

## Huge Weapon In The Toolkit

Fun tricks in the land of the DI

By Jack Alexander

**D**I (direct) boxes. Simple enough subject – just trot on down to your local music store, ask the friendly haircut at the counter what to get, and you'll immediately be provided with an unbiased, highly technical recommendation that takes your needs into account.

Of course, your various employers – the sound company with the warehouse out on the bypass, the disco/live club run by some of the ownership group from the "Sopranos," the storefront alternative hall/coffeehouse down in the city, and the corporate event control freaks with 100 tripod loudspeaker systems and a million-dollar wireless inventory – all have done serious research into DIs and have provided you with the best.

Yeah, right.

One thing all these entities share is the fear of losing money, or inventory, and due to the realities of production, the piece of kit most exposed to, er, abduction on any stage is the humble DI.

Those of us who actually do this kind of work automatically gravitate to the microphones at the end of the show and grab them, fast, and dump them on the monitor board. Vocal mics first, then anything expensive, or wireless, and then get the back-line mics.

DI boxes come last, creating an opportunity for sleazebags to cop them, and this is the main rationale (along with fundamental cheapness) for the prevalence of garbage DIs in your bosses' inventories.

This creates an opportunity for the engineer who actually cares about the sonic outcome of the event. As your masters refuse to get this right (there are exceptions, but unfortunately, this is the rule), go buy your own quality bass and key DIs, wrap them in disgusting day-glow tape,



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and make sure to grab them first at the end of the night.

Why bother? Because DIs are a huge weapon in your bag of tricks to advance your career – when you're around, for some reason things seem to sound better.

## LIKE A MANDOLIN

The average passive commercial cheapo direct box has a miniscule transformer, lousy wire, and functions as a non-linear filter on whatever source it looks at. With early nasty-sounding digital key thingies, this filtering actually was all right. It made them sound less disgusting, allowing you to jack the EQ on the channel for the hot spots you wanted instead of being stuck with 100 percent harshness at all frequencies. They massacred electric bass though, making

The poor drummer is so thrilled when the bass player kicks in his reverb and chorus, jacks his EQ plus 47 dB at 90Hz, and turns the whole thing up plus 8 dB just for flavor. And because you were dumb enough to use the back panel out, this mess migrates to the whole monitor and house system in its pure form.

Jack's rules of engagement for DI, numero uno: Do not take direct output from any backline back panel ever, period. I don't care if they say it isn't post – it won't sound as good as what I'll recommend later, and something or other is probably post-artist activity. You'll be screwed.

## RIGHT TO CONTROL

The whole question of where to grab the direct becomes extremely political with respect to artists, as they think

providing the DI.

For an example of a worst-case bass player/DI bummer, let us return to the 1980s. We had VSOP II in for a PBS shoot at a Chicago venue, and the late Ron Carter was playing an upright with pickup into something or other. Video truck, recording truck and recording types from New York sure to generate a certain amount of conflict with us more humble Midwesterners.

First thing, the NY contingent walks in and demands that we move the (my) monitor board, "cause it doesn't look good" – or something to that effect. We had a solution, and it involved a DI. (Understand this was a long time ago – these days I'm a more respectable human and would never descend to such inhospitable behavior, preferring a state of mature wis-

## Even if it's better, it isn't what they are used to, and there will be trouble

any vintage Fender sound like a mandolin with the addition of an extra octave or two of out-of-phase, low-some-kind-of-end.

And the various cheapish commercial actives are bad in a different way, as they mostly sound sharp and aggressive, making smoother sources sound harsh, and harsh sources sound like the mains in a dance club rig. They usually track heavy on the second and third strings of the electric bass, with weird dips and valleys all over the spectrum of that instrument that simply can't be fixed with EQ.

This created an opportunity for the backline manufacturers, who generously provided "direct" outputs on the back of their amps, negating the need for external directs. These back-panel directs are often noisy, sound awful, and have the potential to be set for post EQ/gain/EFX, meaning that you get every one of the artist's delightful adjustments in the house and the monitors – just as he wants it!

they have the right to control their situation. But you know that if they do, all kinds of things will probably go wrong (or at least sound bad).

