Dual-Manual Madness!

IS ONE KEYBOARD ON YOUR CLONEWHEEL NOT ENOUGH? THESE THREE DRAWBAR ORGANS ARE ALL LIGHT ENOUGH TO CARRY UP A FLIGHT OF STAIRS UNDER ONE ARM.

BY STEPHEN FORTNER

CRUMAR Mojo

From 1974 through the early '80s, Crumar's Organizers were arguably the first keyboards to be marketed as what we now call clonewheels: portable, affordable, drawbar-sporting alternatives to the Hammond B-3. Ads in *Keyboard* magazine featured T. Lavitz proclaiming, "It's better than the B!" The old Crumar stopped making instruments in 1986; the reborn one has signed up some serious talent: Guido Scognamiglio of Genuine Soundware, who for some years now has quietly been making some of the best vintage keys plug-ins in the galaxy. The Mojo further convinces us that he's received far too little fanfare on the U.S. side of the pond.

I'm a PC

Strictly speaking, the Mojo is a bespoke MIDI controller wrapped around an internal computer running the Windows Embedded operating system. In turn, that's hosting a custom version of Genuine Soundware VB3. However computer-averse you are about your keyboard rig, don't be put off. I found the Mojo to be rock solid and the OS free of absolutely all non-essentials. In a month of heavy use, there were no glitches or crashes. It powers up to a playable state faster than most workstation synths, and all controls immediately do what they're supposed to. Crumar has even disabled networking to ensure that nothing distracts the machine—to install updates, the Mojo rolls old school: You have to send a sys-ex file from a separate computer, using a utility like Snoize (Mac) or MIDI-Ox (PC). I did this to install version 2.1, and it was painless. For all intents, this thing is hardware.

Organ Sound

If I didn't know better, I'd be opening up the Mojo to find the tonewheel generator inside. Make that 20 tonewheel generators, each from a different year/model of vintage Hammond. Some tonewheel sets have more rock 'n' roll scream, others skew towards gospel breathiness or even a "white drawbars forward" theatre organ vibe, and you're sure to find several favorites. As with most modeled (as opposed to sampled) instruments, polyphony is full, and no amount of notes I could play at once, even with help from my cats, evinced the slightest hint of latency or audio glitches.

As to all those details that we B-3 nuts love to analyze—tone and correct triggering of harmonic percussion, drawbar foldback, vibrato/chorus authenticity, key click, and so on—the Mojo gets an A+ in every subject. Except for overdrive, which noticeably thins the sound out if you turn the Drive knob much past two o'clock. Before that though, it's satisfyingly tube-like.

Left to right: Crumar Mojo, Clavia Nord C2D, and Hammond SK2.

On a vintage B, the nine contacts (one for each drawbar) under each key created subtle timing slop between drawbar frequencies when you struck a key. There's just no way to get this from the single MIDI note-on that, like most clones, the Mojo uses—or is there? The Mojo can randomize the start times of notes for any drawbars that are active, which goes a long way towards mimicking the desired effect. (Don't worry, this doesn't cause mushy note attacks.) Unlike

CLONE CATCH-UP

Our recent reviews of digital drawbar organs will shed even more light on the new rigs in this roundup. Here are some quicklinks:

HAMMOND SK1:
keyboardmag.com/HammondSK1

STUDIOLOGIC NUMA ORGAN:
keyboardmag.com/NumaOrgan

NORD C2:
keyboardmag.com/NordC2

Crumar Mojo

on a real B-3, drawbars don't speak one at a time if you press a key very slowly, but for that Stax Records-style comping with full drawbars, there's something going on here that's very satisfying.

Other Sounds

In version 2.1 or later, you get a few non-organ sounds derived from other Genuine Soundware plug-ins such as Mr. Ray and Mr. Tramp. It's nothing like the range of gig-ready sounds on the Hammond SK2 (see page 54), but hit Shift and one of the four percussion buttons, and you can have Rhodes on the lower manual and B up top, Wurly on the bottom and Vox organ on top, or Wurly with Farfisa on top. You can't mix and match from there, but the lower manual's preset buttons add different effects such as auto-pan, phaser, chorus, crunch, and a downward octave-shift. With the Vox and Farfisa, drawbars change roles as they do on the Nord C2D and Hammond SK2, but unlike with those, there are no panel markings for the alternate stops and footages.

