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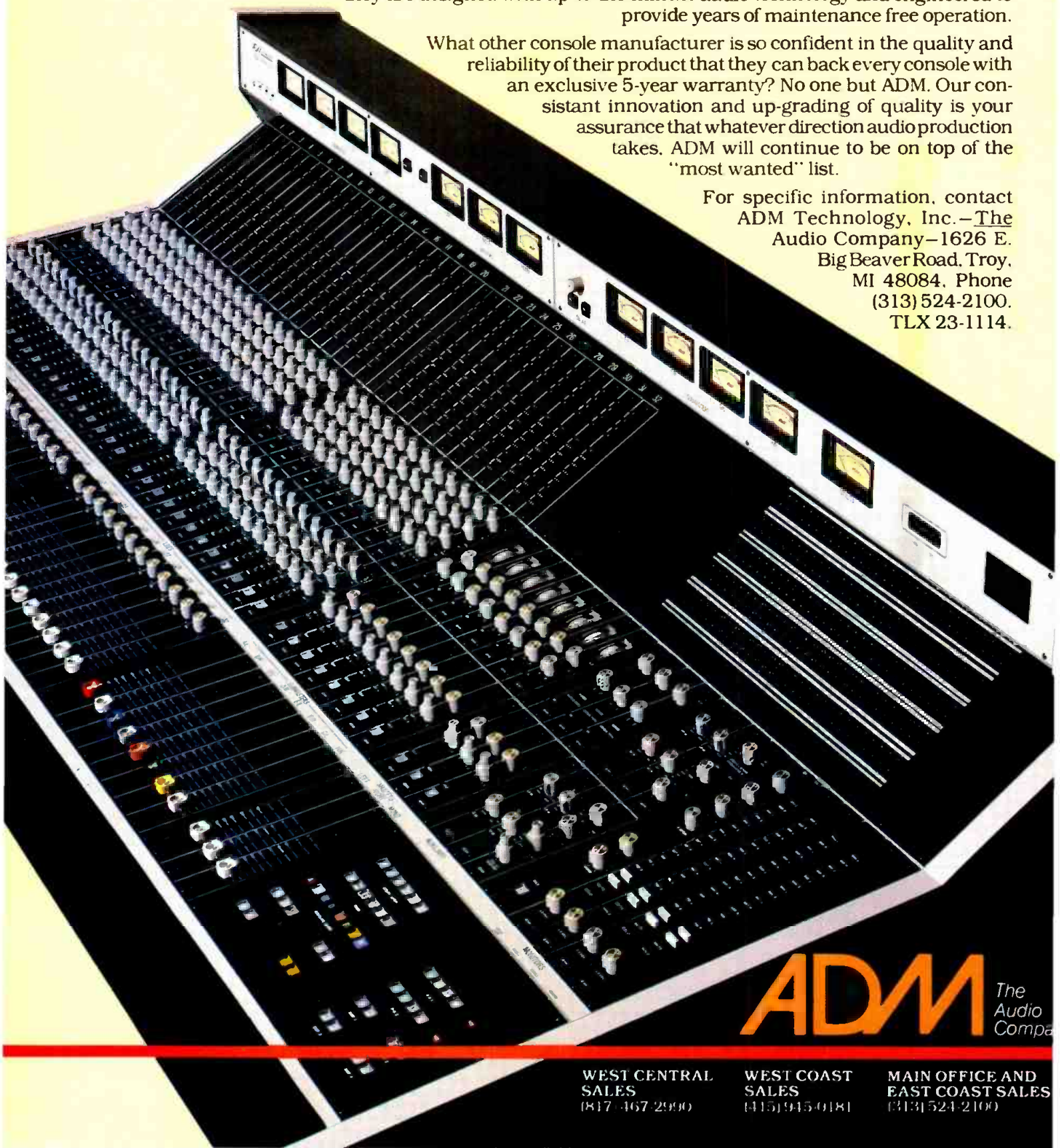

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DECEMBER 1983 VOLUME 19/NUMBER 12

NINTH ANNUAL BEST STATION AND FACILITY DESIGN COMPETITION 43

The best ideas in new studio designs

vote
BALLOT ON PAGE 41

DEPARTMENTS

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Ramko Research Explodes The Reel To Reel Versus Stereo Tape Cartridge Myth!

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MYTH: Tape cartridges do not have the mechanical stability nor precise enough guidance systems to produce truly high quality, wide separation, stereo.

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EDITORIAL

Standards Machinery

Not since the advent of LP recording and color television has the standards-making process been so important to broadcasters and to consumers. Yet there is growing concern that the machinery for setting standards in this country is not adequate for the task. Within a couple of weeks two of the industry's most influential spokesmen addressed the standards issue before two influential technical organizations, the IEEE and the SMPTE. Both speakers, Joe Flaherty of CBS and Julie Barnathan of ABC, warned that in this period of rapidly changing technology, drawing up standards must proceed at full speed.

It would be easy to blame the FCC for the recent fiascos concerning AM stereo and teletext standards, but industry and its standards machinery are also at fault for failing to agree. We see similar problems developing over stereo TV, digital audio, and high definition television, to name a few.

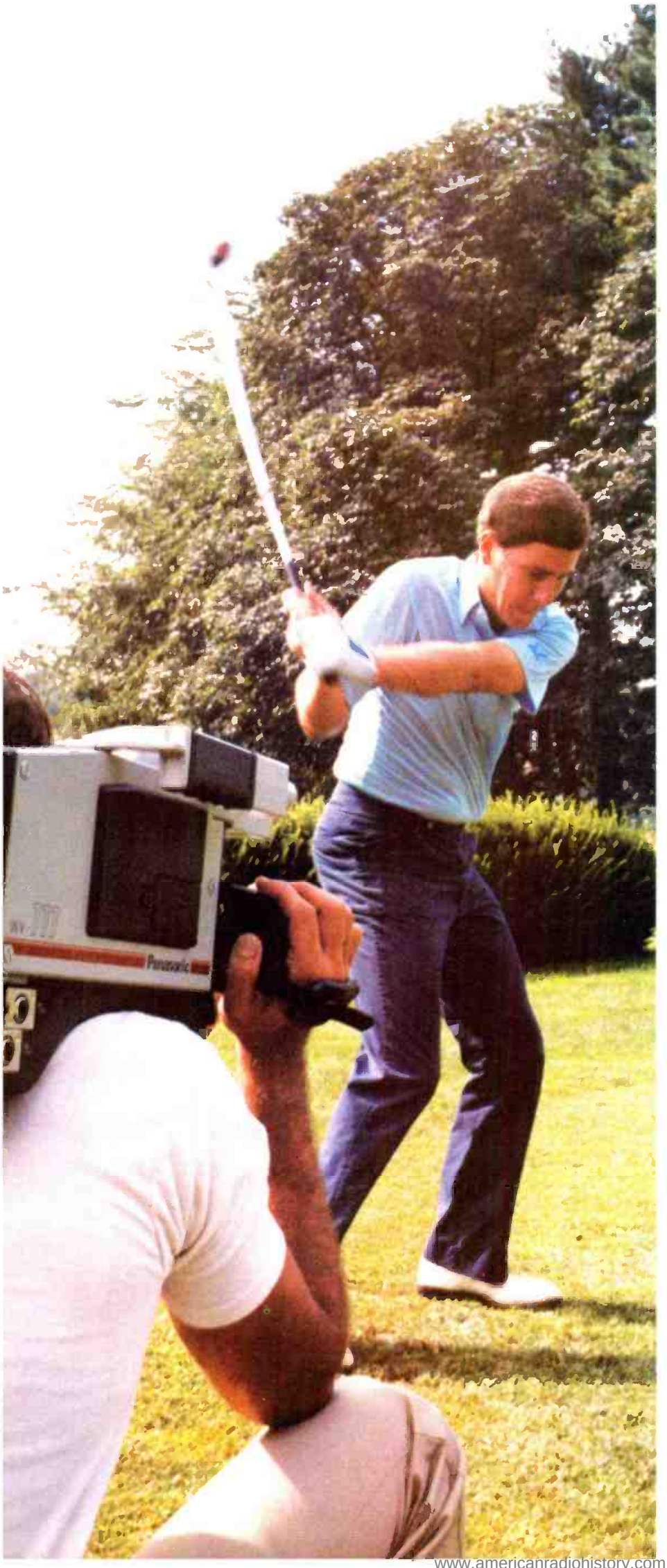
Another problem that requires immediate attention is the weeding away of obsolete and restrictive standards, an undertaking that the FCC is pressing. Here too, the wheels turn slowly—if at all.

As Flaherty pointed out, a standard is an agreement, not an immutable law, and as such can and should be changed. Barnathan reminded his audience that fancy new equipment is only good in the hands of creative people, but lack of standards reduces their efficiency. Both men are leery of so-called marketplace decisions on standards, fearing that they only lead to confusion and delay.

What is to be done? We fully agree that the FCC should clear away obsolete requirements, provided there is some form of communication with industry engineers. Actually, the initiative should come from the industry standards organizations such as SMPTE in consultation with the Commission. The mechanism for this initiative already exists in the form of the Joint Committee for Inter-Society Coordination (JCIC), composed of SMPTE, NAB, NCTA, EIA, and IEEE. (JCIC was responsible for setting up the Advanced Television Systems Committee.)

Along with the clean-up project, it is equally important for the industry to look to the future and establish standards-making machinery that can keep pace with the coming and going of technology. Few efforts are as demanding, complex, and time-consuming as standards work.

But if anyone can streamline the machinery, it is SMPTE. Since its inception back in the early days of filmmaking, SMPTE's most important goal has been standards. With the advent of television, the society continued its vital role. Today at another crucial juncture SMPTE is challenged again. The stakes are high because this country can no longer depend on its technological leadership—competition for that leadership comes from all sides. Implementing standards in a timely manner is a key part of holding the lead.



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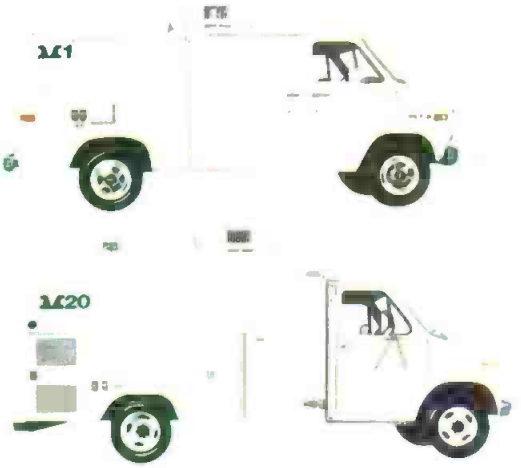

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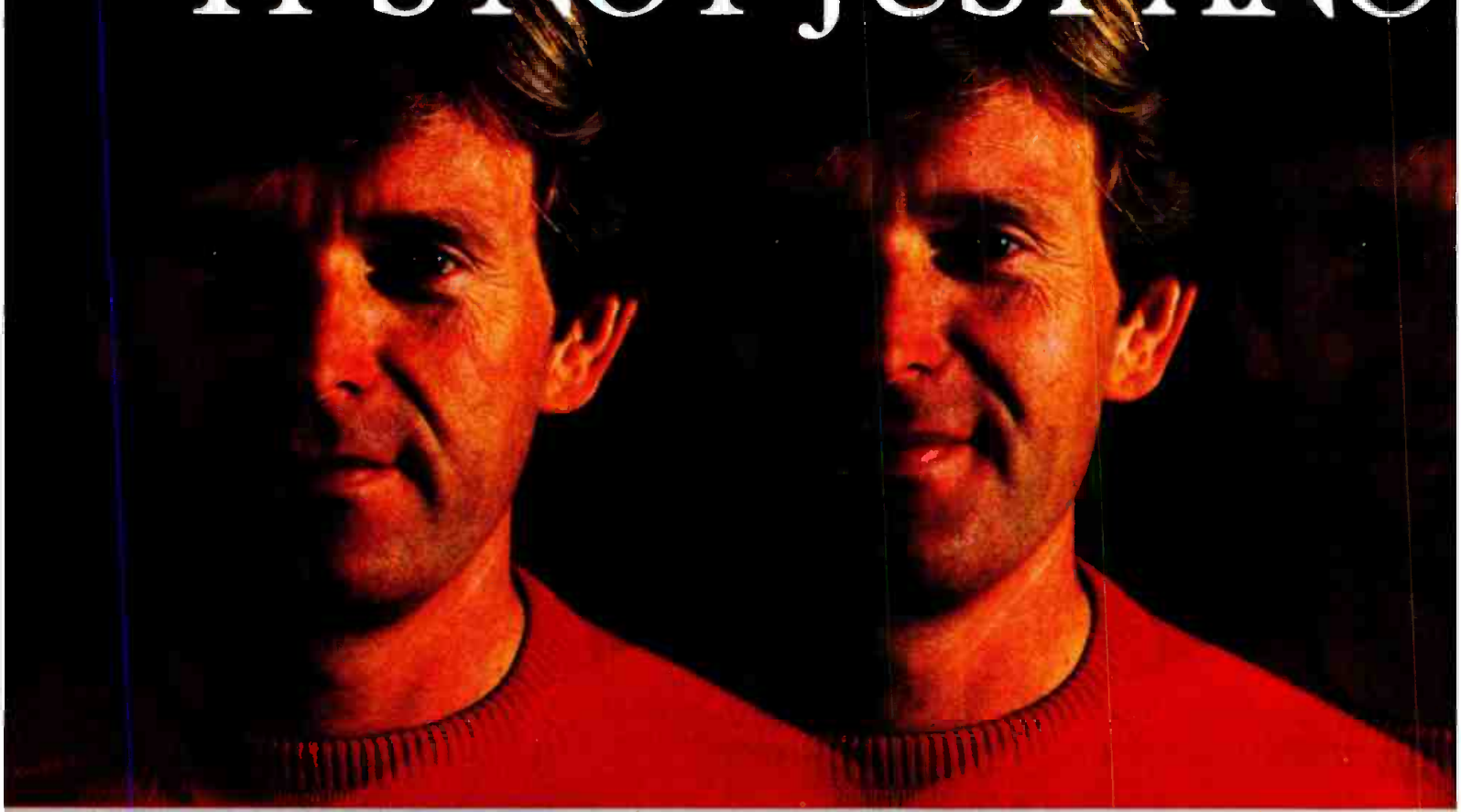

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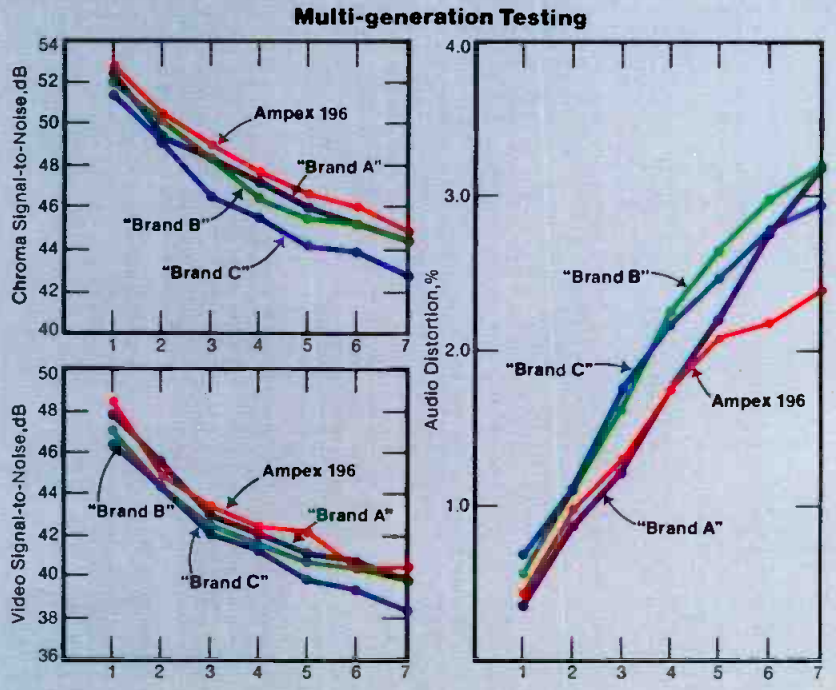

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New Digital Standard Announced at AES

Engineering parameters governing digital audio recording standards have been endorsed by three major broadcast equipment manufacturers and a subsidiary of one. Sony Corp., MCI (a division of Sony America), Willi Studer AG, and Matsushita announced at the 1984 AES convention in New York City that they have all agreed to manufacture according to a new standard referred to as DASH (Digital Audio Stationary Head). The new format combines features of an original format jointly promoted by Sony and Studer with new developments by all three major companies.

In spite of this unifying effort by some of the major manufacturers of multitrack digital audio recorders, there remains a standards conflict with other existing systems. Mitsubishi is committed to continue with its proprietary digital technology because of ongoing success with its X-80 and X-800 digital recorders, which use a format different from DASH. Sony, too, continues with its rotary-head 1610 model, and 3M still makes its multitrack recorder, though it has been less active among broadcasters than other recorder manufacturers.

Still, the Sony/Studer/Matsushita team has extended a concerted effort to develop technologies to enhance the DASH format.

One of the new developments is Matsushita's "thin-film heads," which have been under development for three years. The new heads and connectors will permit tape decks implementing this standard to operate under a format for low-speed recording with increased robustness in signal processing and double density recording. With double density information packing, 48 signal tracks and four auxiliary tracks can produce 48 channels of audio on half-inch tape. DASH also takes into account the AES recommendation for standardization of the 48 kHz sampling frequency.

Another change in the original standard is the adoption of generally accepted tape speeds (i.e., 7.5, 15, and 30 ips). A sampling rate of 48 kHz is necessary to maintain such "round" tape speeds as 30 ips, since at 44.1 kHz the tape must operate at a speed of 27.96 ips. The companies will apply the new parameters to tape decks ranging from two to 48 channels and handling quarter-inch to half-inch tape.

The developers of DASH say the licensing of DASH technology is freely available to any interested manufacturer. Recommended AES/EBU standards for inputs and outputs will be maintained with DASH. Organizations supporting DASH include NHK in Japan, which has 7.5 ips machines already operating according to the new standards.

WBRE Trims Repair Bill by Assigning News Gear

A Wilkes-Barre, PA, television station has discovered that sometimes spending money is the best way to save money. Urged on by chief photographer Charlie Hayes, Jr., in 1980 the station laid out the extra money needed to equip each news photographer with his own camera, car, tape deck, and other equipment. The result, according to Hayes, who administers the program, has been an astounding 90 percent reduction in maintenance and repair costs.

Before the plan went into effect, Hayes recalls, "there were times when we didn't have a deck or a camera that worked." The station pooled its four RCA TK-76s, Sony U-Matic decks, and film gear, with the result that staffers often failed to report damage. Equipment down time was a serious handicap for the news department.

With permanent equipment assignments, Hayes says, the situation has turned around completely. Although the staff wasn't unanimously pleased at the outset, now news crew members take pride in well-kept cameras and cars. The station still pays for any needed repairs, but "peer pressure" is a potent force against equipment abuse.

If a photographer needs a piece of equipment not permanently assigned to him, he must sign for it, and the equipment is inspected on return. In addition, there are occasional spot inspections by station owner David M. Baltimore. Vice president of engineering Charles Baltimore also plays an active role; says Hays, "Our guys are told to assume that Charles Baltimore is hiding behind every bush."

Almost always, the inspections reveal impeccably maintained equipment. The outlay for new equipment—two new TK-76s and Sony BVU-50s, in addition to recently acquired Hawkeyes—has more than paid off for the station, Hayes asserts.

WBRE-TV chief photographer Charlie Hayes (right) checks car, deck, and camera assigned to sports photographer Mark Albrecht. Albrecht's TK-76, the station's oldest, is believed by station to be the first on the air in the world.

Rivera Blasts Proposed 7-Station Rule Repeal

An FCC proposal that could significantly liberalize multiple ownership restrictions has come under fire from the single dissenting commissioner.

Commissioner Henry M. Rivera, speaking before the Texas Association of Broadcasters, charged that the rulemaking "contemplates regulatory and philosophical changes that are far too sweeping, and which carry with them too much potential for harm, for me to support it in good conscience."

The rulemaking, approved by FCC chairman Mark Fowler and commissioners Mimi Dawson and James Quello, asks for comment on several principles until now considered fundamental parts of broadcast regulation. Specifically, the FCC document wonders if, in today's market, encouraging the broadest possible media ownership might not actually limit program diver-

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The digital video people.

sity, rather than promoting it, as has been previously assumed. The commissioners suggest that the rule could act as a deterrent to the development of new networks and could limit the production of new programming by station groups.

In addition, the rulemaking proposes the separation of those ownership issues that involve First Amendment policy and those that involve economic policy. The latter—primarily antitrust considerations—might best be handled by the Justice Department, according to the Commission.

Indicating its inclination toward deleting the seven-station rule, the majority proposed, as an interim step, "significantly" increasing ownership limits, perhaps to 36 radio and 14 television stations.

Rivera rejected the idea that present ownership limitations have discouraged alternative networks, noting, "These rules haven't prevented the formation of 19 radio networks. They also haven't prevented several companies from owning a complement of major market television giving them nearly the same or comparable audience penetration as the network-owned stations."

He added, "I am also disturbed that the Commission showed so little regard for the detrimental effect these proposed rule changes would have upon the ease of entry by newcomers to broadcasting—and upon the diversity that already exists in broadcasting." Elimination of the rules could allow "very large media conglomerates" to "bid up the price of stations in most markets significantly, making entry all but impossible for anyone but them," Rivera warned. Broadcasting's "technical scarcity" and "nearly unique capacity to influence public opinion" make "rigid reliance on the free market . . . extremely hazardous in the sensitive domain of broadcast ownership."

Flaherty Offers Plan for TV Technical Standards

Addressing the Broadcast Technology Symposium of the IEEE, Joseph A. Flaherty, VP of engineering and development for CBS Operations and Engineering, recently called for industry-wide cooperation to develop flexible, timely technical standards for television in the U.S.

"We are today colliding with restrictive and obsolete standards," Flaherty asserted, "and we need a wholesale review of our standards and a reevaluation of their methods of preparation and promulgation."

Flaherty divided television standards into "professional standards," which affect those within the industry, and "mass communication standards," which involve the general public. The former, he said, "should continue to be voluntary standards, promulgated by industry organizations." The industry needs to improve its performance in this area by minimizing the number of standards, streamlining standardization procedures, and considering sunset provisions to avoid obsolescence, Flaherty said.

In the area of mass communications, Flaherty suggested that standards concerned with spectrum allocation and assignment and interference protection should continue to be regulated by the FCC. Those concerning compatibility and minimum quality standards also need at least some regulation, but

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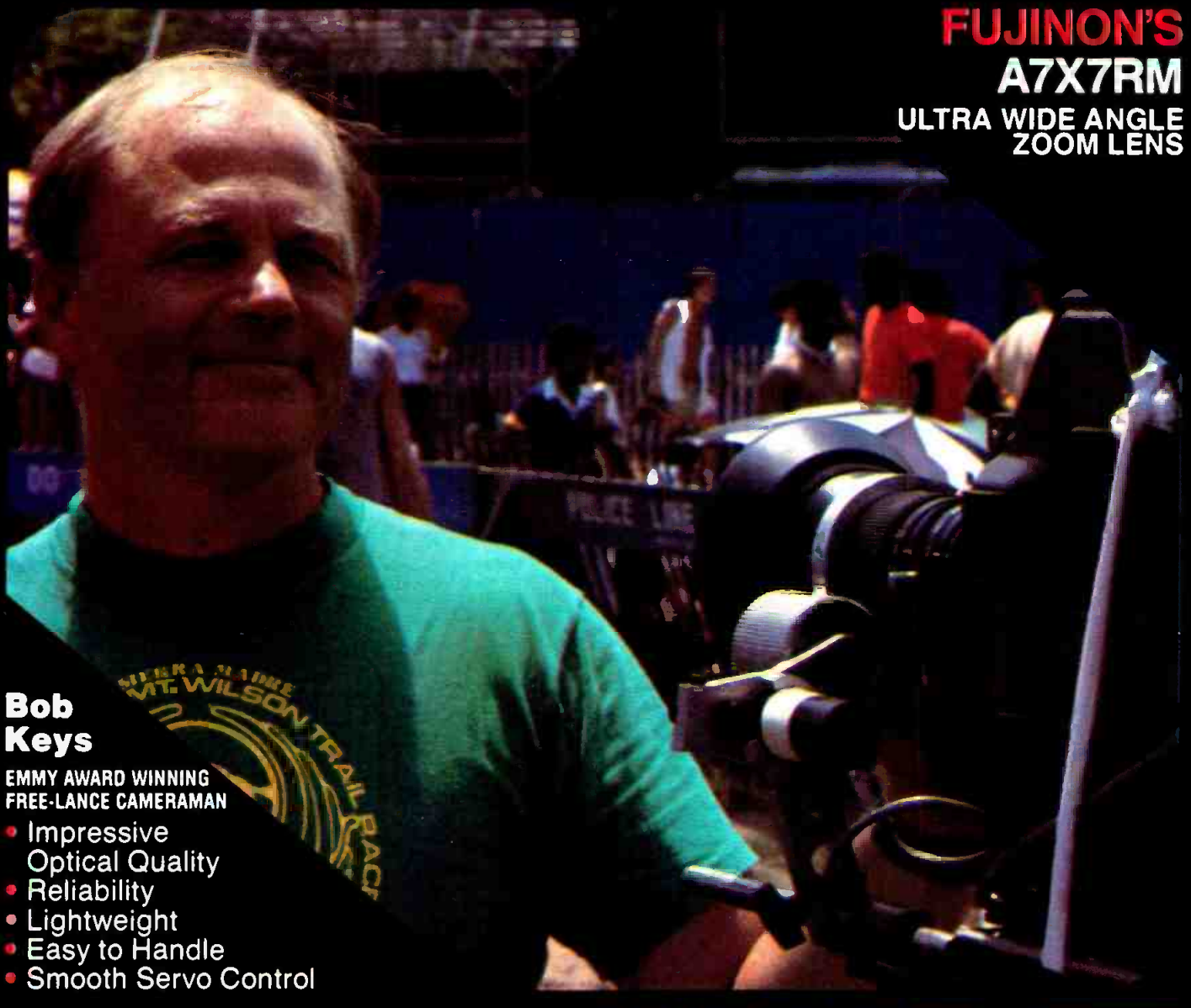

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Flaherty commented, "making the critical choices on these standards is certainly not the unique responsibility of the FCC" and "should be shared with the industry standards organizations."

Those organizations, however, have neglected opportunities to influence the FCC in critical standards-setting actions. Flaherty noted that in two recent areas, AM stereo and teletext, industry committees set up to advise the FCC failed to recommend specific systems.

"Thus, before we complain too bitterly about the failures of the FCC," he told the audience, "we should look for our own record and admit that for many complicated technical, political, and legal reasons, we have failed to generate these critical standards."

To resolve U.S. standards problems, Flaherty proposed "an intensive review of all existing television standards" by the EIA, IEEE, NAB, NCTA, and SMPTE, aimed at recommending which standards should be retained, modified, or dropped; proposing a streamlined method of developing and implementing standards; developing a sunsetting procedure; and determining which standards should come under government regulation. "It is only in this way," he concluded, "that we can achieve a new and effective balance between market forces and technical standards."

Wirth Bill, ACT Filing Charge Kidvid Abuses

Commercial broadcasters came under fire recently from two different sources, each charging inadequate or inappropriate programming for children. Action for Children's Television, the Boston-based advocacy group, filed a complaint with the FCC charging that eight children's programs on commercial TV were in fact program-length product endorsements and should be logged as commercials. The Saturday morning fare cited by ACT included *Monchhichis*, *Pac-Man*, and *Rubik the Amazing Cube* (ABC); *The Biskitts*, *Dungeons and Dragons*, and *Saturday Supercade* (CBS); and *The Shirt Tales* and *Smurfs* (NBC).

ACT also named six children's television specials or miniseries in its filing. The group's president, Peggy Charren, complained, "This is just the tip of the iceberg. . . . What makes matters worse is that most of the products are being advertised on children's television as well, making it hard to distinguish between products and programming." She called the new children's TV season a "disgrace."

On the legislative side, Rep. Timothy D. Wirth (D-CO), chairman of the House Telecommunications Subcommittee, has introduced a bill that would require mandatory children's educational programming. The legislation came in response to a study conducted by the subcommittee that found cartoons outnumbering educational and informational children's shows by two to one on commercial air.

The bill would direct the FCC to institute a minimum standard for educational and informational programming aimed at children, and to review the records of commercial television stations every four years to insure compliance. The proposal was quickly blasted by NAB senior vice president for research and planning John Abel, who countered that commercial television already offers an adequate level of children's shows.

NTSC-Compatible HDTV DBS Scheme Proposed

The CBS Technology Center in Stamford, CT, has developed a high-definition TV broadcast system, for use with DBS transmission, that is compatible with present NTSC receivers. The system was described to the recent Broadcast Symposium of the IEEE in a paper written by Renville H. McMann, VP, advanced television; Al Goldberg, associate director, advanced television; and John Rossi, manager, digital television development.

The broadcasts would use two 24 MHz satellite channels, one carrying a compatible, enhanced 525-line signal with a 4:3 aspect ratio that could be received by standard sets, and the other carrying an augmentation signal that would combine with the first to form a 1050-line picture with a 5:3 aspect ratio. The signals will consist of time-multiplexed component video, with time compression of the two color difference signals three times that of luminance, and digital audio time-multiplexed with the video.

Reception of the image would require a two-channel receiver, which would display full HDTV quality in the center and interpolated 1050-line quality on the far left and right sides. At least four, and possibly five, digital audio signals may be transmitted with the picture. The receiver would not require expensive field or frame memories, although frame memories and progressive scanning could be used to increase the performance of second-generation receivers. Signal sources could include "production standard" 1125-line HDTV cameras and standards converters, telecine chains, and perhaps 1050-line cameras.

The announcement fits in with CBS's original DBS proposal, which envisioned an HDTV system. The network has not as yet taken any steps toward actually building a system, however. According to a spokesperson, CBS's license, granted earlier this year by the FCC, is still active.

NRBA Show Grows in Stature and Attendance

The 1983 National Radio Broadcasters Association's annual meeting was held this year in New Orleans on October 3-5 and, to the surprise of many, the proceedings were roundly proclaimed to have been a success. Total attendance figures at this year's convention were tallied at 4500, up from 4200 at last year's Reno show. Though the figure may not seem significant, almost all of the exhibitors stated that the attendees were attractive customers and that, in general, the 1983 convention provided "quality traffic" at the exhibits.

Increased attendance was not the only positive factor supporting the New Orleans confab. In fact, many broadcasters and equipment manufacturers chose the NRBA convention as the venue for the release of important information concerning the industry. Some broadcasters announced format changes at the show and many new programming services were being offered, while equipment manufacturers chose New Orleans as the proper place to introduce new products.

One of the most radical shifts announced was the change of Broad Street Communications' successful WGSO from news/talk to new call letters, WQUE, and to a new format,

Contemporary Hit radio. By January the station will be broadcasting in AM stereo using the Kahn system.

Among the exhibitors, Harris introduced the 12-channel version of its popular Medalist console, while Nautel Maine unveiled plans to move much of its manufacturing operation for solid-state transmitters from Canada to the United States. Capitol Magnetics introduced its new Audiopak AA-4 cart with a new tape formulation at the NRBA exhibit. Queried as to their reasons for putting such stock in a small show like the NRBA, most manufacturers were positive in their responses.

Dan Wilcox of Nautel said, "I come to the NRBA because it reinforces our presence in the American radio market." Larry Cervon of Broadcast Electronics likes the NRBA because, he explains, "Right now AM stereo is one of the hottest issues in radio and it's the biggest story at this convention. This is a good place to keep pace with the action in that market."

Reflecting on the overall quality of the NRBA convention, Gene Jaeger of Harris Broadcast stated, "We like this show. We think it's necessary for the radio people to have a separate show because it's too easy for radio to get lost at the NAB convention, where TV is dominant. We don't book many sales here, but we get a lot of useful leads and we have a forum that is smaller, more concentrated, and which gives us more time to explain our products, helping us in the future."

