

# World Listens to AOB Commentary

by **Bill Bennett**  
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Atlanta Olympic Broadcasting 1996 (AOB) was the host broadcaster for the 1996 Centennial Olympic Summer Games in Atlanta, Ga. AOB was responsible for providing 3,000 hours of live and impartial coverage of all Olympic events.

In addition to providing complete video coverage (see sidebar), AOB also provided the technical facilities — called Commentary Systems — that allowed rightsholders to send their commentary audio back to their studios at the IBC.

As host broadcaster, AOB coordinated rightsholders' activities, acted as liaison between ACOG and the rightsholders, and provided an array of production and technical facilities and services to the rightsholders.

AOB also coordinated rightsholders' needs for venue compound space, commentary positions, unilateral camera platforms and interview locations. AOB built and operated the IBC, a 500,000-square-foot facility housing studios, control rooms, edit suites, transmission facilities and offices for rightsholding broadcasters.

To connect it all, AOB 1996 coordinated the installation and operation of thousands of audio and video circuits between the IBC and all venues (and other sites), as well as within the venues and IBC.

## WHY A HOST BROADCASTER

When most networks want to cover a sporting event, they seek out the rights, book a mobile unit and crew, and coordinate support services. With the 170-odd worldwide networks covering the 1996 Summer Olympics, this approach is far too unwieldy. Just imagine covering several sporting events from as many as 30 or 40 different venues over a 2-week period — in another country!

Enter the host broadcaster. AOB provided all rightsholders with the capability to reserve turnkey commentary positions at each venue, as well as camera and mobile unit locations for those few who desired to use some of their own facilities. It established host broadcaster standards for audio and video formats, and with ACOG's vast Olympic information resources, helped coordinate the dissemination of information pertaining to each team, player and venue.

Some broadcasters used one of AOB's off-tube commentary positions in the IBC if they could not afford the time or cost of being at every venue where coverage was desired.

## THE COMMENTATOR POSITION

A fully equipped 6-foot long, 3-chaired commentary position typically included a Commentary Unit (CU) with two Beyer DT-109 dual-muff mic/headsets, one CATV monitor showing AOB coverage, and, for some venues, a touch-screen Commentary Information System (CIS) terminal provided by IBM. The CU controls mics, audio monitor sources (program, air, house PA), crowd noise, coordination circuits (intercom) and TV director's cues (so talent are warned of pending replays).

All CUs were tied to Commentary Control Units (CCU) manned inside each venue's Commentary Control Room (CCR). CCU operators controlled the level of International Radio Signal (crowd noise) and could send tone, looped digital voice circuit ID, or program audio down the

broadcaster's program circuit to the IBC. The CCU operators also could communicate with both the commentators and their IBC studio personnel to ensure efficient operations and troubleshooting.

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The Commentary Systems Group also provided interconnecting cabling between the CCR and broadcast compound and rightsholders' mobile units, pre/post and mixed zone interview areas, and other special locations. All commentary signals were run via balanced European-standard line-level 4-wire circuits (one pair send, one pair return). No signal ground was provided between equipment, thus no ground loops.

In one of the more complicated scenarios, a television broadcaster sometimes had its own mobile unit in the compound, with dedicated unilateral cameras located inside the venue. The broadcaster could choose to route its commentary signal from the CP to its truck, add truck-based sound, and send that audio to the IBC. Since the audio is now married with video, the audio not only goes to the IBC via the traditional circuits through CCR, but also via their own dedicated VandA (Video and Audio circuit). An adjunct to this scenario is the inclusion of coordination circuits between the commentator position, mobile unit and rightsholder's IBC studio.

The pre/post and mixed zones provided bookable interview locations, whereby the rightsholder could broadcast its segment on

the AOB 1996 host feed outside of the normal match event schedule.

BellSouth deployed 45 SONET (Synchronous Optical Network) rings within the state of Georgia, all running at OC-48 speeds (2.48832 Gbps). These interwoven, bidirectional, self-healing fiber networks were key to transporting all of the audio, video and data needs of AOB, the rightsholders and ACOG.

Inside most CCRs BellSouth installed AT&T/Lucent SLC-2000 subscriber premises equipment for A/D and D/A conversion of program, feedback and coordination audio at either 3.4 kHz, 7.5 kHz or 15 kHz.

The sampled signals were then transferred onto the nearest OC-48 ring via an OC-3 (155.52 Mbps). Identical equipment was located at the IBC, which performed the other half of the A/D or D/A process. No audio compression was used.

The AOB 1996 Distribution Center took the approximately 40 venue video host feeds and distributed each of them to the rightsholders' studios via discreet coax cables. Hundreds of Leitch video D/As and Panasonic monitors were used in this process.