Rotary Simulation

Simply put, the Mojo is outstanding on this score. Through my studio monitors in stereo, and even onstage with a mono fold-down feeding a single floor monitor, the sense of moving sound encircling me was uncanny. Ear fatigue from a solid month of comparing clones makes me stop just short of saying it's unequivocally the best sim I've ever played, but it's *way* up there. Its overall character is similar to the Studiologic Numa Organ (reviewed May '11), though at default settings, the Mojo exhibits less pitch modulation at fast speed and is less chorus-y at slow speed—both of which I preferred.

Speaking of settings, you can't change anything to do with rotor speed or acceleration (you can in the Mac/PC version of VB3) but you can adjust virtual mic angle and distance, and even the amount of cabinet resonance. Rotor speed is the first thing I reach for if a simulation sounds a bit off, so it was fortunate that the Mojo's sounded so dead-on right out of the box. Seriously—it frackin' kills.

Snap Judgment

PROS Exquisitely modeled organ, with 20 tonewheel sets representing different models and vintages. Possibly the best onboard rotary simulation we've yet heard. Oozes warmth and soul. Inspiring to play.

CONS Drawbars are active only with "manual" preset selected—other presets are fixed. Overdrive sounds fizzy at high settings. No multi-pin connector for real rotary speakers.

Base: $2,579 direct | With gig bag, long-throw swell pedal, and half-moon rotary switch: $2,929 direct | crumar.it

With a monitor and USB mouse connected to the Mojo, you can access this tone-tweaking screen. You can change some settings from the hardware unit (such as choosing from 20 different tonewheel sets) by knowing what buttons and knobs to grab after hitting the Shift button, so read the owner's manual. You can make others (such as percussion decay) the default setting for the Mojo by clicking Store. Particularly useful is the Out Split toggle. Its options include stereo, mono organ without Leslie simulation from one output (for using a real rotary setup), and frequencies below 800Hz from the left output and above 800Hz from the right. This lets you stack a pair of powered speakers vertically and mimic where the bass and treble comes from on a real Leslie. We tried this, and it really does add something, though it's best to stick with straight stereo if your audience is going to hear you mainly through the house P.A.

Overall Impressions

We've been talking facts and features, but let's switch brain hemispheres. Vintage tonewheel organs have soul and personality. They breathe. They inspire musical risks in a way that can feel like the organ is playing *you*. The Mojo gets so close to this ideal visceral experience that it's downright spooky. Clones such as the KeyB Duo or Hammond New B-3 get closer to the *physical* topology of playing the vintage article, in virtue of having four sets of drawbars, chunkier rocker-tab controls, and just more space for you to move around in, but they all involve big jumps up in size, weight, and price. In the realm of two manuals you can carry under one arm, though, about the only thing missing from the Mojo is that smell of old dust on hot vacuum tubes.

HAMMOND SK2

Hammond SK2

Sometimes I think Hammond doesn't fully understand what they have in the SK line. Read their own marketing, or the list of features on any retailer's website, and your takeaway will be something like, "So it's a drawbar organ with more non-organ sounds than usual." What it *is*, in fact, is a problem-solving Swiss Army knife for weekend (or week-in-week-out) warriors, whose B-3 and rotary sound is certainly the star, but whose other sounds are both plentiful, realistic, and soulful enough to give you second thoughts about hauling your weighted workstation to any but the best-paying gigs.

Let's qualify that. What the SK calles "extra voices" aren't going to embarrass your Kronos, Kurzweil, Motif, "SuperNatural" Roland axe, or even your Nord Stage—which is functionally the SK's most level competition. If, however, you audition the sounds on their own merits, your reaction will likely be, "Damn, I could get through a whole gig on this and sound fantastic." If the SK1 was hard to take seriously as being this comprehensive—if only because it's so very tiny—the SK2 being able to play organ on one slab of keys and everything else on the other corrects both the abstract image problem and the concrete ergonomic problem in the same breath.

