

The 125th SMPTE Technical Conference and Equipment Exhibit, Oct. 30–Nov. 4, Los Angeles

The 125th SMPTE Technical Conference and Equipment Exhibit will be held Oct. 30–Nov. 4, 1983, at the Los Angeles Convention Center in Los Angeles, California.

The opening session, "Future Sights and Sounds," will feature, as guest speakers, experts who will discuss their respective industries' commitments to future technologies.

Video, film, and sound topics to be covered at the 125th Conference will include some of the industry's most compelling subjects. Among the film topics now being considered for the program are new image display technology, motion-picture special effects, color grading using microprocessor controls, and new equipment and processes. Video topics are expected to include recording systems, display equipment, high-definition television, small-format video systems, and the design of video installations. Some of the sound topics planned are new speaker systems, 35-mm magnetic film, 70-mm format, practical Dolby applications, audio in high-definition television, and audio in the Olympics.

The SMPTE Exhibit, located on the main floor of the Convention Center, will open on Monday, Oct. 31, at 2:00 p.m., immediately following the Honors and Awards Luncheon. The area will remain open until 8:00 p.m. on Monday to enable those who cannot visit during the day a chance to see the exhibit. Tuesday and Wednesday



Charles D. Kircher

hours are 10:00 a.m. to 6:00 p.m. On Thursday, the last day for exhibits, the hours are 10:00 a.m. to 4:00 p.m. Parking is available.

More exhibit space is available than ever before, and requests for space indicate high interest among the leading manufacturers of film and video equipment.

Local Arrangements Chairman Charles D. Kircher, Foto-Kem Industries, Inc., and his committee, report progress in settling the many details that go into the making of a very successful conference.

Spouses attending the 125th Conference are in for an exciting week of activities according to Chairman Judy Chewey. Sunday will begin with a Welcome Tea, and an opportunity to sign up for the coming week's activities. Monday, a lecture will be given by

Alice Reichard in the morning, followed by the Honors and Awards Luncheon (optional), with the afternoon free. During the rest of the week there will be trips to Little Tokyo, including tea ceremonies, Japanese gardens, and Kabuki dancers, a day in Newport Beach, a shopping trip on Balboa Island, a visit to Del Coronado, and a bus trip to an old Victorian town. Also available will be studio tours and tickets to TV game shows.

The Society has a block of rooms available to conference registrants and exhibitors at reduced prices at the Biltmore Hotel and the Los Angeles Hilton Hotel. Reservations will be accepted only on the forms supplied by SMPTE. This information and conference registration forms will be mailed to members in July. These forms may be copied, or additional forms can be secured by calling SMPTE Headquarters, (914) 472-6606. Additional information will be found in the August *Journal*.

Call for Papers

Plans are under way for the 125th Conference program. Authors of papers, completed or planned, for presentation at the conference are urged to get in touch with Bill Hogan, Program Chairman, Ruxton, Ltd., 611 North Orchard Drive, Burbank, CA 91506, or with Mrs. Mary Connolly, Conference Program Coordinator, SMPTE Headquarters, 862 Scarsdale Ave., Scarsdale, NY 10583.



Report on NAB 61st Annual Convention

By Barry C. Detwiler and Joseph Roizen



Overview of NAB exhibit.

The world's largest display of broadcast equipment, the National Association of Broadcasters (NAB) 61st Annual Convention, was held at the Las Vegas Convention Center, Las Vegas, Nev., April 10-13, 1983. The exhibit contained the products of more than 500 companies. SMPTE technical meetings were held both during and after the convention. Management from both large and small TV equipment suppliers expressed guarded optimism at the beginning of the NAB, which later blossomed into full-fledged confidence by the end of the convention. Almost everyone thought that 1983 would be a good year, and all the signs point to 1984 being better.