Engineering and business interests were well served at the show, with many engineering and sales sessions well attended. The most important isues being addressed in the technical and marketing sessions were those concerning SCA, AM stereo, and Docket 80-90. Sessions dealing with satellite hardware and programming possibilities also drew respectable crowds.

AES Switches Anaheim Convention to Conference

Originally scheduled to be the host of the seventy-sixth AES exhibitors' convention, the Anaheim Convention Center will instead be the location for the second AES Technical Conference. The conference theme will be the "Art and Science of Recording." Exhibitors will be limited to two booths apiece, and equipment displayed will reflect the theme.

According to Don Plunkett, executive director of the AES, "The recent changes come as a result of an overall policy restructuring by the AES Board of Governors, the Convention Policy Committee, and the Exhibitors Committee. The convention/conference structure has been established to last for the next five years, through 1989."

In a condensed form, AES conventions and conferences will take place in the following manner: there will be two conventions per year, one in North America and one outside North America; two technical conferences per year are allowed, bearing the same geographical restrictions as the conventions; each technical conference will adhere to a specific engineering theme, with all equipment exhibits conforming to that theme.

The next convention is the seventy-fifth, to be held in Paris on March 27, 1984, followed by the second AES Conference in Anaheim. The seventy-sixth convention will take place in New York in September, and the Australian conference, the third overall, occurs in Melbourne in the fall of 1984.

North American Broadcast Associations Meet

Several resolutions, ranging from support of local broadcast services to disapproval of UNESCO's New World Information Order, which could change who controls a nation's news, have been passed by a coalition of the Canadian Association of Broadcasters, the CIRT (the Mexican broadcasting association), and the NAB.

Besides these two measures, the associations agreed to continue their cooperative efforts to assure prompt handling of increases for daytime-only and Class IV AM stations and will press for no further reassignments of the broadcasting spectrum to land-mobile radio operations.

On the issue of cable, all said that cable systems should carry conventional broadcasting stations, observe program exclusivity arrangements, and give proper compensation for program use. Also, the three nations should have reciprocal arrangements for program rights payments, and private broadcasters should oppose performing rights payments for sound recordings that are broadcast. Each group affirmed the Inter-American Association of Broadcasters' resolution denouncing Cuban and Nicaraguan radio interference.

AM Stereo to Debut in '84 Buicks, Chryslers

Both Buick and Chrysler plan to offer AM stereo receivers in their 1984 product lines.

The Buick announcement, thought to be the first by any foreign or domestic auto manufacturer, states that "selected 1984 models" will have Delco AM stereo systems. According to Delco GM Bob Schultz, Delco's units will employ the Motorola C-QUAM decoder IC, based on Delco's seven-month test of available AM stereo systems (see *BM/E*, January 1983, "Motorola AM Stereo Gets Delco's Nod for GM Cars," p. 12). Delco devoted the equivalent of 60 person-months of engineering work to the evaluation of AM stereo systems, selecting the C-QUAM circuit as "offering the best value to the buyer of GM vehicles," according to Schultz.

According to Motorola, Chrysler will also use the C-QUAM system in the radios it builds for its cars and trucks. Over 80 percent of Chrysler's domestic autos have radios as standard equipment.

Competition Heats Up in Digital Receiver Market

It is unlikely that NBC, CBS, ABC, and RKO realized the backlog situation that would arise when they all chose, almost simultaneously, to go with the Scientific-Atlanta digital audio system for satellite distribution of their network radio programming. To date (late September) S-A had received purchase orders (and accompanying nonrefundable deposits) for 1485 receiver systems, and had shipped 1200. There is currently an eight-week backlog from the time an order is placed, and though S-A is "trying to accommodate stations with urgent priorities" (such as impending network conversion from land lines), some stations are reporting they will be unable to get a digital receiver in time.

For the remaining 1000 or so affili-

ates of the four radio networks who have not yet placed orders for digital satellite receivers, there is a new alternative—a system from Comtech, which has succeeded in cracking the S-A digital transmission code and is now offering a digital audio receiver and decoder with off-the-shelf deliveries beginning in November. The system is being distributed by Allied Broadcast. The basic DART-384 digital audio receiver costs $6995 (excluding channel modules), and offers "3 dB carrier-to-noise improvement compared to other systems," according to Comtech.

Turner's SNC Purchase Ends Cable News War

With its $25 million purchase of rival Satellite News Channels, Turner Broadcasting System has eliminated, possibly for good, all competition for its twin services, Cable News Network and CNN Headline News. The deal, which still faces Justice Department scrutiny, shut down SNC operations late in October and stipulated that neither ABC Video Enterprises nor Westinghouse Broadcasting and Cable, SNC's two principals, would reenter the cable news business for at least three years.

The agreement ended litigation on both sides. Turner had taken SNC and Group W Cable to court last March on an antitrust charge, and Westinghouse has countered with a charge of unfair business practices.

The $25 million price tag covers none of the actual assets or operations of SNC, which Turner will not receive. Cable systems that had carried SNC will be offered the option to add CNN in its place; systems that were carrying both CNN and SNC will be offered CNN Headline News. All told, CNN could add 1.5 million subscribers and CNN Headline News could double its coverage, with an additional five million homes.

Both systems had been losing money from their outsets, and Turner projected losses in the neighborhood of $5 million and $10 million, respectively, for CNN and CNN Headline News. TBS, however, is profitable, largely because of the success of superstation WTBS.

With SNC out of the way, some observers say the two TBS services will be able to raise ad rates, bringing

profitability closer. Also, the wide distribution of the two services will make it harder for any future competitor to gain a foothold in the cable news business.

Celwave Acquires Phelps Communications Business

Phelps Dodge Industries, hit hard by recent strikes, has agreed to sell its telephone cable, antenna, and broadcast products business to a newly formed company, Celwave Technologies, Inc. The price for the deal is reported at over $45 million; Phelps will retain accounts receivable and some liabilities of the business, worth about $10 million net.

The former Phelps Dodge Communications Co. plants in Marlboro, NJ, and Phoenix, AZ, will be operated by Celwave RF, Inc., and will continue to manufacture antennas and related products for the land mobile radio equipment and broadcast markets. A plant in Hillerod, Denmark, making similar products for the European market will be operated by Celwave Denmark.

John S. Gailey is board chairman and CEO of the new company and John E. Peterson is president and COO. Both are principal owners of the company, along with Frank M. Drendel of M/A-COM, Inc., E.F. Hutton, and other private investors. Celwave expects to move its corporate headquarters from Greenwich, CT, to Claremont, NC, by the end of this year.

Correction

Please note the following corrections to our story on Broadway Video in the October issue (p. 72). First, Broadway did not actually create an effects package for the 1984 Olympics but, rather, provided access to its Mirage system for a test run of new shape programs developed by ABC staff programmers prior to the delivery of their own hardware. Second, the only collaboration between Broadway Video and Soundworkshop was for the design and implementation of a video interface module for the Soundworkshop Series 30 and Series 40 consoles. Third, the audio mixer pictured on page 73 is a Soundworkshop Logex 8.

Fourth, as already noted in the story on digital interfaces in the November issue, the name of the organization responsible for Savant is Robert Lund Associates, New York City.

NEWS BRIEFS

In a recent Torbet Radio survey, 45 percent of radio station managers queried reported that their **news departments make money** for them. International news ranks as their top listener draw, but it occupies only 11 percent of their newscasts; half is local news . . . .Satellite Television's Richard Bodman predicts **DBS services** could garner 30 to 40 million subscribers "easily" . . . .**Cable penetration** is now 39.3 percent, according to the latest Nielsen estimate. . . .The FCC has proposed that cable come under the same **EEO requirements** as apply to broadcasters . . . .The NCTA has endorsed the National Captioning Institute's push for more **closed captioning** of cable programming.

The NAB has given its approval to a recently passed bill authorizing **broadcasts to Cuba.** The organization stressed that the services "must comply with Voice of America standards, operate on the VOA frequency. . .to ensure the least likely possibility of retaliatory interference". . . .The **Society of Broadcast Engineers** will retain its original name. A clear majority of the membership rejected a proposed change to Society of Broadcast and Communication Engineers.

John Martin, formerly VP of ABC Sports, has become president of **Ohlmeyer Communications Co**. . . .The **Corporation for Public Broadcasting** has reelected Edward Pfister president. . . .Lou Adler of WOR replaces John Spain, WBRZ-TV, as **RTNDA** president. . . .**SMPTE** has elected the following new fellows: John L. Baptista, Bernard L. Kickens, Leo Diner, Joseph Flaherty, Sr., Ronald N. Haig, Thomas E. Mehrens, Michael J. Milne-Smith, Kerns H. Powers, John P. Pytlak, Donald C. Rogers, Charles A. Steinberg, Michael J. Strong, Hirozo Ueda, and Howard E. Wilkinson.

Tele-Communications has acquired **Liberty Communications,** a cable system with 210,000 subscribers. Liberty sold a total of five cable systems as well as **KEZI-TV,** Eugene, OR . . . .CBS will sell **WEEI-AM,** Boston, to Helen Broadcasting and pick up Metromedia's **KRLD,** Dallas. . . . Meredith has sold **WOW-AM** and **KEZO-FM,** Omaha, to Omaha Great Empire Broadcasting and Albimar Communications, respectively. . . . Behan Broadcasting has bought **KWFM,** Tucson, from Sandusky Newspapers for $3 million plus $1.2 million on a non-complete.

Four **public broadcast programs** have received Emmys, one for WNET and two produced with CPB funds . . . .**Walter Cronkite** has received the NRBA's Golden Radio Award . . . .**WFMT** has won its second Special Armstrong Award for engineering and technical achievement . . . . Amperex has honored Dr. N.V. Rao from its imaging products group for the **invention of the diode gun.** His patent, applied for in 1977, was recently granted. . . .The Videotape Production Association has given its 1983 **Monitor Award** for engineering achievement to Lexicon for contributions to digital processing.

NATPE's 1984 conference will run from February 9 through 14 in San Francisco. . . .The annual **Computer Graphics Conference** will be in Miami Beach on March 28 to 30. . . . NAB has released a summary of the results of EIA's **stereo TV sound tests.** System selection will be this month.

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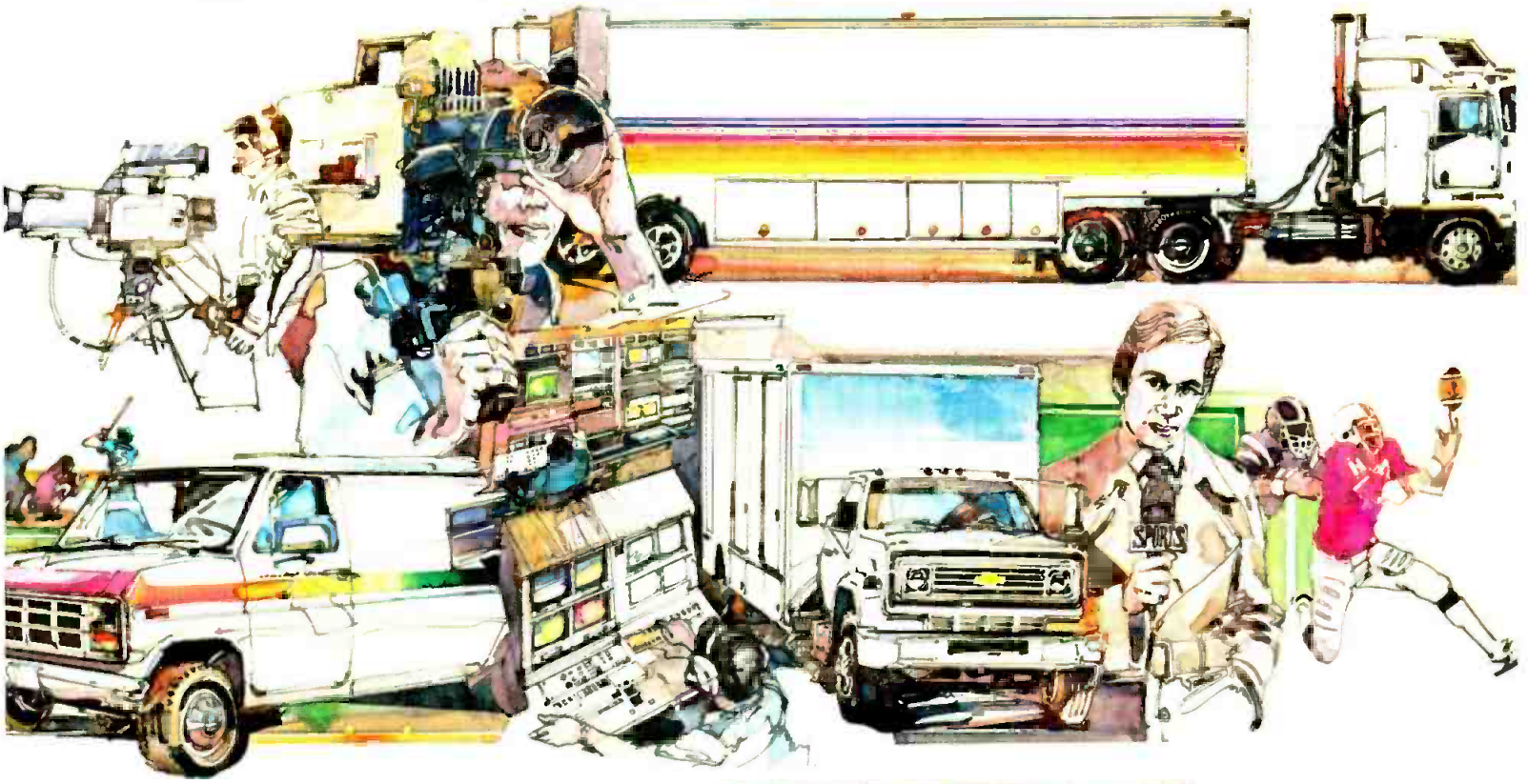

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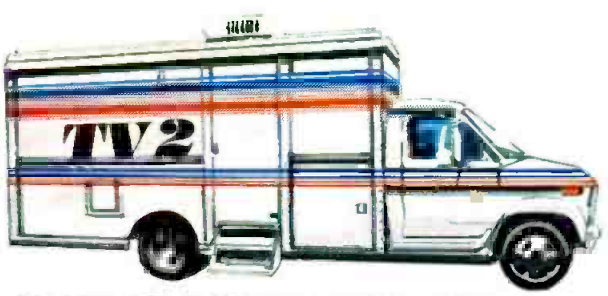

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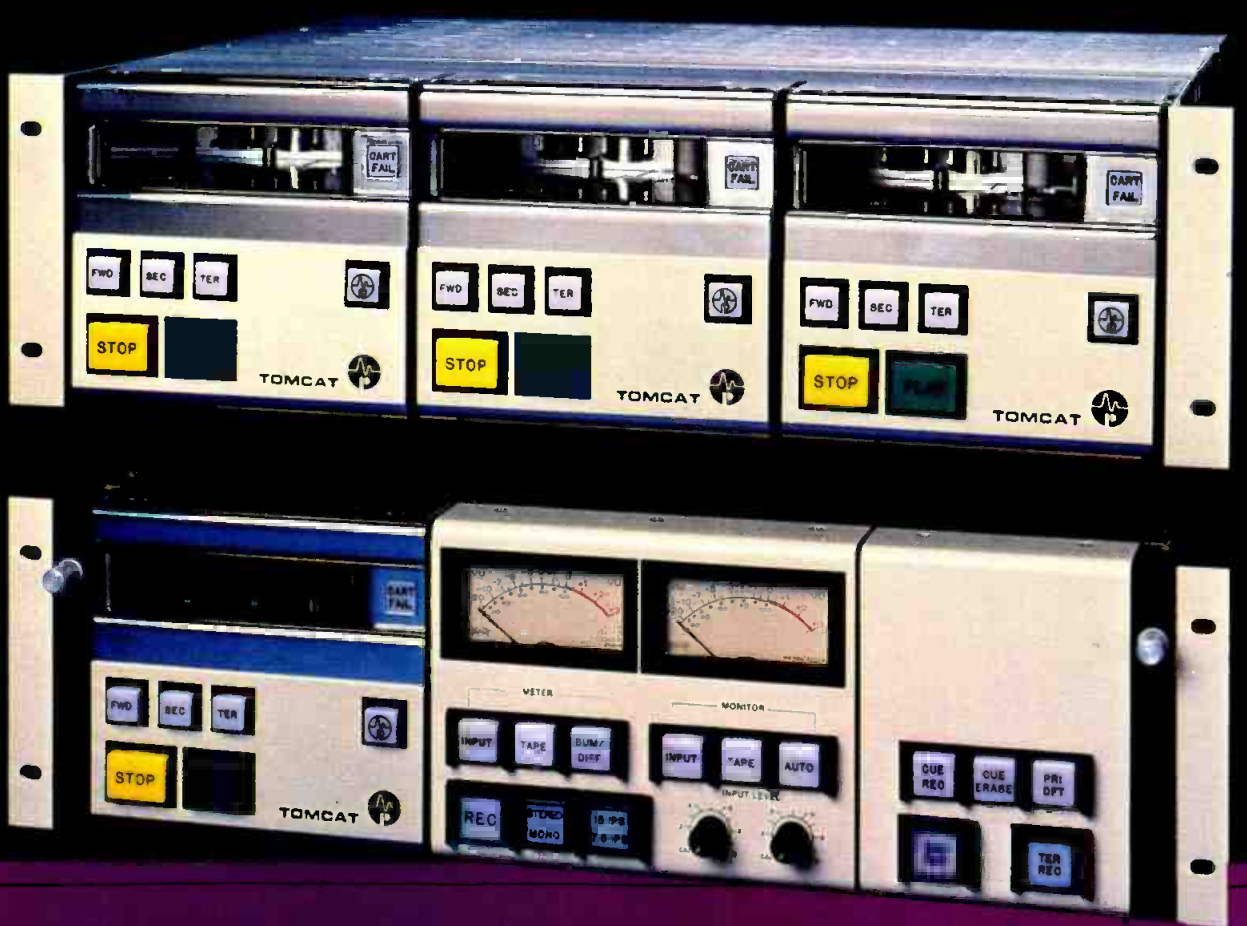

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Programming Conference Debates Radio's Future

By John Storm Roberts
Special Assignments Editor

It is no secret that the winds of change are whistling uncomfortably through the offices of the nation's program directors. The disarray of the album-oriented rock format, the growth of Top-40-type programming whose parameters are by no means clear, MTV looming Godzilla-like over the ratings, news departments rocking perilously in the wake of deregulation—where is a poor PD to turn for guidance?

As far as this year's NAB Radio Programming Conference was concerned, the answer was the NAB-commissioned report, *Radio W.A.R.S.—How to Survive in the '80s*. Carried out by Reymer and Gersin Associates, a Michigan research and consulting company, this provided the topic of the first general session, material for most of the clinics and fuel for a great deal of criticism. What it did not provide was much comfort for confused program directors who feel that the whole formatting issue is getting out of hand.

The stated purpose of the report was "to find out what makes listeners 'tick' . . . what they need and want out of radio," at a time when an ever-increasing number of stations is going after the same demographics, when AOR seems to be in disarray, and when constant crossover programming seems to suggest that the very formats themselves no longer correspond to any objective reality about listener tastes.

In its search for the future, *Radio W.A.R.S.* asked 1300 radio listeners in 13 of the top 75 radio markets questions designed to find out what lies behind their listening choices. The research included such matters as the listeners' image of themselves in relation to radio, as well as matters like their views on chatty DJs. The result, unveiled in San Francisco, aims to privide an accurate portrait of the audiences for nine major formats: Adult Contemporary, AOR, Beautiful Music, CHR, Country, Full-Service, News/Talk, Nostalgia and Urban.

Put briefly, Reymer and Gersin's computer divided each format into at least three—and in the case of AOR, six—groups of listeners, many of them with highly conflicting tastes in DJs, music/speech ratio, and even types of music. As an example, out of the six different segments in the AOR audience 13 percent of the total sample want heavy and hard rock and a lot of talk, while the "plugged-in smarts" want trendy music and an antiestablishment image.

While it might seem that this further fragmentation could lead to more formats, one of the more interesting implications of the survey's findings is that in several cases, new profiles could appeal to segments of more than one format, effectively sketching out possible new directions. This is particularly true of some areas of the AOR and CHR, but also applies to Beautiful Music, Nostalgia, and even to Country Music formats.

Radio W.A.R.S. also came up with some interesting information about listener attitudes. One of the more surprising items was the discovery that Beautiful Music format fans are quite as emotionally involved with their ra-

continued on page 29

Ask the Experts . . .

What do leading program consultants have to say about the future of the radio industry? BM/E asked several at the recent San Francisco RPC.

Chet Tart
Blair Radio

"Technology is going to be the future of radio. With cable radio and the satellite, I think there's a whole new horizon out there. Radio's going to have to do something totally different—something to catch up with the technology, computers and digital recordings, things like Trans Star.

"I also think AM is on the threshold of something new and exciting. We've done the music, we've done the jingles, we've done the DJs, we've done this format and that format. I think people are experimenting with ideas now. I'm looking forward to that."

continued on next page

Ask the Experts . . .

Joe Capobianco
Cross Country Communications

"There will need to be less of an emphasis on things like rotation. That really isn't the big picture. There has to be some kind of vision, or at least an attempt to look at things more globally in each individual market."

Kent Burkhart
Burkhart/Abrams/ Michael/Douglas

"Looking at the next year, we believe that the market shares per format have generally stabilized for Adult Contemporary, for Country, for album rock, for urban, news and the so-called talk stations. We see a continued decline in what one might call the old-fashioned, middle-of-the-road stations, and an increase in Contemporary Hit Radio."

"With all the Adult Contemporary stations that there are, I think we're going to get overblown with AC stations, most of which will go out of business. I also see a good many Urban Contemporary or black stations falling by the wayside.

"I think the older adult market—35-64 or 45-64—is where the real growth is going to be in the next five or so years. This is an audience that's got money to spend! Talk radio gets them, news radio gets them, a certain amount of music radio gets them—not just the nostalgia format, but good pop-adult music."

Dean Landsman
Landsman Media

Jim Cameron
Cameron Communications

"I'm looking forward to the development of young-adult talk. I honestly believe there's a sincere desire for information, news, credible talk, among young people. And they are not getting it from their news stations. So if a station can talk to the issues that affect their lives in a conversational, relatable style, it's going to work. I'm looking to see an AM station with a news-net affiliation go with it, and it will be the next hot format."

"I believe album rock is a diminishing format because its core groups have all either broken up or said they are going to break up, and there are no new artists for the people who are heavily into AOR. Besides, the age group available for AOR is diminishing.

"That leads us to my new concept of eclectic-oriented rock, EOR, which is a replenishing format because it is dealing with the most well-produced music from all formats. And it is dealing with tremendously positive demographics—the 25-to-40-year-olds, who make up the biggest group in the country, the group the advertisers are most looking for, and a group that my research indicates feels left out in the cold."

John Sebastian
EOR Inc.

continued from page 27

dio stations as other groups. Moreover, the report found a close parallel between the attitudes of certain Nostalgia radio buffs and segments of the AOR audience. In the report's words, "Nostalgia fans *think* a lot like AOR fans! Like AOR fans, they think they know more about music than the average person, they are opinionated about music, and they are about as equally interested in *performers* as in *songs*." By contrast, and perhaps equally unexpectedly, the report claims that Nostalgia listeners are extremely *unlike* Beautiful Music fans.

Having described the 36 types of listeners identified by the Reymer and Gersin computer, *Radio W.A.R.S.* goes on to suggest promotional pitches that might suit them.

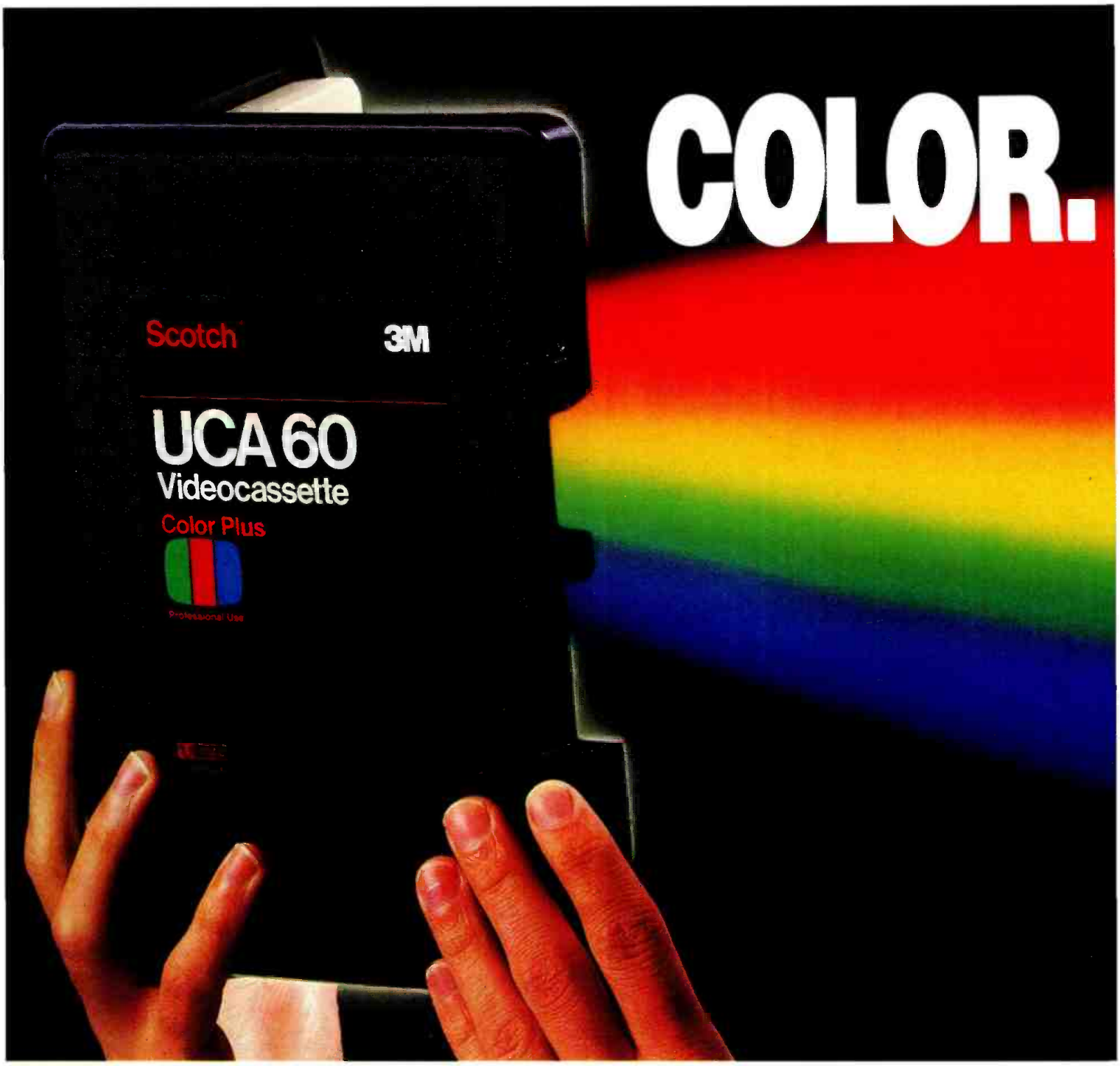
In the various format clinics that took up much of the daytime hours of the RPC, *Radio W.A.R.S.* came under attack on a multitude of grounds. Among them was the complaint that the Country Music research totally ignored the medium and small markets that comprise most of the format's strength, and that the conclusions on News/Talk were essentially based on the views of three listeners in each of 10 markets.

Interestingly, little attention was paid to the major objection that the research focused on reaction to existing formats, rather than trying to find out what kind of radio the sample would ideally prefer. And equally little attention was focused on the fact that intelligent use of the conclusions in the report might lead enterprising PDs to come up with creative new approaches to programming, cutting across existing frontiers.

MTV also came in for a good deal of attention in San Francisco, both in panels and as the subject of a research project reported by Coleman Research, of Dallas, TX. On this issue, signals were mixed. The research evidence was essentially that MTV is not a flash in the pan, and appears to present more of a threat to conventional TV than to radio. While teenage MTV viewers certainly rearrange their radio listening, they do not seem to do less of it, and MTV also helps familiarize them with new groups. Yet the collective gut feeling of most of the RPC participants seemed to be that—research or no research—MTV *has* to be bad news for radio programming, somehow or other.

Another set of sessions suggested that the news for radio news itself may not be as bad as many have feared, post-deregulation. The general conclusion of three sessions on the subject was that too many news departments do a terrible job. RKO news anchor Gil Gross in particular spelled out a list of sins, including the wide-spread use of journalese instead of English and a senseless passion for high story counts and actuality-tape reporting, however meaningless.

But in a session on networks, NBC's Jim Farley quoted research showing that, while only 30 percent of PDs consider news important, 80 percent of listeners (including 77 percent of the 12 to 24 demographic) do so, and, in another session, NBC's Jerry Nachman concluded that well-done news, addressed to a particular audience in language the audience will understand, is certain to be a stabilizing factor during rapid format changes. **BM/E**



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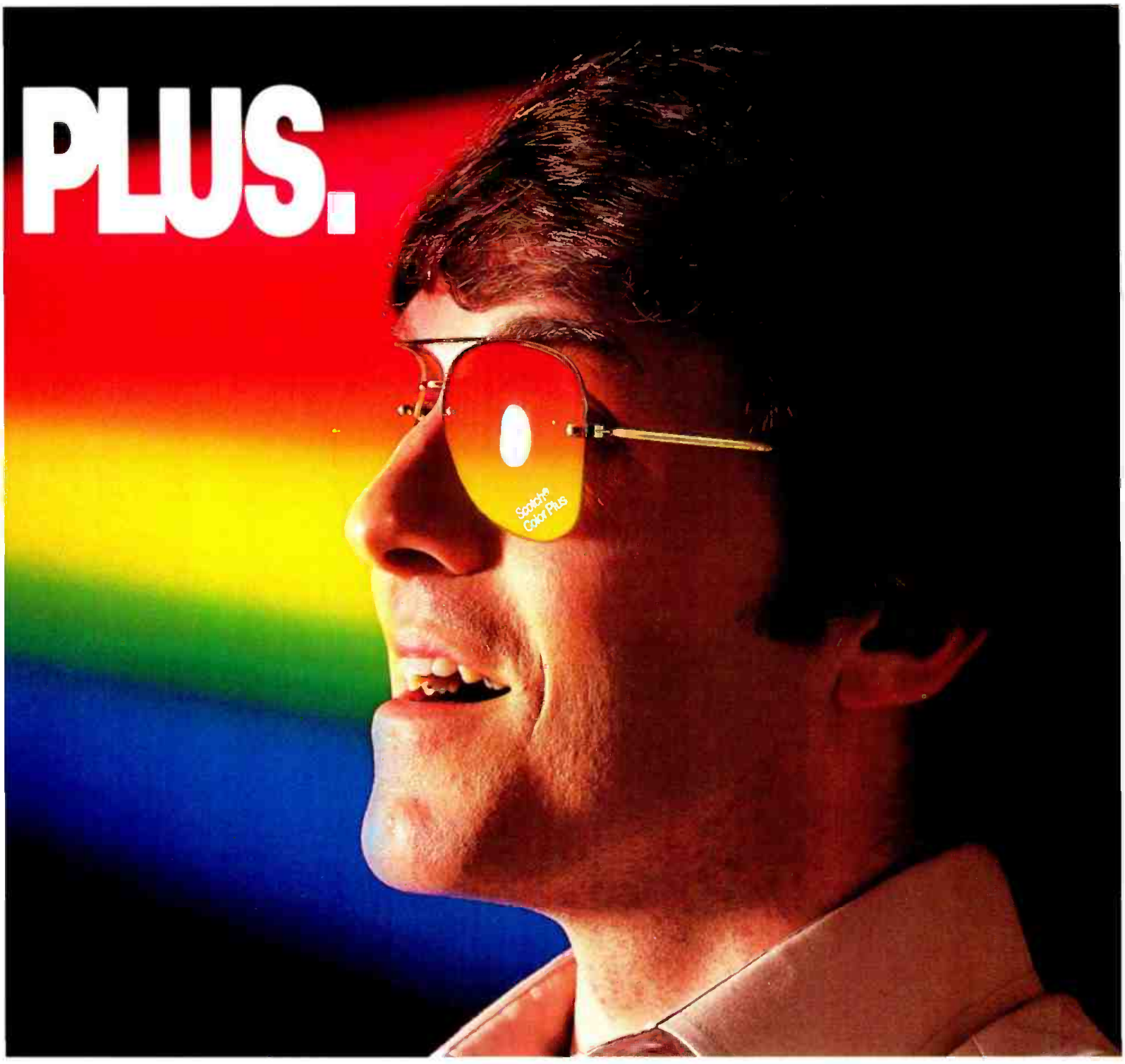

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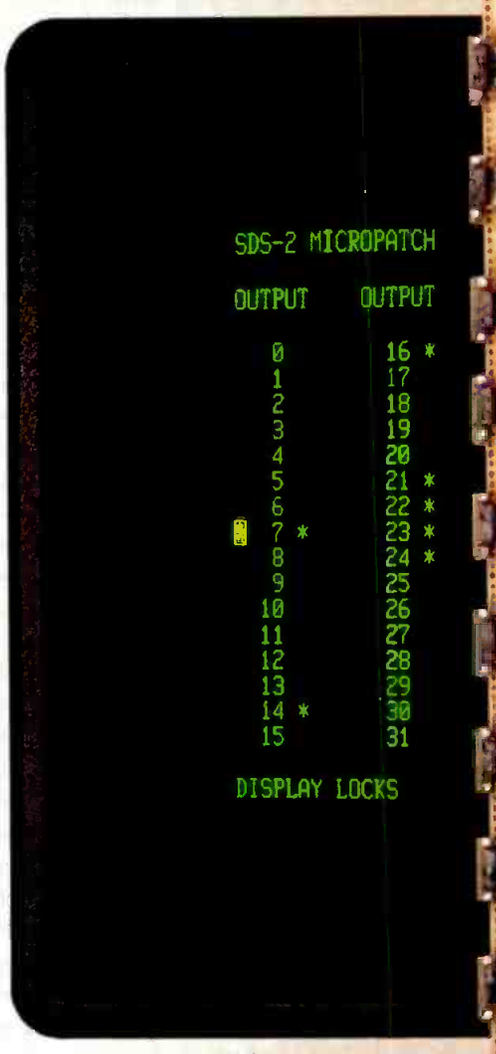

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"Go-Anywhere" Camera Survives Hazardous Duty

By Eva J. Blinder
Senior Associate Editor

Special assignments journalism is a risky business, and mobility is the key—not only to getting the story, but also, often, to staying alive. Chuck de Caro, a member of Cable News Network's special assignments team, has found a solution to the mobility problem in a super-small JVC Microcam that weighs less than three pounds.

