

Miking and Mixing 5.1 for Football

The fine art of surround sound gets a workout on the gridiron

by Mary C. Gruszka

NEW YORK

The big news for NFL DTV fans this season is that all three of the networks that carry the league—ABC, CBS, and Fox—are producing key games in 5.1 surround sound audio.

The audio mixers and engineers who create the sound of NFL are writing the book on how to create an exciting 5.1 mix and, at the same time, produce compatible mono, stereo, and Dolby Pro Logic feeds in an intense and often chaotic live environment. Through experience and experimentation, week after week, they create the methods and processes that help to immerse the DTV viewer in the thrill of the game.

TV Technology caught up with two NFL audio mixers, Fred Aldous, an audio consultant and senior mixer for Fox Sports, and Wendel Stevens, senior audio mixer on ABC Monday Night Football, for insight as to how they mic and mix the NFL games for 5.1 surround.

"It's very exciting that audio is being recognized," Aldous said.

Aldous works the marquee games for Fox in NEP's Super-shooter 18 truck outfitted with a Calrec Q2 analog audio con-

sole. These games are shot in widescreen 480p.

Stevens mixes the 720p production of "ABC Monday Night Football" in NMT's HD-4 truck on an SSL MT Plus digital board.

HOT DOGS AND BEER

Surround sound gives the audio mixer the ability to set the viewer in a particular setting, but where? Although both mixers are still experimenting with perspective on a weekly basis, they, for the most part, set the TV viewer in the stands like a fan attending the game.

"I'm creating a stadium crowd that is 360 degrees around, with the sound from the [playing] field in front," Aldous said. "If you are sitting in the stands, that is what happens."

Stevens describes the aural setting he creates from the perspective "of a fan watching football from the 50-yard line about half way up and enjoying his hot dog and beer."

A different perspective can situate the viewer right in the field of play, with the offensive line in front and the rest of the field behind, an approach taken in many football movies. Aldous and Stevens say they've used both perspectives at various times during a game.

Both Stevens and Aldous go



Fox Sports senior audio mixer, Fred Aldous, at a Calrec Q2 in NEP's SS-18.

for the big, full, enveloping crowd feel in their mic-ing techniques.

Stevens places two sets of Sennheiser ME64 short cardioid shotgun mics in an X-Y stereo pair near the 50-yard line, on either side of the field, to pick up the crowd roar. Each mic pair faces the playing field, capturing the crowd on the far side.

"This blurs the crowd and the PA [public address system]," Stevens noted.

Stevens complements the crowd mic pairs with an X-Y pair of Sennheiser ME64s mounted on a pole at the top of the stadium for the rear channel.

"We're six stories up and get a little bounce from the PA and

pick up the big roar of the crowd," he said.

Aldous mics the crowd with two pairs of DPA 4023 cardioid microphones, each set positioned in a stereo X-Y configuration on opposite 25-yard lines, facing the field.

"You don't want to get the one guy yelling," Aldous said. "You want more of an open feel to capture the size and depth of the stadium."

Aldous also hangs an additional crowd mic pair, DPA 4006s, from the announce booth in an A-B configuration, spaced about 6-8 feet apart. Aldous refers to these as "spot mics," which he mixes to the front and

rear speakers, usually more towards the rear, to better achieve the feeling of being in the stands.

SNAP OF THE BALL

The grunts and grinds of the playing field are captured by a combination of parabola and camera mics. But both Aldous and Stevens agree that it's the umpire mic that's key to creating the "you-are-there" feel to the game.

"It's the most important mic for putting the viewer on the field," Aldous said. "The NFL allows us to put a live mic on the umpire, who stands behind the defensive line, to pick up the cadence of the quarterback and to hear the realignment of the

ME-64 short shotgun, and 12 camera mics. Each camera has a Sennheiser 816 or 416 mounted on it.

For Fox, Aldous employs four wireless parabolas with Neumann KM183 mics each with a Sennheiser SK250 transmitter. Field level cameras are outfitted with Sennheiser MKH70 shotguns, and each of the two POV cameras utilizes a Sennheiser 416 mic.