The combination convention and broadcast engineering conference was opened April 10, with NAB President Edward Fritts delivering the keynote address. In keeping with the 1983 convention theme, "Productivity . . . Let's Work Together," Howard K. Smith, ABC News, moderated a general session on increasing the nation's productivity rate. Panelists were Labor Secretary Raymond Donovan, AFL-CIO Secretary/Treasurer Thomas Donahue, and Dennis Carney, Chairman and Chief Operating Officer, Wheeling-Pittsburgh Steel Corp. Among the highlights of this year's

meeting, broadcasters got a behind-the-scenes look at the FCC and congressional staff during a special breakfast. Sen. Bob Packwood (R-Ore.), Chairman of the Senate Commerce Committee, addressed the breakfast session, while FCC commissioners responded to questions from John Summers, NAB Executive Vice-President and General Manager. CBS News correspondent Bill Lynch moderated the congressional panel.

Amidst the hundreds of workshops, clinics, and panel discussions, the industry took time to honor three broadcasters for their contributions. Former NAB President Vincent Wasilewski received the Association's Distinguished Service Award. Mr. Wasilewski is a partner in the Washington, D.C., communications law firm of Dow, Lohnes & Albertson. The Grover Cobb Award, presented annually to a broadcaster who demonstrates unusual dedication to improving broadcasting's relations with the federal government, was awarded to Jack Rosenthal, President, Broadcast Division, Harriscope Broadcasting Corp., Casper, Wyo. In addition, the NAB presented its Engineering Award to Joseph A. Flaherty, Vice-President, Engineering and Development, CBS Broadcast Group, New York City.

The SMPTE booth at NAB was well attended. Members from around the world visited the booth, which was hosted by Lynette Robinson, Executive Secretary; Alex Alden, Manager of Engineering; Peg Caggiano, International Standards Coordinator; and Barry Detwiler, Television Engineer. Dorothy Smith, the Exhibits and Advertising Manager, met with current and future exhibitors and discussed the upcoming SMPTE Technical Conference, to be held for the first time at the Los Angeles Convention Center, October 30-November 4, 1983.

The SMPTE booth was a wealth of information on standards and new technology and featured a map illustrating the Society's international scope. According to Mrs. Robinson, membership enrollment was very high at the conference, showing continued interest in the Society and its work. She also said she was pleased with the many new SMPTE memberships from those enrolled at NAB '83. The new members included people from many countries.

SMPTE introduced a new book at NAB entitled *Video Pictures of the Future*, which confirms the fact that television technology continues to grow and mature rapidly, with each year bringing forth new developments. The

SMPTE has kept itself at the proverbial "cutting edge" of these new technical developments by presenting at its conferences the latest information for the benefit of the entire television field. *Video Pictures of the Future* contains information on high-definition television, television graphics and special effects, the future of videotape formats, and microcomputers in TV with an emphasis on software. The material for the book came from SMPTE's 17th Annual Television Conference, held in San Francisco, February 4-5, 1983. This up-to-date information on television technology is available from SMPTE Headquarters in Scarsdale, N.Y.

Meetings of SMPTE engineering working groups and subgroups were held during the NAB conference on the following subjects: April 12, *Lens Interface*, Philip Godfrey, chairman; April 13, *Digital Video Standards*, Ken Davies; April 14, *Digital Studio Implementation*, Frank Davidoff; *Editing Procedures*, R. Lund; and *Digital Control*, Robert McAll.

SMPTE working groups on digital video standards and control, as well as a study group on studio implementation, held during NAB, emphasized the importance of digital technology to the industry. As always, the meetings of the SMPTE engineering groups and committees were open to participation from individuals involved in the man-

ufacture, distribution, or use of equipment. Interested parties are always invited to contact SMPTE Headquarters regarding group or committee participation.

NAB '83 proved to be a pleasant surprise for TV engineers and broadcasters interested in new equipment. Besides the updated new hardware on the floor, there were private showings in various hotel suites that added a touch of futuristic mystique to the gadgets projected for next year. Prime among these was an RCA showing, restricted to screened guests, of a CCD camera with good resolution, low-light sensitivity, and no lag.

Eastman Kodak Co. unveiled the concept of Datakode Magnetic Control Surface — a new technology that allows film to communicate with computer-oriented control systems, enabling filmmakers to automate many costly and time-consuming post-production operations.

