

BLUE Does It Again: World Exclusive On The Affordable New Dragonfly

By Paul J. Stamler, *Recording Magazine*, February 2000

It even looks like a Dragonfly. But it sounds considerably better.

When Baltic Latvian Universal Electronics (BLUE) set out to create a medium priced large-diaphragm condenser microphone, they made two decisions that would (literally) shape the design. First, they used transformerless electronics; second, they designed a capsule that would run on a polarization voltage of 40V rather than the more common 60V, avoiding the need for a DC/DC converter. The result is the Dragonfly.

Eliminating the converter and transformer allowed BLUE to build an extremely slim microphone body — only 7/8" x 7/8" x 6 1/2" — that promises improvements in capsule response, particularly off axis. Larger bodies cast acoustic shadows, which can make frequency responses squirrely.

The standard unit, finished in wrinkle-tex black (as we called it in the 1950s), lists for \$1199. Street price is expected to be under \$800, remarkably low for a large-diaphragm mic with a band-machined metal capsule. A fancier model with a thicker backplate on the capsule and high-end components in the amplifier is finished in insectile iridescent green. These will be available as matched pairs only, direct from the factory at a price of \$2800 per pair. I did most of my testing on the proletarian model.

FIRST LOOK

The microphone's capsule is about 1 7/16" diameter. There are three nubs protruding from the swiveling capsule housing; the manufacturer reminds users to remove the lower two, which clamp the capsule in place for shipping, rather like a CD player's transit screw. The third helps with orientation. When it's pointing up and the BLUE logo is facing you, you're on mic. The level of craft is excellent, as we've come to expect from the makers of the Mouse (reviewed 3/99); all the parts look made to last a century or so.

A novel elastic shockmount is included with every microphone, adding to the bug-like appearance. Its well designed swivel and the rotating capsule housing allow a remarkable degree of flexibility in placement.

Looking inside, the parts quality on the standard model is above average, with good resistors and small film capacitors. The upscale mic has fancier parts, including Wima polypropylene caps. The XLR connector on the bottom is gold on the fancy uni, silver on the standard. And the fancy one comes in a beautiful cherry wood box, while the one for the masses will have a linen-covered box.

POWER UP AND CHECK OUT

I connected the Dragonflies to my custom solid-state mic preamps for the initial tests, along with my standard reference unit, the Shure SM81. (No, they're not comparable in price or intent, but almost everyone has used an SM81 and knows what it sounds like, so it provides a good reference point.)

The Dragonflies proved well matched in sensitivity; both measured about 11dB higher than the SM81. That's plenty hot; you won't have preamp noise problems with this microphone, but you may have to watch out for input stage overload, particularly since the Dragonfly has no built-in pad.

I don't have a quiet enough room to test noise scientifically, but the Dragonfly seemed

several dB quieter than the SM81, which is already very quiet. Interestingly, when my furnace was turned on (I ran these tests in early December) the Dragonfly put out more noise than the SM81, probably indicating deeper extension into subsonic regions. Because a shockmount is integral to the design, I expected excellent isolation, and I wasn't disappointed. Low frequency shock sensitivity measured nearly 12dB better than the SM81 (which was mounted using its factory issue spring clip), and almost all the noise pick-up was subsonic, with very little audible in my headphones. Higher frequency isolation was even more impressive, about 14dB better than the SM81, and in fact most of the transmission remained subsonic (the high frequency components didn't make it through at all). The shockmount does its job well. Tapping the capsules proved instructive. The SM81 rang for about ¼ sec at 1kHz, indicating an undamped resonance (probably in the body rather than the capsule). Tapping the Dragonfly's capsule produced a much more damped thud at about 200 Hz. Again, this bodes well for the sound.

A quick check of pop sensitivity showed that the Dragonfly, like most condenser mics, is quite susceptible to breath blasts; its internal amp can easily be driven into momentary cutoff by the letter P. In the studio, a pantyhose and embroidery hoop pop filter is mandatory for vocals. BLUE usually sells wire screen pop filters as accessories and I presume they'll be selling one for the Dragonfly.

BLUE suggests that the Dragonfly can be removed from its shockmount and used for handheld vocals. I'm afraid I'm skeptical; the Dragonfly is sufficiently pop-sensitive that you'd need a heck of a filter on the rotating head. (Pantyhose and embroidery hoops don't work well at live gigs, especially in bars. Trust me on this.) And without the shockmount, the capsule picks up handling noise; the vocalist would need to hold the mic absolutely still with no hand rubbing. No, I think this mic belongs on a stand.

The microphone draws 1.5mA from a standard phantom power supply, unusually low for a transformerless mic. This probably reflects the simpler circuit allowed by the absence of a DC/DC converter for the capsule.