CNN's special assignments unit is an elite group of eight reporters—all former newspaper journalists—who report directly to a vice president and specialize in difficult and often dangerous stories. "I usually get the nitty-gritty ones because I'm the only bachelor," de Caro comments. He has been using the Microcam since last January, before he joined CNN; CNN has also purchased a Microcam, de Caro says.

The Microcam is not a standard ENG camera. It has a single half-inch Saticon and a permanently mounted 6X zoom lens. The companion videotape recorder is a 4.4-pound VHS-C unit that attaches directly to the camera with an optional shoulder brace to form an integrated recorder/camera weighing only 8.25 pounds. (De Caro usually keeps the camera and recorder separate.) At a list price of $850 for the recorder and $895 for the camera, a hard-pressed combat reporter could drop it and run with nary a pang of conscience. Its extreme compactness has allowed de Caro to take the Microcam into—and back out of—situations where an ordinary ENG camera would have presented a hazard.

One such situation is combat-torn Nicaragua, from which he recently returned. According to de Caro, the camera operated well even in the extreme weather conditions he encountered in the Central American country. "We operated in the rain for 14 days," he recounts, "and it just kept going."

Microcam in hand, de Caro perches on the prow of a Nicaraguan rebel patrol boat.

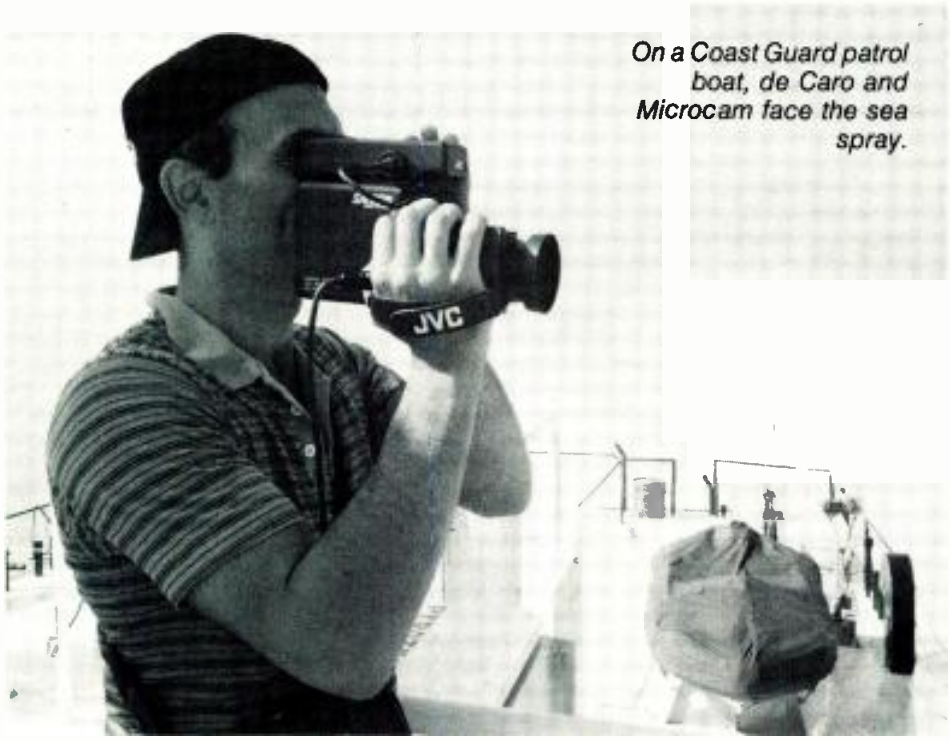
The camera's resistance to moisture also proved a boon during the taping of a CNN piece called "The High-Tech Drug War," taped in part aboard the U.S.S. Pegasus, a missile-carrying Navy hydrofoil. Shooting on deck with no camera case, de Caro was able to keep going with the Microcam despite the constant spray—while a second cameraman's $20,000 deck could not function.

Cramped cockpit

For another piece on drug smuggling, de Caro took the Microcam aboard a Coast Guard HU-25A Guardian patrol jet, flying approximately 20 missions. "There was no way you could take a full-sized camera and deck and pan the cockpit, trying to keep an evasive, low-flying smuggler in sight," says de Caro. "At least not without clobbering the pilot, bloodying the co-pilot, and diving into the sea, only 50 feet below."

To capture the drama of the Coast Guard's pursuit and seizure of a smuggler, de Caro zoomed all the way back to wide and held the camera in the palm of his hand, in between the pilot and co-pilot. He comments that the camera's size and appearance make it seem less intrusive to his subjects.

De Caro found himself in another tight spot last spring for a CNN piece on the Air Force Reserve's International Guard called "Flying the Bottom Line." For the story, de Caro taped a simulated dogfight between two F-4D Phantom II jet fighters—from the cockpit of one of the planes. On the ground at McGuire Air Force Base in New Jersey, de Caro was strapped into the back seat of one of the F-4Ds with two ankle restraints and two calf restraints. "My parachute harness hooked into the



On a Coast Guard patrol boat, de Caro and Microcam face the sea spray.

cockpit fittings, and my pneumatic G suit automatically inflated over my lower torso and legs the instant we started accelerating," de Caro explains. The tight fit (he shared the back seat with the plane's sophisticated avionics) and sudden shifts in gravity were not the only problem de Caro faced inside the fighter. Even if a normal-sized ENG camera could fit into the cockpit, its size and weight could be a fatal hazard if he had to eject.

For the greatest flexibility, de Caro used gaffer's tape to fasten the recorder to an unused portion of the cockpit behind him and to his right. He put three extra batteries and cables for the equipment in his map case on his left side. "Then I just put the camera in my lap," he says. "If I had to eject, I could simply toss the camera away, slam my head back into the headrest and go to the handles."

With the lens at wide, de Caro was able to show both the radar scope display and the dogfight simply by panning. "As a bonus," he adds, "I could hold the camera at arm's length and dramatically record my own reactions to the violent turns of supersonic chase and encounter."

According to de Caro, the picture quality he's gotten with the camera and its VHS recorder has been fine and has been shown on CNN with no problems. He admits, however, that he doesn't look at the tapes with an engineer's eye.

"I can't tell the difference between this and broadcast quality," he re-

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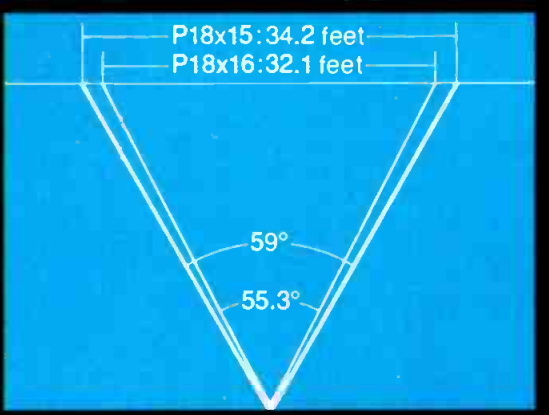

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Circle 125 on Reader Service Card

marks. "But I don't care about the difference—I care about the news." He makes the point that the slightly lower quality of the tapes is more than compensated for by the camera's ability to go places a standard camera cannot.

For example, de Caro recently concealed the Microcam in a "tiny" duffel bag to tape a piece on the sale of counterfeit electronic goods. "We filled the bag with styrofoam and put some old socks on top in case it got searched," de Caro relates, "and we put some cotton mesh on the sides for the camera to see through. It worked great."

Fine tuning

Nothing is perfect, however, so de Caro notes some drawbacks and suggested modifications to make the camera more suitable for newsgathering. For combat work, such as his stint in Nicaragua, de Caro has had the camera fitted with an eight-foot viewfinder cable that allows him to mount the camera on a pole and remain under cover while taping. The camera then functions as a sort of "electronic periscope."

De Caro also notes that the case supplied with the camera doesn't hold up to the kind of rough handling it gets in news work, and suggests that users purchase a more rugged pack, preferably of dense foam rubber covered with nylon. An especially useful feature, he suggests, would be a Neoprene neck strap with Velcro on the outside and Velcro on the side of the camera. This arrangement—available for some 35 mm cameras, de Caro says—would allow a user to attach the camera directly to his chest, leaving hands free for moving in combat and over rough terrain.

Probably the most needed modification, de Caro says, is a C-mount adaptor to permit the use of interchangeable lenses. The camera could also use a transparent guard for the side panel to prevent accidental button-pushing, he notes. He also found it necessary to change the plastic 10-pin connector, which broke in use, to a metal one, and to reinforce the mic jack.

Overall, however, de Caro is more than pleased with the camera's performance. Neither he nor JVC is suggesting that the Microcam will replace full-sized ENG cameras, but for special assignments work, the little camera seems quite ready to take on the big jobs. **BM/E**

Julius Barnathan, President
Broadcast Operations and Engineering
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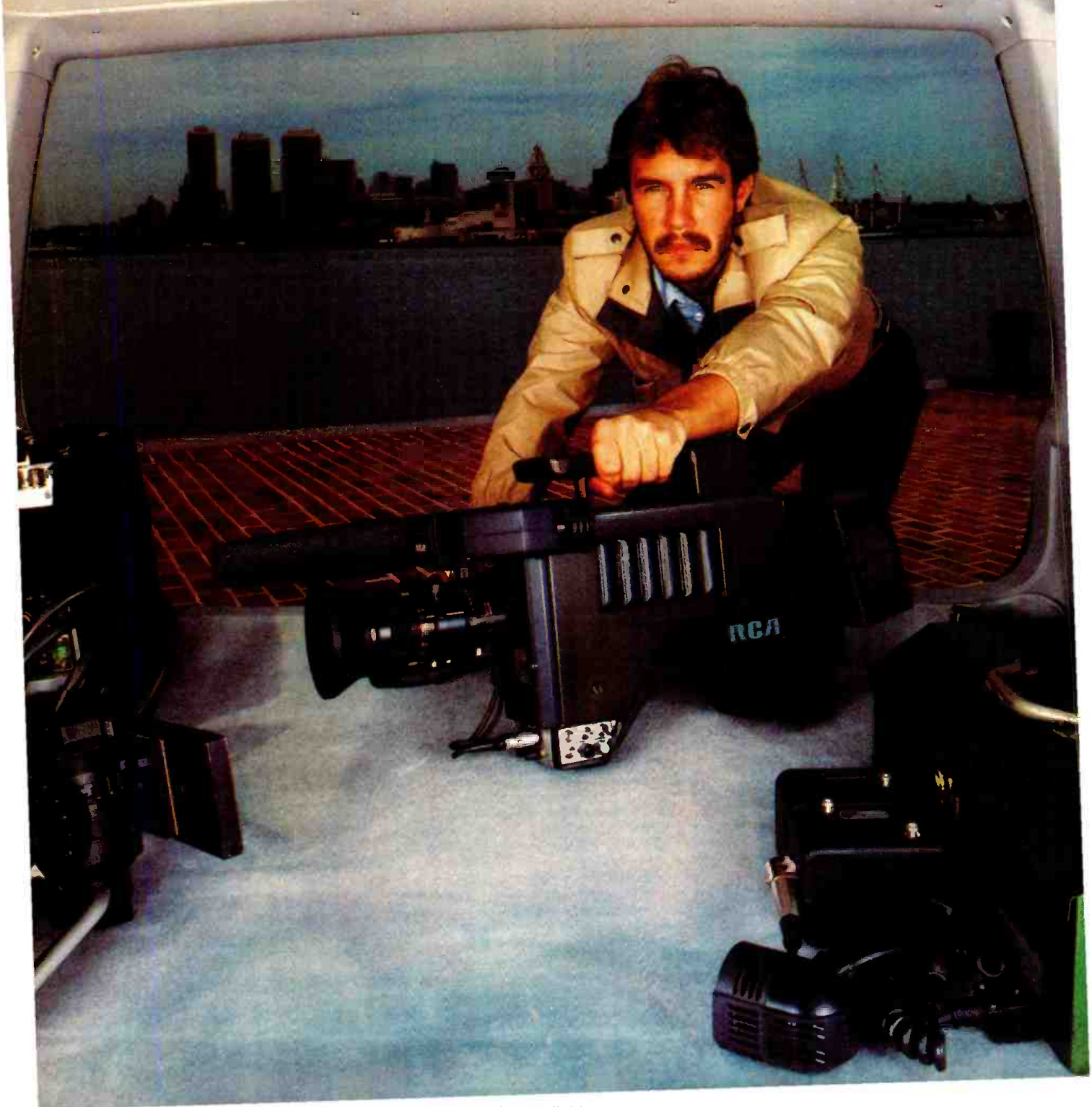
TOUGH



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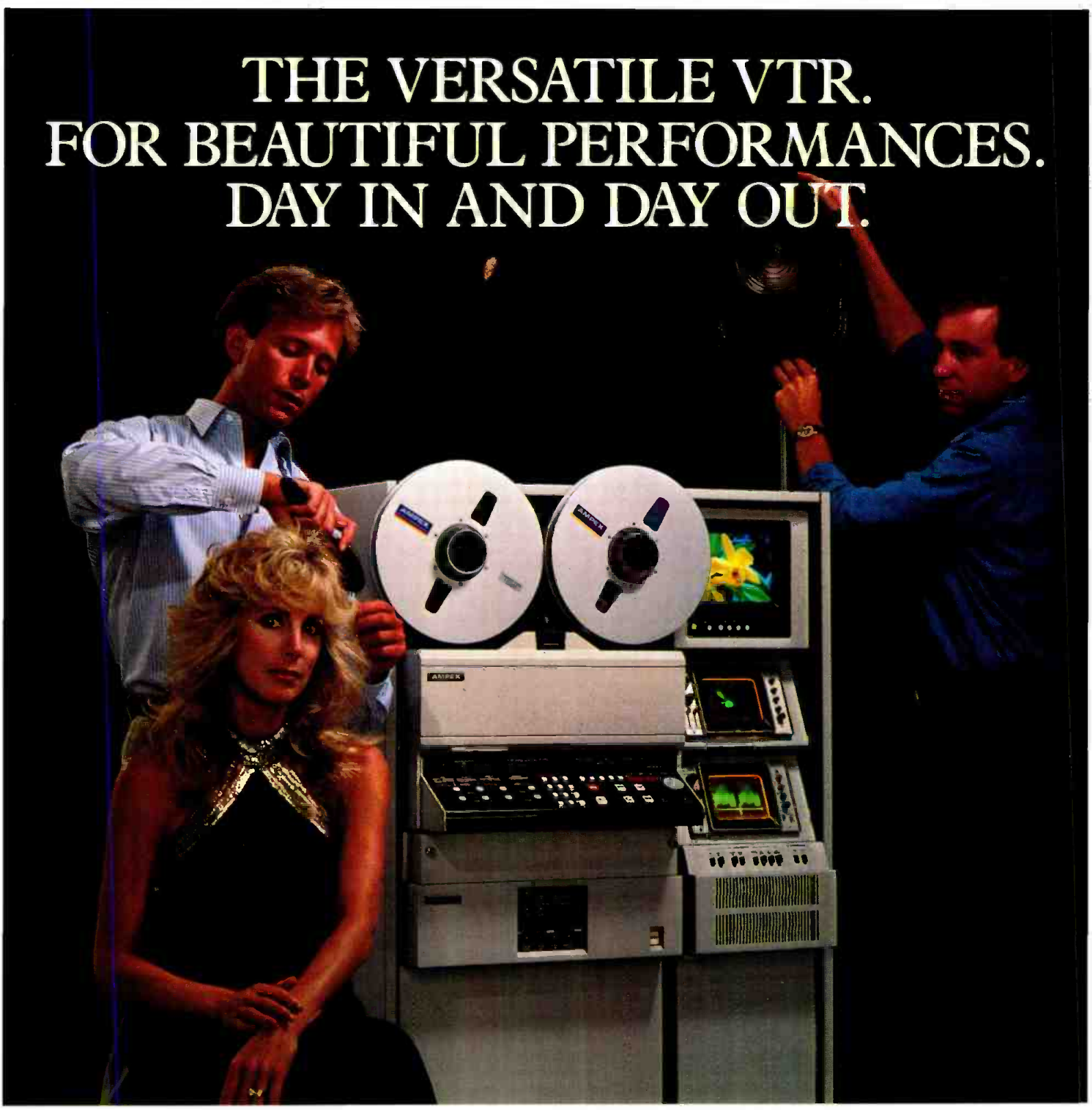

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BEST STATION & FACILITY DESIGN COMPETITION

Here, arranged in five categories—Television, Teleproduction Facilities, AM Radio, FM Radio, and AM/FM Radio—are the nominees for *BM/E*'s ninth annual Best Station and Facility Design Competition. Note this year the addition of the Teleproduction Facilities category, reflecting our belief that facilities are a growing part of the broadcast industry and have valuable ideas to share with stations.

Our editors carefully selected these entries from the many that were received, believing them to reflect the very best in new design ideas; now it's your turn to select the winner in each category by voting with the ballot card that appears with this section.

As you read through the entries, please bear in mind that the contest is designed to recognize management and engineering excellence no matter what the station's size and resources. A Top 10 market station may have had an almost unlimited capital budget and may therefore, at first reading, appear to be the best simply because it is the biggest. But the small-market station may out of necessity come up with the inspiration for the most creative solutions. To help you evaluate the station's size, we have included its market rank as part of the standard entry information.

To vote, simply select your favorite station in each category, check it on the ballot card (page 41), and drop the card in the mail. Each winner will receive a handsome plaque, to be presented by *BM/E* at the 1984 NAB Show, so we must receive the ballot *no later than January 31, 1984* to be eligible. But please read the entries and vote now while they are still fresh in your mind.

One final note. It's never too early to begin thinking about next year's competition. If you think your station might be a winner, drop us a postcard and we will contact you next fall.

INDEX OF 1983 NOMINEES

KUMV-TV

WILLISTON, ND

ADI NO.: 142

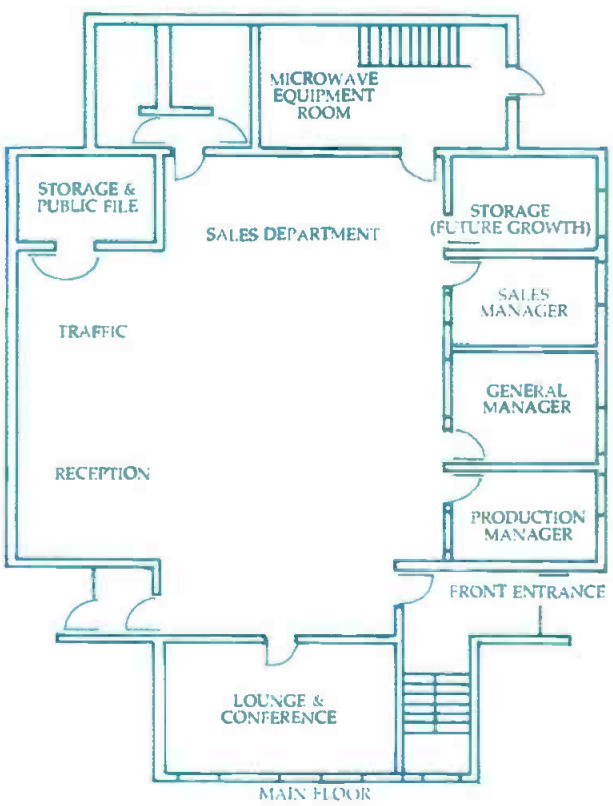
Submitted by
JOT TURNER,
Assistant Manager, and
GENE MONDAY,
Chief Engineer

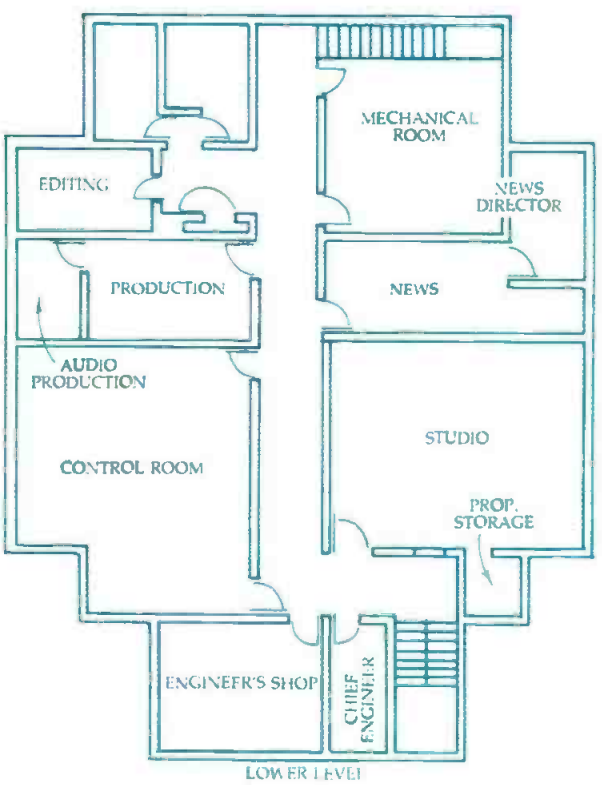
KUMV-TV control room includes Ampex VPR-2B VTRs, an American Data routing switcher, and a Grass Valley production switcher.

An isolated prairie hill 10 miles west of its city of license, Williston, ND, was the site for KUMV-TV's first 26 years. Severe weather conditions during six months of every year compounded the obvious difficulties for all departments brought about by a 10-mile separation from the central business district. Last spring what many considered a dream became reality when KUMV-TV relocated its studios in Williston.

Throughout the site selection phase the two dominant criteria were visibility and room for expansion. High costs ruled out new construction; therefore, after much discussion, a former savings and loan building in the central business district was purchased and the design phase began. At the time of purchase, the building consisted of a 3500-square-foot finished main floor and a completely unfinished, wide-open, 3500-square-foot lower level. Traffic, sales, and general administration would occupy the main floor, with production, news, and engineering below.

The design phase centered around four priorities: (1) traffic patterns;





KUMV-TV

Lower-level studio is immediately adjacent to news department and also doubles for other local production.

(2) studio sound insulation; (3) control room flexibility and efficiency; and (4) incorporation of the new facility into a four-station network extending throughout western and central North Dakota.

Architects were hired to study operations. Their recommendations resulted in a practical, traffic-oriented floor plan. Construction details stressed sound insulation with STC levels of 60 in the studio and audio production room and 45 everywhere else. Studio construction consisted of 10-inch offsetting stud walls lined with blanket insulation. The interior studio walls were then lined with acoustical Sound Soak panels to absorb sound further.

The main objectives in the control room were efficiency and flexibility for future expansion and/or revision. To allow access by engineers, customized equipment racks were installed four feet from the wall. Two Ampex VPR-2B one-inch VTRs for commercial production were installed along the adjacent wall, leaving the film chain along the opposite wall. Newly purchased equipment for the racks included an American Data Model 900 20x5 routing switcher, a Grass Valley 1600 1L production switcher, a Tektronix 1480 waveform monitor for remote monitoring of the transmitters, and a remote-control microprocessor unit. In addition, a separate air-conditioning system just for the control room was installed, complete with a special high-efficiency air cleaning unit to minimize videotape contamination.

A new microwave tower was constructed to provide an STL link and to access the existing four-station microwave loop. A part of the Meyer Broadcasting Television Network, we are now able to receive feeds from any of the other three stations as well as originate feeds at any time. A Harris BT18-H main transmitter and a GE TT32 auxiliary transmitter remain at the old site. Both transmitters were remoted with a telemetry channel added to the microwave loop and a control channel added to the STL.

Construction at the new site took four months. At the request of engineering, the general contractor gave priority to finishing the control room. This allowed the engineers to begin two months of prewiring and installation of equipment. With this work complete, the final move took place the first Friday in May between sign-off and sign-on. All videotape and slide material for a two-day period had been prerecorded on both ¾-inch and one-inch videotape. Therefore, the two Sony BVU-200 machines were moved first and made operational. These were followed by the Ampex one-inch machines, film chain, and studio cameras—all of which were operational by Sunday morning. All normal operations (other than becoming familiar with new surroundings) resumed Monday morning. Only two hours of air time were lost due to an early sign-off Friday and a late sign-on Saturday. This would not have been possible without extensive planning and the coordination and energetic assistance of all station personnel.

The wisdom of the move was immediately felt one week later when 14.5 inches of snow fell on May 12. (No one chose to drive out to the old station for old time's sake!) Now, six months later, the equipment and operation have been tested and fine-tuned. Employee morale is high. And changes now on the horizon, which were not even anticipated one year earlier, will be easily incorporated because we planned for the future rather than the present.

WTVN-TV

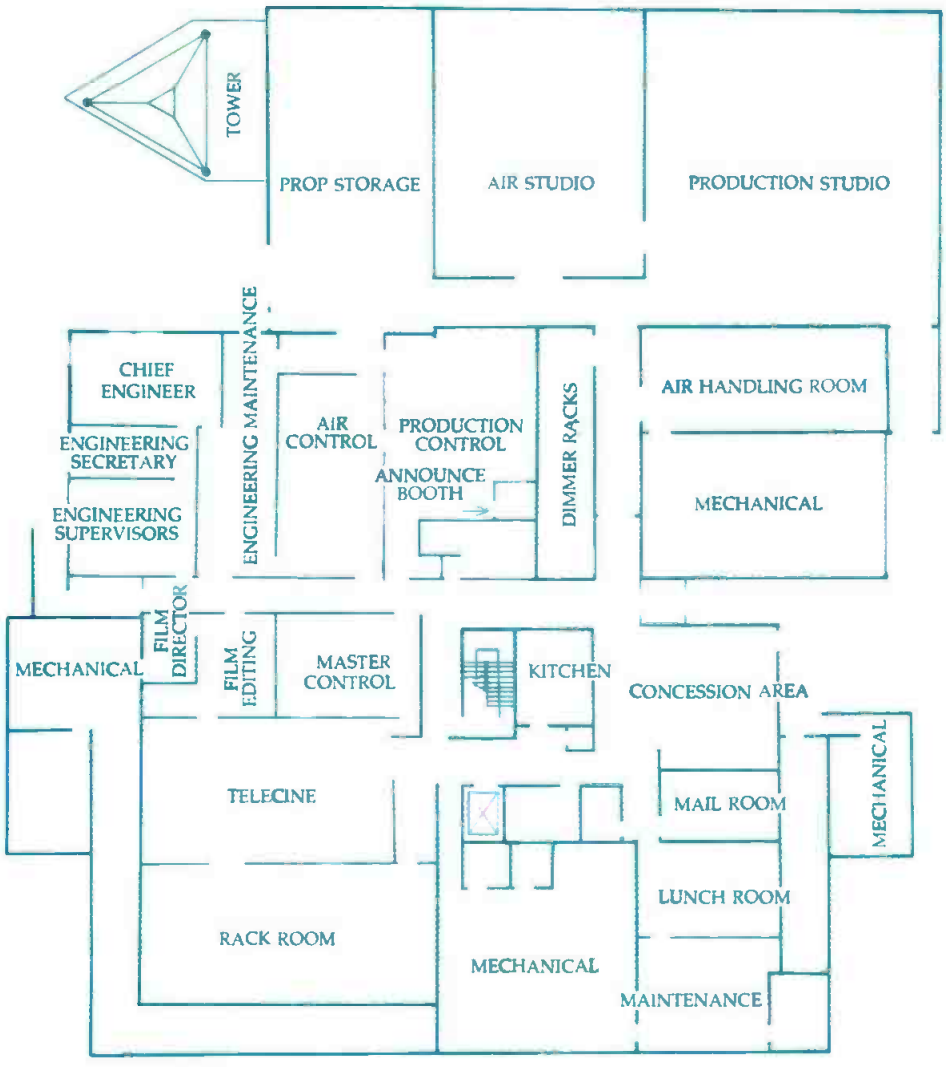
COLUMBUS, OH

ADI NO.: 35

Submitted by
JERRY DIXON,
Chief Engineer

A modern state-of-the-art broadcast facility is a complex combination of tangible and intangible factors which combine the cold, hard realities of equipment, cabling, and space with the concepts of system flow, utilization, and human effectiveness. The complexity increases as news, public affairs, promotions, sports and specials,

Production control room in use for television commercial. Air control is in the next room.



WTVN-TV

live production and commercial production are added to the basic operation. WTVN-TV is just such a complex facility with heavy commitments to local news and commercial production since April 1979, when the new facility went on line. The basic concepts used to achieve this mixture are the parallel air and production systems, redundant equipment, redundant construction of equipment, generous availability of signals, and meticulous documentation.

The functions of the station are divided among three control rooms. Master control, equipped with a Vital VIX 115 switcher and a Nova 3 computer automation system, is the conduit for all on-air programming. Air control is used for live programming such as news shows and for promotions and convenience production. Production control is used for commercial program production. Air control and production control are equipped almost identically with Vital VIX 114 switchers, McCurdy custom SS 100 audio consoles, Scully reel-to-reel audio recorders, and ITC cart machines. They share a two-channel Chyron IV with four disk drives, a two-channel Vital SqueeZoom, and three DVS Phaser frame synchronizers. Production control is also equipped with an Orban equalizer, Orban reverb, an RCA turntable, and an audio cassette recorder. The duplication of facilities allows for easy troubleshooting and even direct exchange of facilities in emergencies.

Telecine has five Hitachi HR-200 one-inch VTRs, a Hitachi HR-100, two RCA TCR-100 videocart machines, and RCA TR-600 quad VTR, two RCA TR-70 quad VTRs, four Sony VO-5850 U-Matics, and three RCA film islands.

