



Figure 7.11 A few of the SNG trucks used for newsgathering, along with a few of the pre-game festivities production trucks outside the Superdome for Super Bowl XXXVI. (Source: Michael Sandorse- Remote Facilities)

The Super Bowl

Large Event — Large Effort

The Super Bowl is the apex of American football. The advertising rates charged for this big game are also high in the stratosphere. Thirty seconds of airtime, plus the cost of producing these half-minute pitches that are often more entertaining than the game itself, can exceed three million dollars. FOX, which did Super Bowl XXXVI in New Orleans and is paying \$4.4 billion over eight years to broadcast NFC games and half the Super Bowls during that time, had a lot riding on the game.

So you would expect FOX, which aired the game in 1998 and again in 2002, to bring its best to this event—not only the FOX A game talent and crew, but an armada of equipment. In the bowels of the Superdome a fleet of television production, satellite and telecom trailers were wedged into place starting a full two weeks before the game. Additional satellite uplink trucks were parked just outside. The amount of gear used is so vast that setup actually started almost a month in advance, even before the playoffs had commenced. Nearly 50 cameras are used between pre/post shows, the game itself and the feeds provided to the world. Over 30 miles of camera cable was installed throughout the dome to connect this bevy of cameras to the production trailers.

Why so many cameras? FOX used 25 cameras to cover the actual game, slightly more than ABC uses on a regular season Monday night game. Early on in Super Bowl history, the general objective of the telecast was to cover the competition between the two teams involved. But people like Roone Arledge, who was instrumental in creating *Monday Night Football*, changed how sports were portrayed on television. Technology played a hand also. Arledge was one of the first to get up close and personal with the players. He put cameras in event locations that had never had them before. Instead of merely peering from above the action, he was one of the first to put them down on the sidelines. He placed them capturing action from angles never before dreamed of. When he got involved, it was still television production dogma not to spread the possible views presented to the viewer, as it was thought to be disorienting and confusing. He pioneered the experimentation of looking from different angles.

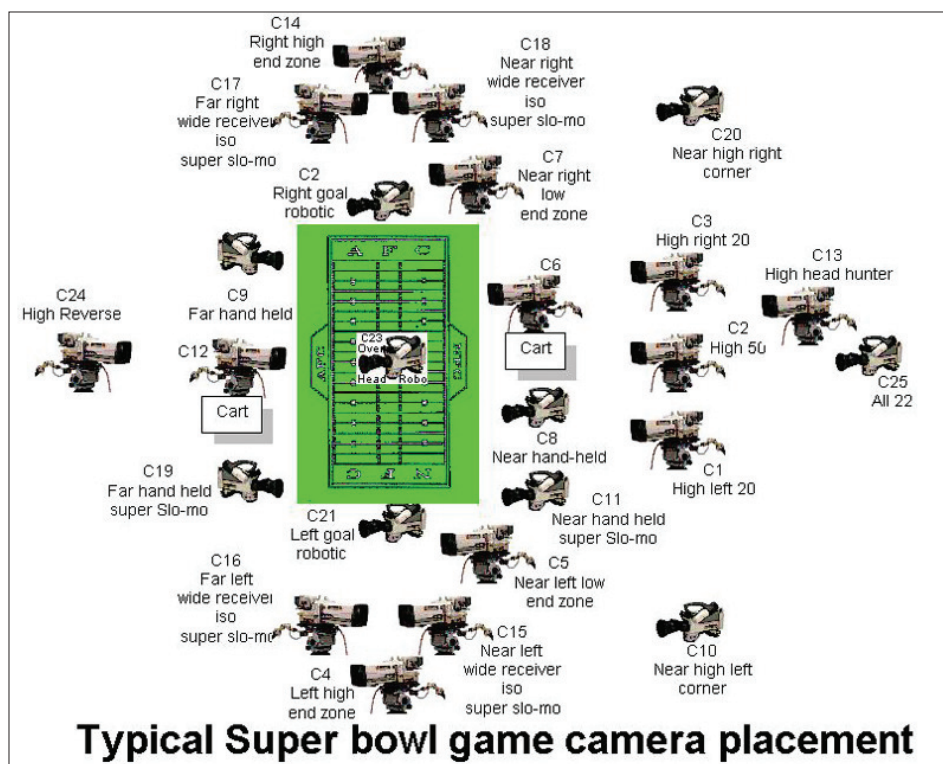
“You hope the game lives up to your coverage,” Sandy Grossman, Fox Sports Director who has done 10 Super Bowls. (USA Today)