I pulled out The Wall Wart From Hell and tested the Dragonfly's susceptibility to hum pickup. It measured about 6dB better than the SM81, which itself has very good hum rejection; the area of greatest sensitivity was the capsule housing. This is exemplary performance. One would predict no problems when miking a combo amp, and (from experience) one would be right.

But I'm getting ahead of myself.

SOUNDS

This isn't a flat, uncolored microphone, nor was it intended to be. BLUE makes this explicit. They go for the bright sound made famous by generations of Neumann M49, U47, and AKG C12 users, featured on thousands of hit records over the years. Skipper Wise of BLUE says the Dragonfly was designed to veer toward the C12 end of the spectrum, with a scooped out midrange and broadly emphasized top and bottom. And so it proved to be.

We got the first production unit of the black model and a pre-production prototype of the green. I used them for a long session with Brad Sarno over at Underground Sound and a couple of quick gigs. We didn't get to try them as drum mics, but we worked the acoustic instruments over pretty well.

I did most of my vocal comparisons with a Groove Tubes 6tm. And while I performed my standard acoustic guitar comparisons with a Shure SM81, I also used the 6tm as a reference here, as I've found it to work well with my instrument.

In a departure from previous tests I used my custom tubed preamp (watch this space) for amplification, running straight into Brad's Apogee 24-bit A/D converters and thence onto his hard disk system. We listened back over Rogers LS3/5a speakers with subs; later Brad dithered the recordings down to 16 bits and I listened at home.

First runthroughs confirmed Skipper Wise's description; the scooped midrange and emphasized highs were obvious when the mike was used on-axis. At 90', the scoop was accentuated a bit, but the change in tone was less than is usual with a large capsule. At 180' off-axis the rejection at mid frequencies was good, but the bass and treble came through; the sound was all boom-and-tizz. This behavior is standard with a large-diaphragm microphone — goes with the territory.

We started the serious tests with my voice. At a standard distance of 6', the 6tm sounded full and natural, with a broad emphases around 6–8kHz, typical behavior for this mic.

The Dragonfly sounded thin and bright, almost anemic, with no sense of body.

We moved in closer, to 3' (I was glad for the pop filter!). Suddenly the picture shifted dramatically. The Dragonfly's bottom filled in and the sound became rich, detailed and exciting — but still marginally bright for my tastes.

Remembering an old U47 trick, I rotated the capsule about 30'; I was now singing slightly off-axis. (The swiveling head makes this ridiculously easy.) Bingo, I was now hearing exactly what I wanted to hear. The balance was right, and the level of detail and intimacy in the voice was remarkable.

We tried the same tests on Kevin Bilchik, a baritone with a more pop-oriented vocal style. (I am and always will be a folkie at heart.) The results were the same; this is a great vocal mic in the right position — and the right position is a matter of millimeters and degrees.

As I said, we did most of our work with the black Dragonfly. In an A/B vocal test, the overall performance of the green unit was similar, but the brightness was slightly less prominent (probably due to the thicker backplate) and the overall sound was a hair clearer, classier, and more robust, presumably thanks to the improved passive components. I'm sorry that BLUE isn't offering the green ones singly; there are people who might be willing to spring for the upgrade but not for a pair.

Finally, since the Dragonfly is priced comparably with the Neumann TLM103, they would seem to be logical competitors and we did a quick check. Nope. The sounds are so different that the comparison is between apples and oranges. The TLM103 has a classic U87ish sound, with a robust midrange and a broad lift around 7kHz (it sounds remarkably like the 6tm, although clearly a solid-state transformerless design); the Dragonfly has that scooped midrange and hotter top. Different tools for different uses.

INSTRUMENTALS

Next we tried my little Martin. This guitar is so hard to record because of its remarkably complex radiation pattern, and it's very hard to find a mic that will do it justice.

I started with gentle fingerpicking. At 6' the SM81 sounded very natural and uncolored, although not terribly detailed, while the Dragonfly had an odd sound that definitely didn't mesh with the Martin. Remembering my experience last year with the Mouse, I pulled

both microphones back to 12'.

Suddenly the Dragonfly's sound snapped into focus. It was clear, clean, detailed, and beautifully balanced, one of the nicest sounds I've heard from this instrument. Similarly, the 6tm was excellent at 6', while the Dragonfly came into its own at greater distances. When I changed to some more aggressive ragtime playing, the Dragonfly's best distance shortened to 10', while the 6tm still preferred 6'.

Results were broadly similar on Kevin's Guild dreadnought, a monster of a guitar with a whooping bottom end. Once again the Dragonfly's preferred distance was 12', while the other mics worked better at 6' or so. But the 12' working distance made proximity effect much less of a problem, and while I was never perfectly satisfied with any of the recordings of that guitar on that night, the Dragonfly made the most credible attempt. I pulled out my national Tricone, another bear of an instrument to record. The Dragonfly at 10' sounded more like the actual instrument than any mic I tried. This is an extremely complex sound emanating from several different sources in the body of the guitar, and it's hard as hell to capture. The Dragonfly's performance was excellent. (I used it on the national at a performance a few days later, and it shone; it also did a great job on the Jew's harp at the same gig.)

