

Marching to Victory

By: David Barbour

Providing audio for competitive drum and bugle corps admits no room for error

Drum Corps International (DCI) is a non-profit organization that develops young drum and bugle corps in North America. DCI promotes marching music while providing education, competition, and entertainment. Today, professional drum corps are large-scale marching bands and independent organizations that compete on an international stage. They also come with distinct technology requirements in the audio department.

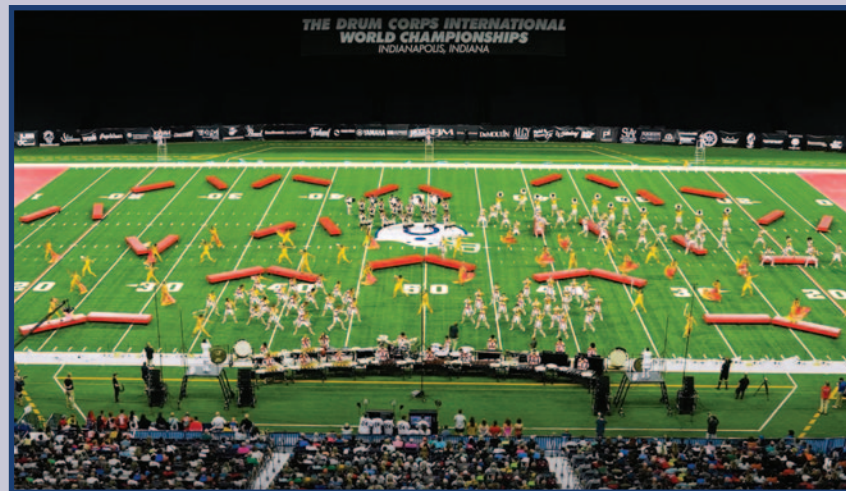
This year, DCI's summer tour began June 26 and ended in August, with Canton, Ohio's Bluecoats Drum and Bugle Corps departing Lucas Oil Stadium as the 2024 World Champions. Corps like the Bluecoats can have up to 165 members, led by 200-plus staff, personnel, and administrators.

These competitions, which feature an extremely high level of syncopation and performance, require that groups move all instruments and equipment into position and leave the arena within minutes. When moving an entire band ensemble and color guard, drum corps travel with professional sound systems.

"As popularity grew for the sport, so did the need for bigger sound," says Aaron Beck, Bluecoats audio systems designer. "Electronics and the need for sound systems started around 2002. For the first ten years, you would see systems consisting of prosumer equipment, only to amplify the front ensemble. The goal then was to make instruments that weren't meant to be loud, louder. That was basically the start of adding amplification."

Beck, a business development manager at Solotech's Las Vegas office, understands this world better than most, based on personal experience. "I marched with the Bluecoats 30 years ago as a cymbal player," he says. "I grew up in Indiana, where marching bands are big. I only did it for one year, in 1995, because I already knew I wanted to do audio professionally." However, he adds, "For the Bluecoats' 40th anniversary, they played a piece [from the Cirque du Soleil production] *KÀ*. I was working for Cirque at the time [as head of audio], and I reconnected with David Glasgow, the band's director, and we started discussions. He said, 'You're working for Cirque and you're not working for us as well?'"

Along the way, the Bluecoats picked up the creative duo of Jonathan Vanderkoff and Jim Moore, who, among other



During a marching season, the Bluecoats will travel across the US aboard a fleet of 14 vehicles, buses, and semi-trucks, covering 8,000 miles for as many as 25 performances per season.

things, were the driving forces behind the Tony award-winning Broadway revue *Blast!*, which featured a cast of marching band performers. "The audio tools we've added have allowed John and Jim to do a much more theatrical show," Beck says.

In the years before he started working for Bluecoats, Beck says, "They only had amplification of the front ensemble instruments, like the marimba and vibes; prior to amplification, those kids had to play with the hardest mallets just to be heard over the drums and brass behind them. But if we're going to market ourselves as partly educational, we should be teaching proper technique."

Beck also stresses the importance of spending money on the right gear for the job, telling the corps' management, "You need to look at it as a capex purchase. You wouldn't spend \$10,000 on a bus; you'd buy one. It would appreciate over several years.' So, in the last few years, we upgraded to real consoles, renting professional wireless systems."

Coming onboard in 2015, Beck decided early on, "We were going to need a real professional 96K console, running at higher sample rates, with better preamps and enough inputs and outputs to keep up with the complex shows. We've had a few consoles over the years; this year, we're running an Allen & Heath dLive with 100-plus inputs, 40 channels of RF wireless, and 48 outputs. Now, with RCF HDL line array boxes fastened to rolling carts, we can control the vertical dispersion for stadium audiences." To accomplish this the system uses two Yamaha generators [6,300W] on opposite ends of the field, yielding two 20A circuits per side. "With the efficiency of the RCF boxes, we

can power all the subwoofers [SUB 9004-AS and SUB 8004-AS] with a mix of HDL 6-A and HDL 20-A, that allow us to achieve stadium concert sound levels while keeping up with the natural volume of the horn line and percussion sections.”