Two studios mated with the control rooms allow commercial production to occur simultaneously with on-air productions. The air studio is equipped with a Berkey Colortran 24x32 two-scene lighting system. The production studio has a similar 30x88 two-scene system with three independent faders. All circuitry and lights are interchangeable. The studios share three Ampex BCC-10 studio cameras. Provisions for ENG/EFP cameras are also wired to both studios, the newsroom, the GM's office, and outside.

Signals can be originated from a 2 GHz microwave and a satellite receiver. Permanent facilities for feeding the network and microwave to a satellite uplink provide us with similar ability to distribute programming.

A 3M 80x40 routing switcher puts every source at a finger's touch. Routers feed the three frame syncs and two inputs of the SqueeZoom. This makes every source potentially available on each switcher. Routers also feed the audio boards, the news editing facilities, the screening room, and the CCTV system. With the installation of the routing switcher, we prepared for the future of television stereo by wiring all equipment for two channels of audio. All signals come out to patch panels for maximum versatility. Signals at the patch panel and DAs are all level-consistent. The routing switcher is constructed with interchangeable sections for easier maintenance and reduced down time. The ability, throughout the station, to change a board or a piece of equipment and have the necessary equipment functioning immediately makes production easier and more reliable.

Generous maintenance areas are provided. All equipment was installed so access for maintenance is convenient. All equipment cabling is accessible through computer flooring. Cabling is thoroughly documented and labelled.

Environment controls are separate for each engineering area, enabling individual control. Track lighting in all areas makes operations and maintenance more comfortable and efficient, while broad hallways allow easy traffic and movement of equipment.

Backup systems ensure continued operation even under emergency circumstances. For instance, a generator with automatic start and changeover operates all essential equipment. The

vote
BALLOT ON PAGE 41

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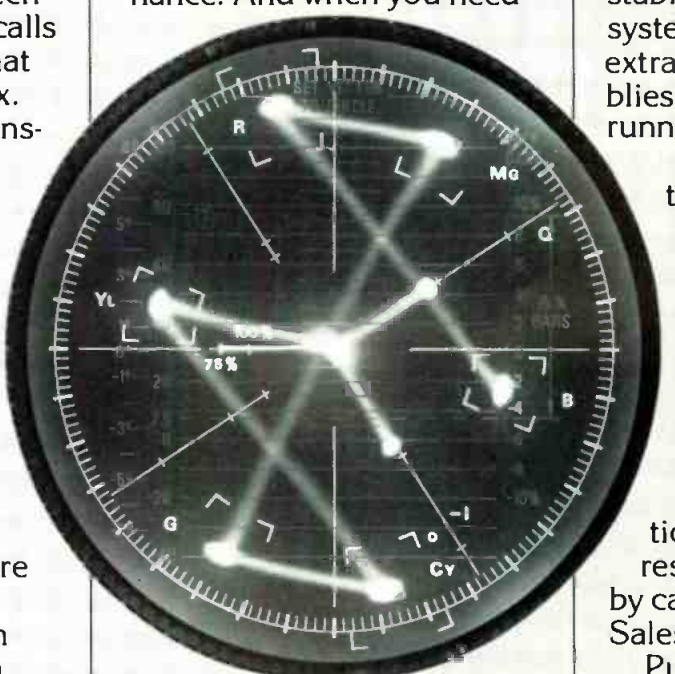

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Typically busy WTVN telecine area has six Hitachi HR VTRs and RCA cart and quad decks.

station operates off a Tektronix 1410 sync generator with automatic emergency changeover to another 1410. There is also an auxiliary sync system with two sync generators operating with automatic changeover.

The four years that WTVN-TV's present facility has operated have been a period of growth and change. We will undoubtedly continue to grow and change as our commercial production expands and as technology changes.

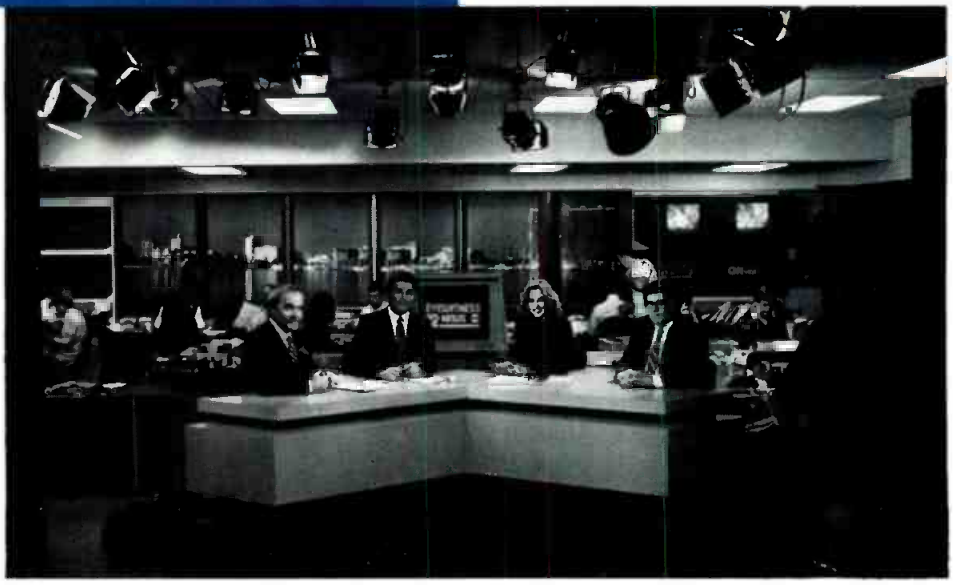
WPEC-TV

WEST PALM BEACH, FL

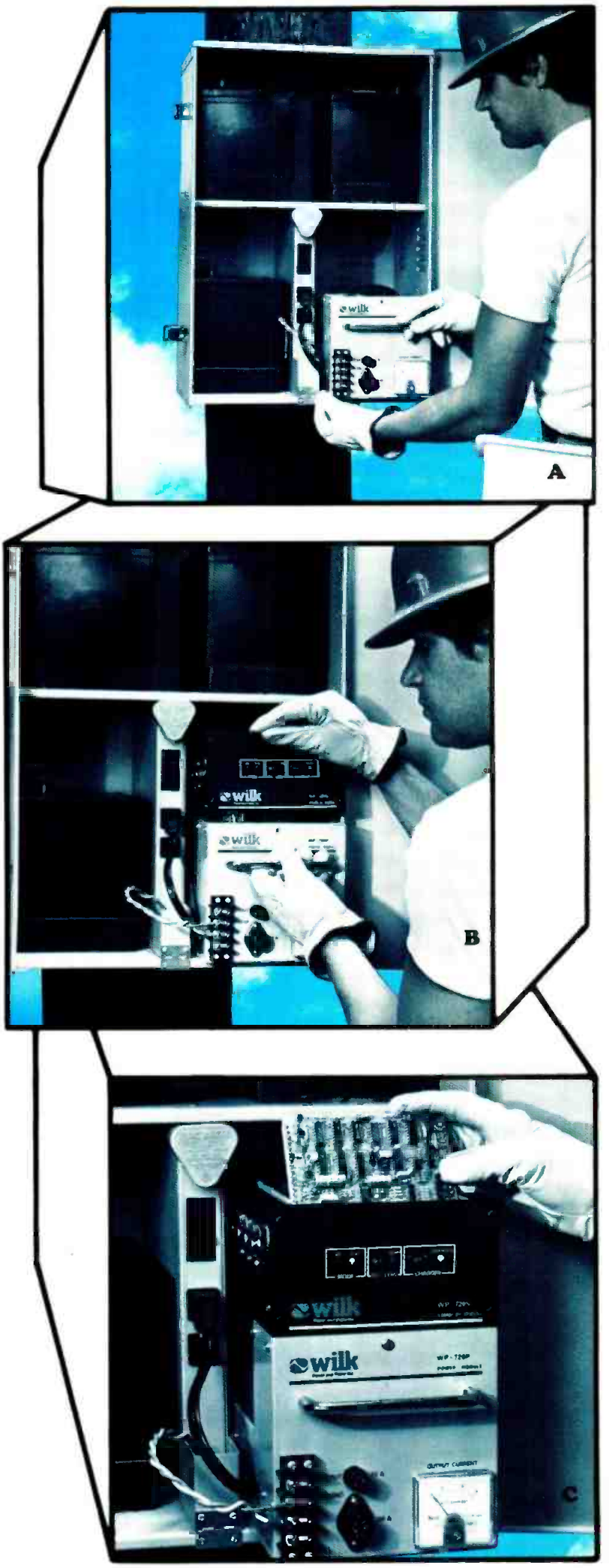
ADI NO.: 63

Submitted by
ROBERT C. WIEGAND,
General Manager,
GEORGE DANNER,
Chief Engineer, and
JUDITH GOODMAN,
Corporate Relations
Manager

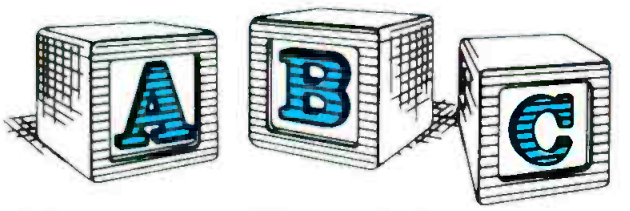
When Photo Electronics Corporation purchased the ABC-TV affiliate in West Palm Beach, FL (WEAT-TV 12) from the late John D. MacArthur in 1973, it ranked ninetieth in market size and employed 60 people. The station's call letters were changed to WPEC and its facilities were moved into unused space in the parent company's manu-



The newsroom has its own lighting grid and functions as a second studio. The 20-foot reversible photo mural backdrop was made from a series of 35 mm slides by the parent company's photo division, LaserColor Laboratories.



Wilk's modular standby power supply- As easy as



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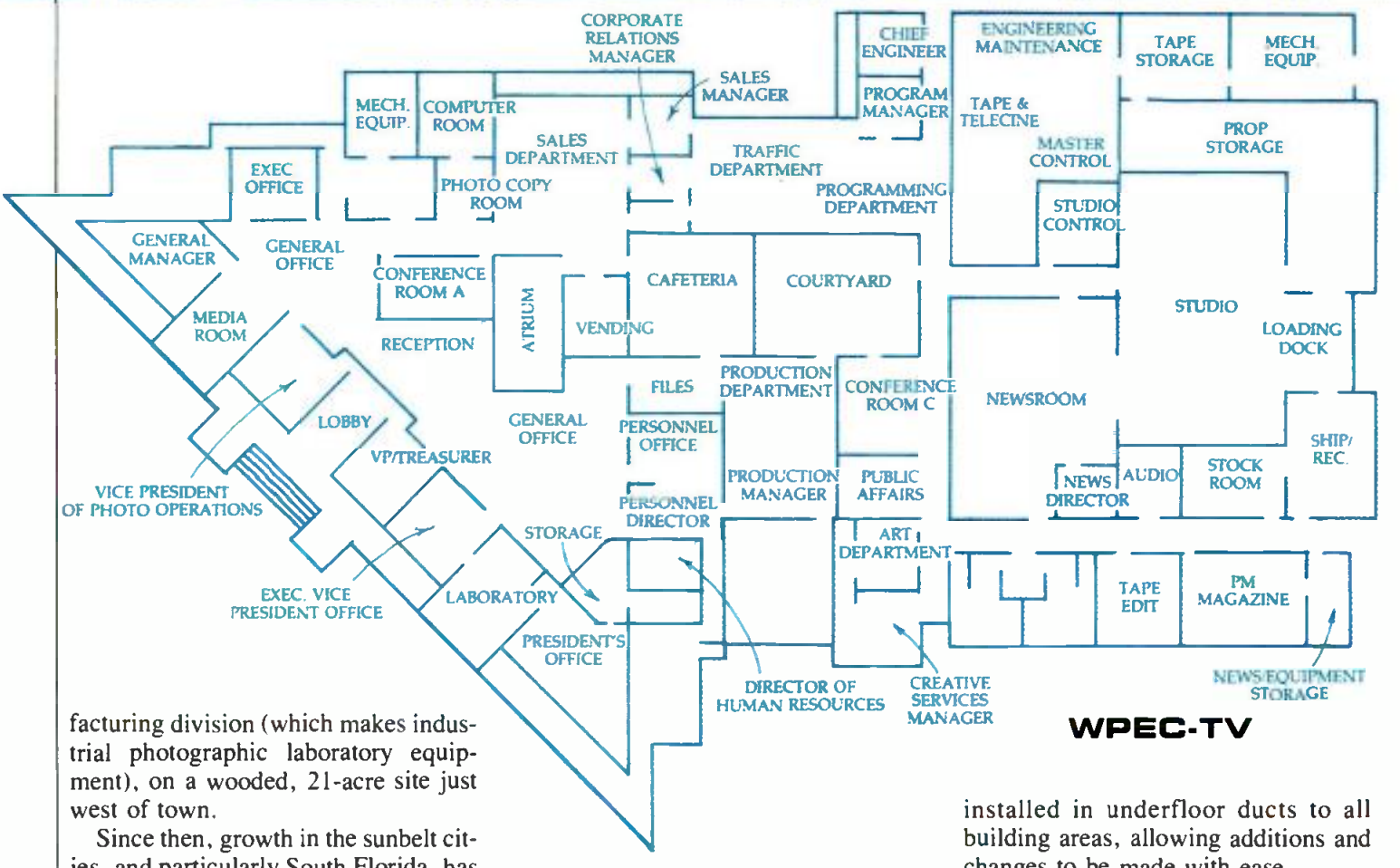

WPEC-TV

facturing division (which makes industrial photographic laboratory equipment), on a wooded, 21-acre site just west of town.

Since then, growth in the sunbelt cities, and particularly South Florida, has moved our ADI rank to 63, and employment has increased to over 100.

Station management, recognizing that a modern TV station in a highly competitive market needed a facility specifically designed to meet its needs, selected the local architectural firm of Peacock and Lewis to design a new $2.5 million broadcast center next door to the existing facility. Working closely with top management and the engineering department, a new 23,000-square-foot facility combining the TV operation and a new corporate headquarters was designed, doubling the station's space.

The principal guideline was to produce a smoothly functioning building emphasizing outdoor views for virtually all departments and eliminating the overcrowding and traffic problems of the old facility. Rather than two production studios, it was decided to make the newsroom itself into a studio. It has its own lighting grid served by a section of the new Berkey Colortran lighting panel, and connects to the main studio (1650 square feet) through a 12x12-foot moveable wall with a 50 dB sound rating. Studio cameras can be moved into the newsroom as necessary.

All technical areas of the building are glass-enclosed to give a feeling of openness for operating personnel and to allow frequent group tours to observe operations without interference.

Power, telephone, TV distribution, and computer data lines are installed in underfloor ducts to all building areas, allowing additions and changes to be made with ease.

A separate entrance with a canopy is provided for the production and news crews. Equipment storage areas immediately adjacent to the loading bay allow cameras and tape gear to be easily stored, batteries charged in specially constructed racks, and equipment to be moved into and out of the station's vehicle even during South Florida's frequent rain showers. A 120x160-foot grass ellipse immediately in front of the building is an FAA-licensed helistop for the news helicopter.

Since most of the station's equipment was dependable and relatively trouble-free, it was decided to still use most of it in the new building, adding new sync generators, distribution amplifiers, monitoring, and a new Central Dynamics 480 switcher. In addition to moving the existing equipment, seven new Sony BVU-800s were added to the ¾-inch tape editing suite, which already included eight units. Another two VCRs were added for on-air playback, satellite feeds, DEF recording, and so on.

Linked to the original building by a covered walkway, the new WPEC-TV 12 facilities are reached via a curving entrance road through an area landscaped with native Florida vegetation, fulfilling the goal to provide a beautiful and spacious home for a busy television station and its people.

Tape and telecine's spacious layout can be easily seen through the glass walls of studio control. The producer's console is in the foreground.

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PACIFIC VIDEO

LOS ANGELES, CA

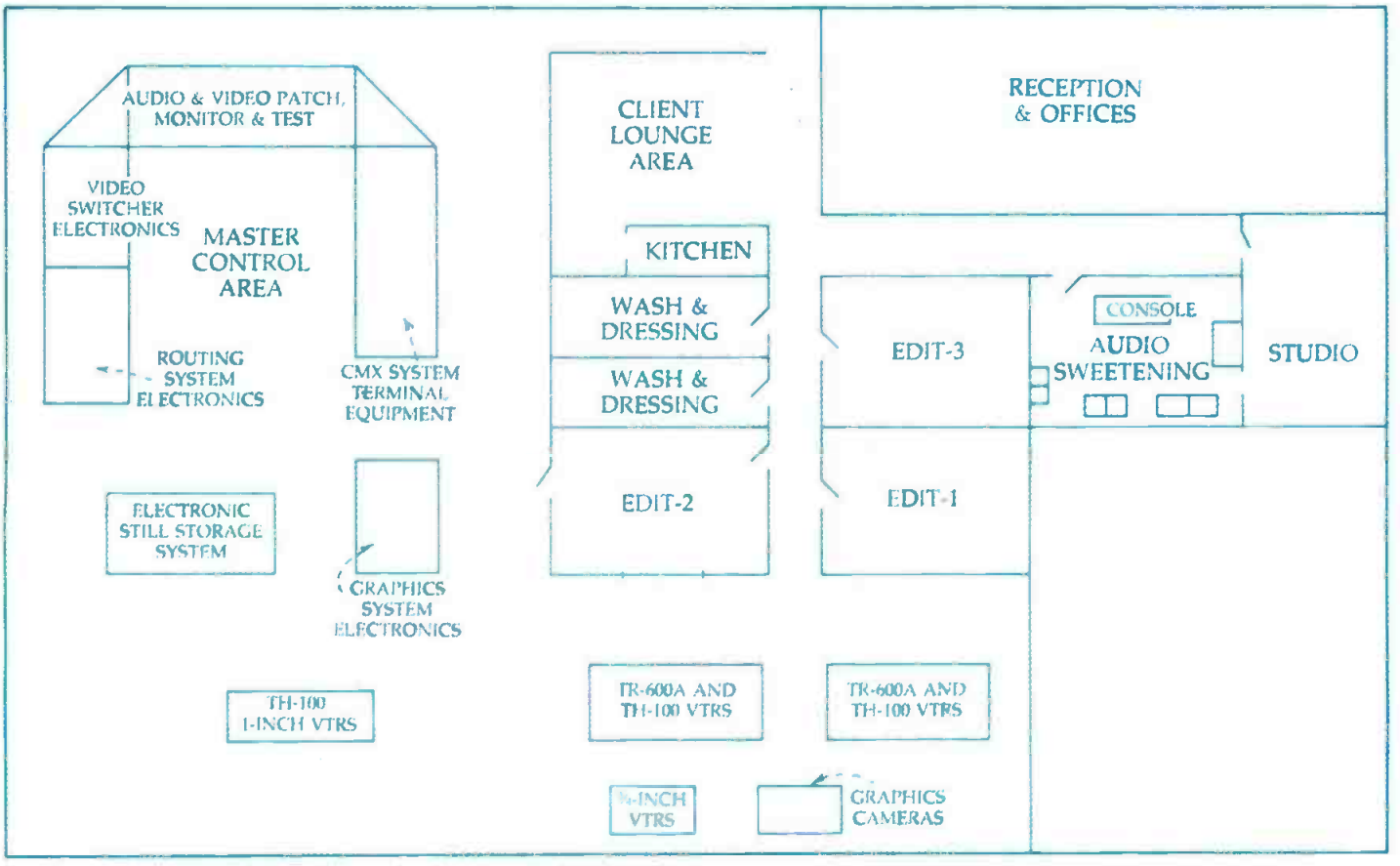
Submitted by
LEON D. SILVERMAN,
Vice President

The Thomson Vidifont Graphics V system is located in the center of the master control room. Remote keyboards for the system are located in the editing suites.

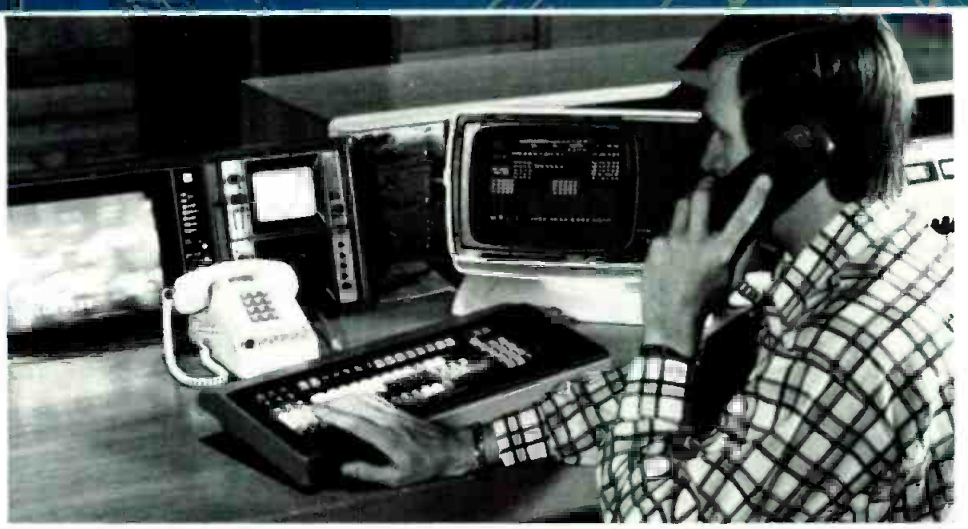
The 20,000-square-foot Pacific Video facility was developed following a year-long study of existing post-production plants. At the heart of the facility's design is the concept that our customer's creative requirements are as important as the engineering needs. The goal was to remove all of the technical harassments that have surrounded many post-production operations, so that our customers could be free to create.

One of the ways in which this challenge was met was by the physical separation and isolation of the editing suites from the master control area and the banks of VTRs. Only remote-control functions are located in the edit suites. Further, the editing suites are much more spacious than is customary. They are set up on two levels, with the operating positions on a raised platform. The lower level provides room for additional clients and production personnel who are not directly involved in the edit decision-making operation. A circular conference table is set off to the side to eliminate the distractions of people and conversations behind the director/editing team. The key people in the editing session—director and editor—are located in the center, visually and acoustically the best part of the room.

The edit suites were laid out for production operations, with ample desk



PACIFIC VIDEO



The CMX 340X keyboard and terminal shown here have corresponding CMX-1² intelligent interfaces located in the master control operator stations. To the right of the CMX terminal is the audio console and Grass Valley switcher.

space to the left of the editor. On the table directly in front of the editor is the CMX terminal and editing keyboard. We are currently using a CMX 340X, and awaiting delivery of the new 3400 hardware and software. To the right is the audio console, then the Grass Valley 300 production switcher with two-channel DVE, then remote keyboards for the Thomson Vidifont Graphics V system and Ampex ESS II still store.

Deciding on the equipment complement for Pacific Video was a two-step process. First, we investigated the range of products needed to set up the post-production center. Then came the more difficult process of making economic projections to determine what kind and how much equipment should be purchased in order for the facility to become profitable in the shortest period of time. The final equipment list was calculated by knowing how much each piece of equipment could be billed per hour, and figuring out how much return could be obtained from the investment.

Master control at Pacific Video is a large L-shaped computer-floored room where all VTRs are arranged in an extended line. There are three major groupings: the first two are five Sony BVU-1000 and BVH-1100s, the third group consists of three one-inch VTRs and a quad deck. In the center of each of these groups is an "operator's station," a rack consisting of a Conrac 6142 19-inch color monitor, a Tektronix 1480M waveform generator, a Lenco PSW-467 video switcher which allows the operator to monitor the output of each of the VTRs in that group, the switcher outputs for every edit suite, the CMX display, and the routing switcher machine assignment display. The operator's station also holds CMX-1² (intelligent interface) and Leitch SP6-130N sync generators for each VTR, an Auburn DBM-1 blanking meter, and RTS intercom for edit-room-to-master-control communications. Next to the third grouping of VTRs is an area for all helical-scan VTRs: Sony BVU-800s and 2860s, all with sync generators and I²s.

Timing for our post-production center was a major consideration in system planning. Our goal was a "zero time plant" where system phase, subcarrier phase, pedestal, sync and burst, setup, and chroma can all be maintained constantly. With a zero time reference, once a signal arrives in time and phase, it can be distributed to every tape machine in the building via the routing switcher. Each tape machine has its own input selector and can select any output from the routing switcher. This permits direct access from any of our VTRs, edit suites, or production studio directly into any selected tape machine for recording.

The main Image Video routing system (50x48) was designed so that four levels can be routed independently. In this way, audio can be taken from one machine, time code from another, and video from a third. Tied to the main router is another, smaller routing switcher whose sole purpose is to assign tape machines to edit suites.

At Pacific Video we have attempted to balance the creative needs of our clients with our desire to build a technical plant that is as maintenance-free as possible. Our approach to the physical separation of large customer-oriented edit suites from our highly efficient master control area has helped us meet this challenge.

EMPIRE VIDEO

NEW YORK, NY

Submitted by
TOM SAYLOR,
Chief Engineer

Empire Video is the brainchild of Lenny Davidowitz, a veteran video editor. Lenny wanted to open his own post-production facility that would provide state-of-the-art one-inch editorial equipment in comfortable, relaxed surroundings. His extensive knowledge of film editing has helped attract clients in the field of television commercials. Because so much work today is being shot on film and completed on tape, many film producers want a tape editor who can understand their particular needs. These factors combined create a successful Empire Video, which began to take shape in early 1983. Lenny assembled the personnel necessary to operate the company: playback is handled by Ron Sabatino; Anne Shepherd is director of operations and I am the chief engineer. We think it's necessary that we function as a cohesive team, and we share a philosophy of providing personalized service to our clients.

For the physical operation we found 9300 square feet of space in midtown Manhattan. Proximity to clients was an

important consideration. Approximately two thirds of the floor is occupied by the post-production facility. The layout was designed for clients to enjoy spacious accommodations in both the editing suites and lounge. The maintenance shop, library, and offices are in a separate area to keep traffic in those locations to a minimum.

We currently have three Ampex VPR 2Bs and one Sony BVH 2000, which will all be replaced by four Ampex VPR 3s as soon as they become available. Our computer editor is the CMX 340X with Motion Memory, which will be upgraded to the CMX 3400. We chose the CDL 1080 switcher for dependability. We have an Ampex digital optics system for digital video effects. Two timed utility bus outputs feed the ADO inputs and can be directly reentered into the switcher, as the delay through the ADO is one frame. We also have interfaced to the CMX two Sony BVU 800s and a Fortel Y-688 time base corrector. The Fortel takes the RF dub out of the VTR for its input while having a 32-line memory and image processing. For titling and graphics we have a Dubner CBG-1 and two Ikegami black-and-white cameras. We chose a Shibasoku CMM20-11 monitor fed by a 10x1 video switcher for viewing in the edit suite.

Empire's new one-inch editing suite was designed and built by AF Associates. The facility includes a CDL 1080 switcher, an Ampex ADO, Dubner CBG-1, an ADM 1600 console, and Studer A-80 tape deck.

The CMX GPI was interfaced to our system by Steve Rotter, using Cherry Hill slide switches to delegate control. Ten functions in the CDL 1080 and four functions in the ADO control panel can be individually activated. In addition, everything else in the editing console can be started by using the GPI. Our audio requirements were filled by an ADM 1600 II 16-input board with two inputs per fader and a Studer A-80 tape deck modified to accept neo, FM, or

vote
BALLOT ON PAGE 41

The maximum for the minimum

In designing the HK-302, Ikegami kept the frills —and the price—to a minimum while maximizing the performance. And that helps keep a moderate equipment budget from interfering with first-quality program origination.

However, staying with the basics doesn't mean sacrificing advanced technology. The HK-302's highly efficient optical system coupled to ⅔" low capacitance diode-gun Plumbicon* tubes and high transconductance FET pre-amps deliver sharp, low noise pictures (S/N 57 dB) with excellent colorimetry. And the compact camera head includes a full range of operational automatics to ensure consistent signal quality.

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To add to the versatility of the HK-302, use the Ikegami automatic highlight compression option. It ensures highly detailed pictures even in high contrast scenes.