As mentioned, technology has played a role in the camera count and how they’re used today. As most of us know in today’s camcorder world, technology has shrunk the necessary camera electronics into a small pack-



Figure 7.12 So many camera triax cables converge on the truck compound for the Super Bowl that the setup crew uses a wooden board to terminate each cable. The cables are statically tested (without the actual cameras connected) and then a short piece of triax is run from this board to one of the four trucks that support this large platoon of cameras. This setup makes it easier to troubleshoot problems, and to find and quickly use any of the numerous spare cables as backup. Notice that each cutout and slot holding the end of a triax cable is labeled as to the location of its other end. The crew refers to this board as “the chrome cow.” (Source: Marty Elbeck - NEP)

Figure 7.13 Right: At recent Super Bowls, there have generally been five cameras high on the near (for Super Bowl XXXVI that was the NFC bench) side of the field, three along the near sideline, five in each of the end zones, two in the near corners of the dome, four on the opposite sides, one on each goalpost, and one mounted overhead at the fifty. The networks also usually add up to a dozen more to cover the coaches’ stand, hallways to the lockers and the announce booth, and six more for the \$150,000 to \$300,000 pre-post game set that they construct. Some cameras have very narrow assignments. Four cameras in the end zones are often used just to cover the wide receivers as they run their routes for use in instant replays. Of the four commonly centered at the near 50-yard line, one is used to shoot all 22 players at once (it’s actually called the “all 22”), just in case the interesting part of the play is missed by all the other cameras for replay. Just for good measure NFL Films, which provides the feed for the rest of the world, can add upwards of 12 more cameras. The NFL cameras are also used by television stations around the country to get live shots of their talent for air back home.



age. This process started over 30 years ago, and allowed the television camera onto the sidelines to intermingle with coaches and players. Miniaturization also allowed more cameras to be carried. When handheld cameras are used in conjunction with other cameras in a broadcast situation, some of the camera system must still reside out in the production trailer. That infrastructure has gotten smaller also. Even so, the camera equipment for Super Bowl XXXVI is still spread over four trailers.



Figure 7.14 Instant replay trailer used by ABC for Monday Night Football, and once every three years for the Super Bowl.

Today's electronics make for cameras that are much more stable than they were at Super Bowl I. Thirty-five years ago, cameras needed to be adjusted often, and trying to get more than a dozen cameras of the day all looking and then staying the same was difficult. The second push from technology was in lens technology. At the first Super Bowl, a zoom lens with a 10:1 ratio was common. Fifteen years later zoom ratios had increased to 30:1. Now lenses with zoom ratios of 86:1, upwards of 10 of them, are used for game coverage. This allows a camera from the upper stands to close in on a player's face. The zoom lens is now a key tool for telling the story of the game by conveying the players' grimaces, their joys and their defeats. The television director no longer simply directs the coverage of the game, they weave the unfolding contest into a story. If the game is close it becomes a drama.