Overview

The SK2 is a dual-manual SK1, plain and simple. The internal sound engine and rear panel connections are identical, and the only difference on the front panel is that a "Lower to Pedal" button (which lets you play whatever's assigned to the lower manual on a MIDI organ pedalboard) replaces the SK1's Split button. Whatever happened in the SK1's lower split zone happens on the lower manual of the SK2. Since we don't have room here to recap everything about the SK1, we've posted our full review from the November 2011 issue at keyboardmag.com/HammondSK1. If you're new to the SK line, read that, then read this.

Like its smaller sibling, the SK2 compensates for having only one set of drawbars with a useful set of other realtime controls. This includes the volume of the non-organ sounds, organ overdrive (the most natural sounding in this roundup, to my ears), effects (in addition to Leslie) for both organ and non-organ sounds, reverb, master EQ with sweepable midrange, and even a song player for audio backing tracks from an attached USB stick.

As on the SK1, three buttons to the left of the drawbars switch their control between the upper, lower, and pedal registrations, and the "Favorites" buttons just below the LCD let you save the entire state of the instrument: drawbars, organ and non-organ zone assignments, effects, you name it. My main complaint carries over from the SK1: The drawbars are recessed in a tray, and the south edge of this tray can be a pinch point for the fleshy base of your hand if your drawbar-grabbin' muscle memory comes from a real B-3 or Hammond's XK family.

Organ Sound

The drawbar tones in Hammond portables dating as far back as the XK2 (reviewed June '99) have always been a little more present and individuated to my ears than those in competing clones. For that reason, they remain my favorite for pumping through a real rotary speaker, especially the vintage sort, which tend to roll off and smear higher frequencies.

Vox, Farfisa, and pipe organs are incorporated in the drawbar type menu, not in the extra voices, which makes sense—they're organs. Additional Vox sounds in the "Library" bank of the extra voices (meant for playing downloadable sounds from Hammond's website) do nicely should you want transistor organ on one manual and B-3 on the other.

Back to the B-3. The two main tonewheel sets you'll use are B types 1 and 2—though there's a third "mellow" type. Type 1 skews flutey and jazzy where type 2 is a bit more brassy and suited to rock.

Rotary Simulation

In my November 2011 review of the SK1, I called its Leslie effect world class, and that still stands for the SK2, even in light of other developments since. It's also the most tweakable of the bunch, letting you edit and save everything to do with rotor speed, virtual mic placement, cabinet type (I adore the 31H "tall boy" setting), and more. You could argue that the Mojo or Numa sim sounds more "holographic" in a head-to-head comparison. However, I also had my Leslie 142 in the room during this roundup, and when I compared the SK2 to *that*, my opinion of it went up. At the gig, it'll do you right, no question about it.

Extra Voices

With one button-press, you can allocate non-organ sounds to the upper or lower manual, but not both at once. In addition, a Solo button mutes the organ on the manual you've chosen, letting you layer in the organ or not. You could do this with key zones on the single-manual SK1—and a cheap MIDI keyboard could work seamlessly for the lower zone—but it's hard to overstate the convenience of having that second keyboard on the same instrument, fed by the same power cord. It just makes things so darned *easy*.

Snap Judgment

PROS Excellent B-3 organ sound and rotary simulation. Deepest editing of any organ in this roundup. Quantity and quality of non-organ "extra voices" makes it a one-stop gig powerhouse. Quick and easy assignment of sounds to upper or lower manual.

CONS Recessed drawbars, as on the SK1, feel cramped. It seems reasonable to want two sets of drawbars at this price. Some of those cool non-organ sounds make you notice the absence of pitch-bend and modulation wheels.