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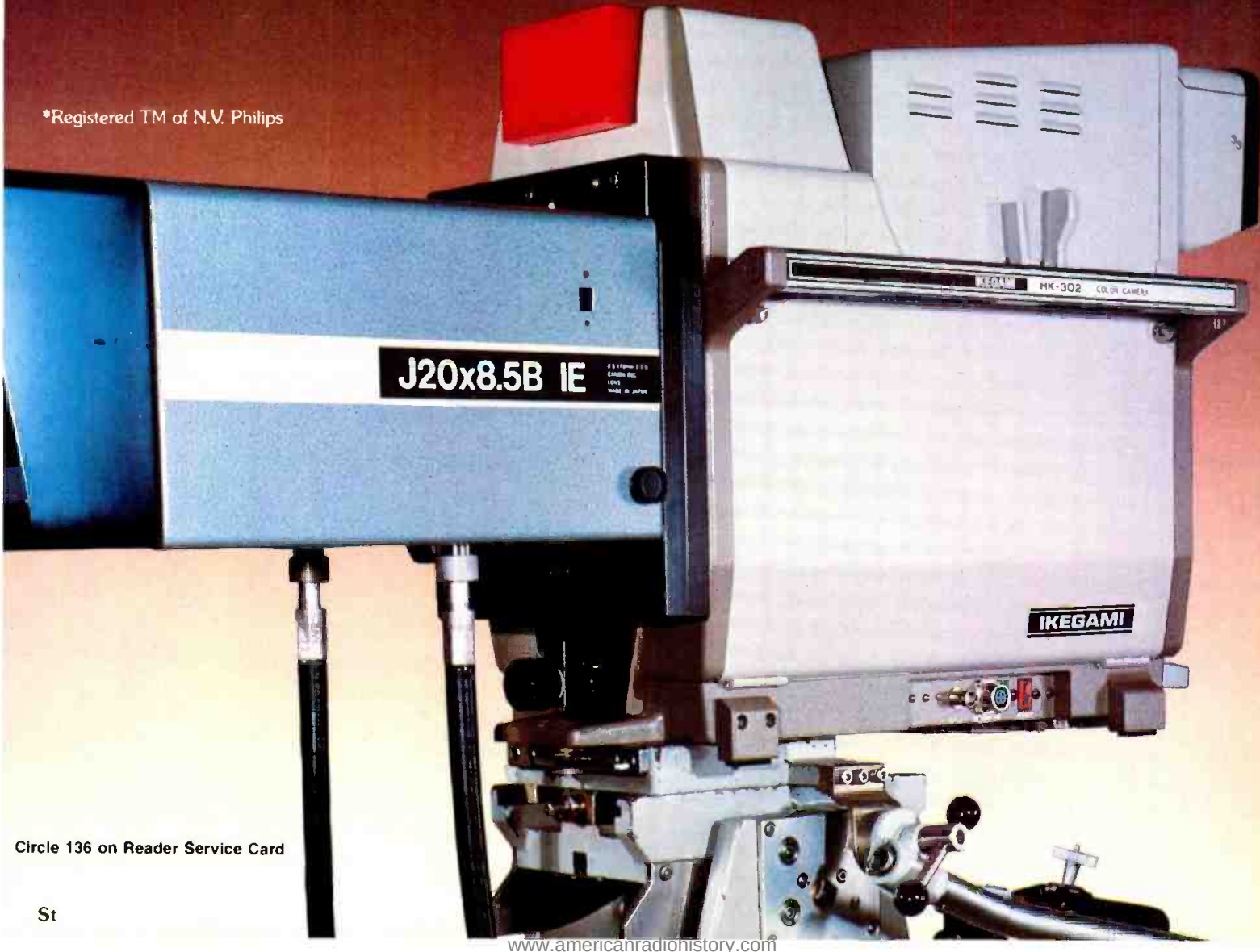

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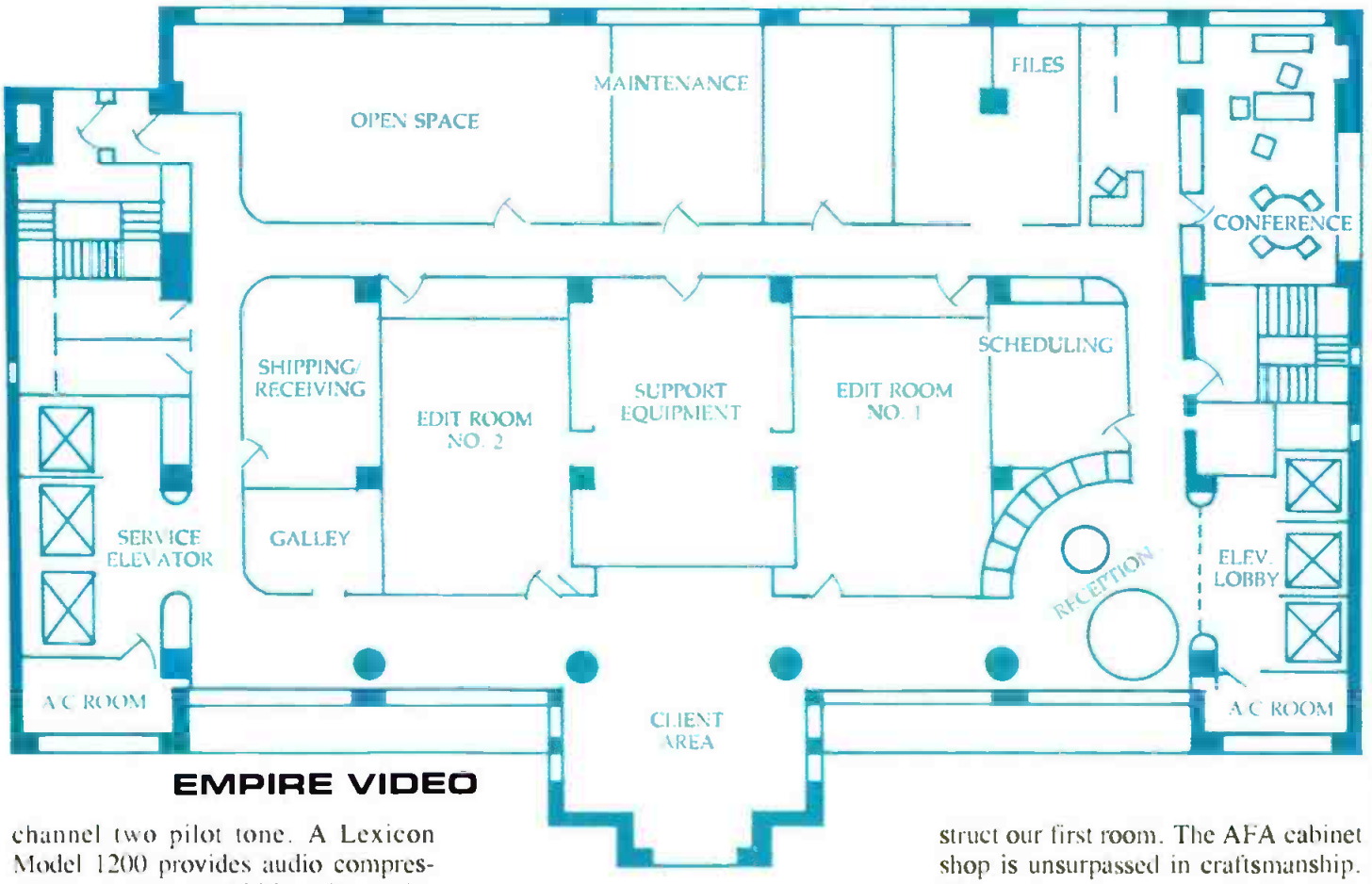
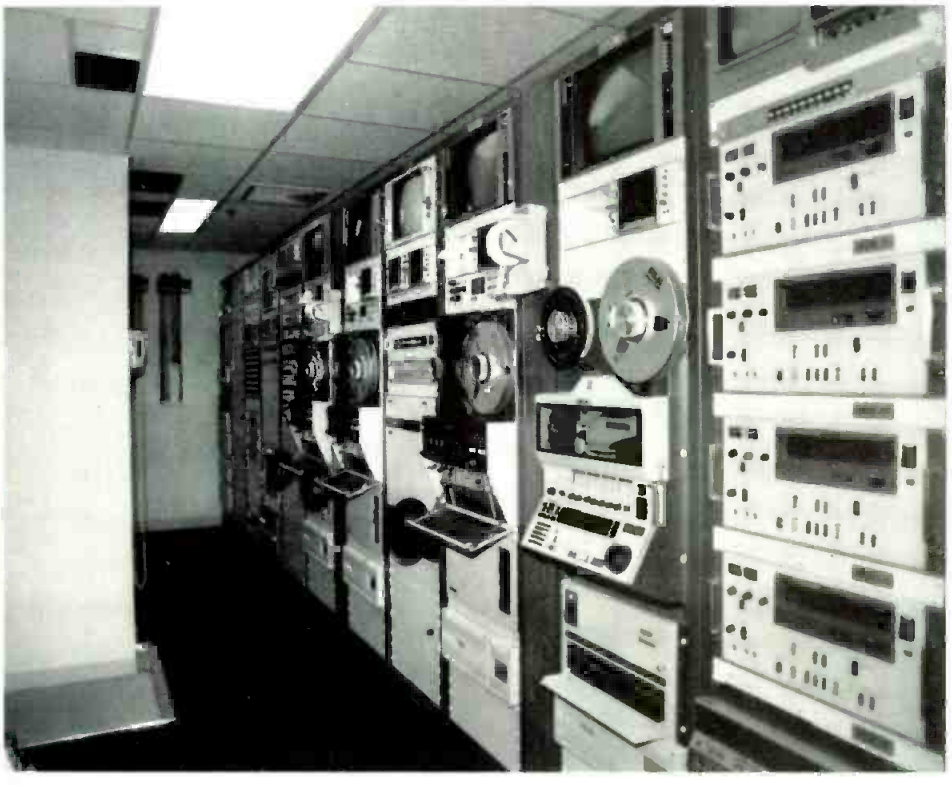


EMPIRE VIDEO

channel two pilot tone. A Lexicon Model 1200 provides audio compression/expansion capabilities. The equipment room has one row of eleven racks. The computer floor has a direct feed of seven tons of air conditioning with the return directly above the rack for even distribution of air through the equipment. Clients do not have direct access to this room, which allows us better control over both machines and materials.

AF Associates of Northvale, NJ, was chosen to design, modify, and construct our first room. The AFA cabinet shop is unsurpassed in craftsmanship. The equipment was assembled and cabled at AFA's headquarters before being moved to Empire Video. Once the actual installation began, work proceeded at a rapid pace. We were operating within two weeks of receiving our first piece of equipment and able to meet our deadline in accepting bookings from clients. All who participated can be proud of their efforts and the results!



The equipment room, with one row of 11 racks, offers monitoring, taping, patching, and time base correction. The tape machines shown here are a Sony BVH 2000, and three Ampex VPR 2Bs.

Because of our commitment to keep Empire Video a top-ranked post-production facility in a very competitive industry, we are constantly evaluating new equipment. We anticipate offering a Fortel color corrector in the near future. We are planning to expand our graphic capability with the addition of a color camera and auxiliary lighting system for general use. We have constructed the shell of our second editorial suite, which is a mirror image of the first in both its interior design and rack layout. We plan to be on-line with our second room by July 1984.

It has been a rewarding experience for all of us to participate in Empire Video becoming a reality. We have achieved a reputation for quality work in a very short time. The favorable response by clients is evident in their return to work here as new projects move to the post-production stage. We look forward to continued success and growth in the future.

NATIONAL VIDEO CENTER

NEW YORK, NY

In National Video's Edit A, the Datatron Vanguard editor with Level 6.0 software interfaces with a GVG 1600-3H switcher with E-MEM and AFV. Chyron graphics unit is seen at right.

Submitted by
HERB OHLANDT,
Vice President,
Engineering

National Video Center/Recording Studios is currently enjoying a highly successful "change of life." Almost 25 years ago, studio co-owners Hal Lustig and Irv Kaufman founded National Recording Studios in an office building on New York City's Fifth Avenue. Expanding steadily to meet increased business demands, primarily for their TV and radio commercial recording abilities, National eventually grew to encompass a decidedly cramped 12,000 square feet. Kaufman and Lustig were able to increase National's involvement with post-production and audio mixing for video. But, until April 1981, the lack of space prevented them from making a total commitment to

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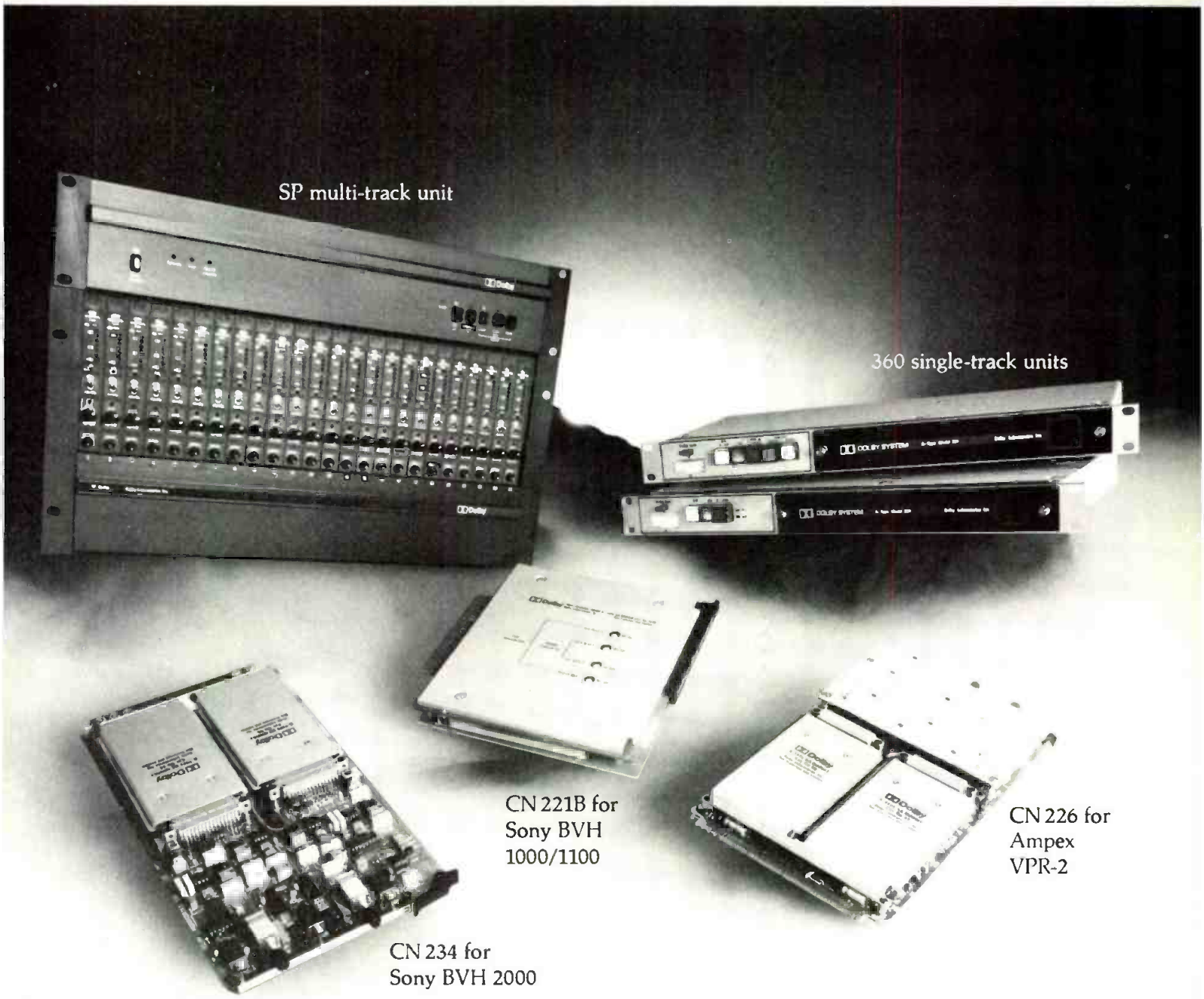

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video production.

When National opened the doors to its new home two and a half years ago, the company underwent a total metamorphosis. NYC's former West Side Airline Terminal Building provided 55,000 square feet of space, ample room for both large-scale studio production and state-of-the-art post-production.

Original hopes were that the new National would find a niche in NY's thriving commercial production industry. However, the move happened to coincide with the first wave of large-scale cable TV production. Almost from the outset, the 4000-square-foot TV 1 was booked solidly for a number of months with CBS Cable, and then Hearst/ABC. National's growth was far beyond what the facility originally considered "realistic" projections, so much so that it found itself far ahead of schedule for the completion of TV I, the 2000-square-foot TV II, and its third floor post-production facilities.

At the time of its move in April 1981, National offered a total of three edit rooms, the most sophisticated of which featured CMX 340X computerized editing with five-machine interface, a Grass Valley 300 Switcher with DVE, and Chyron and BEI character generators. One of the largest editing rooms in the country, the 750-square-foot room was designed primarily for long show editing sessions.

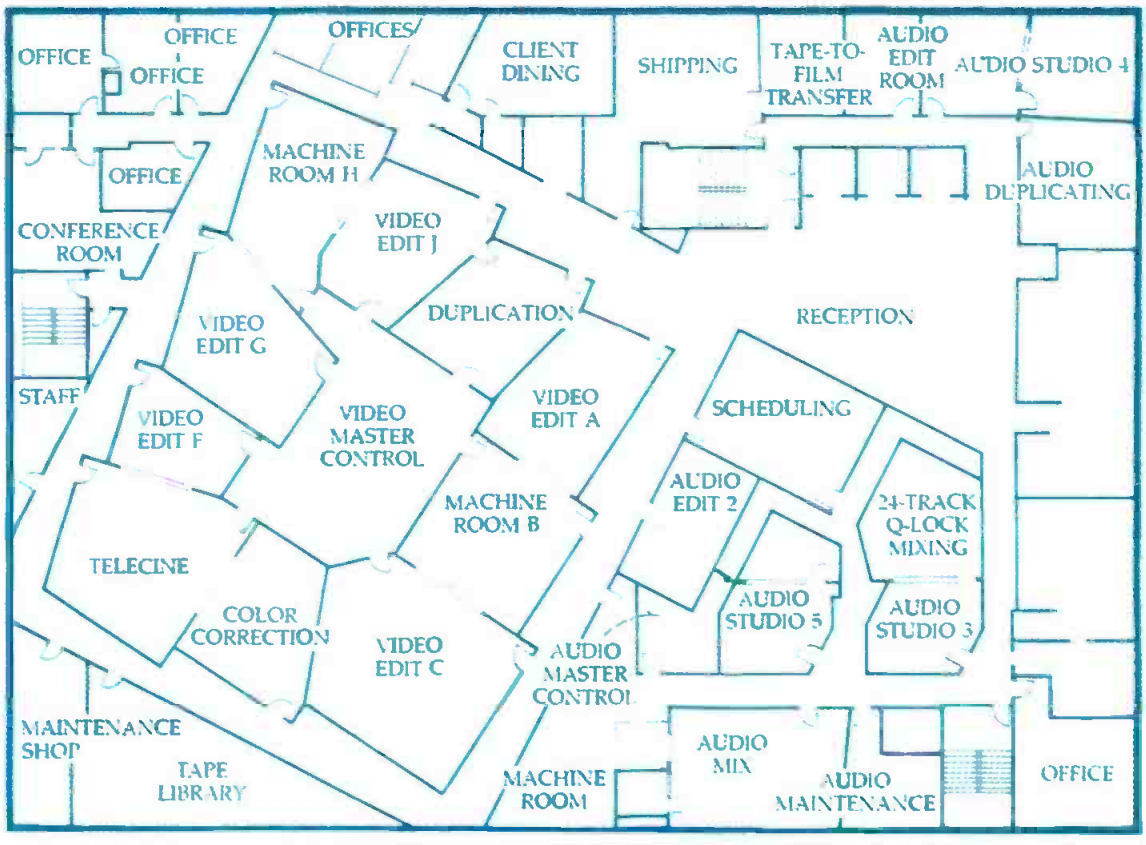
In October of this year we cut the ribbon on Edit Room G, a 550-square-foot state-of-the-art $1 million+ room which has built-in audio-follow-video capabilities. Designed to handle up to seven machines—three Ampex VPR-3s, an Ampex VPR-2B, two Sony BVU-800s and a Sony BVU-820—it features a Datatron Vanguard editor, complete with "Smartscan" capability, extensive list management, and user-definable keys. It also has a Grass Valley 300-3A switcher complete with Master E-MEM, and a full set of options, including borderline keyers and chroma keyers. The audio board is an ADM Technology Model VP 803. The board can be operated in normal fashion as an 8x3 console with full EQ, channel assignment, and so on, and can also be controlled by the Vanguard editor working through the Grass Valley SIA interface card for fader selection and level control, using the VCA technology within the board.

All our video distribution, as well as two levels of audio, 30x40, expandable to 50x70, is handled by Grass Valley Series 3400 DAs and Spectra-Sonics audio DAs. Audio boards are by Quantum and ADM, waveform monitoring is by Tektronix, with color monitors by Conrac and Tektronix. Our Utah Scientific routing switcher provides us with very high signal quality and rapid equipment configuration, thought luxurious by some, but useful to us.

Other post-production hardware on line at National includes a Grass Valley DVE Mark II two-channel effects unit, two Ampex ADOs, BEI 3000 character generators, and film-to-tape transfers with a Bosch FDL-60 B telecine coupled with a Corporate Communications color corrector. ATRs are from Ampex and MCI. And, maintaining close ties with its audio recording roots, the facility features 24-track capability.

On the production front, National's studios are outfitted with RCA TK47 BEPs on Vinten Fulmar pedestals.

A close examination of the source of National's ongoing success story must focus on its ability to serve not one, but many types of clients, and to provide each of them with a uniformly high level of dependable audio and video production and post-production quality.



NATIONAL VIDEO CENTER

Photo: Googbody & Meachem

View of TV 1's Grass Valley 300-3 switcher. This large studio has 24-track audio capability, with an MCI JH-500 recorder and MCI and Ampex ATRs.

JVC INTRODUCES KY-310U

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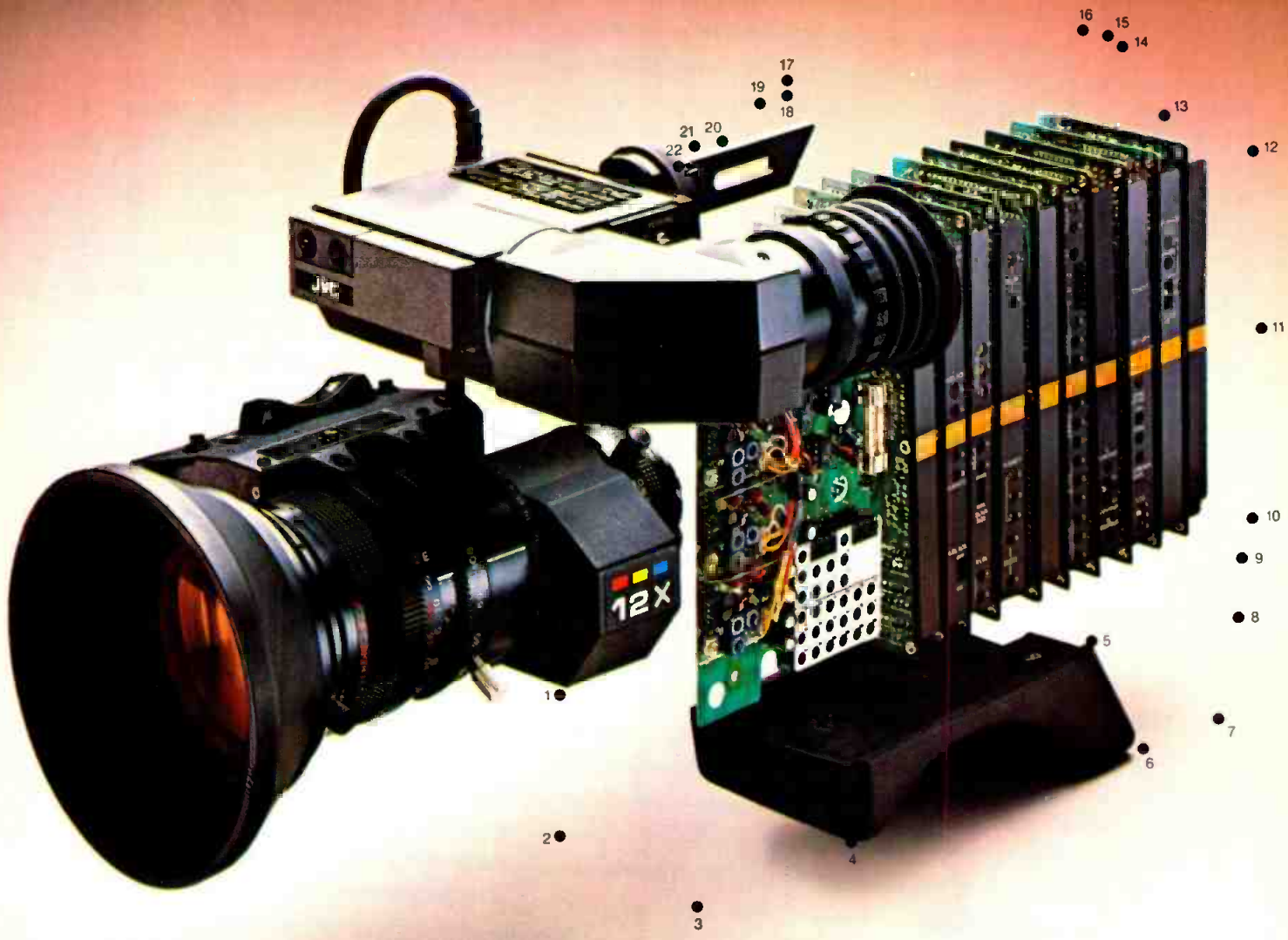

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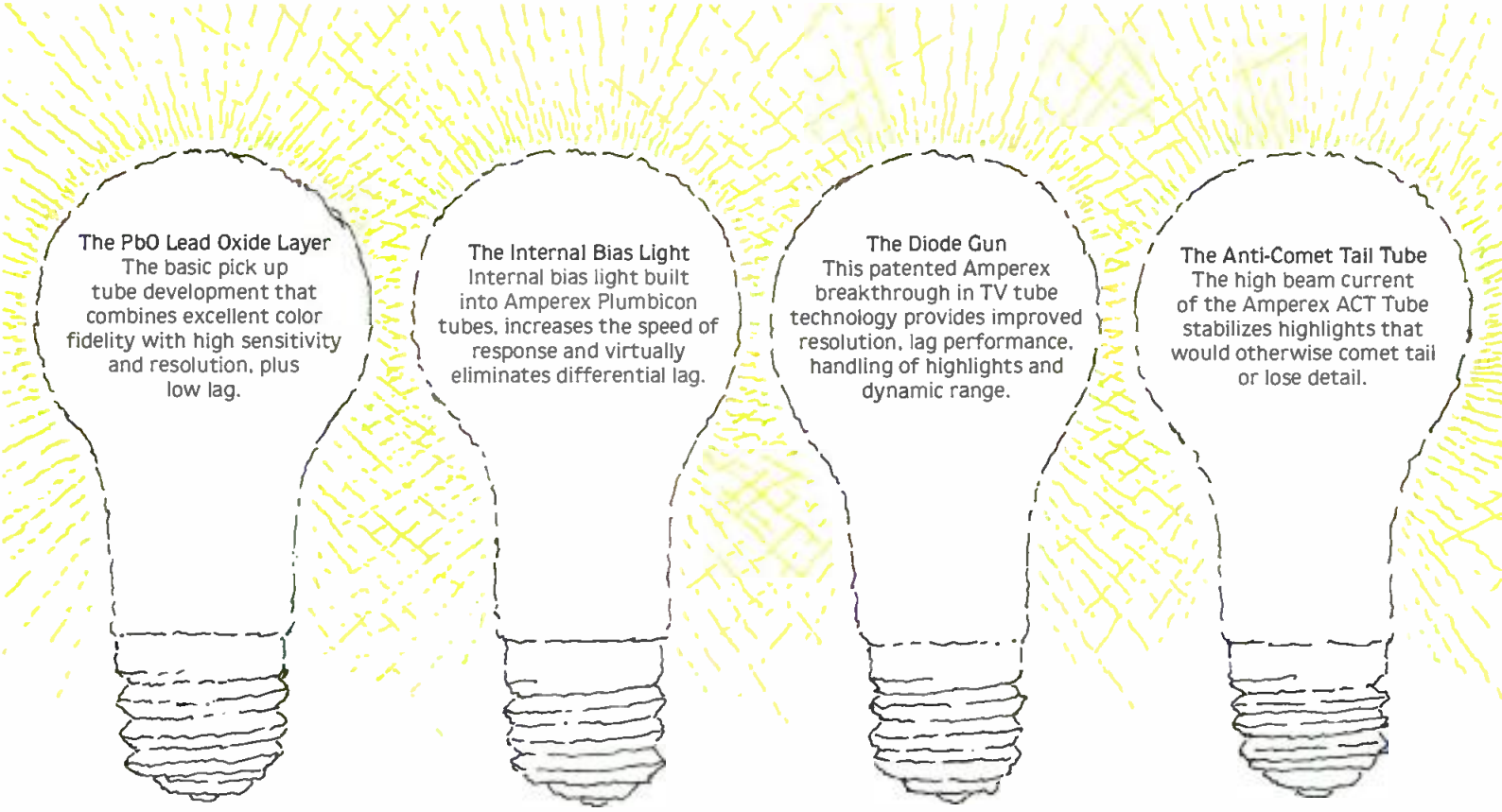
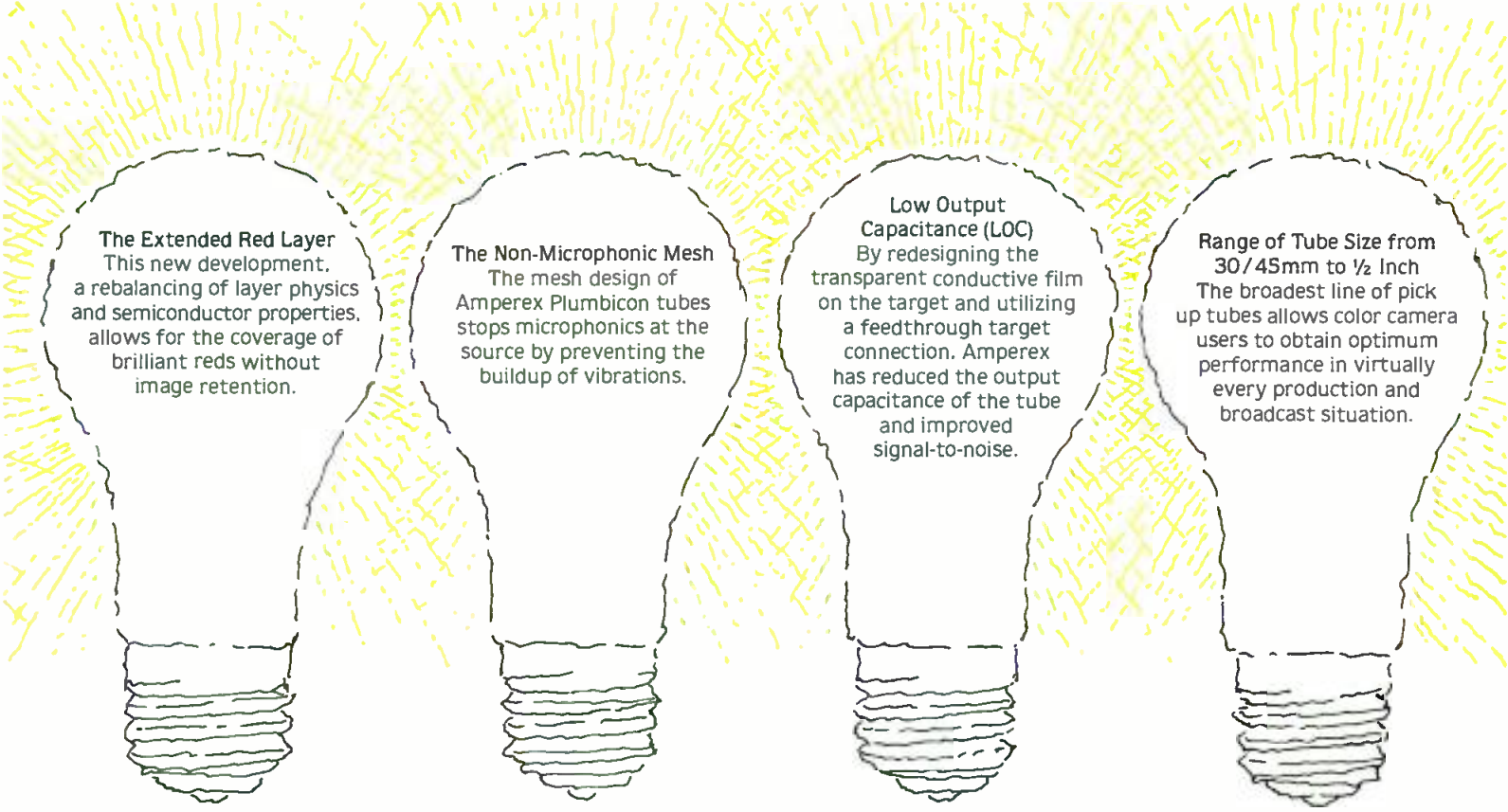


Eight brilliant ideas in TV



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WRC-AM

WASHINGTON, DC

METRO RANK: 9

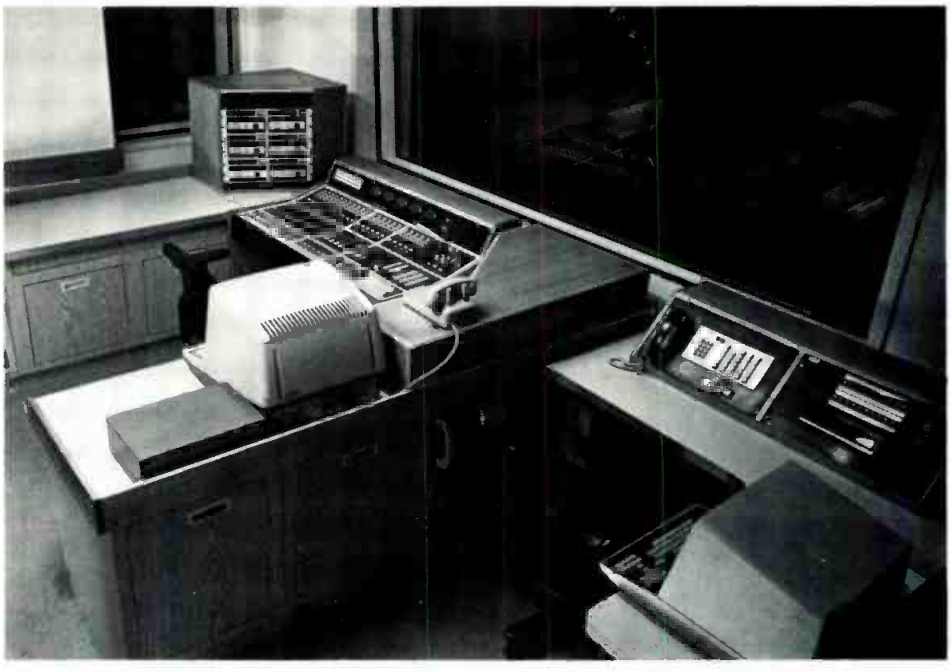
Submitted by
THOMAS L. MANN,
Engineering Manager

The National Broadcasting Company's WRC, Washington, DC is one of the oldest radio stations in the country, having been in continuous operation since August 1, 1923. It was fitting, on the station's sixtieth birthday, that it be housed in a new 10,000-square-foot state-of-the-art broadcast home.

Although planning began on the new building several years before, the exact engineering design work on the technical facility was not begun until September 1982. The station had to move out of the old facilities completely in less than a year. Additionally, it was important that the main air studios be moved to and be operating in the new facility in considerably less than a year.