The massive camera presence is almost matched by the instant replay effort. There were 42 sources of VTRs and video servers in use for Super Bowl XXXVI. All 25 game cameras can be recorded for instant replay. Although the majority of devices used for instant replay are still VTRs, about 12 replay outputs (called channels) are from video servers. These allow quicker access to replays, and also allow com-

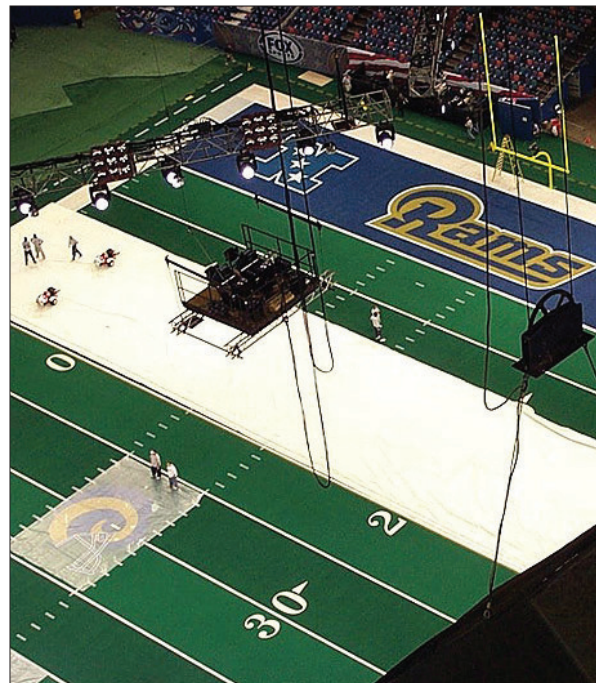


Figure 7.15 Left, lighting and speakers being raised into position for Super Bowl XXXVI. (Source: Marty Eibeck - NEP)



piling of game highlights, or creation of rapid play sequences on the fly in the background as the server continues on with its instant replay duties. All these replay VTRs and servers are also available to the NFL replay booth for use in call challenges. Maybe one reason that the playoffs have seemed to be more contested in big games is that there are more replay sources, hence more angles from which to dissect a play, used in the playoff than in the regular season.

"And therein, sometimes, lies the danger. You add more equipment than you're used to working with, and it might throw off your timing." Bob Stenner, FOX Super Bowl Producer (USA Today).

There was a production trailer for the pre/post game and one for the game itself. These production trailers select which source (camera, VTR, server, etc.) is on the air, and add the special effects. Two more of these trailers were used just for graphics: one for the pre/post game, and the other for the game itself. Another trailer will produce the NFL Films feed to the world. One housed only the super slow motion instant replay devices. These are devices that record at three times normal speed. So instead of 30 frames a second, these VTRs record at 90 frames a second providing increased temporal resolution (less movement change from one frame to the next). One trailer housed all the editing equipment used to produce the feature pieces for the pre-game show. There was also a trailer that housed the needed telecom equipment. Finally, the most important trailer, technically, is the engineering support trailer. This trailer had a number of uses. It was the "master control" trailer. It selected which production trailer was sent, via the backhaul, to FOX back in Los Angeles for air. It also provided backup to the whole FOX network for the game. Normally the game would be sent via satellite to the FOX operations center, which would insert the commercials. An additional feed out of this trailer was used as a second satellite feed, transmitted on a separate satellite complete with commercials inserted from this trailer. In that way, if something happened to the first satellite, or something catastrophic happened at the FOX operations center, local FOX affiliates airing the game would have switched to the other satellite and would have received the game straight from venue in New Orleans. This trailer also tied all the other trailers together via intercom, video and audio distribution into a single system.