$3,495 list | $2,895 street | hammondorganco.com

Again, for space reasons, I'll refer you to the SK1 review online for my favorite sounds across categories, but suffice to say that the acoustic pianos are more than good enough to get you through a rock or dance band gig, the Clavs and electric pianos have tons of variations and ooze funky cred, there are some analog string machine patches straight out of the '70s, and that's just the tip of the iceberg. Need to hit those sixteenth-note horn parts on covers like "September" or "Give It to Me Baby"? The "Unison Brass" patch has the crisp attack and stacked octaves you need. Two cool synth brasses also hide in the "Wind" category: the mellow, Oberheim-like "Afri" and the brighter, more splatty "Rosa." You won't find many synth leads, though. Bottom line: These sounds are anything but afterthoughts.

Overall Impressions

Earlier, I suggested that the SK2's most likely competition is the Nord Stage line, which I meant as a compliment. In a way, the SK2 is like the Photoshop mockups I've seen some enthusiasts make of their dual-manual dream axe: It can play killer B-3 on one manual and pianos, EPs, Clavs, and synths on the other. Of course, you can play it as a straight two-manual B, but the immediacy of assigning sounds to different manuals, coupled with the quality of those sounds, make it seriously attractive for working keyboardists who need to cover maximum ground with minimum weight, footprint, and setup fuss. True, piano-centric players will insist on weighted keys, but the SK2 is aimed at the organ-centric. Add something with pitch and mod controls (say, a Roland Gaia or Novation UltraNova) to cover synth-heavy parts, and you'll have a gig rig whose flexibility, tote-ability, and sound will be the envy of all your peers.

CLAVIA Nord C2D

For many musicians, the "drawbuttons" Nord keyboards have used in lieu of physical drawbars have been no obstacle. For just as many others, it's been like dressing the T-Mobile spokesmodel or that blonde vampire dude from *True Blood* (take your pick) in an overstuffed and shapeless parka: There's droolsome stuff under there, but you wouldn't know that from touching it. Now, the C2D and upcoming Electro 4D are here to change all that. Oh, and they've upgraded the sound across the board as well.

Clavia Nord C2D

Drawbars!

The C2D does more than just glom movable drawbars onto the C2 (reviewed May '11), as even a first glance reveals. First of all, about twice as many controls as on a C2 are packed into the same panel real estate. That's largely because the C2D is the only machine in this roundup with *four* full sets of drawbars (two per manual, plus a pair of pedal drawbars), like on a real B-3 or other full-console Hammond. This is one of those luxuries that's like a hands-free Bluetooth phone hookup in a car: easily dismissed if you've never had it but sorely missed if you've gotten used to it. The biggest benefit is that for either manual, you can adjust one set of drawbars while playing the other. The C2, which had two sets of drawbuttons, not four, approximated this with a preview that showed upcoming drawbar settings on Nord's signature LED strips. The C2D, by contrast, doesn't need LED strips.

About those drawbars. Not unlike the Hammond SK and Studiologic Numa Organ, they're really faders with drawbar-shaped caps. Quite unlike the SK and Numa, they're pleasingly clicky when you move them. Purists may grumble that the numbers 1-8 are printed on the panel and not on the drawbars themselves, and that you can see the 6, 7, and 8 when a drawbar is pushed in to zero. Will that impact your playing? No. Looking at the sheer density of controls, I initially expected that manipulating drawbars as I played would feel scrunchy and cramped, but I had no such trouble.

Organ Sound

There have been many improvements in Clavia's tonewheel and rotary modeling since the first Electro hit the scene, and even current Nord models power up with different iterations. Make no mistake—the C2D is the latest and greatest. Even going back and playing something as seemingly recent as the C2 or Electro 3 (reviewed Apr. '09), one hears audible differences, all for the better. Nord's website touts tweaks to the key click, harmonic percussion, and low end—all of which I heard—but I swear I can hear more definition and "breath" in the drawbar tones themselves as well. Praise I heaped on the C2 is still deserved, only moreso now, so we've reposted that story at keyboardmag.com/NordC2 for reference.