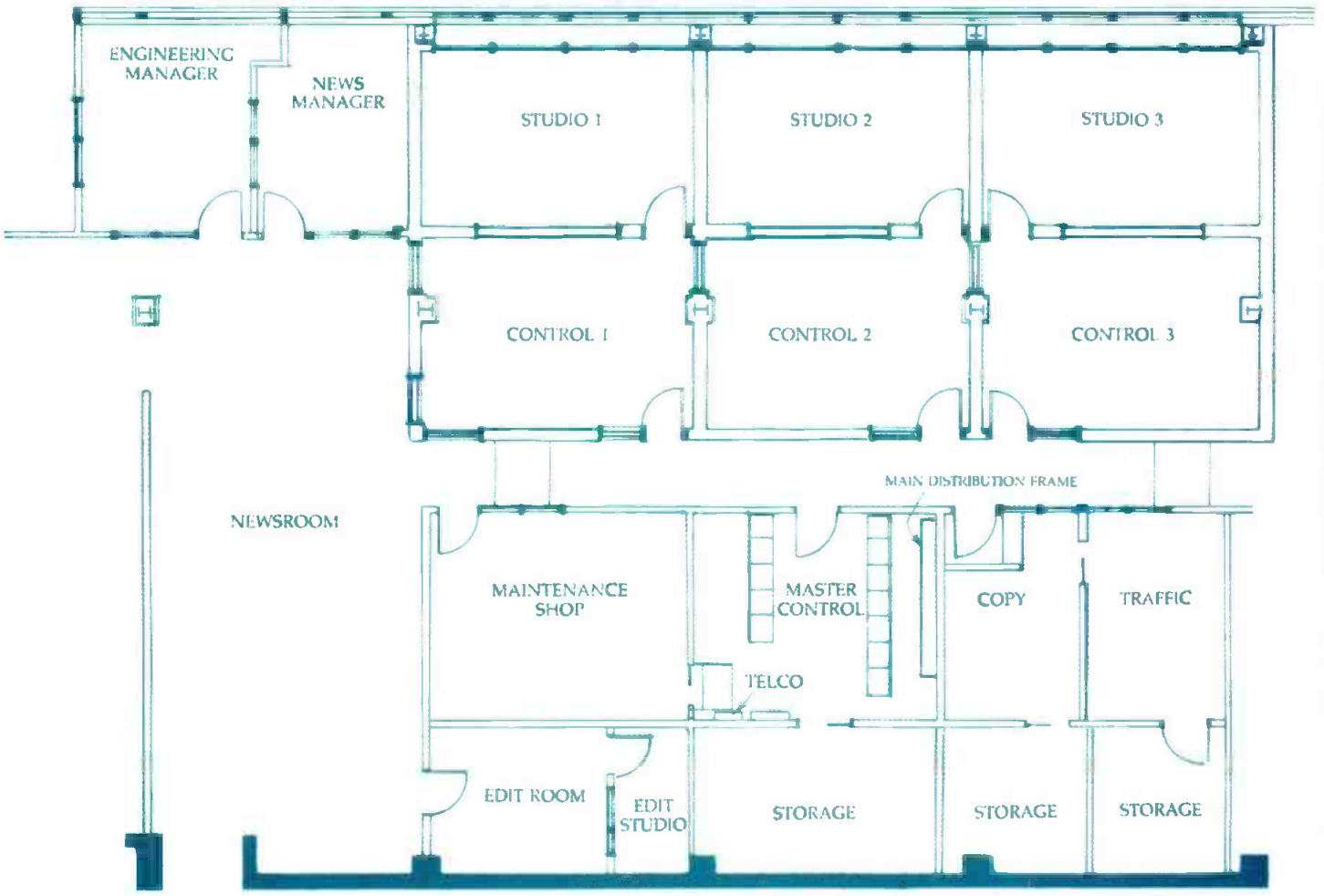
On top of this extremely tight deadline, the WRC facility is especially complex, programming news/talk in the nation's capitol. This format is live from the studios 15 hours daily, with nine hours overnight coming from NBC's "TalkNet" via satellite. The programming calls for program origination by numerous remotes each day from the homes and offices of various WRC personalities, as well as taking telephone calls in the studios. The WRC news operation is fully computerized, taking news from virtually all the national and international news wires, as well as business news and weather, and reading it electronically, direct from the wire, into computer memory, from which the WRC news personnel can recall any story at any time and edit it for air.

The design and construction of the technical facility took place from September to December 1982, with equipment specification and purchasing during the same period to meet early January 1983 delivery requirements. This simultaneous design and equipment specification required that matters proceed on an "as needed" basis. After great deliberation, we selected McCurdy Radio Industries to supply the four consoles and the intercom system; Mastercraft Woodworks to supply all the custom studio furniture, including the two 1000-pound studio tables in solid oak; Scientific-Atlanta to provide the digital downlink, and Utah Scientific to supply the 150x110 audio routing switcher. All other equipment was purchased individually.



Both Studio 1 (top) and its adjacent control room (below) contain Colorgraphics/Integrated Technology news computers and McCurdy customized talent consoles with intercom and monitor select built in.

The building had been turned over to WRC by Thanksgiving 1982, at which time the design staff moved in, followed shortly by the installation of the wiring system. Both computer floor and overhead wiring ducts were part of the design. The computer floor covers all the technical area, and was used for audio and control wiring. The overhead



WRC-AM

ducts carry monitoring audio and all the RF and data associated with the news computer system, remote controls, and other computer-based systems in the station.

From the time the consoles arrived until March 14, when the station began on-air operations from the new facility, the full facilities of our engineering department were singly focused upon the completion of the master control center, the edit control room and booth, and the air control room and studio.

After the on-air control facility was operational, construction began on the second studio/control room complex, intended to provide both a backup air facility and a light production facility. This room was finished in mid-June. Subsequently, the old WRC studio facility in an old wing of the building was torn down and a third studio/control room complex, a multitrack facility for extensive productions, was completed.

KNX-AM

LOS ANGELES, CA

METRO RANK: 2

Submitted by
ERIK J. DISEN,
Director,
Technical Operations

In 1973, KNX was using a technical plant essentially left over from big-time network radio. The seven studios had all-tube audio mixing consoles using plug-in Langevin amplifiers. The number of 6V6s and 1620s per studio was amazing! The equipment was worn out and needed to be replaced. Completely replacing such a large outdated technical plant did not occur overnight; in fact, it took KNX 10 years. But on June 6, 1983, everything, including the transmitter, had been replaced.

The floor plan is left over from the original construction of the building in 1937. The smaller studios were located on the second floor, and as the radio operations changed over the years, the whole KNX operation was consolidated there. Studio 7 is the master control, where all feeds from the outside world (numerous in an all-news format) are received. This was the first room to be

McCurdy's new 24-channel stereo audio console stands alone in quality and performance...

Total control of mixing and monitoring, in stereo, over 24 channels, is not easy at the best of times. Now however, McCurdy's new SS8824, stands alone in its ability to supply that total control.

The SS8824 is loaded with standard features that provide ease of operation and quality of reproduction: items like two individually assignable stereo buses, plus an auxiliary stereo bus, with individual level and assignment, electronic cue switching and improved on/off switching.

The McCurdy SS8824 also has an extensive list of prewired, plug-in options and is compatible with a wide range of McCurdy auxiliary audio equipment. All this gives you quality audio, simplicity of use and flexibility for best possible component matching.

Let us show all the reasons why the new McCurdy SS8824 stands alone in quality audio reproduction. Call us today.

INTRODUCING THE MODULAR

SS8824

McCURDY RADIO INDUSTRIES
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Chicago (312) 640-7077

Since the CBS network has gone to satellite delivery of its program material, KNX has installed a 2.8 m Scientific-Atlanta antenna in its parking lot.

News producer Ron Bradford in Studio 1 with Pacific Recorders console, ITC carts, and MCI tape machines.

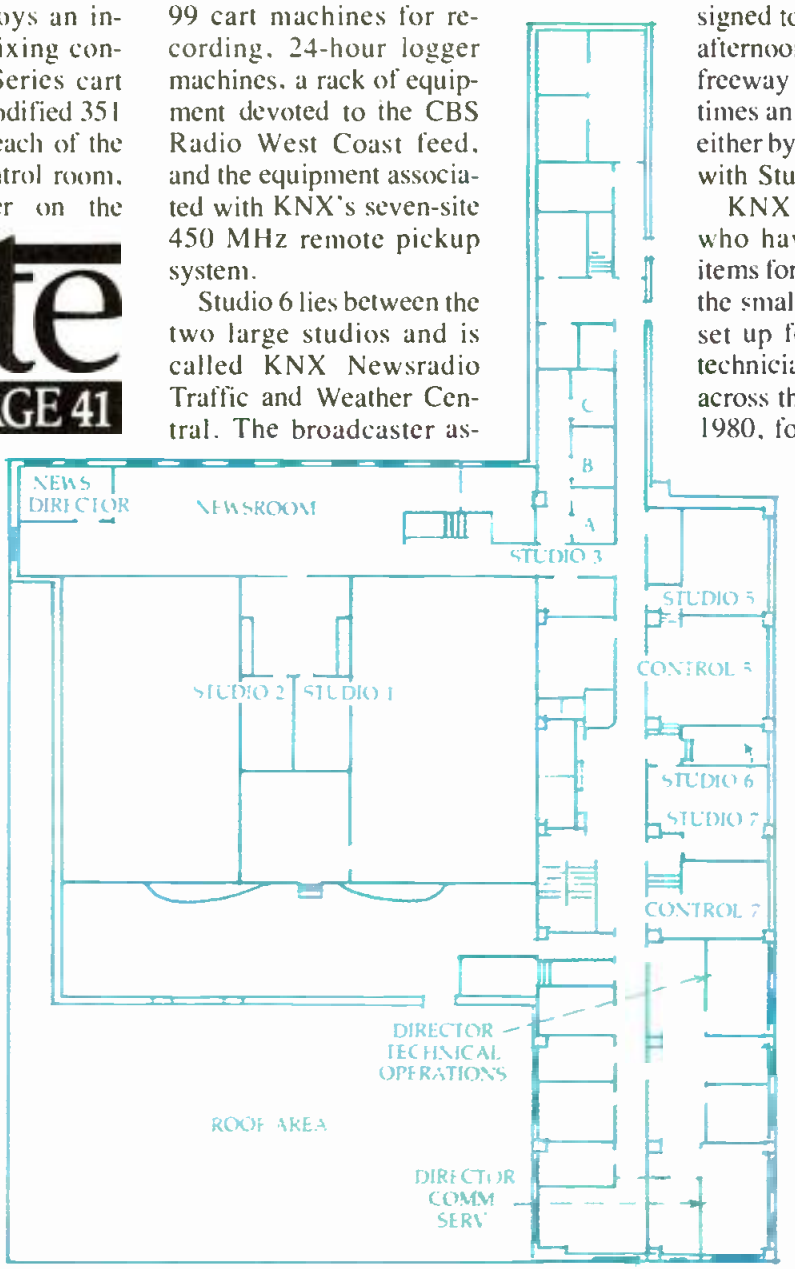
rebuilt. It presently employs an in-house-built 20x4 audio mixing console. The ITC Premium Series cart machines and the Ampex modified 351 tape machines are within reach of the technican who runs the control room, supporting the broadcaster on the other side of the glass.

vote
BALLOT ON PAGE 41

Master control also has 32 Bonneville DA-6 distribution amplifiers that feed the various in-house and external audio signals via 19-pair Beldfoil to the other parts of the station. The KNX transmitter, 17 miles south of the Hollywood studios, is controlled from this studio via Moseley DRS-1 remote controls.

Studio 5 is the main production studio. It is a carbon copy of the master control, in case there should be a major failure. Additional features in Studio 5 are the MCI JH-110BX tape machines (four in all), ITC Series 99 cart machines for recording, 24-hour logger machines, a rack of equipment devoted to the CBS Radio West Coast feed, and the equipment associated with KNX's seven-site 450 MHz remote pickup system.

Studio 6 lies between the two large studios and is called KNX Newsradio Traffic and Weather Central. The broadcaster assigned to this studio in morning and afternoon drive periods reports on freeway and weather conditions six times an hour. Studio 6 is controlled either by the control room associated with Studio 5 or 7.



KNX employs many reporters who have to produce their news items for later broadcast. In the past, the smaller production studios were set up for split operation, with a technician and a broadcaster sitting across the glass from each other. In 1980, former Studios 3 and 4 were gutted out to the walls to make room for three news edit booths, which resemble small-market production studios without turntables. For the first time in history, factory-made audio consoles, Ampro AC-6MBs, were used as an expeditious and cost-effective answer to making them ourselves. ITC Premium Series cart machines and the modified Ampex 351 tape machines round out the equipment in Studios 3 A, B, and C.

This year, the final two studios, formerly set up for split operation, were demolished to make way for two more larger news edit studios. With the exper-

KNX-AM

ience of building Studios 3 A, B, and C, we were able to include some features in Studios 1 and 2 that make a newsperson's life easier. There are three microphones in 1 and 2, so a group discussion can be recorded. The decision was made to go with Pacific Recorders BMX-10 audio consoles.

KNX is a 50 kW, non-DA, Class I-B station on 1070 kHz. In 1981, CBS Radio chose a Continental 317-C2 replacement transmitter. The audio processing is an Orban 9000A with a backup unit feeding the auxiliary high-level plate-modulated 50 kW transmitter, a General Electric 4BT-50A1. There is a 225 kW Caterpillar diesel generator in case the power goes off. The main antenna is a guyed 497-foot (½ wave) tower, while the auxiliary antenna is a guyed 365-foot tower.

KNX also found a place on its Hollywood parking lot where the interference level was low enough to mount a 2.8 m dish above ground, out of harm's way. The 4 GHz RF feed from the LNA to the downconverter is fed via ⅞-inch foam coax. Even though the run is almost 300 feet, the loss is less than that using the supplied coax.

CKSP-AM

SUMMERLAND, BC

METRO RANK: UNRANKED

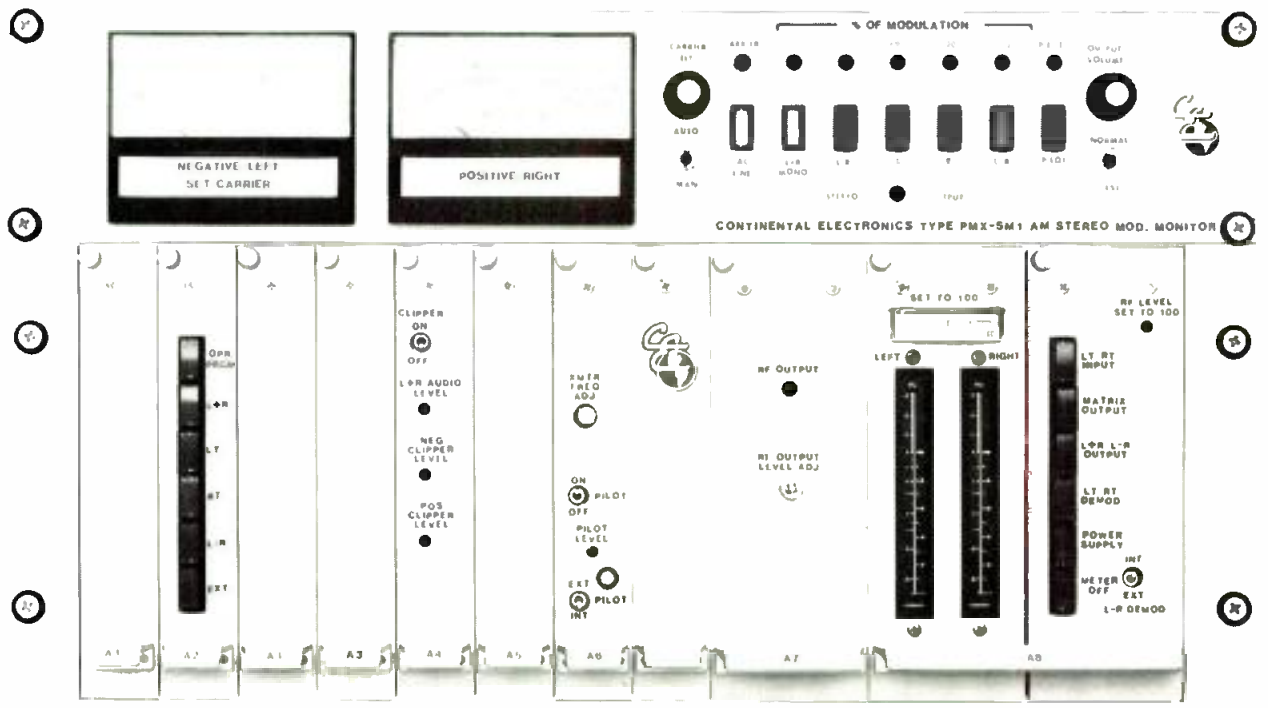
Submitted by
BARRY JOHNSTON,
Chief Engineer

Established in 1972 as a sister station to a larger AM facility, CKSP was designed to operate a maximum of six hours a day serving Summerland, a small community in the interior of British Columbia.

As business increased, we found the 500-square-foot facilities inadequate, so in late 1981 we began planning a larger station to allow an increase in program time and better community service. The entire upper floor of a building on the same street was available, giving us 2800 square feet. Now we had the room to build a "real" radio station! Not only was the building adequate for all the technical requirements, but also the Main Street entrance further enhanced our established community involvement, providing convenient access to the public.

vote
BALLOT ON PAGE 41

Your winning combination for AM Stereo



Is AM Stereo ready to move up?

Market-place decisions notwithstanding, the recent introduction of receivers able to decode signals from any of the four systems in use today makes it easier for broadcasters to move ahead with AM Stereo plans.

Which system is #1?

The PMX (Magnavox) System was first selected by the FCC to be the Industry Standard for AM Stereo.

We established the system's viability during the 1979 NAB Show.

The politically-inspired "market-place" decision hasn't affected the technical performance of the PMX System one bit.

Hearing is believing.

With the PMX System, AM Stereo music sounds like FM Stereo music. So it makes for higher listener appeal and better numbers: For audience and the bottom line.

The Winning Combination

Our Type 302A Exciter, developed for the PMX System, and our new Type PMX-SM1 AM Stereo Modulation Monitor give you a superior package for AM Stereo broadcasting.

We've built a world-wide reputation for high-quality AM transmitters that offer unmatched on-air reliability with complete transparency.

Ultimately, the day-to-day operation of your AM Stereo System will depend upon equipment and service.

We stand on our track record of providing the best of both.

If you're considering AM Stereo, or if you just want more facts, give us a call. You can't lose.

Continental Electronics Mfg. Co.
PO Box 270879 Dallas, Texas 75227.
Phone: (214) 381-7161

Continental Electronics

Circle 144 on Reader Service Card

The main control room at CKSP is laid out so that everything is within easy reach from the announcer's position.

Challenged by a small market station's limited budget, many hours of planning were required to achieve maximum efficiency. With this careful planning, as well as utilizing local contractors and tradesmen, the "new CKSP" was actually completed within projected cost.

The control rooms were laid out to provide a view of the downtown area. Although constructing sound studios on outside walls with windows creates engineering problems, we felt that it was necessary for the atmosphere desired. All walls surrounding the sound studios are 13 inches thick, using two staggered-stud two-by-four walls, separated at the top, bottom, and through the center with one-inch Dona-cona board (fiberboard). Walls are filled with fiberglass and covered with two layers of 5/8-inch sheetrock. In each studio we also installed an acoustic absorption wall built with a two-inch-in-ten-foot slant. This was covered with one-by-three cedar boards over dyed burlap, and filled with acoustic fiberglass. These walls are not only aesthetically pleasing, but they also provide excellent acoustic properties. We covered existing wood floors with one-inch fiberboard, then 7/8-inch plywood, topped with carpeting.

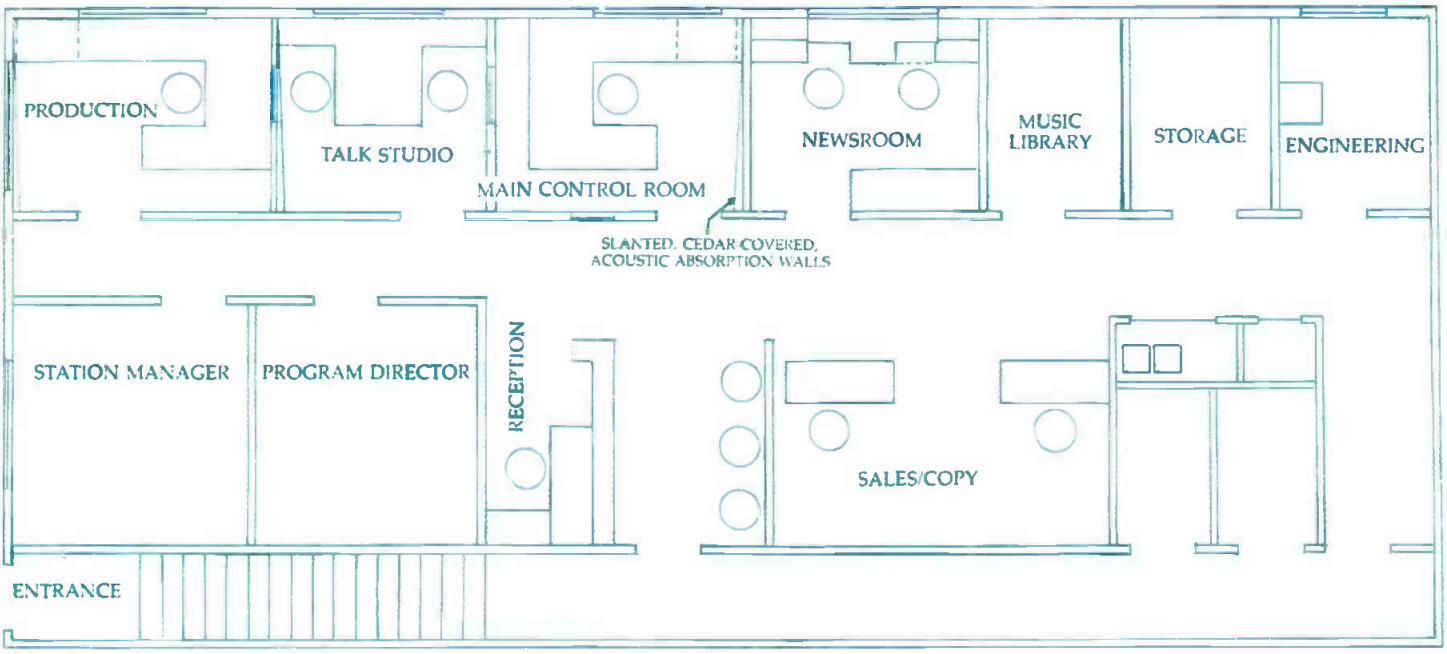
vote
BALLOT ON PAGE 41

Using Dona-cona board as the base for floors and walls was a very inexpensive but quite effective way of producing a "floating" room, so each studio was acoustically independent. We have found our studios to be very soundproof, yet not totally "dead," as found in recording studios.

All studio windows are double pairs of twin-sealed pans in custom frames with sound traps built into the top and bottom. This solved the sound leakage problem related to large windows on outside walls. Having all studios in line with windows between them gives excellent visual contact between main control, talk studios, and production. This layout also allows easy transfer of "on-air" programming from main control to production for emergency repair and routine maintenance.

We installed a four-inch-by-six-inch wire channel in the outside wall that runs from production room to engineering. This makes for easy inter-studio and central wiring to engineering.

For main control, we selected a Ramko DC-8 console and Audicord cart machines. We have purchased this equipment for other stations in our system and found it to be dependable and easy to interface. Modifications to the console include remote turntable starts and hands-free telephone interface



CKSP-AM

The dynamic duo.

A gated compressor/limiter *and* an independent de-esser—dual functions in one economical package. That's Orban's problem-solving 424A dynamic range controller—the new industry standard in level control.

The 424A (dual-channel/stereo) and 422A (mono) offer outstanding flexibility for those situations that require it and utter simplicity for applications where time is tight. But users tell us that what impresses them most is the 424's astonishingly *natural sound*—even at high compression ratios. That's no accident: The 424's innovative circuitry was developed from Orban's famous "Optimod" broadcast processors.

In broadcast, a processor has to sound good on *all* program material without readjustment, and ruggedness and reliability are crucial. The result is a design that substitutes experience for trendiness. The payoff? At last, you can do substantial amounts of gain reduction without audible "action" or pumping. And do it with a machine that's as solid and reliable as its broadcast ancestors.

Use it as an AGC for gentle control of levels, or as a peak limiter to get maximum punch from your program. Our unique "Idle Gain" control works with innovative gating circuitry to prevent unnatural gain variations during pauses or when compression is activated or defeated. And the built-in, independent De-Esser rounds out a system that's particularly useful as a complete vocal processor.

Dynamic level control and dynamic sibilance control—a dynamic duo solving your level control problems and delivering the most natural sound around.

The proof is in the listening: your Orban dealer can show you why the Model 424A/422A Gated Compressor/Limiter/De-Esser has become the most popular level control device available.

orban

Orban Associates Inc.
645 Bryant Street
San Francisco, CA 94107
(415) 957-1067 Telex: 17-1480

Circle 145 on Reader Service Card

Custom-built console and Audicord cart machines are center of bright production room with turntables and cart racks to the left.

circuits.

The remote cart-starts with volume controls and the tape selector/network switches were built in small decorator-type Hammond cabinets with connecting plugs on the rear so that they could be set in the most convenient area on the countertop. Engineering keeps a set of spares for quick replacement. Within easy view of the announcer is a small corner cabinet which contains LED meters showing "air signal" and network feeds, telephone lights, clock, and "off-air" alarm lights.

The engineering department custom-built a console for the production studio. Using suggestions from the announcing staff, we installed features that provided quality of sound and convenience of operation.

The placement of the newsroom, immediately off the reception area, puts it in the center of activity and makes it readily accessible to the public. The diffused lighting and cedar paneling in the talk studio contributes to a relaxed atmosphere for on-air guests. And, after station construction, we still have 500 square feet for future expansion either for offices or other uses.

I believe that we have accomplished what we set out to achieve. We built a modern studio that satisfied all our requirements, a studio that's fun to work in and appealing to the eye. And the project was completed within the original projected budget.

☑vote
BALLOT ON PAGE 41

The broadcast microphone with hidden talents for all your talent. The SM7.

To help broadcast engineers contend with a wide variety of voices, the Shure SM7 is really four microphones rolled into one. That's because the SM7 Unidirectional Dynamic Microphone features two frequency-tailoring switches that provide a choice of four different response curves—to best suit each individual voice and situation.

Depending on the switch settings, the SM7 can provide an extremely wide-range flat frequency response, add presence and crispness to speech, boost vocal clarity, roll off low frequencies to provide natural closeup miking, or help reduce sibilance.

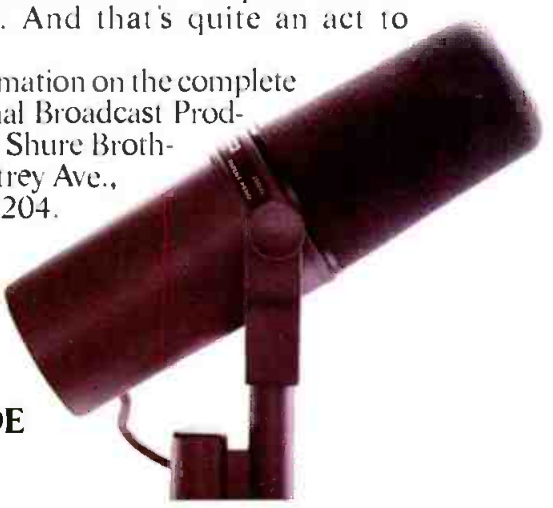
At the same time, a tight cardioid pattern effectively rejects unwanted background noise and minimizes off-axis coloration.

Beneath the SM7's integral foam windscreen is a rugged steel cage that surrounds and protects the cartridge from damage. And Shure's patented air suspension shock mount offers uncompromising isolation, cutting down on the effects of mechanical vibration in the studio.

Engineers will also appreciate the built-in humbucking coil that guards the SM7 against electro-magnetic interference.

With so many talents, it's no wonder the SM7 is following in the successful footsteps of Shure's legendary SM5. And that's quite an act to follow.

For more information on the complete line of Professional Broadcast Products, call or write Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204. (312) 866-2553.



SHURE

THE SOUND OF THE PROFESSIONALS...WORLDWIDE

Circle 147 on Reader Service Card

In the past ten years,
computers have gotten smarter,
cameras have gotten simpler,
ovens have gotten quicker,
beer has gotten lighter,
bodies have gotten leaner,
athletes have gotten richer,
hi-fi has gotten higher,
radio has gotten stronger,
studios have gotten smaller,
towers have gotten taller,
movies have gotten longer,
cars have gotten shorter,
film has gotten faster,
outerspace has gotten closer
and blue jeans have gotten classier.

Now it's our turn.

In the past 10 years, the Premium Line from ITC has seen refinements, but no major changes. Frankly, it hasn't needed any. The Premium Line has been a dependable workhorse that's found its way into more studios than its next two competitors combined.

But we couldn't leave well enough alone. So this year, the Premium Line gives way to the Delta Series, a new generation of cartridge machines that offers you more than ten years worth of improvements.

It's mechanically better. The cart guides are improved. There's a crystal-referenced servo capstan motor with a vapor-honed non-magnetic shaft. Modular construction makes alignment and service convenient. High-speed recue is standard. And the Delta III gives you three independently removable decks.

It's electronically better. There are new, high performance components, including NE5500 Series amplifiers. There's an exclusive ITC/3M playback head for smooth frequency response and improved signal-to-noise. We've added a toroidal power transformer with fully regulated and protected power supplies. And a digital cue tone detector controlled by a powerful microprocessor.

And it's physically better because it's smaller. The whole unit is only one-third rack width (5⅝"). The enclosure is made of ¼-inch milled or cast aluminum, for stability. And the panel inserts are made of Lexan®.

Of course, we left in all the good things that made the Premium Line so popular. The ½-inch tool plate aluminum deck. Durable, high quality switches. And a solenoid-actuated, chain-and-sprocket pressure roller assembly. All backed by our famous two-year warranty on parts and factory labor, plus a 30-day guarantee of satisfaction. If, for any reason, you're not completely satisfied, you can return the unit within 30 days of purchase and we'll refund your money in full.

The good things are still there. But what you'll notice are the improvements. We think they were worth the wait.

For more information, or to place an order, call us collect from Alaska, Hawaii or Illinois, at 1-309-828-1381. From the rest of the U.S., call the following. Toll-free number:

1-800-447-0414.

3M hears you...

