First shalt thou write and orchestrate thy song. Then shalt thou record it in thy studio, and thy actor shall lip-sync on camera, amen.

That's how it's usually done. Heathen that we are, here's what we did instead...

Recording Angels

A heretical approach to the screen musical

BY KEITH SNYDER

The singer improvised *a cappella* on the set, with a pitch reference from a little Casio keyboard at the beginning of each take. I took the footage home and composed accompaniment, underscore, and sound design. There is no dialogue replacement or lip-synching; the vocal track is location sound only.

Credo is a nine-minute screen opera in which God lets us know that if we're going to kill each other, well, that's how it is, but please to leave His name out of it. With the exception of a few spoken words, his monologue is sung.

In the beginning was the word

The screenplay is in formal verse. In addition to elevating the words into a poetic realm appropriate to the subject, meter and rhyme are easier than prose for an improvising performer to remember. We shot mostly in "masters", playing out each scene in a single, uninterrupted wide shot. There's almost no opportunity, in editing, to cheat around flubbed takes.

Turning these verses into vocal music was left to Larry Picard, the singer. He created not so much a *vocal score* as a *vocal plot*: For each verse, he came up with a harmonic mode, a starting and/or ending note, and an idea of tempo and line shape.

"Improvise" doesn't necessarily mean "totally wing it". For *Credo*, it had to include "don't waste time on the set", as well as "make sure the sections can cut together gracefully"—and also "don't suck", a more worrisome concern on a one-day film shoot than on a nightclub stage. If you blow your film production budget on bad improv, you're just as finished shooting as if you'd captured genius.

Lights! Camera! B-Flat!

We shot at the First Presbyterian Church of Brooklyn. The FPCB has a Shure UT1-TJ wireless lavalier microphone ("lav") system, a Soundcraft Spirit LX7 board, and a Marantz CDR-500 CD recorder, presided over by Chris Neuner, a composer/engineer who sings in the choir there with Larry. (Availability of existing resources is always a prime consideration.) Chris verified the system worked, then set up his students, David Tardy and Jim Pace, as location audio guys.

Each take went like this:

Director: Places! Roll camera!
Cinematographer: Rolling.
Director : Sound?
Sound: Speed.
God: Could I have a B-flat, please?
Casio keyboard: Meeeeeeep!
God: Thank you. Hummmm... hummmm... OK.
Director: Action!
God (in B-flat): *I am a god of no religious preference...*

A wireless lav is nobody's first choice for recording a vocal. In addition to the threat of invasive radio signals—which didn't crop up on our shoot, though none of our cell phones worked inside the church, either—there's a darkish tonal quality that has as much to do with mic placement as with mic characteristics. If you're hiding the lav in the performer's hairline, it's not

picking up lots of direct consonance and high end.

However, not only were we using existing resources, but I'm of the school that says: No distortion? Hiss not too bad? Great performance? We're done. And here Larry became our secret weapon in yet another way: The signal-to-noise on a classical lyric bass sounds not too shabby even on a wireless lav. With an operatic voice that big, a little noise floor isn't a terrible thing. The audience sees the performer's lips move, which helps intelligibility. Our purpose wasn't to record a classical music CD, but to maintain what John Gardener called "the fictive dream"—suspension of disbelief and effortless transport into a fantasy. The audio can't outright *stink*—sound is as important as picture—but nobody's going to be jolted out of the dream just because one of your two dozen audio tracks has a noise floor a little higher than you'd prefer.

In short films, the choices usually aren't between *the right way* and *the wrong way*. They're between *less than optimal* and *not doing it at all*.

Hiding the lav in Larry's hairline was out, since he doesn't have one. David and Jim tucked it into the knot of God's patterned tie. Single-framing through the footage, I can pick out its silhouette here and there, but for practical purposes, it's invisible.

Because of extensive storyboarding and location pre-visualizing with a Digi-8 camcorder, we knew Larry would face away from the camera only once—and that moment would be excised in editing, as we would cut in during his turn toward the camera. So the transmitter pack was clipped to his belt, around the back, and that's where it lived as we sped through the shot list on our one-day shoot.

And then what? Turn to page 80 for my DAW Details article on the post work.

