

In The Sound Lab: Recording and Mixing The String Cheese Incident

RECORDING

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Miking Instruments

Mark Hornsby on
miking and making
Nick D'Virgilio's new
album, *Invisible*

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Nick D'Virgilio is one of the most talented musicians I've ever met. As a founding member of Spock's Beard, Nick is well known in the progressive rock world and is currently a member of the award-winning UK prog band Big Big Train. In addition to making his mark as a drummer, Nick is also a songwriter and a multi-instrumentalist, and we've been working together in studios all over the world for over 20 years. A few years back, he mentioned to me that he had begun writing a rock opera. At the time, he had been touring the world with Cirque Du Soleil's *Totem* show as the primary drummer and assistant music director. For six years and almost 1,400 shows, he performed from a drum booth backstage, looking at the other performers and audience only on video monitors. It was at this point he started working on a concept album that would later be titled *Invisible*. When he began writing, he started by drawing comparisons between his current work situation and the nine-to-five grind

so many people can relate to on a day-to-day basis. Almost like a scene out of *Office Space*—picture a guy sitting in the same cubicle day after day, often contemplating what life is all about. In Nick's story, one day that guy gets up and just walks out, and a new journey begins to unfold.

Over the course of the next few years, Nick kept writing, perfecting and exploring different avenues on where the story could go and where this protagonist might end up. While its genesis was biographical, the story as a whole isn't. He let it go where the music took him. In a nutshell, it's the journey of a man who goes out looking for explanations, eventually finds himself in a near-death experience, and then finally comes to the realization that it doesn't matter what you do for a living, where you live, or how much money you have, because we all have value.

When it came time to start recording this project, we were all working at Sweetwater where Nick has been the online face of drums for the past several years. Through hundreds of videos and millions of views, there aren't many Sweetwater customers that aren't familiar with his efforts. So, since

Nick (and Sweetwater) is a supporter of all its drum brands, it brought up some interesting questions: What drum kit or kits do we use? What cymbals do we use? Heads? Sticks? Nick is, in a way, endorsed by *all* the drum manufacturers that Sweetwater carries. This, coupled with the fact that we used all these different brands on a daily basis in Sweetwater Studios on other peoples' albums, well, it just wouldn't make sense (or serve the project) to just use one or two drum kits. So, we decided to try and use them *all*. We approached the vendors and almost all of them saw this as an opportunity and jumped on it. So, throughout the course of making *Invisible*, we used Aquar-

ian, DW, Evans, Gretsch, Ludwig, Mapex, Paiste, Promark, Remo, Sabian, Sonor, Tama, Trick, Vater, Vic Firth, Yamaha and Zildjian products—all the while documenting every step of the process. In doing this, we knew that with Nick's notoriety in the drum community, a lot of people (namely drummers) would be holding a critical ear to

our efforts. So, in order to maintain some form of cohesion, we approached DPA microphones and asked if they would like to come on board with this project. The answer was an immediate yes. Think about it, particularly for the drums: every song on this album (that has drums on it) features a different drum kit, different cymbals, different drum heads and different sticks. What better way to maintain consistency and sonic fidelity than using one of the most respected and 'hi-fi' microphone manufacturers in the business? Well, it made sense to us and now you get to experience it firsthand. The song we're going to be looking at is called 'Turn Your Life Around'. It's a fairly rockin' track and the first song on the album that features a full band with drums. The entire rhythm section was recorded at Sweetwater Studios in Fort Wayne, IN, and the strings were recorded at Abbey Road Studios in London. I'm going to take you through how we recorded all of it, using only DPA microphones. Then, you can head over to RECORDING Magazine's website and download the actual Pro Tools session and scope the tracks for yourself. Pretty cool, huh? Thank you Nick, all the vendors, and of course, thank you Sweetwater!