A really cool feature is that five registration buttons—two for the drawbar sets and three that call up stored presets—are now stacked vertically in the end block to the left of each manual. Pressing these doesn't cut off the sound when you're holding down notes (changing overall programs with the main increment buttons to the left of the LCD does, however), so you can "play" them similarly to how Ike Stubblefield talks about playing a B-3's reverse-color preset keys (see pages 20–21).

As on all organs in this roundup, a pedal-to-lower coupler lets you kick bass in the lower octaves of the bottom manual in the absence of an optional organ pedalboard, but unlike on the Mojo and SK2, you can only add "string bass" style release time to

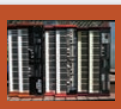
Snap Judgment

PROS Four full sets of drawbars. Spacious, hi-fi, authentic organ and rotary sound is Nord's best yet—and it was awesome before. Best Vox, Farfisa, and pipe organs of the bunch. Eleven-pin connector for audio output and speed control with real rotary speaker.

CONS No pianos, EPs, or other non-organ gig sounds. A bit pricier than the other organs in this roundup.

$4,195 list | $3,495 street | nordkeyboards.com

the pedal part when the Vox or Farfisa models are active—it's part of a synth bass sound that doesn't come up with the B or pipe organ. Speaking of non-tonewheel organs, it's become common to have Vox, Farfisa, and possibly pipe organs on clonewheels as a bonus, and worth noting that it was Nord who started this trend way back with the C1 (reviewed May. '07). To my ears, theirs still sound the best—especially the pipe organ, which sounds as hi-fi as it does majestic. Beyond that, there are no acoustic or electric piano sounds, strings, or anything else hiding in a menu somewhere: The C2D puts all its resources into its organ sound, and Nord covers the do-it-all gig machine with the Stage 2 line.



Unboxing and first-play videos of the Crumar Mojo, Nord C2D, and Hammond SK2!
keyboardmag.com/august2012

Rotary Simulation

Nearly every major Nord keyboard has ushered in improvements to the rotary modeling, and such is the case with the C2D. Again, I was able to compare it to a "regular" C2 and an Electro 3, which were both very good to begin with, and again, the sense of both direct and reflected sound bouncing around the room and the illusion of bass and treble rotors spinning in opposite directions are more convincing still on the C2D.

While the "spin factor" is delicious and unimpeachable, the cabinet simulation aspect (which can't be divorced from the rotation aspect) had a more pronounced effect on the drawbars' frequency response than I'm used to hearing. What the menu called a 122 type boosted the mid-highs a bit, whereas the 145 had a definite treble rolloff—from the Leslies I've known, I'd expect the opposite. If this bugs you, compensating with the onboard three-band EQ works quite well, and at any rate, Leslie-literate gig-goers will still be wondering where you hid the real thing.

CONCLUSIONS

If it's a two-manual organ you want, which one of these should you spring for? That depends on your priorities and what other keyboards you already have covering other types of sounds. Tonewheel and rotary emulations on all of them won't disappoint, and you can spend a lot of time second-guessing yourself about which is most realistic—believe me. The psychological price hit for all three is also right around the three grand mark, and slightly more for the Nord.

For near-total immersion in the illusion of playing a vintage instrument, the Crumar Mojo is extremely compelling because of its 20 tonewheel sets, grit and grunge, and frankly, the metal knobs and '80s-style LED buttons on the comparatively Spartan control panel.

If you're a traditional B-3 player for whom having two drawbar sets per manual is essential, the Nord C2D is your only option short of stepping up to a larger console like a DLQ KeyB Duo (which weighs 57 pounds and starts at $4,999) or Hammond New-B3 Portable (which costs five figures). Playing it feels surprisingly spacious and relaxed given its compact size, and given the sound quality, you certainly won't feel like you compromised in order to get all those drawbars.

If you've been dreaming of something that's an organ *first* but that also can render a lot of other essential sounds with credibility—as opposed to a workstation or stage piano that rolls in a drawbar organ mode—then the Hammond SK2 is the droid you're looking for. ♫