Keith Snyder (snyder@recordingmag.com) is a recording artist, producer, film director, and audio engineer. His last crime novel, The Night Men, *featured a theremin in a key role. Your questions or comments are welcome at the Credo blog, on the Web at www.journalscape.com/credo.*

In this month's Vocal Column (see page 44), I described how we captured a workable vocal take from an a cappella vocalist in a church for a short film I was scoring. Here's the rest of the story of how the mini-opera came together...

Post Without End, AMEN

BY KEITH SNYDER

Because of the tight storyboard for my film *Credo*, once we had the vocal from singer Larry Picard, the first rough cut went together in Apple Final Cut Express easily. I departed from it slightly: There was enough variation in framing to allow a few cross-cuts to exploit Larry's most inspired melodic moments.

However, first I had to sync up the lav (lavalier mic) audio with picture. David and Jim provided me with five CDs of lav audio and a written log. In order to streamline our shoot, we hadn't slated on the set—so there was no clacker spike to line up visually.

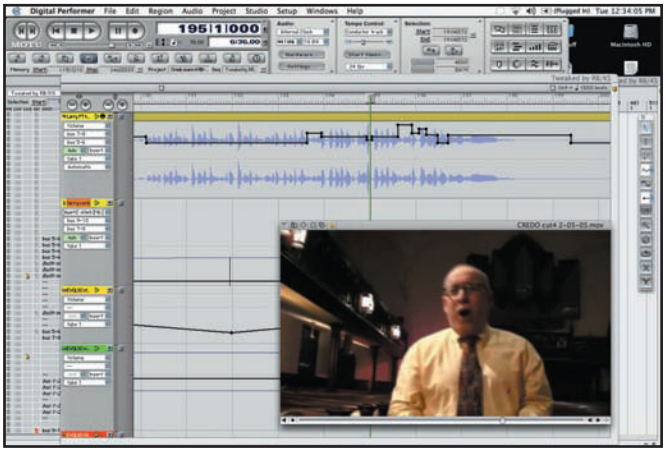
There's a long version of this story, but the short version is that because the file creation dates on the music files were in the same temporal order as the timecode numbers on the captured video clips, I was able to import the lav audio into Final Cut Express one file at a time, in order, lining each up by ear, moving it this way and that a fraction of a frame at a time. When the lav audio stopped audibly chorusing against the camera's native audio, I locked it to picture and turned off the camera audio.

Soon we had a complete a *cappella* version of *Credo*. All the best takes, all the best melodic choices, nice picture, nice flow, start to finish. I exported a QuickTime and brought it into MOTU Digital Performer 4.12. (I learned to export subsequent QuickTimes without sound, so as not to unnecessarily burden my CPU.)

I showed it to a few people, and completion funding presented itself unexpectedly. Not a huge figure, but enough that post wouldn't have to drag on for eons. By this time it was November, and the Cannes Film Festival submission deadline was in March. We made that our goal.

My first use of the money was to prowl www.sounddogs.com for thunder, gun, and violence effects. As *Credo* is about religious violence, many of the thunder sounds you'd expect to surround an angry God are augmented with handgun and mortar noises.

Our original concept allowed for a lot of scenes to remain a *cappella*, with a gospel choir laid in during a climactic moment. But as I worked with it, I found that it benefited from more music, and different music, than I'd expected. In the finished version, a classical/electronic/sound collage/Afrobeat sequence occurs where we expected the gospel choir.



Two scenes do remain a *cappella*; the rest are accompanied in various styles rendered with a range of softsynths and effects, including Battery, Kontakt, Spektral Delay, and a new purchase specifically for the project: the East West Quantum Library String Orchestra ("EWQLSO"), Silver edition. This last was especially gratifying, as replacing Absynth pads with high-quality string samples (and gaining MIDI control over performance dynamics, not just volume) helped the string parts breathe. When I tried routing them through the MOTU eVerb plug-in so they'd seem to be in the same acoustic space as Larry, they didn't sound so hot. So I left them dry—which really means "left them with the natural reverb they were recorded with"—and I'm very happy with the result.

Another happy surprise was how closely EWQLSO's "Hauptw_stops4" resembled the sound of the church's pipe organ. This allowed God to play more on the soundtrack than the single chord he played on location.

As these things got laid in, they caused problems with Larry's tracks. Larry's got a great sense of pitch, but even a classically trained musician's pitch center can shift a little after 60 seconds of improv with no accompaniment. The few shifted notes were off so slightly as to be unnoticeable in the a *cappella* track, but coexistence with softsynths didn't sound quite right.