PUTTING IT TOGETHER

With everything going on in the audio control room, bringing in sound effects from DigiCarts, tracking VTRs, riding gain on announcers, plus listening for cues from the director, producer

"SpiderVision™ by Modulation Sciences is a system dedicated to visualizing surround sound compatibility. Whether your audience listens with Dolby Pro Logic, Circle Surround or Lexicon Logic 7, SpiderVision provides you with the complete picture to insure compatibility in all transmission modes - mono, stereo, two channel encoded surround and true 5.1-- for all surround decoders. Contact MSI for details."

defensive line as they see how the offensive line unfolds."

The NFL controls this mic and allows it to be on from the time that the offensive huddle breaks to three seconds beyond the snap of the ball.

Aldous uses a single DPA 4061 lavalier mini mic with a Sennheiser SK250 transmitter. The mic signal is sent to an Orban 345 stereo synthesizer to give left-right perspective and front-rear depth, depending on how it's mixed in the console.

Stevens puts two mics on the umpire, Sennheiser ME104s, "to get a stereo ambience from the field of play. As soon as the ball is snapped, we go to the parabolas."

For "ABC Monday Night Football," field effects are handled by six wireless parabolas, each containing a Sennheiser

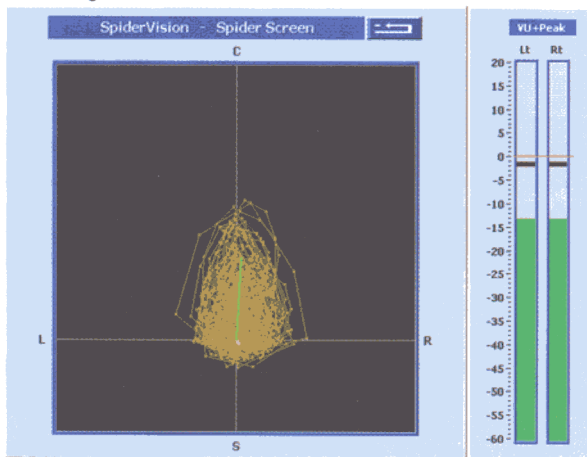
or AD, Stevens and Aldous rely on sub-mixers for a portion of the mix.

Paul Niesen sub-mixes the parabola microphones on the Fox games that Aldous works on. In charge of the RF gear, parabolas, and roving reporters, Niesen "monitors the parabola operators and positions them for the best sound possible," Aldous said.

Stan Johnson works with Stevens to handle the camera and parabola mic sub-mixes. In the truck, Stevens arranges his mixes in groups—announcers, music, parabolas, delayed mics, umpire, crowd, tape machines and the like.

"I've established rules for each of the groups," Stevens explained. For example, the announcer group is 100 percent in the center, the field effects are panned left and right 100 percent with

SpiderVision - Spider Screen
Normal Program A



modulation sciences, inc.

none in the center but a little, maybe 15 percent to 20 percent, in the rear. Music is panned left and right.

A big challenge Stevens faced was audio delays.

"When we are in HD and not all of the sources are in HD, there are lip sync and time delay issues [due to the upconversion process]," Stevens said.

ABC also uses the "1st and Ten" yellow line effect upstream of the video feed, which also causes a video delay.

"So we need to delay the audio for the mics for certain cameras and not others," Stevens said. "When we cut the entertainment piece, we knock the cameras into real time, take the delay out, and the "1st and Ten" guy goes into bypass."

Aldous sets up the announcers to the center channel only,

music in front left and right with a little fed to the rear.

"With the sound effects, the rushes and swooshes, I try to make them 360 degrees to make them feel like a video arcade game," Aldous said.

Both Aldous and Stevens are responsible for all of the audio mixes from their respective consoles, not just the 5.1 mix. That means they closely monitor for stereo, mono, and Pro Logic compatibility.

As Aldous explained, "If you are doing only one format like 5.1, you can mix extremely aggressively to the rear as well as to the front. But you have to compromise in doing all the formats together; otherwise the stereo and mono can sound unpleasant to the listener. That's why I tend to mix conservatively in the front, since that's where the visual is." ■



Modulation Sciences, Inc.
12A World's Fair Dr.
Somerset, NJ 08873
(732) 302-3090 Phone
(732) 302-0206 Fax
sales@modsci.com
www.modsci.com