Regarding the loudspeakers, Beck says, “Performance, size, weight, and cost all factored into my decision to select RCF. Sure, it could have been other manufacturers, but the RCF solution was a perfect match of performance and met our budget. We purchased [the RCF gear] in 2018 and it has been one of the best decisions, working perfectly for the past seven seasons.” Drawing on his experience, which also included several years on Broadway (including stints as head of sound for Disney Theatricals and the blockbuster musical *Mamma Mia!*), he says, “Prior to my arrival at the drum corps, everybody used a left-right system and just shoved the audio out. Now we have six stacks across the front so that when we’re amplifying a soloist on the 20-yard line on the left side of the field, it’s coming out of the speaker stack in front of that; it’s delayed, so that the acoustic energy lines with the amplified source to create kind of a holistic presentation.”

With a touring application that is completely self-contained, active solutions are standard in today’s drum corps. This type of mobile system has also brought new ideas to the market. “Marching bands, or ‘the marching arts’, are definitely our niche,” says Jerrod Douglas, marketing manager at Pageantry Innovations, maker of the customized mobile carts for the Bluecoats mobile RCF system. “However, we have been expanding our business based on what we build for drum corps like the Bluecoats. We are finding new markets for this type of system.”

When it comes to design, the rigging for the steel carts is customized for each system. “Similarly, as the rigging is built into the cart, the array can be adjusted upward in 5° increments with the assistance of specialized gas struts. That kind of flexibility allows users to change the angle of the bottom box and use EASE

focus to fine-tune the coverage,” explains Douglas. “As our designers continue to improve the carts for our customers, our goal is always to make certain carts are road tough, the gear gets to where it’s going, and it continues to be reliable.”

In terms of miking, Beck says, “For brass amplification we use a mix of individual wireless microphones along with five Shure VP88 stereo microphones for full hornline amplification. We also use some area mics along the front.” The entire mic system relies on Shure wireless gear.

One wrinkle is that Lucas Oil Stadium is roofed. “Outside, there are no reflections,” Beck says. “The show is loud, direct, in your face. Then we go inside for the final, the most important show of the year, and the sound bounces off the ceiling and walls. Using a proper line array system has given us some directionality to get that energy into a more controlled space.”

Each corps has a 17-minute window, Beck notes. “The show itself is about 12 minutes. You get two or three minutes to set up and make sure everything works. Everyone rolls in with their own generators and power distribution systems. You need these because you’ve got to have power when rehearsing at the high school stadium in the afternoon.” Of course, everything must be hauled off the field in the same amount of time.

Life on the road

Being in a group like the Bluecoats requires a considerable time commitment, Beck notes. “Everybody hits a spring training site, spending five or six weeks rehearsing from roughly Memorial Day to July 4. Then the tour is six or seven weeks. We start in the Midwest, working our way down to Texas where we do a big show at the Alamodome [in San Antonio]. Then we swing east through Atlanta and head north up through Allentown, Pennsylvania.” Ultimately, all the corps end up at Lucas Oil Stadium in Indianapolis, for the preliminary, semi-final, and final competitions. About 31 corps are entered before getting whit-



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CLOSE-UP: SOUND



Left to right: Audio engineer John Chung, assistant audio engineers Joseph Kim and Jeremy Otoo, sound designer/music producer Matt Jordan, Aaron Beck, assistant audio engineer Elliott Buehl, and audio engineer/videographer Justin Robards.

bled down to about 20 and, for the final, 12. The performers, who cannot be older than 22, are mostly college music majors.

As productions have become more sophisticated, Beck says, “We’ve evolved from having a front ensemble technician to a team of six that rotates in and out, just like the staffing on any national tour.

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mics and have to make sure we don’t conflict with the group leaving the field and the one coming on.” DCI uses Frequency Coordination Group, based in Orlando, Florida, for all RF coordination on the large regional shows and championships in Indianapolis. Each group is assigned a set of channels and, he says, “You don’t turn on the transmitters until you’re in the end zone and your time starts; you don’t want to step on the group in front.”

Moving a corps around the country is no small task. The players “are often sleeping on the bus for four hours until they get to, say, a high school. Then they sleep for several hours on the gym floor or sometimes in dormitories. Each group also has three or four sleeper coaches for staff and a semi, which is a kitchen, because you’re making meals for 200 people five times a day. Then there’s an equipment truck, a scenic truck, and an audio truck; it adds up to a fleet of 14 or 15 commercial vehicles.”

Each band requires as many as 50 staff members and volunteers on the road. “There are probably four or five brass instructors, four or five percussion instructors, and four or five visual instructors,” Beck says. “There’s the color guard, the audio staff, commercial drivers, food service teams, and all the groups have added sports medicine teams. It’s like the biggest professional sports team rolling down the road.”

As noted, the Bluecoats won this year’s competition, its first since 2016, ending the summer on a satisfying note. “There is something fleeting, yet forever, about a show that will never be seen again,” wrote Chris Almeida in his feature in the *New York Times* about the competition. “The Bluecoats, like every other team, set a lofty goal: perfection.” And its audio, like every other aspect of the production, must be perfect to succeed. 📡