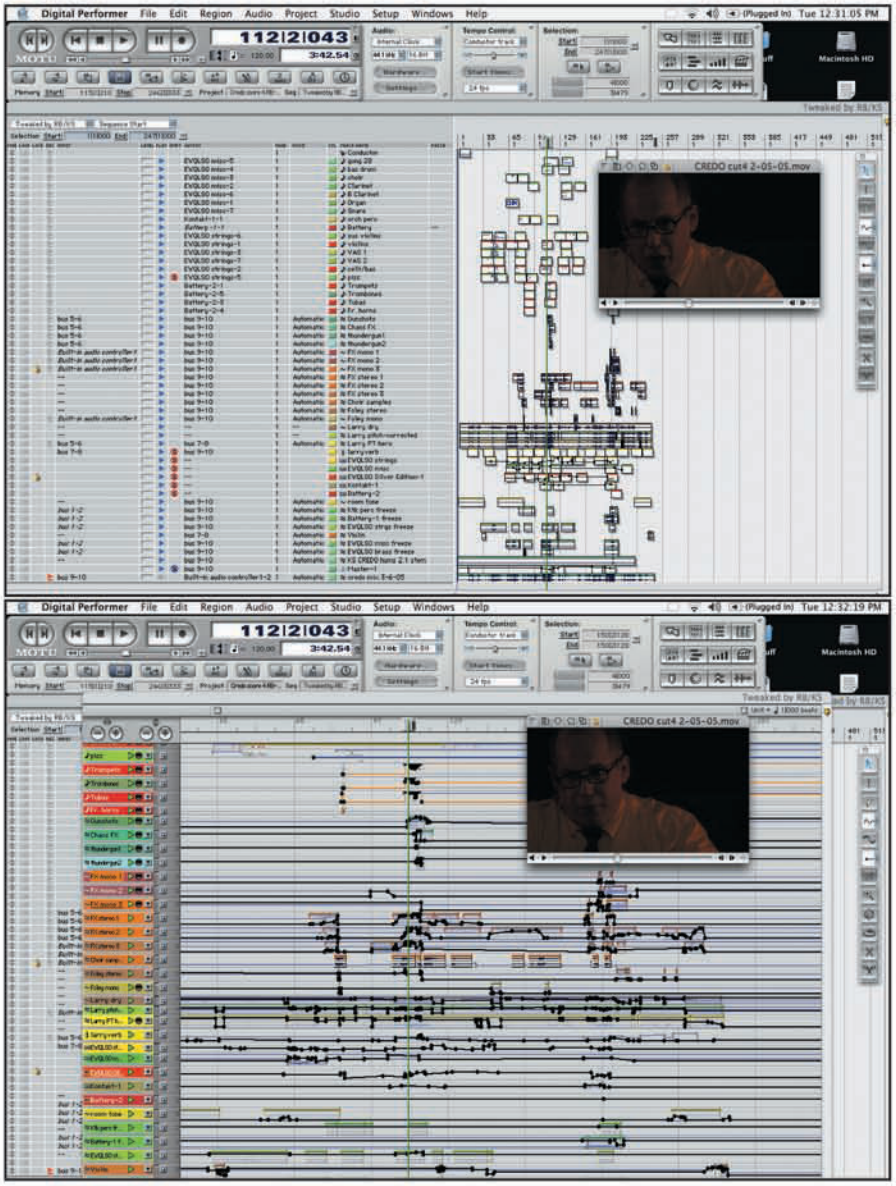
I got to work with Antares Auto-Tune. A few days and a lot of undos later, the tracks sounded fine together. I used no global correction—when a note here or there didn't sit quite right with

the strings, I went in and manually drew in a small change.

In the case of one shot, in which God walks slowly toward camera, somehow Larry hadn't been given his pitch reference—and of course, it was the best take. His vocal performance was internally consistent—its relative pitches were all dead on—but the tonal center sat a quartertone from anything on my keyboard. "Correcting" the vocal to match the computer's idea of pitch just rubbed me the wrong way, so I experimented with inserting pitchbend changes in the MIDI tracks until they sat nicely with the vocal.