RCA showed a new component-coding scheme dubbed Super Mac, which uses the IBA-developed Multiplex Analog Component (MAC) digital compression techniques, but adds the capacity to have both chrominance color difference signals on each horizontal line, instead of alternating them from line-to-line as MAC and SECAM do. One skilled observer described the result as being definitely better than straight NTSC.

In the same domain of component coding, the Grass Valley Group fielded their own invitational display of a system using a simultaneous three-channel switcher handling *Y*, *R-Y*, and *B-Y*, or *RGB* signals, and not encoding into NTSC until the point at which the composite signal is put on the air. They mixed signals between two synchronous BVU-800 VTRs, with overlays or chromakeys, and it all looked very good. Both the GVG and RCA exhibits point to an intermediate solution to the all-digital studio.

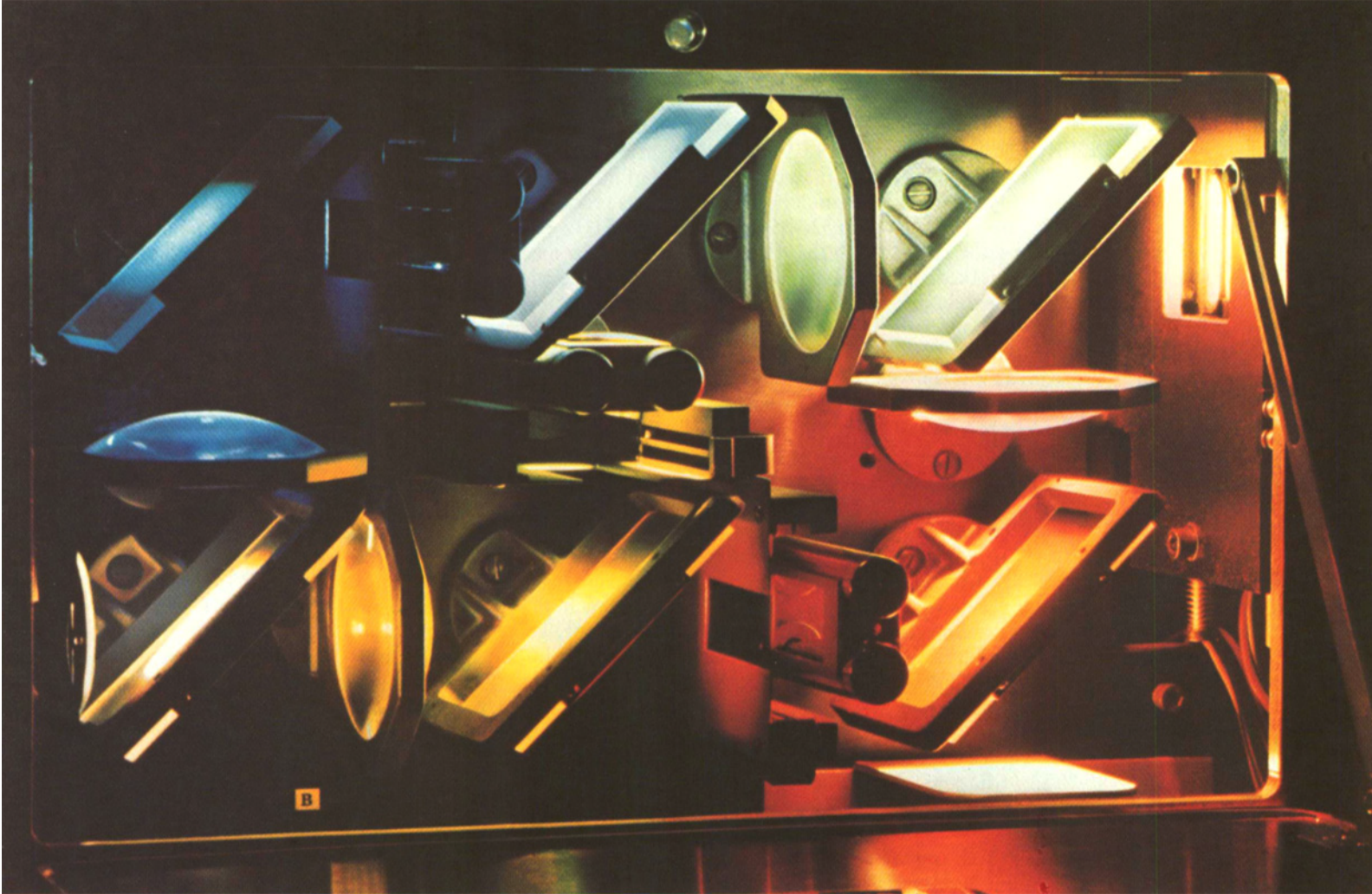
At the Tropicana Hotel, Sony showed an interactive videodisk that provided sound with frozen images. A single disk could hold 1400 still images and five to six hours of audio, or various combinations of more pictures and less sound, down to full motion and normal audio, all controlled by a small computer.