Inside the Studio

with Mark Hornsby

Photography by Erick Anderson, except where noted

Miking and Making Invisible



by Nick D'Virgilio





Photo by Nigel Dick



Miking and Making *Invisible*

The Drums

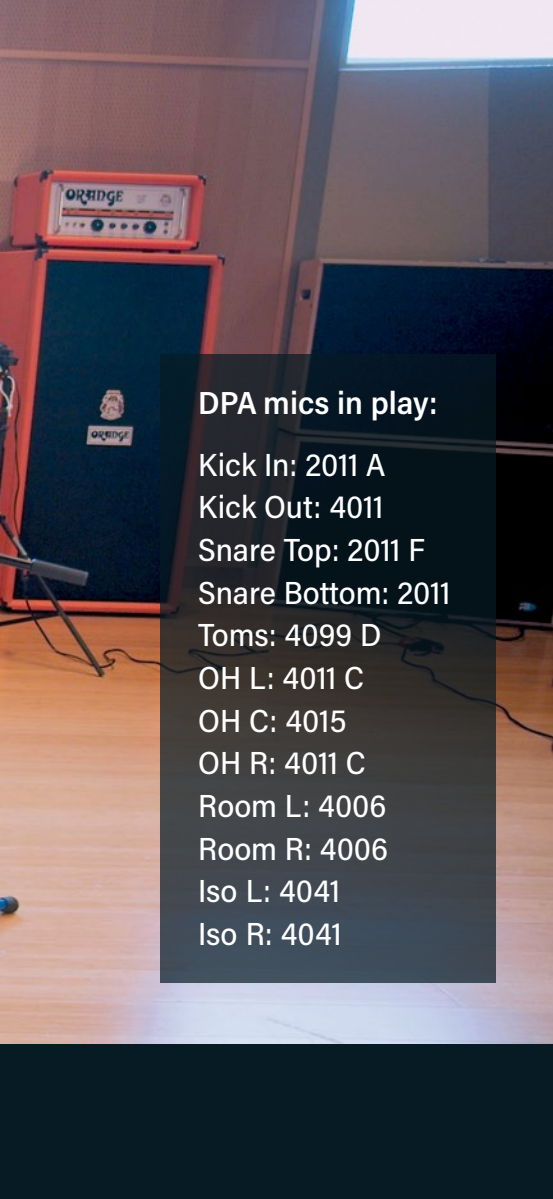
The drum kit on 'Turn Your Life Around' is a Sonor SQ2 maple with a walnut roots satin veneer. It has 8", 10", and 12" rack toms, 14" and 16" floor toms, and a 22" kick drum. The snare drum is a 6 1/2" by 14" Sonor SQ1. Heads by Aquarian: Response 2 on the toms with Classic Clear heads underneath, a clear Force One on the kick drum, and a coated Super 2 on the snare drum. For cymbals, we used Zildjian for this track, a combination of A and K types. Some of my personal favorites from this setup are the K Sweet Crashes and K Custom Organic Ride.

This maple kit is pretty unique in that there are reinforcement rings on the tops and bottoms of every drum (kick included) which creates a tight and punchy sound. At first glance, these drums look wide open—no tape or Moongel here, but we did dampen the decay of the floor toms with an old-school trick: cotton balls. Tip: if the drum keeps ringing and you're trying to stop or shorten the decay, it's usually the bottom head—not the top one. Take a couple of cotton balls and stretch them out into a small flat pillow, and put them *inside* the drum, resting on the bottom head. This shortens the decay without altering the attack. On the snare drum, we used one Drumdot. Drumdots are small, clear polymer discs that you can put on the actual drum head to control or dampen the sound.

A note on tuning: most drums have a sweet spot where they really speak. When a drum is tuned too low, it sounds flabby. When it's tuned too high, it sounds choked. What we try and do is find the sweet spot where there's nice attack and good tone. If one drum creates a droning sound or cross-talk with another, then that's a problem because the drone creates a sustaining note that bleeds into everything. Use these tips and your own common sense, advance the conversation with your drummers, and even the differences between what you're hearing in the control room vs. what's happening in the tracking room. Trust me, this will save you a ton of time.

The Drum Mics

We used DPA microphones—some of the best microphones in the world. DPA is transparent with high max SPL and superb off-axis sound quality—great for drums, since everything is bleeding into each other. Here's a breakdown of how we did it: inside the kick drum we used a DPA 2011 A cardioid (159dB SPL). Outside the kick drum, on the floor and pointed up at the exterior of the head was a DPA 4011 Cardioid (144dB SPL). On the snare top and bottom we used the 2011 F (140dB SPL). One of the coolest things we discovered is that DPA makes



DPA mics in play:

Kick In: 2011 A
Kick Out: 4011
Snare Top: 2011 F
Snare Bottom: 2011
Toms: 4099 D
OH L: 4011 C
OH C: 4015
OH R: 4011 C
Room L: 4006
Room R: 4006
Iso L: 4041
Iso R: 4041

a podium boom arm which will also function as a preamp for the 2011. This gave us the flexibility to get the diaphragm of the microphone into the space between two toms, or in between the high hat and the rack tom, and right up to the snare—no bulky mic stand to deal with. For the toms, we used the 4099 D series; this is the extreme SPL version of the 4099, and the new core technology series from DPA.