Finishing with Auto-Tune, I froze the vocal track and exported it out to Pro Tools, which I prefer for audio editing. Besides breath/rustle removal and general level tweaking, a serious plosive problem marred the beginning of the first shot, on "Thou shalt not kill". I'd never have guessed a "K" sound could sneak around and hit the knot of a tie that hard, but somehow, Larry's managed. It got notched out. Back in Digital Performer, eVerb smoothed out the artifacts.

While on location, David and Jim had recorded mono church ambience alongside the mono lav vocal, with the church's



Preserving "the vocal as king" worked better than if I'd planned it. The quartertone shift happens at the perfect moment in the drama, and it's immediately followed by an a *cappella* section in which Larry seamlessly returns to standard intonation. Unless you've got perfect pitch, you'll never notice it. (And if you do have perfect pitch... uh, we did that on purpose.)

RØDE NT-2 mic set in omni mode. I'd intended to use it as a natural-sounding reverb track. Problem was, it just didn't sound that good. However, having it available as a reference was a great help in faking the space with eVerb. The result was not only acceptably natural-sounding, but controllable from moment to moment, both for verisimilitude and for dramatic emphasis. At the climax, when God summarizes

his new message: *"I will not say kill anyone!"* I was able to subtly ramp up both the reverb level and the decay time. Couldn't have done that as neatly with location ambience; not only couldn't I have changed the decay, but the room tone and noise floor would have risen too.

Room tone itself is used very sparsely, mainly to be noticed only when it goes away: The camera tilts up from the sanctuary, dissolving slowly up to the choir loft, where God looks down at us. Nice transition, but it's the fading-away of room tone that really takes us out of reality and puts us Someplace Else—and then in total silence, God sings.

Since most of Larry's performance is in free time, I didn't bother with anything resembling tempo mapping until the climactic scene, the electronic/Afrobeat/sound collage section that's the only "groove music" in the whole piece. Until then, I let DP run at its default tempo and placed notes (in DP's multiple-track graphic editing window) where they made sense to the ear, without regard for barlines.

Two more acoustic tracks joined the virtual tracks. The birth of my twins in December KO'd my ability to direct the angelic choir recording session, so Larry ran it, directing the choir through various useful chords in various useful inversions. I flew them into Pro Tools, arranged them in a way we hadn't previously considered, and reverbed the hell out of them. (I preferred the sound of the Pro Tools reverb for this.) The choir was recorded by Chris Neuner using the church's RØDE NT-2. The result was exported as a single stem and placed in DP, with sync maintained by starting the export at 00:00:01.

The last touch was half a dozen carefully chosen notes from a real violin, which I recorded at the violinist's apartment with an Mbox, a RØDE NT-2, and an AKG C1000S. Why those two mics? Because they're the only two I own. Email to ex-bandmate (and occasional *Recording* contributor) Richard Bugg resulted in this response:

"If the room has a high ceiling I would use the NT-2 in omni mode and position it above and to the front so that the body of the violin was about 24 inches from the mic and pointing at it. If the room has a low ceiling, I would use the same position, but switch to cardioid pattern. I would use the AKG to pick up the underside of the violin from below and behind to get some of the low frequencies. A lot of this depends on how the room sounds."

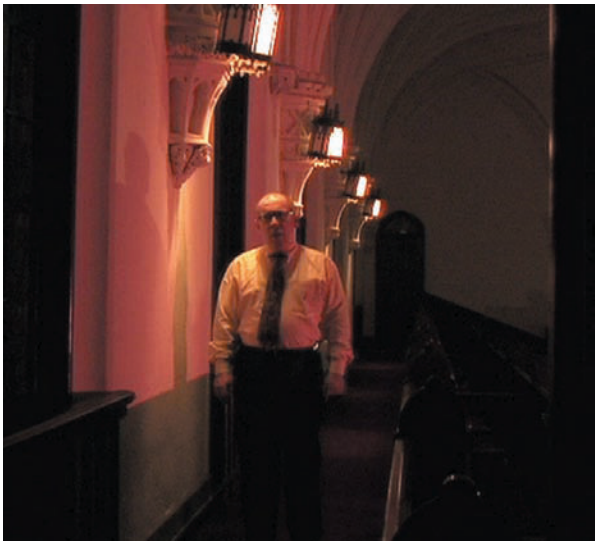
I set up accordingly, got quick levels, and then devoted my full attention to the performance—as I'd rather have non-optimal audio than a non-optimal performance.