Several suites at the MGM Grand and the Las Vegas Hilton had displays of teletext. Perhaps for the first time anywhere, three different types of teletext were being transmitted simultaneously over three separate TV stations in a single city. KLAS-TV, the local CBS affiliate, was sending out the Extravision service using NABTS in an Alpha Mosaic mode, KVBC was transmitting NBC's Tempo Alpha Geometric mode, and KTNV provided the Keyfax service on the British synchronous teletext standard now called

Photographs by Donna Foster-Roizen



SMPTE booth at NAB '83: (L-R) Alex Aiden, Manager of Engineering, visitors to booth, and Lynne Robinson, Executive Secretary (seated).



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World Teletext.

For those interested in alphanumerics, Quantel/MCI had private showings of CYPHER, a prototype of a very clever character generator that did incredible things, using typeface as a source for up to 8000 fonts.

One of the highlights of the show was high-definition television. Ikegami and Sony were the principal exhibitors of 1125-line systems developed through NHK (The Japanese government-operated broadcasting company). Sony's elaborate exhibit, claimed to be the largest in NAB history, featured the first public showing of engineering evaluation models of the 1-in. high-definition video recorder and 1-in. digital video recorder, including a vision theater. Once inside the Sony exhibit, the NAB attendee was given an audiovisual review of their standard product line, followed by a demonstration of both high-definition television and digital video recording. The HDTV, operating at 1125 lines, 60 fields, with an aspect ratio of 5:3, was shown on a three-tube projector with a 70-in. (diagonal) screen, as well as on special high-resolution color picture tubes.

The Betacam BVP-3, three-tube camera, was shown in a new Plumbicon version, along with several adaptors that allow existing cameras to interface directly to 1/2-in. recorders. Sony repeated its setup of colorful parrots, which proved successful at SMPTE's Technical Conference in November, 1982. A spokesman for Sony noted that the "color and variety

of birds allows attendees to better evaluate the cameras."

Ikegami featured a monitor display of the 3 × 5 aspect ratio picture that attracted a great deal of interest. The high-definition image was produced by an RGB signal with 30-MHz bandwidth. The monitor used a special dot-triad tube with small size phosphor-dots.

The two HDTV demonstrations at NAB used the Fujinon 14× high-definition lens that was first made available three years ago. Applicable to both 1-in. and 1 1/4-in. formats, the lens can resolve 1300 television lines and deliver an MTF in green-red-blue of 90% or better, according to the manufacturer.

At the Fujinon booth, their efforts in high-definition were applied to other areas, including the development of the optical components for a laser telecine system that converts 70-mm film to video or vice-versa.

Bosch Fernseh and Hitachi Denshi demonstrated the 1/4-in. systems at the NAB. Both systems used cobalt tape cassettes similar in appearance to Philips-type audio, with different specifications which may be revised before the products are available for marketing.

Ampex Corp. featured its Type-197, 3/4-in. videocassette, formulated to optimize the performance of Sony BVU recorders. Available in lengths from 10-60 min and in a 20-min mini-cassette, the Ampex 197 results from a blend of the finest broadcast materials and Ampex's high technical

expertise, according to Phil Ritti, Product Manager of Ampex Magnetic Tape Division. The cassette is said to be capable of still frames for up to three hours with no dropout increase or RF loss. Although optimized for Sony BVC, the cassettes have broadcast specifications that make them suitable for all 3/4-in. U-format VCRs.