One of the coolest things we did was with the overheads. Instead of just using the traditional two-mic approach, be it cardioid or figure-eight, we used three mics to paint one cohesive picture: a pair of spaced 4011 C cardioids, and a centered 4015 A Wide Cardioid placed over and behind Nick's head. The 4015 polar pattern lies somewhere between cardioid and omni, so it has a wider spread in what it picks up. This three-mic setup provided a crystal-clear stereo picture.



Photo by Nigel Dick



Miking and Making *Invisible*

Room mics: a pair of 4006 Omnidirectional Microphones with nose cones attached. The nose cones (included with the mic) create a more balanced frequency response for a cleaner, less 'smeared' omnidirectional capture. For the majority of the songs on the album, we recorded an entire rhythm section and once we got the main band take that we were happy with, we opened up the doors to the iso rooms and added some additional microphones inside each for some extra depth, ambience and ultimately, a much larger sound. In two iso booths, tilted up at 45 degrees, we placed 4041

Omni Large Diaphragm mics; super sensitive, ultra-low self noise, and they sound incredible on the lows and highs—a lot of what you want from a pair of mics outside the main tracking room. I will explain how I used these ambience mics in the mix in next month's column. Finally, on the wall in the main tracking room, for some ear candy we used a 4061 Omni Miniature Mic, taped to one of the diffusers on the wall. This mic features a 5mm capsule with a Kevlar cable. This is DPA core tech, IP58 rated to withstand wind, rain, dirt, bears, and other distractions of the wild.

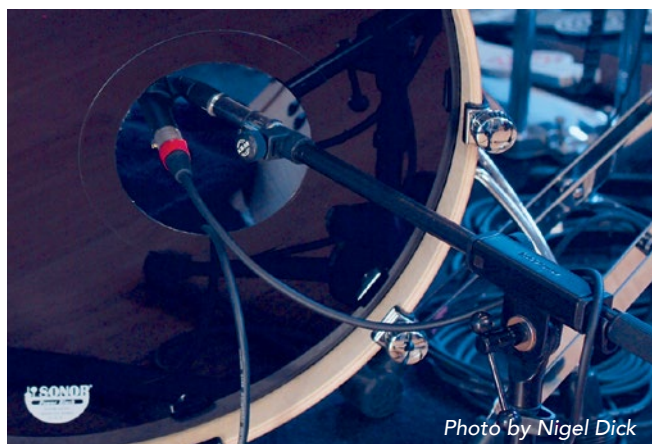


Photo by Nigel Dick



Photo by Nigel Dick

DPA mics at Abbey Road:

Decca Tree L: 4006 A with 50mm APE modifier

Decca Tree C: 4006 A with 50mm APE modifier

Decca Tree R: 4006 A with 50mm APE modifier

Violins, Violas, Double Bass: 4011 A Cardioid

Celli: 4015 A Wide Cardioid

Room Mics 1: (2) 4041

Room Mics 2: (2) 4006 A (nose cones attached)



The Orchestra: Back to Abbey Road

I've recorded several dozen projects in Studio 2 at Abbey Road and it's always a joy to go back to that space. Not only because of the history behind the room, but the phenomenal selection of musicians in London; there are about a dozen working orchestras in London proper. These musicians are accustomed to working in a recording studio environment. Using all DPA microphones in this space was not only a first for me, but also for the conductor and some of the engineers at the studio.

'Turn Your Life Around' features an eighteen-piece string section consisting of first and second violins, violas, celli and double bass; we used a combination of direct, room, and Decca Tree mics to record it. Direct: 4011 A mics on the violins, violas and double bass; 4015 A Wide Cardioid mics on the celli. Room: a 4041 pair, and a spaced pair of 4006 A mics with nose cones attached. On the Decca Tree, we placed three DPA 4006 A mics with 50mm APE (Acoustic Pressure Equalizer) modules attached; these optional DPA mic mods alter frequency response without producing artifacts. Our APE mods provided us with a frequency response curve strikingly similar to the (famer) vintage Neumann M 49 and M 50 LDC mics used in orchestral sessions.