God shooting schedule

Time	Task	Camera setup
8:00 AM		
8:30	Load-in/setup/coffee, introductions, a few words from Mike	Andamion & Keith-camera sound
9:00		Chris & David - mic stands in choir loft
9:30	Shot 16 "Dance number" **DOLLY SHOT**	8 "Dance number"
10:00		
10:30		
11:00	Shot 1 "Big rise"	1 "Front and center" W
11:30	Shot 17 "End throne"	9 "Throne" W
12:00 PM	Shot 18 "Small print (throne cut-in)	9 "Throne"
12:30	EXT. shots 19 & 20	10 "Outside church"†
1:00	**LUNCH**	
1:30	Shot 2 "Stern countenance"	2 "Under choir loft"
2:00	Shot 8 "Omniscience! (daisy face)"	2b "Under choir loft, boomed"
2:30	Shot 9 "I know everything (daisy medium)"	2b "Under choir loft, boomed"
3:00	Shot 3 "Traveling 3/4" **DOLLY SHOT**	3 "Traveling 3/4" W
3:30	Shots 4 & 5 "Traveling cut-ins"	3 "Traveling 3/4" T
4:00	Shot 6 "Turn to organ"	4b "Loft facing sanctuary"
4:30	Shot 10 "Ah! Let me show you"	4b "Loft facing sanctuary" W
5:00	**DINNER**	
5:30	Shot 11 "Objects"	5 "Middle of R. balcony" W
6:00	Shot 12 "Blessed wide shot"	5 "Middle of R. balcony" T
6:30	Shot 13 "whatever the f[illegible]"	5 "Middle of R. balcony" T
7:00	Shot 14 "Murdering his son"	6 "L. balcony door"
7:30*	*Shot 7 "Inside organ"	11 "Inside organ"
8:00		
8:30*	*Shot 15 "Scary space" **NIGHT-TO-DAY**	7 "Scary space"
9:00	**LIGHTING CHANGE**	
9:30*	*Wild inserts (M.O.S.)	To be decided on set
10:00*	*including *Shot 21 (M.O.S.) "Insert: cross"	4c "choir loft"

Sundown

* These shots can be switched to a different time without regard for time of day
† Rain cover set for this shot is INT. exiting church



Again, these parts were performed in free time without simultaneous playback. The violinist, Jo Chay, has an improv background, so I was able to show up without a score and talk us through the session. One of the violin instances occurs during the track with the pitch-shifted MIDI strings, so I played her the scene in Final Cut and she retuned to match. Finally, I had her noodle in various modes and keys; a few of these phrases, edited together, run under the end credit roll. Violin is the only track, besides Larry's voice, that was routed through the church-emulating eVerb. NT-2 and C1000S were panned hard left and right and sweetened with a few harmonizing notes from the East West "sustain violins."

All post for *Credo* was done in various coffeehouses on my 100% Starbucks-compatible composing rig: a 15" 1GHz G4 PowerBook and some Bose Noise-Canceling Headphones.

Thy lord and mastering

My mastering skills stink. Richard signed on, and I shipped him a Digital Performer file—not his preferred format, but one he could work with.

Richard eschewed compression, adjusting the levels of my frozen soft-synth tracks. About two-thirds through, DP took his system down and kept it down until he had to catch a plane. He emailed me instructions and I finished up the job as his assistant.

The final challenge was how to best control some big THUDs from Battery during the climax. They sounded fantastic on big monitors but distorted on my TV speaker.

From Richard: "You could pull the level down some by using a frequency-dependent compressor to squash the low frequencies but leave the upper octave alone. This will give you the psychoacoustic trigger of the bigger low frequencies without putting the energy in that is distorting your speaker."

Not trusting myself to get global frequency-dependent compression settings right, I drew in manual compression envelopes. Combining this with milder volume notches created a result I liked—and cutting off the trailing end of a choral "Aaaah!" in the treble accentuated the final BOOM even more.

Fade to black

The Cannes Film Festival received around 5000 films this year and programmed only about ten short subjects. We didn't make the cut—but then, neither did *Amélie*.

Meanwhile, as of press time *Credo* has been nominated for the Best Experimental/Art Film award at the West Chester Film Festival. We figure you meet your deadlines and do your best, and the rest is up to fate.