The Panasonic Co. of Secaucus, N.J., demonstrated its Recam system emphasizing that the system may be used in combination with other formats. Panasonic also introduced two new high-resolution color monitors designed for professional broadcast and teleproduction at the NAB show. Panasonic's 19-in. color monitor has a dot pitch of 0.43 mm, one-third less than conventional CRTs, to provide a resolution of more than 600 lines at the center.

At the RCA exhibit, the various new accessories for Hawkeye ENG cameras and editing systems, included a rather unusual configuration of a multi-deck VTR. Somewhat reminiscent of the RCA quad-cart machine in application, this device, dubbed the TCR 10, had six cassette player decks using the 1/2-in. VHS format. A rack-mounted control unit at the side could program the decks to give instant sequences of recorded tapes for station breaks, commercial spots, or program sequences.

There was certainly no shortage of suppliers, or of innovative handling of alphanumerics in character generators. One of the most visually appealing demonstrations of such devices was at the Thomson Broadcast booth, where their Vidifont Graphics V, with the aid of some new software, could produce a 3-D rotational effect of letters or figures appearing on the screen.

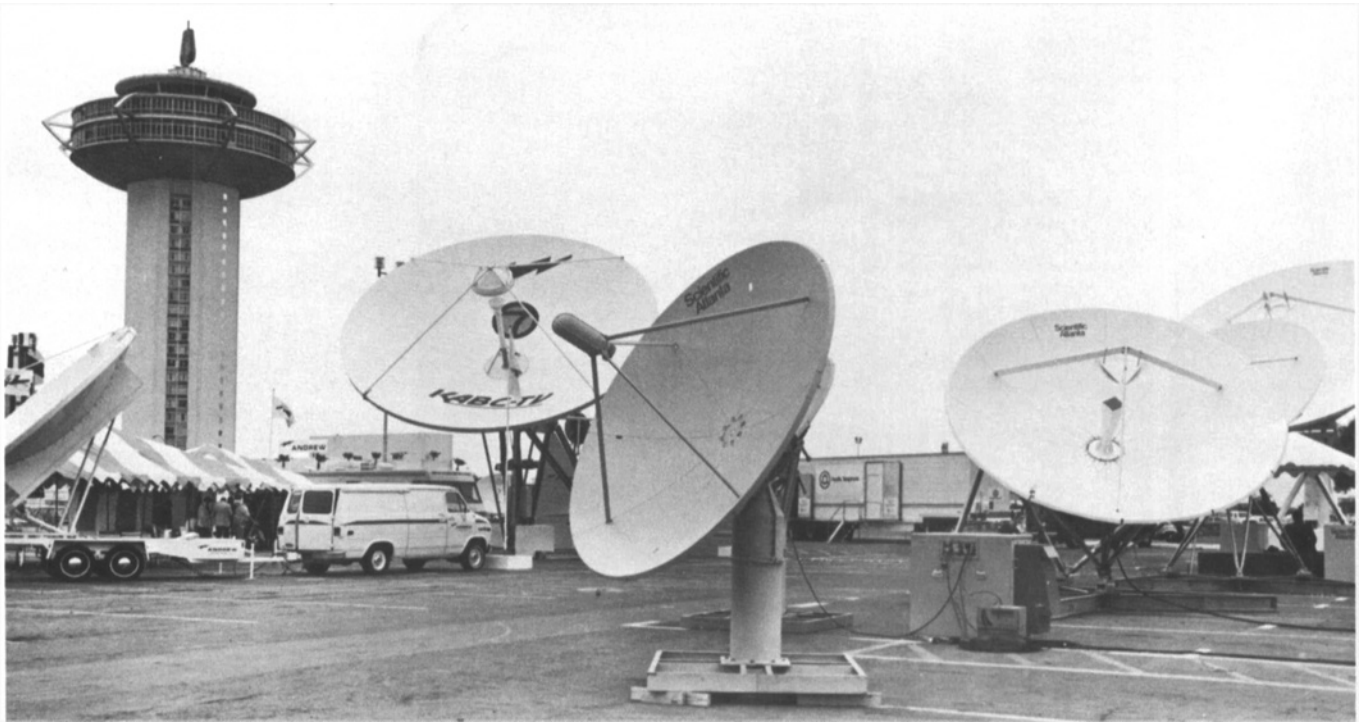
Scientific Atlanta displayed a MAC transmission by satellite, with the image being projected in large-screen form on a GE Talaria Light Value projector. This is also an approach to better NTSC images with an intermediate component-coding technique for high-definition television.