All the trailers were in place for over a week before the game. An initial set of trailers arrived more than two weeks before the event. It took three days to park, power and make the necessary interconnections between the trailers. An initial setup crew of 30 mushroomed into well over 100 as



Figure 7.16 Another imposing presence in NFL games now is the graphics effort. This photo is inside the FOX football A-game graphics trailer. The graphics are the score boxes that fly together onto the screen and then explode off, the lineup displays, and all the stats that are shown, some now quite animated. Powerful real-time 3-D computers of the type used by George Lucas and company produce some of these graphics. Outside statistics vendors also provide real-time stats that are automatically assembled for graphical display by these same computers. FOX pioneered this explosion in the use of graphics to help tell the story. Interestingly, back in the 1970s when the use of graphics was still in its infancy, some at NBC worried that graphics might distract the viewer too much. (FOX A-game/Super Bowl graphics unit)

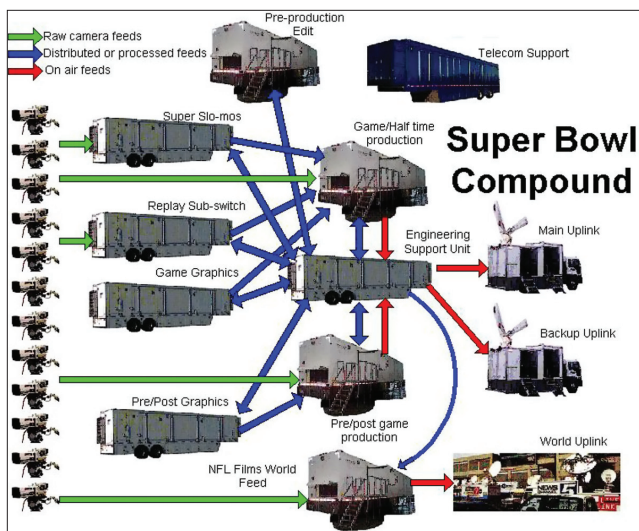


Figure 7.17 Signal processing flow for Super Bowl XXXVI between the dozen units involved with the Pre-game and post-game shows.

the big day approached. The entire system was checked for functionality five days before the game. Pre-production for the game started the next day. Half time rehearsals commenced three days before Super Bowl Sunday. Every day the system was rechecked to make sure that all needed intercom, video or audio feeds, and other control was still functional. This continual checking of facilities consumed a good part of each day. The Super Bowl is television's equivalent to a space shot for NASA. Too much is riding on this not to check and recheck.

Once the game was done it took four days before all trace of the television compound and its tentacles interlaced through the Superdome were completely gone. The Super Bowl, in magnitude and scope, is second only to the Olympics and the political conventions when it comes to hardware used for televising a single show. ■

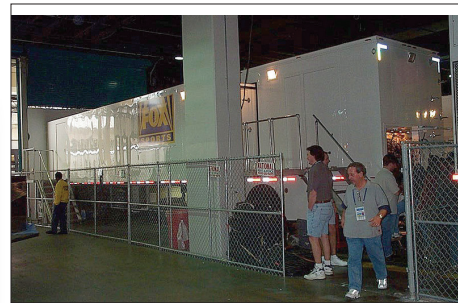


Figure 7.18 All this equipment is housed in 10 trailers, all specially built for everyday sports usage but modified for the Super Bowl. Most of these trailers would do your everyday college football, or NBA, NHL or MLB game all by themselves. Many of these 50+ foot trailers expand out on one or more sides after they are parked to increase working space. Above is one of the production trailers used at Super Bowl XXXVI. Behind the column a door into the expanded part of the trailer can be seen. (Source: Marty Etbeck - NEP)

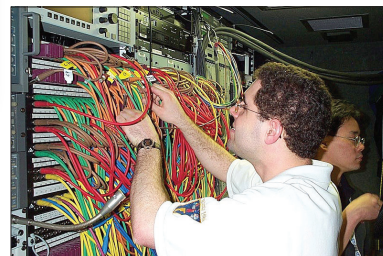


Figure 7.19 One theme that has run throughout this book is that remote production vehicles must be flexible and reliable. One way that this is accomplished is via ample video, audio and, in recent years, control and computer network patching. Since no two events are alike, patching configures the trucks to perform the way the client wants. At Super Bowl XXXVI the client was FOX. (Source: Marty Etbeck - NEP)