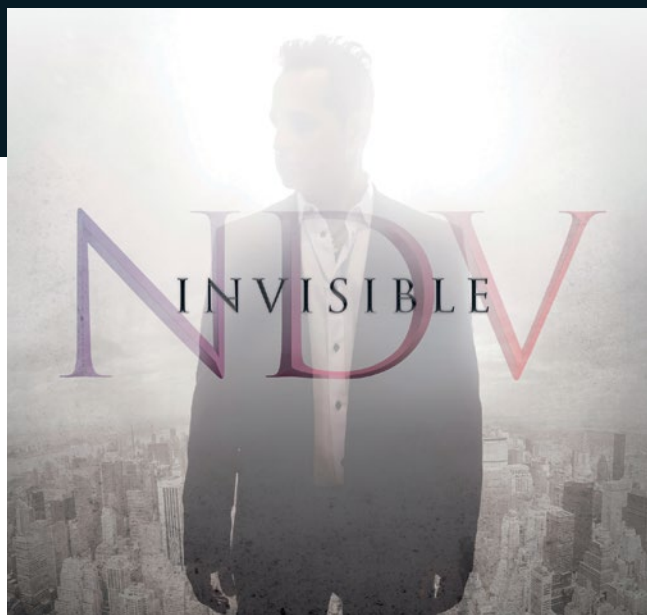
While I shouldn't be surprised, it's amazing to me how great everything sounded; I heard things in that room that I've never heard before. From the bottom octave all the way up to the top end clarity, using these mics in that space was like taking a filter off a photograph and seeing it in full clarity for the first time.

The Rest of the Band

There are a *ton* of talented musicians on this album. All the bass tracks were recorded with a combination of a Rupert Neve Designs direct box and an Ampeg SCR-DI direct box or Aguilar bass amp miked up with a 2011 A. Electric guitar tracks were recorded with a 2011. The acoustic guitar tracks were recorded with a 4099 at the neck, a 4011 on the bridge, and a 4041 overhead (a stellar combination!). Nick's vocals were recorded with a DPA d:facto handheld microphone and all the background vocals were done with 4011 cardioids. The piano was recorded with a pair of 4011 mics, and the organ was recorded with a pair of 2011 mics along with a d:facto. Synths, Wurlies, and Rhodes were recorded direct, again via Neve DI boxes. Everything in the rhythm section was recorded through the Neve Shelford 5052 preamp/EQ into Avid MTRX converters at 24/96. The orchestral parts at Abbey Road were recorded through the AMS Neve 88RS console in Studio 2, and into their Prism Sound converters at 24/96.

Next...

Seems like a lot of work, right? It was, and speaking of all that work, we did one other thing that we felt was important. As I mentioned earlier, we documented the entire process: *on video*. We brought in our talented director and good friend Mr. Nigel Dick, who not only shot a documentary on the making of the entire album, he also shot a tour of DPA headquarters in Denmark, where you can go behind the scenes and see how these mics are made firsthand. Nigel and Nick also shot a rundown of every drum kit used on the album. Our videos will appear on Sweetwater's YouTube channel this summer; *Invisible* hits the streets on June 26th.



Okay, so that's how we recorded it. **Go to www.recordingmag.com/inside-the-studio and download the ProTools session and 24/96 wav files for 'Turn Your Life Around'.** Next month we'll look at how I mixed the song and you can follow along at home.

Big shout-outs to all the musicians, the staff at Sweetwater and Abbey Road Studios, John Hinchey for the great string arrangements, Rick Wentworth, Gabriel Antonini and all the hard working folks at DPA, Nigel Dick, Erick Anderson, Chuck Surack, John F. Bradley, and to everyone else I haven't mentioned—cheers! This was the last project I did while on staff at Sweetwater Studios and I have to say, it's one of the proudest projects I've ever been a part of. Thank you Nick, for including me on this journey—I think everyone who hears the result is in for a real treat.

Mark Hornsby is an award-winning music producer and audio engineer. He is co-founder and president of EchoXS Entertainment, LLC, a company dedicated to providing artists with creative solutions by some of the best people in the business.

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