Camcorders

At NAB '83, camcorders were still the most desirable, as well as the most controversial, video product. The range of camcorders now available is greater than ever before. Sony has at least one adherent to its Betacam-format Thomson Broadcast, while RCA has



Visitors to exhibit booths.



Earth stations used in connection with satellite displays at convention.

a few for its VHS Type-M format, used in the Hawkeye. These include the Ampex ARC 10, the Panasonic Recam, and several others.

Fernseh and Hitachi exhibited camera-recorders using the Funai-developed CVC cassette, which uses $\frac{1}{4}$ -in. tape. As previously stated, the latest Bosch/Fernseh version shown at the NAB is called Quartercam. In addition, Bosch has two editing systems to go with the Quartercam, one of which is a very clever approach to field editing. The Quartercam VCR portion is detachable from the camera (as are some of the others). Bosch has built a portable editing console, about the size of a large briefcase, to which two Quartercam VCR units can be attached, thereby being turned into an editing system.

ABC plans to use the equipment for broadcasting the Summer and Winter Olympics in 1984.

There is a chance that the $\frac{1}{4}$ -in. format could still be standardized among those companies going into the manufacture of $\frac{1}{4}$ -in. cassette camcorders. The SMPTE has been asked to consider the possibility of developing a single $\frac{1}{4}$ -in. format.

Digital Video Effects

It almost seems that everything that could possibly be done to a video image has already been done by either the Ampex ADO, the Quantel Mirage, the

NEC/Grass Valley DVE, and a few lesser-known systems. Each year, new software programs emerge, adding another dimension to video image manipulation. This NAB was no exception, with tumbling, turning, zooming, and sandwiched, rolled, squeezed, sphered, and windowed images. In fact, the demonstration tapes produced by a few Grass Valley customers were so spectacular, they appeared on a local news show in San Francisco after NAB, together with other NAB surprises like the CMX 3400 Plus and Aurora 100.

Conclusion

NAB '83 showed some definite trends in the broadcast and post-production field as far as hardware was concerned. Obviously, the impact of camcorders is now of substantial proportions, and many studios are converting or equipping themselves in this fashion to handle ENG and EFP applications more efficiently. Digital video effects are now so well established that they have become a fairly standard part of regular broadcasting, both on the program production side, and in "live" use on the air.

One-in. Type-C helical VTRs could also be categorized this way, and with the wide price range of these recorders, which includes some very economical units, they are now penetrating every segment of the TV market, including the upper end of the CCTV market.

The latest additions to this line, such as the ultra-light Ampex/Nagra VPR5 and the Sony BVH 2500, have added to the extensive capabilities of this format and assure even further widespread use of this equipment.

While high-quality telecines will continue to handle motion-picture film for broadcast purposes, more and more slides and still images will be handled by digital still stores, with instant recall. For convenience, the slides and films may be transferred to magnetic disks or videotape before being put on the air or integrated into a program.

Computer graphics are coming into their own, with a larger number of broadcasters now showing better understanding of its capabilities, more immediate interest in obtaining equipment, and becoming involved with this new technology.

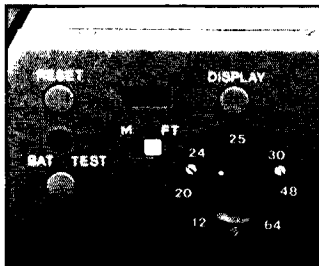
Component coding is starting to appear in various pieces of hardware, and more of it will be coming out this year. The trend is toward an increasing number of manufacturers offering component-coding devices for specific studio functions, such as the switcher from Michael Cox and the titling system from Quanta, both of which work with Hawkeye editing systems in the *Y-I-Q* domain. To all appearances, true digital video recorders are still a long way off, and HDTV will also go through many industry discussions before a system or a standard emerges.



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