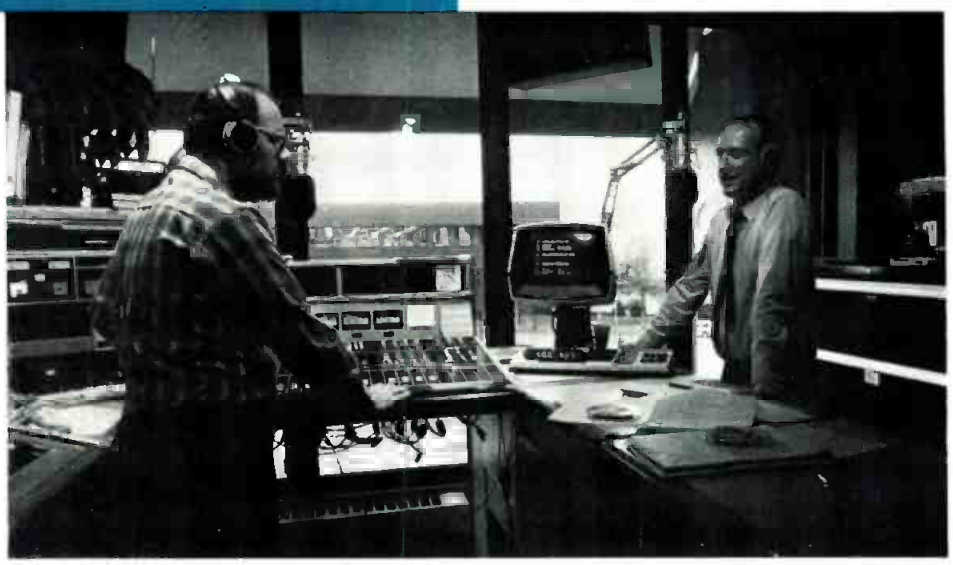
3M

KSEA-FM

SEATTLE, WA

METRO RANK: 13

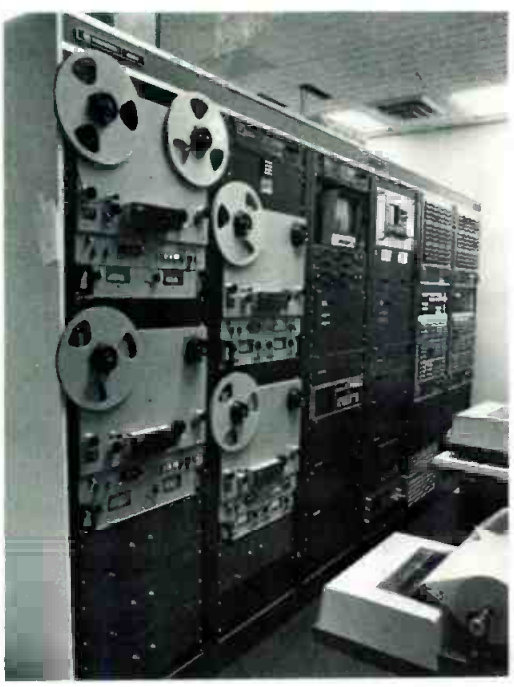
Submitted by
BUZZ ANDERSON,
Chief Engineer



Announcers prepare to go on the air in the control room. To the right of the console is the TEC 70 terminal to allow the announcer total control of the 9003 system for the live-assist operation.

In the last three years KSEA has undergone a thorough overhaul of virtually every operating part. The conversion started with the engineering office/shop, which was expanded to include a large bench, equipment rack, crossconnect system, a large storage cabinet and new test equipment. Next, we brought in a new automation system, a Harris 9003, supplemented with a 9001 for backup, and SCA programming. The transmitter was moved into a new building (shared with KIRO-TV), and matched up with a new unit to form a 40 kW parallel feeding a new Harris FMH six-bay antenna. The last change was the exciter system that was replaced with a new Broadcast Electronics package.

At the hub of the entire station is the audio crossconnect system (CCS) located on the walls of the engineering shop. *All* audio appears at the custom-built CCS one or more times on its path through the station. Using over 100 12-pair shielded cables, virtually all sources and destinations are brought to the CCS, where they are interconnected, at eye level, with shielded jumper wires. The CCS is made up of small (2-56) wire clamp feed-through barrier strips, mounted side by side on four-inch-wide Plexiglass panels on two-inch standoff. Two panels mounted side by side vertically form a column of 96 three-wire circuits, enough for a 48-circuit Bantam patch bay. The Plexiglass panels have a white tape strip down each side for identification of every single circuit at each connection. Each connection also has a four-digit location code used to index all circuit information in the station cable and wire logbook. All of the permanent 12-pair source/destination cables are soldered underneath the Plexiglass panels to the barrier block wire feed-through posts.



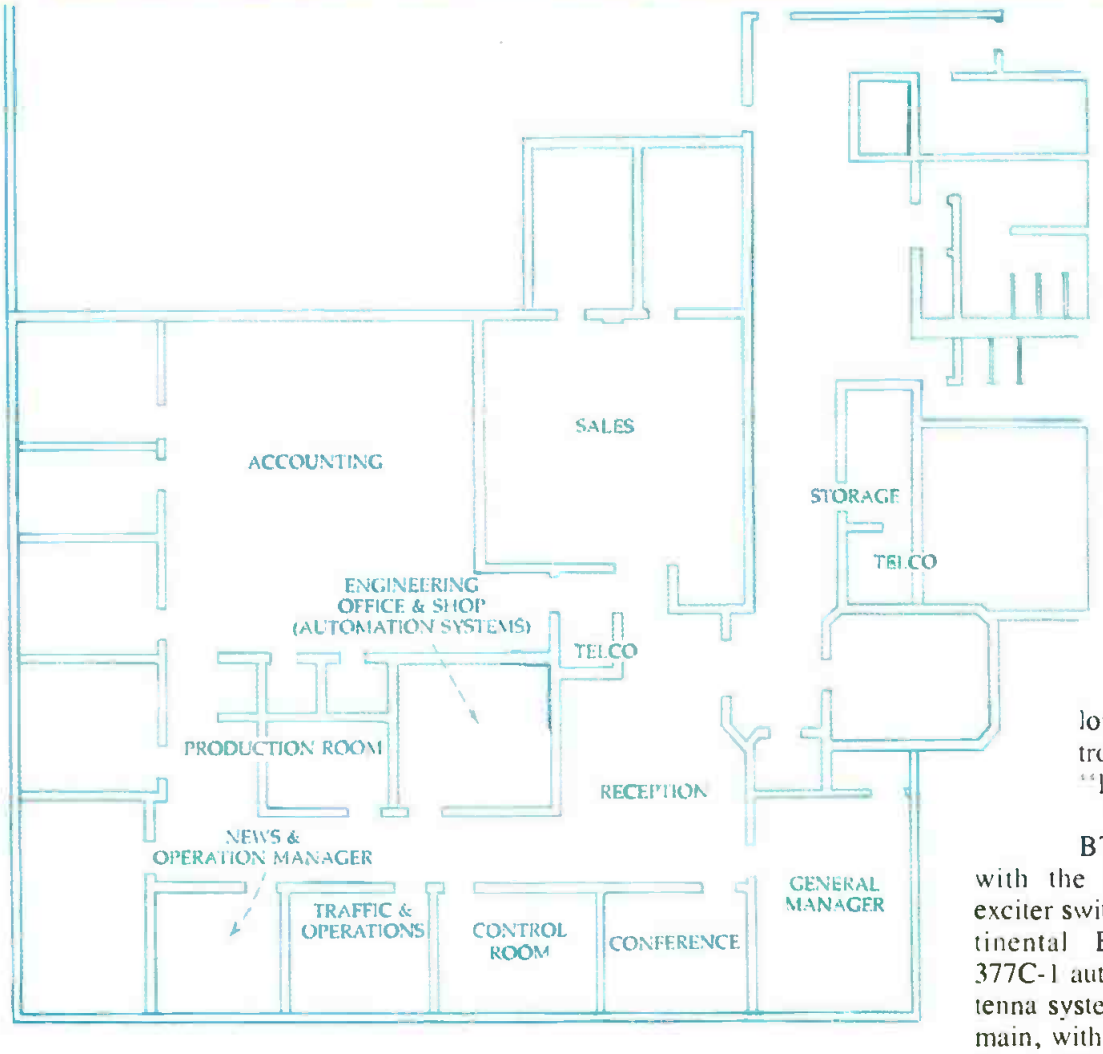
One of the first moves KSEA made when rebuilding its facility was to install new Harris 9001 (left) and 9003 automation systems.

Our Weatherphone System located in the shop uses conventional telco 1A2 key system equipment and two Harris Criterion 90 cart decks. The system provides a 60-second weather forecast, with two different sponsors, via a 15-line interface, to an average of 120,000 callers per month. There are plans to digitize the audio recording, eliminating all moving parts, and expand to twenty lines in 1984.

We also acquired new test equipment, including: Tektronics 5L4 spectrum analyzer and camera; HP 1742A oscilloscope with DMM; HP 3312A function generator; HP 5315A universal counter; Fluke 8050A digital multimeter; Fidelpac 65-390 wow and flutter meter; and a Simpson 260 VOM.

We run the KSEA main program channel on a Harris 9003 system with a 32-channel audio switcher. The existing sources are: Studio A (control room); Studio B (production room); satellite (Bonneville Easy Listening music); four Instacarts (spots, jingles, and so on); four MCI reel-to-reels (local music rotation for drive time) and ITC WP (emergency fill music).

We run the SCA channel programming on the Harris 9001 system with a 16-channel audio switcher. The existing sources are: Radio Data Systems satellite (2400 baud data system); telco coupler (college sports and external religious programs); two Technics RSM85MKII cassette decks (religious programs); and three MCI reel-to-reels



(on a transfer switch from the 9003). Both Harris 9000 systems have had the program buses modified to allow side-chain audio processing on nonmusic (9003) and nondata (9001) sources. The two processors are ADR Compex 760 limiters. In addition, the 9003 system has a built-in B&K oscilloscope for easy head alignments and a continuous display of program phasing.

We put automation control terminals in the two studios and in traffic, for the 9003; in operations for the 9001. With data transfer switches, the terminals will be able to access either of the Harris systems as well as any other computer system installed at the station.

Soon Harris will have the software completed to allow the 9003 system to communicate directly with the Marketron Act IV traffic system, eliminating the need to load the log manual-

KSEA-FM

ly every day.

Each station contains an Auditronics 18-channel console modified to provide direct interchangeability between mono and stereo input modules in all channels. The console is bridged between the two cabinets to allow 100 percent access to all wiring and the backplane. TEC 70 terminals located to the right of the console allow the announcer total control of the 9003 system for the "live assist operation."

The transmitter is an RCA BTE 40E1 40 kW parallel with the combiner switching and exciter switching replaced by the Continental Electronics 377D-1 and 377C-1 automatic controllers. The antenna systems are a Harris FMH-6BC main, with pattern optimization, and a Harris FMH-2BE auxillary with raydomes. These antennas are mounted on the side of the 530-foot KIRO-TV tower in downtown Seattle.

The new exciter system installed in October 1983 includes two Symetrix CL150 limiters, an Aphex aural exciter, a Broadcast Electronics FS-30 stereo generator, BE FC-30 SCA generators (67 kHz and 92 kHz), and a BE FX-30 exciter. There is also a QEI 691-01 modulation monitor.

WKYS-FM

WASHINGTON, DC

METRO RANK: 9

Submitted by
DANIEL G. RYSON,
Supervisor, Construction & Maintenance, and
WINFIELD S. STANDIFORD,
Manager, Engineering

When we moved to a new office, studio and transmitter complex in a new building, we had an opportunity to build a station that would fill our existing and projected needs and also solve some severe coverage problems. The station was built with four control rooms and associated studios: Control/Studio 4 for backup air and production; Control/Studio 5 for air; Control/Studio 6 for production (four-track, expandable to eight-track); and an edit/announce booth for news production.

We estimated that our studio walls, floors, doors and windows would have

vote
BALLOT ON PAGE 41

a useful life of 30 years. Not wanting to live this long with any mistakes in design, we hired an acoustic consultant, Paul S. Vene Klasen & Associates of Santa Monica, CA. This firm worked closely with the building architects to insure that mechanical systems designed into the building would not transmit noise through the building skeleton into studios. They also specified studio wall, air conditioning and electrical construction.

Each control room was built in a way that allows for easy replacement of equipment and rebuilding. All tie trunks to other parts of the building enter each control room and terminate on barrier strips. All equipment in a control room, including the console, also terminates on barrier strips. Interconnecting wiring in wire lockers within each control room ties everything together. With this method of construction we can easily reconfigure what appears where on a console.

Operating engineer in air control room works on Neve custom console with MCI tape recorders, ITC Delta cart players and Technics turntables in the background.

Our air Control Room 5 and backup air Control Room 4 are built around Rupert Neve 15-input custom consoles. Each room also has MCI JH110B audio tape recorders, ITC Delta cartridge

Rough edges bend Arthur out of shape.

Sometimes, under our optical comparator, the edges of tape we receive from a supplier look like the teeth of a crosscut saw. Those poorly slit edges could cause a loss of phase stability. And when Arthur Constantine, our VP Sales, sees them, he really gets bent out of shape.

Next thing you know, that tape is on our loading dock to be shipped back to where it came from.

The same thing happens when Arthur spots uneven oxide coating, poor surface bonding or spotty lubrication.

Our specifications are tough to meet. But, we require our suppliers to meet them. We'll ship a whole batch of sub-standard tape back, before we'll send one defective cartridge out to you.

That's why seven out of ten radio stations around the world rely on Fidelipac Tape Cartridges.

We simply will not compromise the consistent quality of our product.

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BROADCAST TAPE PRODUCTS

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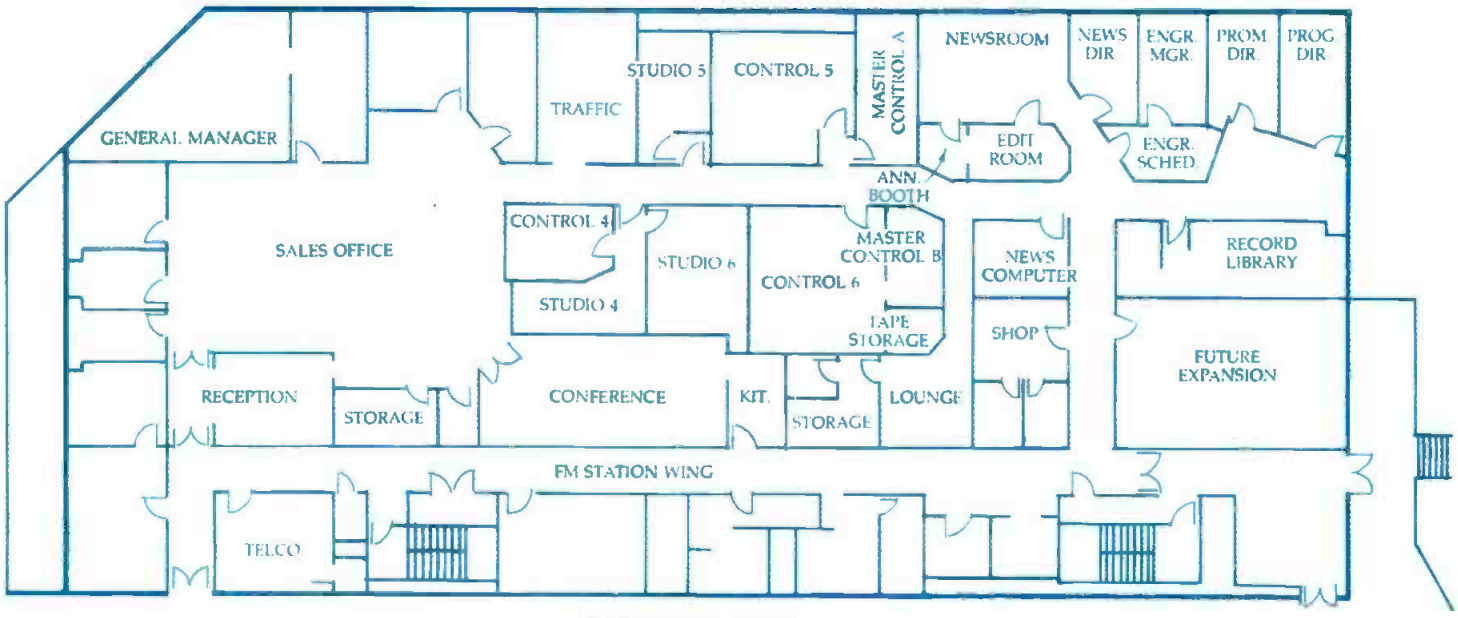
Circle 154 on Reader Service Card



WKYS-FM

players. Technics turntables and cassette recorder/players.

Our production Control Room 6 has a McCurdy Radio Industries 8720 eight-track console with ITC Series 99 recorders. Almost all music we play on the air is from cartridge tape which is dubbed in this room from phonograph records or reel-to-reel supplied by record manufacturers. We are also equipped to play compact discs directly on the air and will do so with increasing frequency as air product becomes available.

Based on time and motion studies of a news operation, we worked wth a local firm, Duponts Cabinet, in the design and construction of a three-work-station newsroom that puts those items most frequently used within easy reach of personnel. Provisions were made for eventual computerization of news operations, including an air-conditioned room to house the computer system disk drive.

Audio distribution for the entire plant is by means of a Utah Scientifiic 50x40 stereo routing switcher. This system feeds audio to all offices and technical areas. Plant intercommunication is done with a Farrtronics 20x20 intercom system, into which we integrated the news department two-way system.

One asset we had to work with when we designed the station was the park land adjacent to the building. The air control room/studio, newsroom and most offices were built to take advantage of Glover Archibald Park. In each control room/studio combination, the cabinetry is in a different color, to minimize operator fatigue. In the selection of the colors for the air control room, where engineers and announcers work long shifts, we matched the cabinetry to two trees which dominate the view from both work positions. This facility was "human engineered" to be one where people feel at home.

One of three work stations in the newsroom shows the Farrtronics intercom and two-way control (left) and turret with Utah Scientific routing switcher and tape players on the right.

Three years ago we knew we had a serious coverage problem in the Virginia suburbs and in the Georgetown area of the District of Columbia along the Potomac River. The consulting engineer firm of Robert A. Jones did a series of ground and airborne field strength measurements, which concluded that the station's tower was causing a shadow in coverage on the side of the tower opposite the antenna. We also determined that the gain of the antenna should also be reduced for better coverage in the valley along the Potomac.

The solution was the installation of two Harris FM 25k transmitters operating at 27,100 W, along with an RCA BFJ-4 panel antenna and a Delta Electronics remote-control system. The station operates with a full 50,000 W ERP.

Now You Have a Choice...

Network Compatible Digital Audio Earth Station Terminals for ABC/CBS/NBC/RKO Program and Data Formats...from Comtech!

Comtech's commitment to the broadcast industry continues in the wake of our successful analog SCPC network now in place and operating for the affiliates of the Arkansas Radio Network. Our new digital Audio Receiver Terminal (Dart 384) is cost-competitive and fully compatible with the major networks digital audio systems. It also meets, or exceeds, all audio quality requirements. So, if you are now a network affiliate or considering becoming one, the Dart 384 Terminal will provide you with everything you need for quality digital audio to match your network's system.

The system is completely Comtech from top to bottom and draws heavily on our years of expertise in high-speed digital data communication equipment. It is also designed to accommodate the more restrictive spacing of future satellite placements. Comtech will provide site survey and/or turnkey installation services if desired. However, we have designed the terminal for ease of installation using local services.

The basic terminal consists of Comtech's high performance of 3.8 meter antenna; low noise amplifier, antenna-mounted down converter and demodulator shelf with 8 channel program capacity. The channels can consist of a mixture of audio channels, data channels and one voice cue channel. It is also user expandable with plug-in modules and expander shelves.

For a closer look *at this alternative source for your Digital Audio Earth Station, write or call Comtech Data Corp., 350 North Hayden Road, Scottsdale, Arizona 85257, (602) 949-1155, or Comtech Antenna Corp., P.O. Box 428, St. Cloud, Florida 32769, (305) 892-6111.*

Distributed By: ALLIED Broadcast Equipment

PERFORMANCE IN SATELLITE DISTRIBUTED DIGITAL RADIO NETWORKS

COMTECH

Comtech Data Corporation Comtech Antenna Corporation

Subsidiaries of Comtech Telecommunications Corp.

Circle 155 on Reader Service Card

WNWC-FM

MADISON, WI

METRO RANK: 105

Submitted by CARL A. RAMSEY, Manager

Our 24-hour-a-day noncommercial Christian format station features a blend of about 70 percent music (most hosted by live announcers), 20 percent taped syndicated features and 10 percent news. We designed a 3500-square-foot building to house the facility. WNWC is one of 10 stations in the upper Midwest owned by Northwestern College, Saint Paul, MN. The station is located adjacent to Madison's Beltline freeway in an office park, providing for high public visibility, but a potentially noisy environment.

In the large main control room, as throughout the rest of the facility, we use Technics SP-10 MK II turntables, all mounted in individual 600-pound concrete bases with oak wood fronts of our own design. Electro-Voice RE20 microphones, AKG K240 headphones, and JBL 4301 BWX monitor speakers suspended on rubber straps are used throughout the entire facility. Our Broadcast Audio Associates System 12 console has one mono and three stereo channels and provides for remote control of the turntables, as well as an International Tapetronics Corp. (ITC) 3D cart reproducer and a variety of three tape recorders located in a built-in rack across the room from and to the right of

View of the main control and news booth areas as seen from the large studio shows built-in equipment rack (left), accessible from rear.

LISTEN TO THE DIFFERENCE.

THE DELTA RCS-1V REMOTE CONTROL SYSTEM

A simple, yet sophisticated approach to AM, FM and TV Remote Control

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All parameters are displayed for the operator.

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The RCS-1V is designed to grow with your plant. Additional control, input, and alarm boards can be added to the systems, thereby meeting any new station requirements. In addition, the RCS-1V contains the fundamental building blocks for ATS, permitting conversion to a combination Remote Control/ATS System at a later date.

Write or call for a descriptive data sheet and pricing.

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DELTA ELECTRONICS

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Circle 157 on Reader Service Card

the operator. The racks also house monitoring equipment, an Orban Optimod 8000A and Micro Controls studio transmitter link and remote-control units. Wiring from each studio passes through a switching center in this rack area. A custom-built cartridge storage cabinet is to the immediate right of the announcers.

The production studios are identical in size and layout. We kept the turntables on the left in all of the studios so that the operators would become accustomed to this location. The MCI and Ampex ATR 700 tape recorders in Production A and B are mounted in their own individual roll-around pedestals for operator convenience, and to permit them to be interchanged between studios. Each production studio has an ITC RP record center. Production A has a CCA console and Production B uses another BAA System 12. There is walk space behind each console in the building to facilitate maintenance.

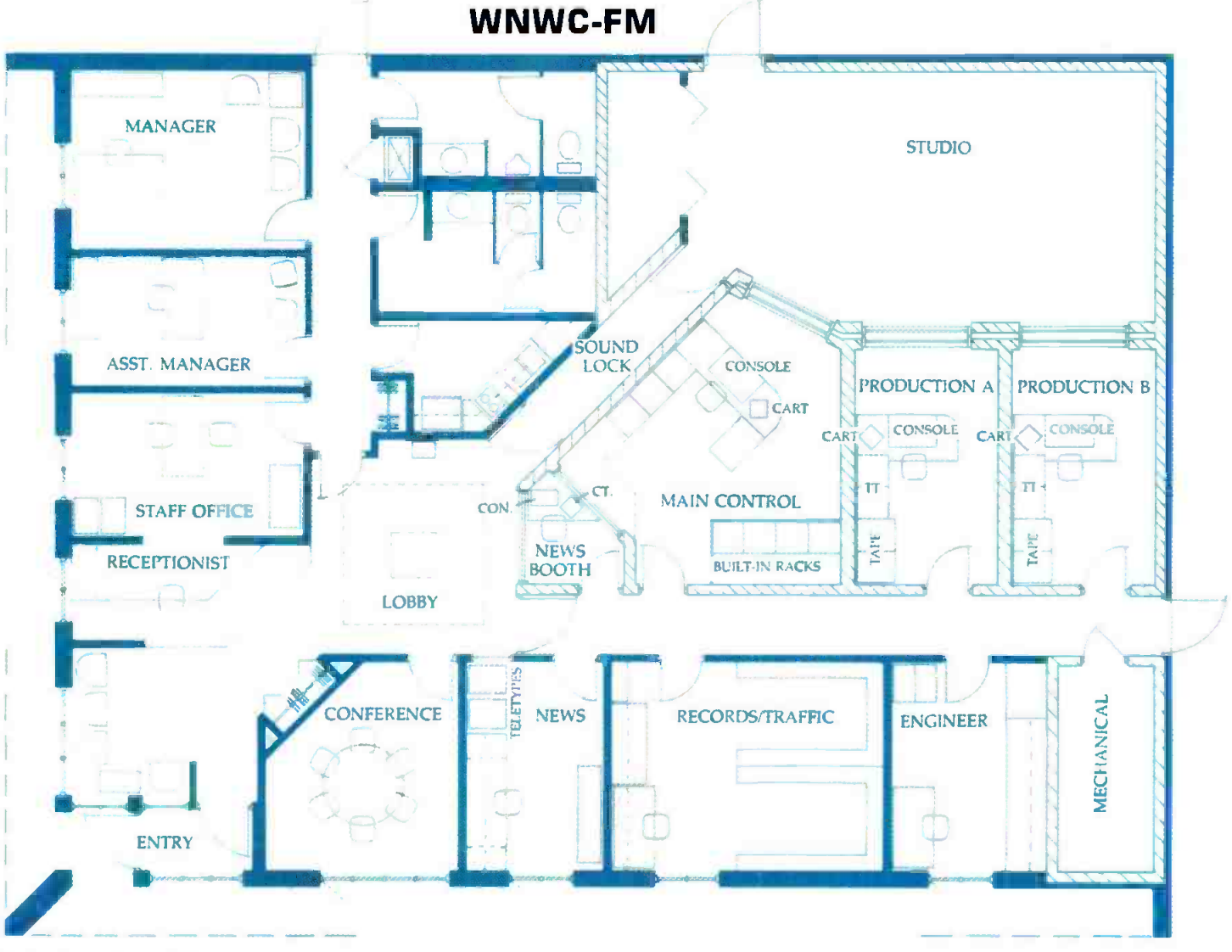
In the news booth, we have a Shure M67 mixer that we modified for broadcast use. The newsroom has a Broadcast Electronics 4M50 console along with a Gates Criterion 800 cart record center, a Magnacord tape recorder and cassette and phone recording equipment. There is also an ITC 3D playback unit. With this setup, we can go on the air directly from the newsroom.

Chief engineer David Woodcock checks out the Broadcast Audio Associates System 12 console located in the main control room.

The studio walls were not punctured, except for the heating ducts, which are specially sealed and isolated by second ceilings. The studio complex has a completely separate and quiet heating and air conditioning system, located in the mechanical room. The rest of the facility is heated and cooled from a rooftop unit. All electrical and audio conduits run underneath the floor. A copper grounding system was installed before the individual slabs were poured for the studio floors. Between the large studio and the control rooms there is a double-block wall with a four-inch air gap in the middle. We installed windows of double ¾-inch laminated sound glass. Various combinations of block walls with specially applied dry wall over the top are used throughout the rest of the studios. All of the studios make extensive use of sound block, highly absorbent ceilings, Sound Soak wall panels and carpeting on the floors.

The new facility has functioned as we had hoped it would. And we did it within our budget of $170,000, with the help of our contractor and a crew of volunteer cabinetmakers who are station listeners.

WNWC-FM



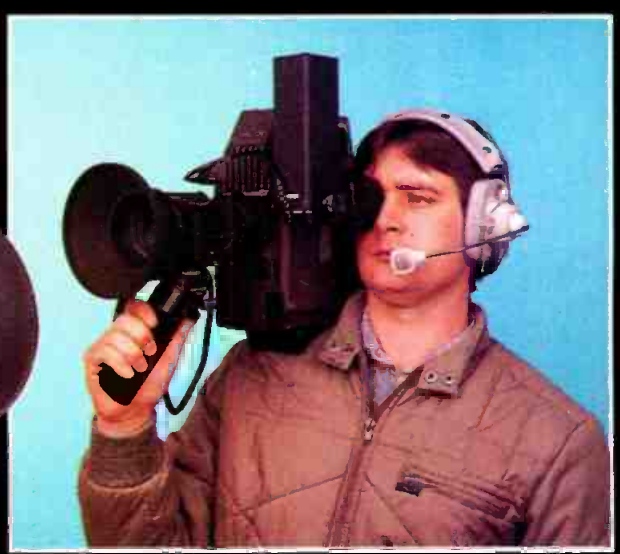
Versatility

Philips LDK 14SL/RGB

You won't find a more versatile television camera than the Philips LDK 14SL – with its quick switch capability for Studio, EFP or ENG use.

Yet however you use it you get the same broadcast quality performance – the result of a new LOC diode gun Plumbicon tube and a number of intelligent automatic systems.

Now to make it even more flexible, Philips has introduced the LDK 14RGB. This camera has all the quality of the LDK 14SL family while offering the extra facility of full bandwidth RGB outputs for chroma-key in addition to the normal CVBS video outputs.



PHILIPS

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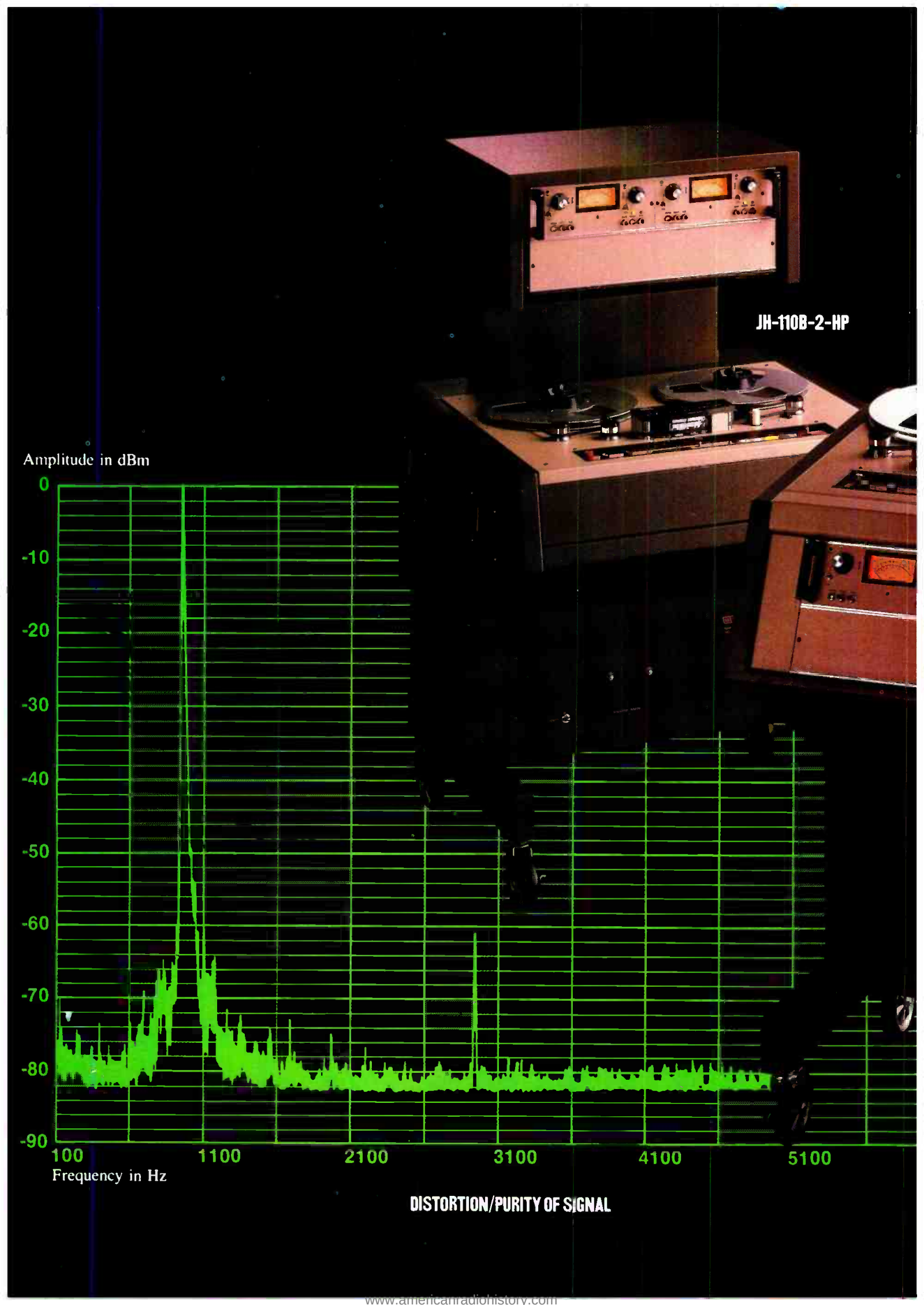
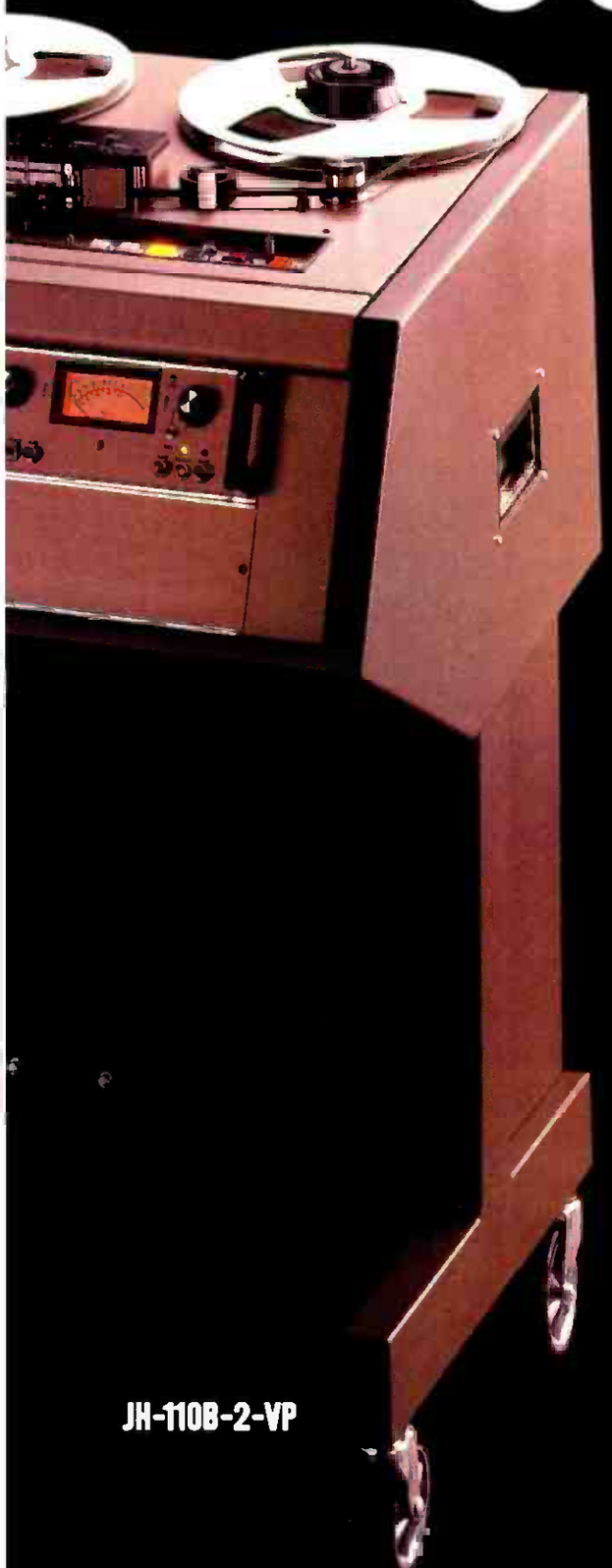


DOES MCI REALLY OUTPERFORM THE REST?