The AOB 1996 Commentator Switching Center took most of the commentary circuits and routed them from the SLC-2000s to TRS (tip-ring-sleeve) jackfields via T-66 punch blocks. Each commentary circuit was normalized through the jackfield and sent on its way to a rightsholder. AEQ test units were used to monitor circuit quality and tone generation.

From the rightsholders' studios in the IBC, a broadcaster had the ability to go live with talent and athlete interviews from the studio, or utilize another video or audio source outside of the IBC. They could apply voiceovers, music, graphics and editing resources to the final air product. The Broadcaster's program signal utilized an AOB-provided unilateral circuit back to AOB 1996 Transmission. From there it went to any of a variety of common carrier POPs (points of presence) such as Vyvx,

## AOB Feeds The World

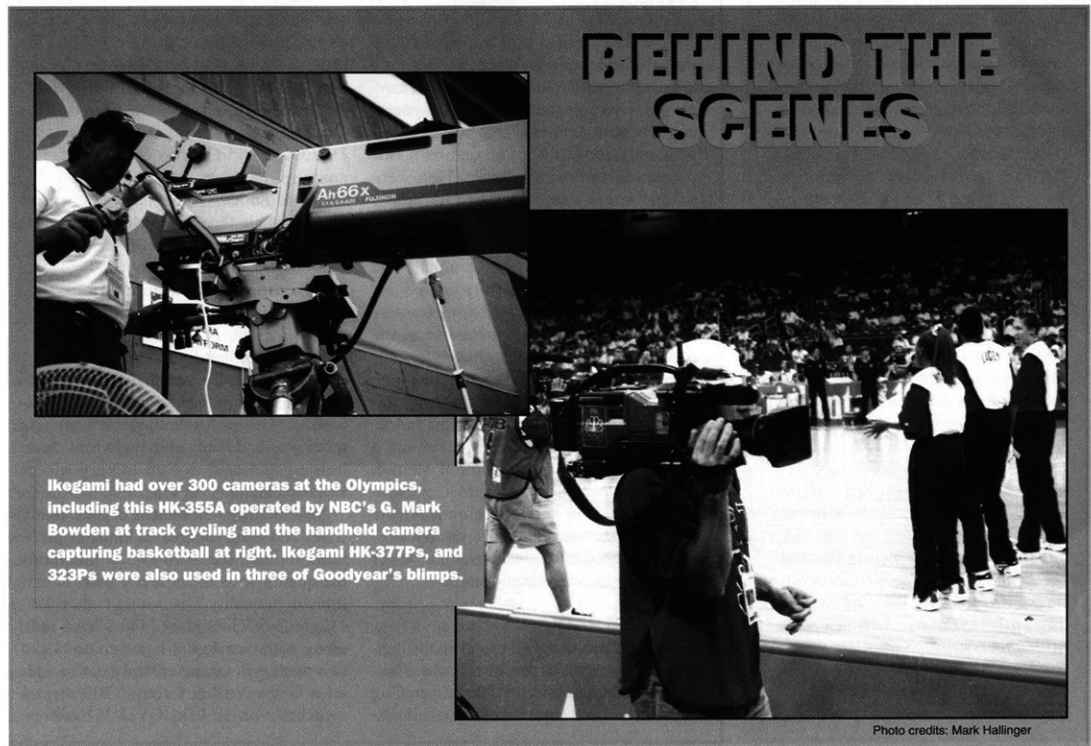
In addition to commentary, AOB 1996 also provided unbiased coverage of all events from all venues (3,000 hours worth), all live. This host feed included coverage via traditional and specialty cameras (point of view, cranes and tracking cameras), slow-motion and super-slow motion replays, extensive character generator pages, and ambient crowd noise and special effects audio. AOB 1996 also took virtually all of the timing and results information generated by Swiss Timing and IBM and transferred it to on-screen graphics that could be used by any country.

This is the signal that more than 95 percent of the world's viewers saw from Atlanta. Most international rightsholders used this multilateral host feed as the kernel of their coverage, and add their own commentary, graphics and special segments.

Leaving each venue, AOB's VandAs and unilateral signals each required their own OC-3 circuit, and utilized an Alcatel Network Systems 1718 digital video codec at each end of the VandA. This codec provided the user with one video and four audio channels, thus providing for compression-free composite NTSC transmission. ■

AT&T or MCI, or satellite uplink facilities located in AOB's satellite uplink farm. ■

*Bill Bennett served as a commentary systems manager with AOB. He is now developing new applications for broadcast and the World Wide Web. He can be reached at e-mail: 70742.365@compuserve.com*



**Ikegami had over 300 cameras at the Olympics, including this HK-355A operated by NBC's G. Mark Bowden at track cycling and the handheld camera capturing basketball at right. Ikegami HK-377Ps, and 323Ps were also used in three of Goodyear's blimps.**

Photo credits: Mark Hallinger