

# PROJECT MEMO

## Practical Digital Has Arrived

### Control, matrixing and routing at Jones Stadium

By Rich Williams

In 1947, when the Clifford B. and Audrey Jones Stadium opened on the campus of Texas Tech University in Lubbock with a seating capacity of 27,000, thoughts of digital technology in the minds of most were as remote a concept as landing a person on the moon.

As the popularity of football grew over the years, the open-air stadium did the same, with the most recent expansion taking capacity to more than 60,000. And, the reality of practical implementation of digital technology has definitely arrived.

The multi-phase expansion project also included the construction of 47 luxury suites, a 1,100-seat club area and significantly expanded press and broadcast facilities. The centerpiece of the \$85 million project is a 150-foot structure towering over the west side of the stadium. The West Stadium Complex, as it is called, totals 175,000 square feet and replaces the 12,500

square-foot press box previously located on the site.

For the athletic department, the focus of the new structure was on an additional 2,000 seats located in the club level and luxury suites. This new eight-story building includes a large concourse and concession area, luxury suites and a club area, plus a new broadcast control booth, press room and camera deck.

ASC Contracting Group, working in conjunction with the project's A/V consultant Topper Sowden & Associates, was brought in to design, program and install a digitally controlled audio-visual routing, matrixing and delivery system serving these areas.

#### FAMILIAR GROUNDS

ASC Senior Systems Engineer Scott Carlock programmed the MediaMatrix 960nt Mainframe at the core of the new system. For this application, MediaMatrix is outfitted with two MM-DSP-RJ DPU cards and six MM-8802 interfaces.

The project had an air of familiarity for Carlock. In addition to plenty experience with MediaMatrix, Carlock is also a graduate of the Texas Tech Electrical Engineering department. "I've seen many, many sports events there, so working on the system was a bit of a homecoming," he says.



The new addition at Jones Stadium as seen from the outside (right), and the interior view from the new press box.



The scope of ASC's work required multichannel audio/visual distribution within the new West Stadium Complex also included RF-distributed video delivery to areas throughout the stadium.

"The RF broadcast serves all the concourse areas and the east and west side grandstands - in short, the TVs are distributed in areas throughout the entire stadium. The feed is typically from the school's broadcast facility, unless the game is being aired by a national broadcasting company like ESPN or Fox, in which case that signal is also fed to one of the modulators," Carlock explains. More than 150 televisions and video screens are located throughout the interior and exterior areas of the new West Stadium Complex alone.

"The stadium staff also wanted the ability to handle more sophisticated broadcasting set-ups, so we added more tie lines and triax runs for additional camera locations and to the broadcast truck stumps," he continues. "Most of our work however was concentrated on the audio/visual services to the event-related areas within the new complex. There are two levels of luxury suites, on floors seven and eight, and the club level plus a few extra 'party' suites are located on the fifth floor. Below that is the broadcast and media-related floor, which is



*A common area behind the new suites, also receiving A/V programming via the new system.*

where the MediaMatrix head-end is located."

The club level offers 700 exterior seats and 470 interior seats plus access to and the club level concession stands and bar. The 147 luxury suites offer gathering area and bars, plus several rows of seating facing the stadium. All suites have motorized windows that can be opened or closed individually.

From a flow-chart standpoint, the broadcast/announcer's booth area is the creative center of the media system in the complex. Basically, many sources originate or are routed through the booth. External feeds are brought in to the booth and terminate

at a patchbay that is tied into a Mackie 1604 VLZ mixer. The outs from the board are tied to another patchbay tied to the MediaMatrix system located down the hall.

#### **STRAIGHT ROUTING**

Although admittedly lower-tech than other parts of the system, Carlock explains that the important factor is how it all fits into the workflow of the broadcasters. "At the MediaMatrix we're doing a combination of mixing of various signals - be it the announcer's booth, the referee's mic, or the ESPN announcer - and straight routing of the various incoming signals directly to the various floors. The signal to

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the stadium bowl is always going to be from the announcers in the booth, but the announcers also have access on their mixer to several external feeds if they choose to use them during the game."

The MediaMatrix feed to the stadium bowl leaves the head-end and interfaces with the stadium's existing public address system rack, housed in another room. Right now, the feed is a largely unaltered mono signal, with only minor limiting. (There is also ongoing discussion of upgrading the stadium PA system in the near future.)

"This year's big push was to complete the major construction and to get the club and luxury suites up and running. Actually, this is one of the reasons we chose MediaMatrix - its ability to easily expand the system to add all the control capabilities that eventually will be required for the next upgrade," he adds.

