a number of features on this thing that seem very simple, but make it much more convenient and more useful. It seems like many mixers and preamplifiers and audio interfaces should have features like this, but most don't. I'll talk about a few of them.

Separate phantom power buttons for each microphone channel. This is a very basic thing, but an awful lot of audio interfaces and mixers only allow you to turn on phantom power for all the microphone inputs at once, or for a couple of groups. With most modern microphones, this isn't a big problem; having phantom power on generally does no harm. But for some old-school ribbon microphones, it will literally destroy them. And it's nice to have fine-grained control.

A huge amount of headroom. This thing goes to eleven, literally — you can hit it with audio signals that are much “hotter” (louder) than most gear can handle, and it won't break a sweat. Why not just turn down the inputs? Well, sometimes it isn't obvious when a source is loud. My Radial JDV direct box has a huge amount of headroom, and even if the guitar going through it doesn't seem like it is producing a lot of volume, it can produce very strong transients, such as when I hit a string hard with a pick. If I run this into a low-end preamplifier, there will be transient clips that produce a lot of distortion. The “peak” light never comes on; if I record the signal, it seems very low. But there are all these weird noisy harmonics. They are completely gone when I run the JDV into this mixer; it sounds better than I've ever heard it before.

Accurate numbers on the knobs and sliders. If a slider has a “zero” point, that's the point at which you get zero dB — no gain, no reduction.

Useful ranges on the knobs and sliders. On some of the Mackie mixers, you can use the EQ knobs to apply a huge amount of boost or cut, but the EQ circuitry sounds so bad at the extreme ends of its range that you wouldn't ever want to. There's a huge amount of phase distortion when you crank up the EQ. So you'll likely only ever use a small part of that knob's range. On this mixer, the EQ control knobs, gain knobs, etc. all are calibrated to give you ranges that are of practical use. So at the extreme ends of the high and low EQ knobs, it still sounds good. It may have much more EQ than you would want today, but it doesn't sound bad; maybe you'll want that much EQ on something, someday.

A very nice, very simple, compressor. There is a compressor on each mono channel and it sounds great. It has only one knob, that determines how much compression. Everything else is automatic and it just sounds “right” on voice and guitar. At first I was hesitant to turn it up too high, thinking it would make the source sound unnatural — but see my previous comment about how SSL calibrated these controls to provide *useful* ranges!

“On” buttons for each feature. A simple feature like the channel compressor has a knob to set the level, and a button to turn it on and off. So when you turn it off, you don’t forget where you had it. This also allows you to very easily punch it in and out to compare. Maybe you don’t want it on any more? See if it actually helps the sound.

LEDs on most of the “on” and “in” buttons. When you turn on the channel compressor, or the EQ, or a bus send, there’s almost always a little LED that lights up to remind you that it’s on. That’s because it’s far easier to see a little LED reminding you why the channel is behaving the way it is than to try to look at little pushbuttons and see if they are pushed in or not. Unfortunately, there are a few spots in the crowded monitor section where it would be nice to have LEDs like this, but there aren’t any — but they clearly just couldn’t fit anything else in that section without making the whole thing bigger, and it’s a nice size as it is, so I can’t really complain; maybe they’ll more in a future product.

Balance controls everywhere. Any time a mono channel can be routed onto a stereo bus, there is a balance control. So if I want to send it only to the left side, or only to the right side, or somewhere in between, I can do it. This is sorely lacking in many mixers and I’ve often been frustrated trying to do things like send a mono signal just to the left side of the master output, for feeding into a Skype call (Skype only hears the left channel), while using the right channel for something else.

A very nice, very simple, bus compressor. There’s a compressor that is designed to be applied to the whole mix. This controls the peaks and levels of the mix after the individual tracks are blended together. This “tames” everything and helps give it a consistent loudness. It is possible to mix tracks and compress the mix on the fly in the digital realm, and that’s what I’ve usually done in Logic, but there is a long-standing backlash against that practice. The reason is, essentially, that mixing tracks inside analog circuitry, especially analog circuitry with a huge amount of headroom and a clean, almost noiseless signal path, just seems to do something that our ears are used to hearing in the real world and in many famous records, but that mixing “mathematically” just doesn’t seem to do. That sounds like voodoo, but it is undeniable. I suspect it has to do with the way that the harmonics of the different signals actually interact in the circuits, in ways that just aren’t adequately simulated by just summing the audio samples digitally. This thing isn’t *really* a “summing box,” although it *can* be used as a sort of summing box — it does have a lot of extra inputs that can be routed and used for summing, although it would require staring very hard at the diagrams in the manual.

A very loud, very clear headphone amplifier. The headphone amplifier in this mixer is one of the best I’ve ever heard. It is at least as good, and probably better than, the headphone amplifier on my old Apogee Ensemble, which was quite good, and certainly better than my old 4-channel headphone amplifier, called an ART HeadAMP V, which I used when Grace and I recorded podcasts

in the storage room, although that one was just fine for our purposes and might see some use again one day. It's so loud and clear that it doesn't *sound* loud, because I don't ever hear distortion, but I quickly found that it was plenty loud at the ten or eleven o'clock marks and turning it up higher than that just doesn't seem necessary.

I'm just getting to know this thing and it is full of features — in fact, it's really kind of over-complicated, with features like the ability to route separate mixes to a performer and an engineer, presumably in a separate control room. I don't have a separate control room and certainly don't have a separate engineer and don't expect to have either anytime soon; I'm doing everything on my desk. So this seems like some features that I'd never really want. But that isn't entirely true, because while I may never use some of these features, and they were originally designed for traditional recording, and still named that way, they offer me a huge number of flexible routing options. I have plans to take advantage of for other purposes. So the extra mix busses can be quite useful for, say, adding a remote podcast guest, which would be difficult to do without an extra mix bus.

I'll mention a feature that is so simple it doesn't even seem like a feature. Today I spent some time tweaking the knobs and sliders to get a mix that sounded pretty good using a vocal mic and an electric guitar plugged into a direct box. When I was done for the day, I left everything plugged in and just turned off the power switch. It saved my configuration automatically. I didn't have to save everything to a setting file or a project file or a series of separate plug-in setting files. If I get time to do some music tomorrow, I'll just come in and turn on the power. It will "boot up" in just a second or two. I won't have to launch any applications, load any project files, or change any driver settings. That in and of itself seems like it will make my life as an occasional amateur musician much, much easier.

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