I didn't expect either of the mics to perform well on mandolin (large diaphragm mics usually don't), and I was right. Sorry, mandolins like small-diaphragm mics usually don't), and I was right. Sorry, mandolins like small-diaphragm mics like Neumann KM84s and Oktava MC012s, and that's that. But it was worth a try.

SAVING THE BEST FOR LAST

Finally, Brad fired up his amp and picked on a Telecaster. We placed the Dragonfly and various other mics about an inch in front of the grille cloth, facing the cone of the speaker about 2/3 of the way to the edge.

We listened to the recordings, and our jaws dropped in unison. With the other mics we were hearing recordings of varying quality; with the Dragonfly it was different. We were no longer listening to a recording of a Fender amp — we were listening to a Fender amp. That was astonishing. There in the control room, coming out of the monitor speakers, was the undiluted sound of a very good amplifier — period. The illusion was perfect; if you closed your eyes you'd swear that the grey grille of a Fender Deluxe Reverb was sitting in front of you, not the small box of a monitor speaker. I've never heard an electric guitar sound captured so perfectly. Sorry, none of the other mics we tried rated.

Speaking of being fooled, at one point the signal from the Dragonfly caught my back brain unawares; I had my mouth open and was replying to a question recorded on the disk before the cortex kicked in and reminded me that this was not live.

That very seldom happens. It's awfully hard to fool the back brain, and the Dragonfly is one of the few microphones I've tried that managed. (Neumann KN84s have done it, as have some Sony lavalier mics.)

What's most astonishing is that the voice I replied to was my own.

There was one small bug, though. First of a kind prototypes invite gremlins, and this test was no exception. The Curse of Oleatha Avenue bit the green microphone; when we tried to use it for some preamp comparisons, we discovered it was picking up a local FM station quite audibly. (The black microphone was dead silent, hooked up to the same preamp with the same cable.)

We opened the mic up and couldn't find much wrong; my guess is that the prototype's lacquered coating on the gold colored capsule housing was interfering with proper grounding, and the wires weren't being properly shielded. BLUE assured me that the problem won't be there on the production models.

SUMMING UP

This is a hell of a good microphone, doubly so at the expected street price. It brings a taste of true high-end performance on a project studio budget, and under the right circumstances can produce truly marvelous results.

Those circumstances do make a difference, though; the vocal and guitar tests make abundantly clear that this is not a mic you can just throw into a standard setup and use without thinking. It's very snickety about position, distance, and angle.

This opens an interesting philosophical question. Is the Dragonfly more critical than most, or is it simply that at the point where it 'snaps into focus,' the sound is exceptionally right? Dunno, but there's no question that experimentation will yield dividends with this microphone, and you're likely to come up with answers that differ from your usual placements. From my experience, it likes to be closer than usual for voices, farther away for acoustic instruments, and right there for amps.

This in turn imposes a few requirements on the user. First off, large-diaphragm microphones can cause problems in high leakage situations; their off-axis colorations can create weird interference patterns when a lot of mics are open in a crowded studio. (This is not a criticism of the Dragonfly; it happens with all large-diaphragm microphones.)

The Dragonfly's preference for greater distances on acoustic guitars could produce headaches if you record guitar and vocals simultaneously; the greater distance means you're more likely to catch vocal leakage in the guitar mic. And the greater distance also implies less forgiveness of bad acoustics; if your room's adding unpleasant colorations, a greater mic to instrument distance will show that up.

I put in those caveats only because I want you to understand the implications of this mic's preferences. If, like most project studio owners, you record your tracks one at a time, leakage isn't an issue (although you'll still need a good room — or, if you can't make it good, make it dead).

Finally, keep in mind that this is not an uncolored mic, but one with a particular style of sound, one geared more toward highly crafted pop recording than, say, a naturalistic folk approach (although it sure worked on my acoustic instruments, so maybe...).

Don't let this seeming forest of hedges obscure my basic conclusion: this microphone represents a stunning achievement in bringing high-bracket quality to a reasonable price point. For pop vocals in particular, its performance is exemplary once you find the right spot, and it's the best mic I've heard for recording a guitar amp. Ever.

These limited test results are enough to tell me that this mic, like BLUE's Mouse, is a winner, and one I'd recommend to any project studio owner who needs a fine pop, soul, hip-hop, or rock'n'roll sound. Well done, folks.

Paul J. Stamler (stamler@recordingmag.com) wishes to thank his ukis Brad Sarno and Kevin Bilchik; special thanks also to Brad for the marathon session and for burning CDs on the night before his vacation.