For the luxury suites within the West Stadium Complex, four sources are sent from MediaMatrix to a selector panel located within each suite. A stadium engineer, who has access to that control screen on the MediaMatrix unit, determines the four sources available to the suites. For instance, the engineer may choose to supply the suites with a choice of announcers' booth, local sports radio, the ESPN

broadcast and background music, depending on what is available for the specific event.

Two Crown CTS-2000 two-channel 70-volt amplifiers amplify the four line-level signals leaving the MediaMatrix MM8802 breakout boxes, and the powered signal is sent to Lowell CS610 combination volume/program selector panels outfitted with Lowell LVC100-RM 70-volt attenuators.

The panels give each of the 47 suites control over choice of program material and volume. Speakers within the suites are Lowell CT830 ceiling-mounted 8-inch speakers with 16-watt transformers. Smaller eight-seat suites have two ceiling speakers and the larger 18-seat suites required four speakers.

A single feed, selected by university personnel at the MediaMatrix unit, is sent to the club level for broadcast throughout its indoor and exterior seating areas. Lowell speakers were utilized indoors and a battery of JBL Control 28T monitors with 60-watt transformers were installed in the outdoor areas of the club level. The JBL speakers, along with numerous 27-inch video monitors, are mounted under the lip of the overhanging suite level, providing the outdoor club-level fans clear sound and a choice of views.

A total of 110 JBL Control 28T loudspeakers and 331 of the Lowell 8-inch



One of the system's "nerve centers" with MediaMatrix digital control/matrixing and plenty of Crown power.

speakers were used throughout the complex, powered by eight Crown CTS-600, seven CTS-1200 and two CTS-2000 amplifiers.

## INTERPRET RELAY CLOSURE

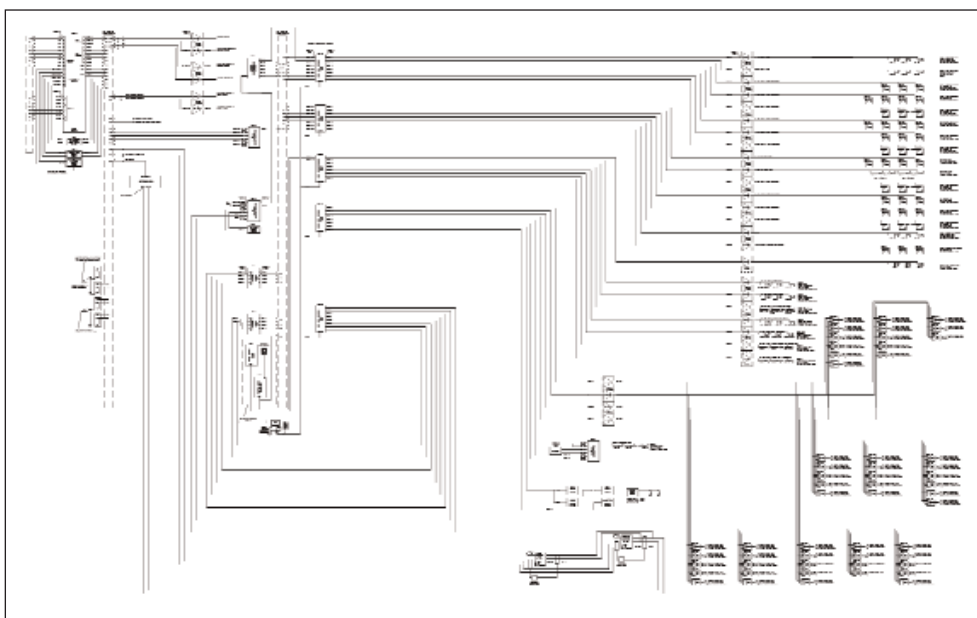
ASC also employed an AMX Axcnt III integrated access controller to interpret the relay closure from the fire control panel to mute the system for life-safety purposes. "Although not part of the life-safety system, we had a custom panel made by AMX with a mic input and push-to-talk button for important paging duties.

"The panel button sends a signal to the AMX, which in turn recalls a preset in the MediaMatrix system allowing the mic to override the current audio program, so the page can be heard," Carlock says.

So, now that Carlock has been intimately reacquainted with his alma mater, is he spending more time at Jones Stadium watching the team's home games? Unlikely, given that ASC Companies' Contracting Group is quite busy these days, coming off the heels of the Jones Stadium renovation and a recently completed multi-MediaMatrix Fort Worth Convention Center install.

"Besides," Carlock confides, "I'm more of a hockey fan." ■

Rich Williams is a regular contributor to Live Sound, including an in-depth look at new sound and systems at the Apollo Theater last year.



An overview of the entire new system in schematic form.