On one part of this, though, the players have a point: the effect created by any direct loaded on the output of an instrument. This is most noticeable with electric bass (any electric bass – Fender style or upright with a pickup). That DI in line will change the tone of what they're hearing from their instrument/amp combination.

Even if it's better, it isn't what they are used to, and there will be trouble. With a DI hung on its output, the bass will play different, the scales will sound different, and many players will demand that the DI go away, replaced with a mic on the amp.

If an artist actually owns a high-quality DI, always uses it when practicing and actually remembers to bring it to the gig, this won't be an issue. Reality check: most of the time, you're

dom.)

We stalled them a bit while I stuck a 1/4-inch line cord in the input of a passive DI, dropped it into the last channel of the split, and pulled the curtain over it. The joker who had demanded the movement of the monitor desk came in from his throne in the recording truck to inform me that he had a hum in the split (gee – I wonder if the open ground I had created had something to do with that).

Feigning surprise, I shoot a pointed look at the about to be moved monitor desk, and tell him that we might be able to help, but that it was probably his cabling, as we never had problems like this. Wish I had a picture of the look on this guy's face (anger/disgust/suspicion) as he gave in on the monitor board issue and officially requested our help.

I pattered around the distro behind the board for a bit, and then crawled under the curtain and unplugged the

DI from the split. After a decent interval I got on the com and asked if things were better. Of course they were, and I assigned the blame to a bad quad box – tsk tsk, I must talk to that electrician.

## WHAT GOES AROUND

And then the DI gods got even, because Mr. Carter did not like what our DI was doing to his sound. The guys in the truck loved this, as I got stuck dealing with him.

We went from a decent active to a passive. No good. Someone had a really good active in the truck, and he wouldn't go for that either. The other players in that band weren't exactly chopped liver, and now Herbie Hancock, the Marsalis brothers and Tony Williams are standing there in full production lighting watching Ron Carter tell me that he will not play the show with any of these DI's in line.

I go and get a Klark Teknik third, figuring that it had a better transformer, and use an adapter to get him into that. Tried it in bypass (he didn't like that), so then engaged the EQ and tried to use the EQ function to give him the sound he wanted. No, again.

We gave up and slapped a mic on the amp.

Would he have gone for any DI? Probably not. Which is why the best DI is no DI.

Instead, get some high-quality mic

cable and some equivalent ends, and make a "Y" cable with a female 1/4-inch connector "Y'd" to another female 1/4-inch connector on one side and a male XLR connector on the other.

Plug the bass into the one female 1/4-inch connector with a line cord, and plug the other female 1/4-inch into the amp with another line cord. Take the XLR side and plug it into the snake.

If there's too much hum, drop a pin 1 lift in line with the XLR. This will not always work (noise), but when it does, it has remarkable purity and bass extension.

As for DIs – they all sound different, which means that you have to drag a bass player friend to a big music store and have him play through every DI on offer, which will allow you to make an informed purchase.

## MUSICAL UNDERPINNING

At the very least, you should always have one good DI in your toolkit – bass is the musical underpinning of most shows and the difference between something good and something special will be significant.

And active is not necessarily better. At this point, I have two DIs – one is a passive Canadian number with the cool wire and the Dean Jensen based transformer. It doesn't have much of a sound (that's good), but has wonderful low end and works great for most situations.

When the money is on the table, and I need stellar DI performance, I go active. Tube active. I take a Universal 2/610 tube mic preamp and dump the bass or whatever into the 1/4-inch inputs on the front panel. If you haven't heard this on bass/acoustic guitar/keys or whatever, check it out.

Finally, if you're a do-it-yourself type, a number of designs are floating around the Internet that incorporate old Altec transformers. There's a whole cult thing in the audiophile world about those transformers, especially the gray ones done up for the military.

Based on what I've heard, the cultists are right about this one. Almost too neutral for me (I do like a bit of fudge in my low end), but far better than anything available for under \$1,000, as long as you can find the necessary parts (eBay, and it's not easy).

And remember, no matter how good the DI, mic the amp (yes, even the keyboard rig) and get the artist's perspective into your mix. Even the great DIs tend to be a bit dry, and a bit of speaker slap added from a mic will provide a little air movement to spice up your direct injected electrons.

If you're lucky, you might even make the mess sound real. ■

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