In a world filled with claims and counter claims for high performance audio products, sometimes it's hard to separate opinion from fact. That's why MCI has provide complete graphic proof of all important tape recorder/ reproducer performance characteristics. Now available in a handy Engineering Notebook, these curves and their accompanying methodology form the standard by which all other tape recorders must be judged.

If performance matters in your broadcast or tele-production application, don't be fooled by "simple specmanship." And if you want to decide for yourself how the JH-110 Series measures up to comparable units, just ask Sony Professional Audio to arrange for a demonstration.

Does MCI really outperform the rest? We'll let you decide. For your free copy of the Engineering Notebook and more information about our demonstrator program, contact Professional Audio Products, Sony Communications Products Company, Sony Drive, Park Ridge, New Jersey 07656.

SONY
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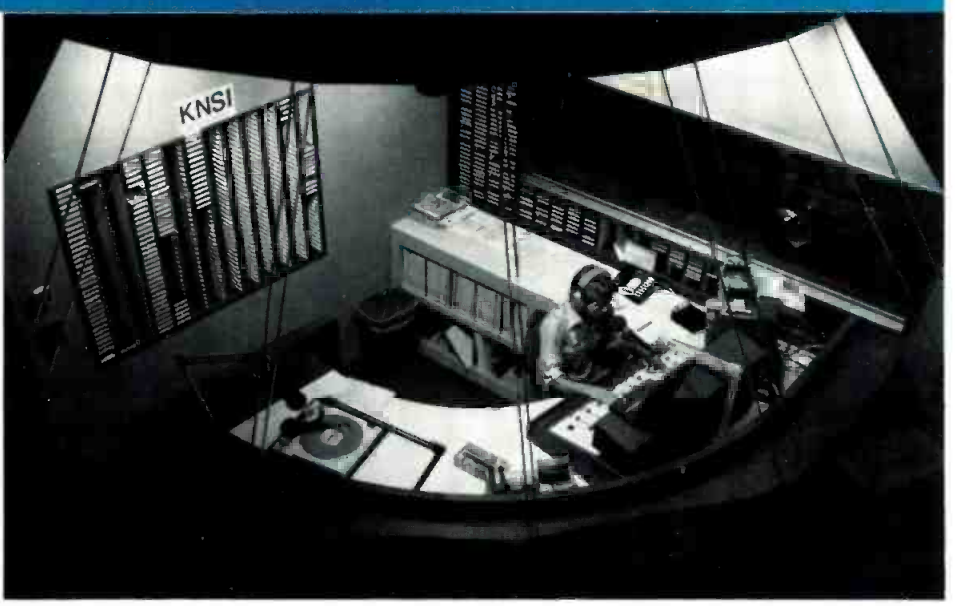
KNSI-AM/KCLD-FM

METRO RANK: UNRANKED ST. CLOUD, MN

Submitted by
JOHN MOLINE,
Station Manager

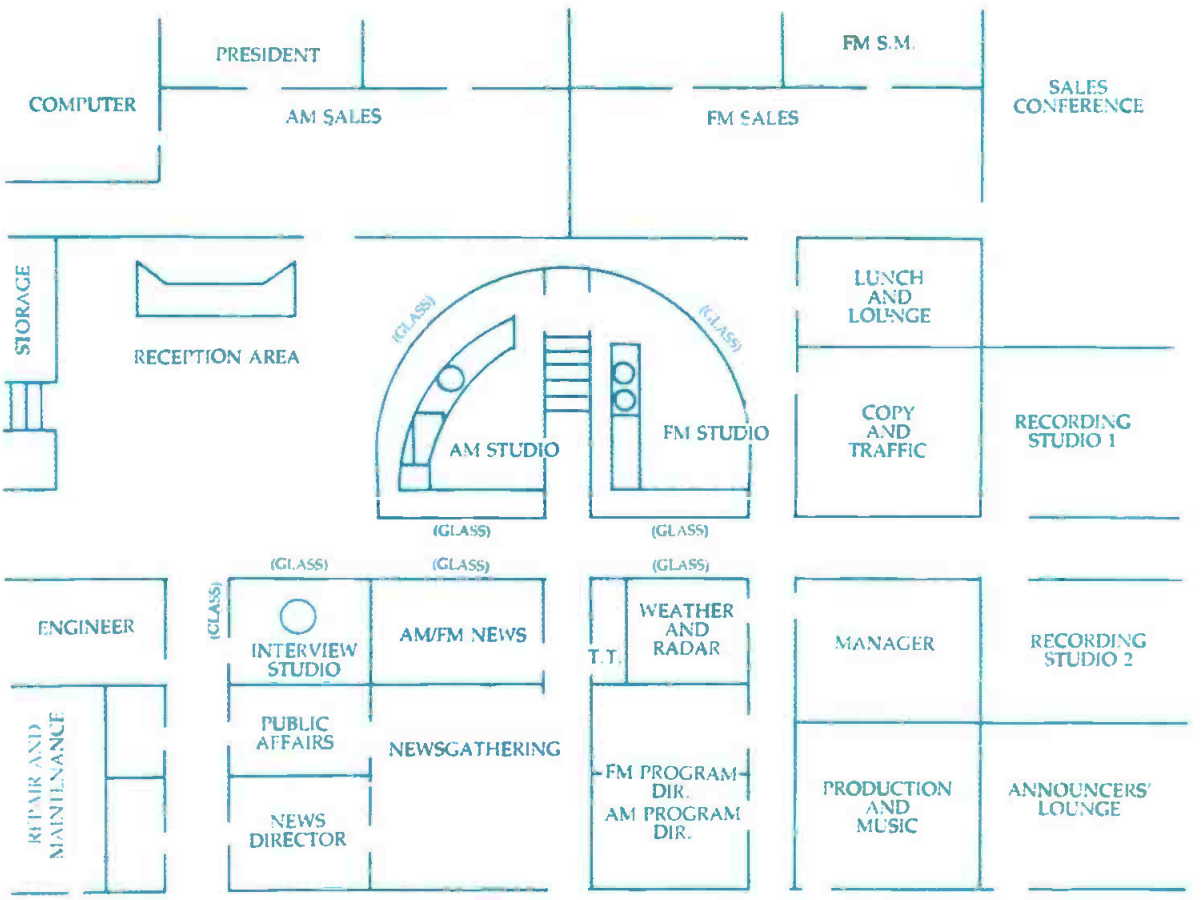


The glass-enclosed studios for the AM station let the on-air personality view other parts of the station complex.

The KNSI/KCLD Radio City Music Mall consists of three of St. Cloud's oldest buildings (the oldest built in 1870); and today we are taking advantage of the thick granite foundations to separate main broadcast studios. There are seven studios and over 15 offices equipped with the best products we could find. Starting with the AM ("Music of Your Life" format), we have three Otari reel-to-reel playbacks mounted under the 12-channel Centurian II console so as not to be in the way of the announcer.

All studios are equipped with a minimum of a three-deck ITC and a single-deck ITC record playback cartridge unit. In the FM KCLD studio, which is our Adult Contemporary 24-hour station, we also use one Otari record playback reel-to-reel, but almost all music is played on the two Technics SP15 Quartz turntables or ITC cartridges. Both AM and FM studios have built-in cartridge sleeves that will hold over 1000 cartridges each. Both studios, which are arranged back-to-back, have waved carpeted walls for better acoustical sound. The audio processing and all remote equipment are located in the

KNSI-AM/ KCLD-FM



FM studio. KCLD-FM uses CRL 2PP800 and KNSI uses AM Optimod for their audio processing. The FM console is a Pacific Recorders 10-channel BMX 10.

Like the on-air studios, each of our two recording studios is equipped with 12-channel Centurian consoles and can be switched over to main operation in case of major console breakdown. Each of the recording studios is also equipped with two ITC 750 and 850 record/playback reel-to-reels and ITC cartridges plus Sharp record/playback cassette units. Turntables are Spartas.

KNSI/KCLD may be the first radio station in the Midwest, if not the nation, to have its own exclusive color weather radar. Our 12-inch Sperry Marine radar is located in our 24-hour StormWatch Weather Center and can be viewed from both AM and FM studios, even though each studio has its own color weather radar monitor. The color unit is a Denrad Colorizer. We can also project on the monitor screens the forecast which is entered on our computer/word processer and also our Heathkit weather computer.

The AM/FM newsroom can be viewed by both studios and is equipped with one ITC 750 and one 850 reel-to-reel and an ITC record/playback deck. Equipped with an Ampro eight-channel micro-touch audio console, the newsroom functions as a studio.

The FM studio is on the opposite side of the wall from the AM in the semi-circular, glass-enclosed air studios, centrally located.

Our entire 12,000-square-foot station was designed by our own personnel to give us the maximum efficiency and a very workable facility. There are over 25 miles of audio wire beneath the floor or in the sofits, so no wires show externally. Radar, microwave, and Marti antenna equipment, are located on our 100-foot self-standing tower on top of the Radio City Music Mall.

KNSI/KCLD is very proud of its state-of-the-art facilities and of the professional atmosphere that emanates from this complex.

WKXJ-AM/WCKQ-FM

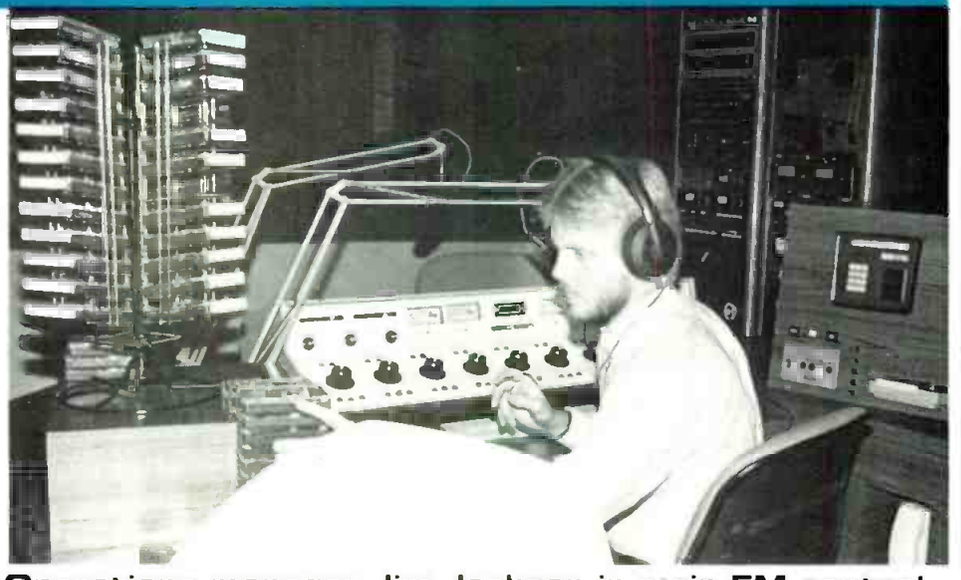
METRO RANK: UNRANKED

CAMPBELLSVILLE, KY

Submitted by
JIM JACKSON,
Operations Manager

Soon after a change in ownership of Taylor County Broadcasting Company in 1979, the go-ahead was given to renovate outdated studios and offices. The main concern was to develop a design for the studios which would be functional and practical from an engineering, as well as a programming, standpoint.

All of our on-air and production studios are designed to be as comfortable as possible, and we have tried to position essential equipment as close to the operator as we can or to provide remote con-



Operations manager Jim Jackson in main FM control room, where all essential equipment is located close to operator's reach.

Studio B is used for production purposes, but may be put on-air if necessary. Music director Mark Royse works the MCI reel-to-reel and ITC carts.

trols to add to the ease of operation.

A common wiring trough ties all studios together and connects to our transmitter room. Existing walls were replaced with soundproof ones using double studs with a one-inch air space and batt insulation. The viewing windows and carpeting on the upper half of the studio walls provide additional soundproofing. To accommodate the special needs of our three studios, a special HVAC system was designed with sound baffles in all duct work to supply each studio with the proper amount of heating and cooling with minimum noise.

vote
BALLOT ON PAGE 41

The FM studio and main control center feature a Continental Electronics Rock 10 console, two ITC three-deck cart machines, Russco Studio Pro turntables, and two Sennheiser 421 microphones with UREI LA/4 compressor-limiters to control the mic level prior to adding a small amount of reverb using a Tapco 4400A. Some equalization is added with a UREI 535 graphic equalizer. We do not attempt to change the announcers' voices, but rather to enhance them by creating a richer, fuller projection.

On the right side of our studio bench is a remote-control panel for equipment in the wall racks. We use a deluxe remote-control unit for the rack-mounted Scully 280B reel machine, and a remote record-play-stop for the ITC record/play cart machine. In the same unit is a GTE speaker phone with a Styleline touch-call phone located below for private conversations.

The two wall racks contain EBS equipment and the Tapco and UREI units. We've also designed an AM/FM/FM stereo alarm panel to indicate the air status of our stations for the operator. In front of the studio bench are modulation monitors for AM and FM, giving the operator constant indication for perform-

"The Electro-Voice Sentry® 500 is a monitor by design."

Greg Silsby talks about the New Sentry® 500 studio monitor...

Everyone expects a studio monitor system to provide a means of quality control over audio in production.

True, other audio test equipment can supply you with valuable data. But that data by itself is incomplete and only displayed in visual form.

Only a true studio monitor speaker system can deliver an accurate indication of audio quality in... **audio**! After all, this is the language of the trained ear and doesn't require a complex interpretation process.

I believe the Electro-Voice Sentry 500 Studio Monitor System will meet your every expectation.

What's a "studio monitor?"

The term "studio monitor" is often a misnomer. It's easy to tack a label on a box and call it a "studio monitor" without including the best precision engineering available, and careful attention to application design. Too often, these all-important considerations are traded-off for such marketing reasons as high cosmetic appeal, a particular type of popular sound, and low component manufacturing cost. While all of this may translate into high profit margins for the manufacturer it does nothing to produce a reliable standard for audio testing and evaluation.

Linear frequency response

The Sentry 500 follows the well-established Electro-Voice tradition of combining the most advanced engineering and manufacturing technology available. The Sentry 500 has been carefully thought-out and built to meet the specific needs of the audio professional. Like the smaller Sentry 100A, the Sentry 500 provides linear response throughout its range (40-18,000 Hz ± 3 dB). In fact, because the two systems share this linearity, program material may be mixed on one, sweetened on the other, with complete confidence in quality. Acoustic "Time Coherence" (the synchronous arrival of acoustic wave fronts from both high and low-frequency drivers) has been maintained through careful crossover design and driver positioning.

Constant Directivity

The Sentry 500 is a Constant Directivity System, benefitting from years of E-V experience in the design and application of constant directivity devices. Utilizing a unique E-V-exclusive high-frequency "Director", the Sentry 500 provides essentially uniform coverage over a 110° angle from 250 Hz on up to 10 kHz and 60° dispersion from 10 kHz clear out to 18,000 Hz! And it does this on both the vertical and horizontal axes. This means the "sweet spot", once a tightly restricted area large enough for only one set of ears, has been broadened to allow accurate monitoring by the engineer, producer, and talent—all at the same time. That's what we call Constant Directivity.

A monitor by design

To qualify as a truly accurate test device, a monitor speaker system must faithfully reproduce the wide dynamic range required by today's music and current digital recording techniques, and do it with low distortion. This is no problem for the Sentry 500 which combines the high efficiency of an optimally-tuned Thiele-aligned cabinet to the brute power handling of Electro-Voice Sentry components. Consider what you get with proven E-V components in the Sentry 500: the Sentry 500 will deliver 96 dB at one meter with only one watt and yet will handle 100 watts continuous program material with 6 dB of headroom. That's 400 watts on peaks! The same Super-Dome®/Director combination which maintains uniform dispersion of linear response out to 18 kHz also handles a full 25 watts of program power or 5 times the power handling capacity of most "high powered" tweeters. After all, tweeters should convert electrical energy to acoustical energy—not to smoke and fire.

The Sentry 500 is another no-nonsense Electro-Voice Sentry design with the incredible performance and credible price you've learned to expect from EV. I'd like to tell you the rest of the Sentry 500 story and send you the complete Engineering Data Sheet. Write to me: Greg Silsby, Market Development Manager/Professional Markets, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

Greg Silsby

Market Development Manager, Professional Markets

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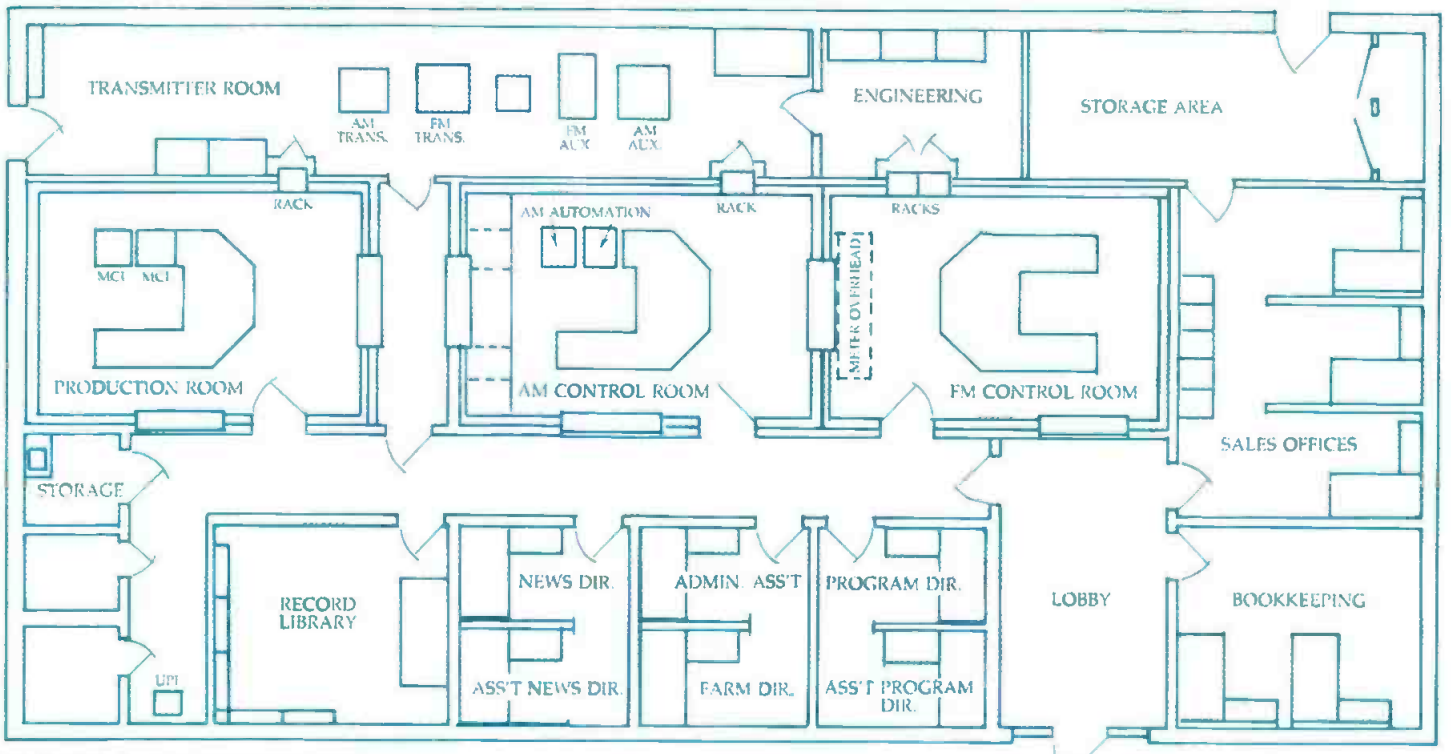


WKXJ-AM/WCKQ-FM

ance of modulation at a glance.

Our on-air and production studios are located on the same side of the building. The AM station control room (Studio A) also serves as a production studio. WKXJ-AM is affiliated with the Satellite Music Network's Country-Coast-to-Coast format. It is fully automated, using a Cetec Series 7000 automation system featuring Audiofile cart machines. Other equipment includes a Rock 10 console, ITC three-deck record/play deck, two Scully 280B reel machines, a Belar remote AM modulation monitor, McMartin remote receiver, and a Sanyo power amp.

Our third studio (Studio B) is used mainly for production purposes, but may be used for on-air if necessary. Here, too, we're using a Rock 10 audio console. In addition, there is an Orban 418A stereo limiter, Orban 622B parametric equalizer, two MCI JH110-B reel machines, two Russco Studio Pro turntables, a Sennheiser 421 microphone, an AKG D1000E microphone, one ITC Series 99 record/play cart machine and one Series 99 playback-only machine.

As with all our studios, the news studio is designed to provide flexibility for the news staff. All equipment is within a 90-degree reach. We designed three equipment racks to fit into an area just above the desk top. We use an Otari MX-5050B reel machine, ITC cart machines, a Tapco 6200 mixer, a Superscope portable cassette machine, and a D1000E microphone. The news staff has all the necessary equipment close at hand, so they never have to wait for the production studio.

The transmitter room contains the main AM and FM transmitters as well as standby transmitters for each. The main AM transmitter is a Continental 314 R-1. The main FM transmitter is a McMartin BF 3.5k. We use an Orban Optimod 8100 FM processor and a Dorrough DAP 310 for AM processing.

We're also equipped with an auxiliary gas-powered generator capable of keeping both stations on the air in the event of a power failure.

It's taken a lot of hard work and a lot of input from engineers as well as from announcers to design this facility, but the results have been worth the effort.

WKOP-AM/WAAL-FM

METRO RANK: 136 **BINGHAMTON, NY**

Submitted by MARGARET BRYANT, Chief Engineer

In 1981, when WAAL-FM and WKOP-AM were reunited after nearly a decade of separate operations, the first problem we had was that neither existing studio facility could house both the AM and the FM. Our search for new quarters was narrowed by the desire to remain in downtown Binghamton. We finally settled on two floors of an old building that had been a clothing store.

It was decided to locate the offices on the second floor and the studios on the third floor. As shown on the floor plan, the studios are located in a core area with hallways around them. This was done for several reasons. First, being located in the center of the building kept out the noise from outside. Having the studios in a central core area also keeps the wire runs to a minimum. In addition to these and other reasons, we needed a simple way to meet the city fire code.

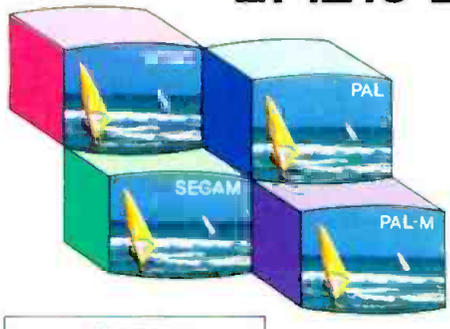
Also located in the core area is the wire

vote BALLOT ON PAGE 41

Cost-Performance to Oki Doesn't Mean Less Performance for Lower Cost.

Performance Takes Priority!

LT1210 Digital Television Standards Converter




LT1015Σ

Professionals demand an uncommon level of picture quality in TV standards conversion. And production on the road requires a compact, reliable unit. Oki Electric built the LT1210 to deliver. It's the world's smallest converter able to handle NTSC, PAL, and SECAM, with PAL-M conversion as an option. Yet it incorporates every function and feature needed for producing studio-quality programming. The image enhancement function, for example, ensures a high-definition picture with outstanding image clarity. This converter is also a totally integral unit so no adaptor or changing of encoder/decoder modules is required for conversion between NTSC, PAL and SECAM.
The cost-performance of the LT1210 is nothing less than outstanding. Oki Electric's proven expertise in standards conversion combined with the latest in LSI technology results in a highly reliable, easy-to-use converter. The LT1210. Check it out. Anywhere.

Oki also produces the high-end LT1015Σ Digital TV Standards Converter.

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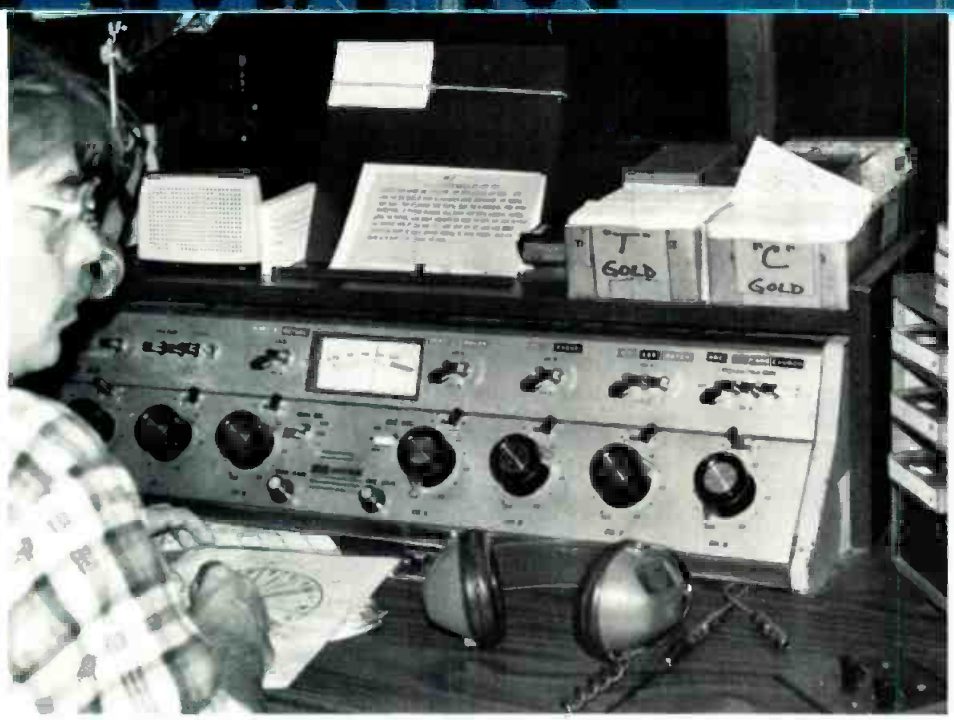


WKOP's control room has a Gatesway 80 board and an ITC 3D cart machine. One of the challenges of moving into the new facility was that no new equipment was purchased.

room, which is the main distribution point for all the studios. We used 66B4-25 punchdown blocks as the master blocks. Wiring was then routed to 66M150 blocks to be distributed to each of the studios. We installed 25-pair cable in a Wiremold raceway that ran along the studio walls. Once in the studio, the cables were then punched down on 66B4-25 blocks and distributed to the various places in the studio. The patch panel wires also come down to a 66M150 block, so any changes necessary on the patch panel can easily be made in the punch blocks.

The walls in the studio area are all staggered studs with insulation woven in between. The walls extended up to the old tin ceiling, which, unfortunately, we had to cover. Our efforts at keeping out stray sounds were helped by the existing eight-inch-thick wall running between the production studios and the control studios. We have never had any sound problems with this arrangement.

The two biggest problems we encountered were the uneven floors in the old building and the fact that no new equipment and cabinetry were being purchased. The first problem was solved by simply leveling the floor. The second problem was a little more involved. With no new equipment being purchased, it meant we had to time moving each of the studios so the least amount of air time would be lost. Two of us moved each stu-

vote
BALLOT ON PAGE 41

WKOP-AM/WAAL-FM

The definition of the best color camera tubes in the world.

No matter how you define your color camera needs, you will want to be certain you have chosen the best tube for the job. And no technical appraisal can be complete without EEV Leddicons.

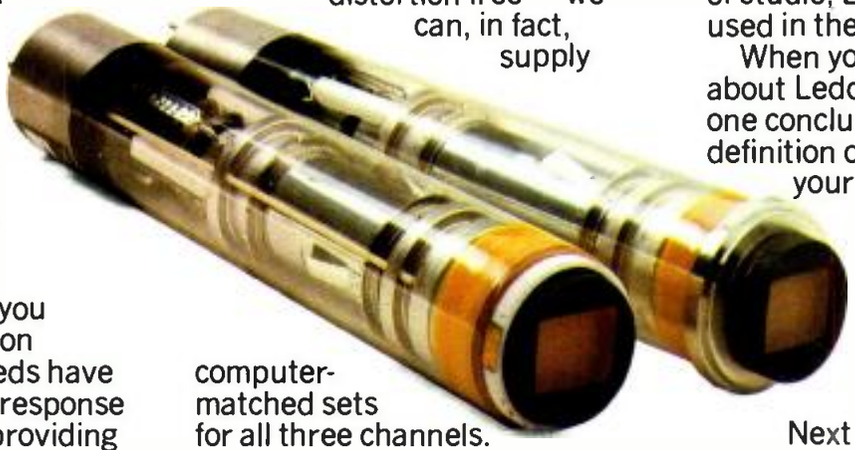
Take lag or smearing. Because Leddicons incorporate a unique light bias arrangement, shading is minimal. So is differential lag. The result is that a football in flight will always look like a football — not a flying saucer!

As for color imagery, you simply cannot improve on Leddicons. Extended reds have a precisely-engineered response with an infra-red filter providing cut-off exactly where you want it.

Or compare the highlight image performance of Leddicons with other tubes. The difference is that the retention effect is minimised by a unique target manufacturing process — even in the very difficult extended red channel where other tubes are simply unable to cope.

You'll certainly want to avoid blemishes. That's why all Leddicons must satisfy the most exacting manufacturing, testing and quality control standards. And it shows — in the fact that Leddicons average less spotting than other tubes!

Then there's geometry. The optimised electron optical design of Leddicons ensures the best possible geometry. Registration too is equally distortion free — we can, in fact, supply computer-matched sets for all three channels.



And what about microphony? With EEV's unique anti-microphonic mesh assembly, Leddicons provide the cleanest pictures — even from cameras operating in areas of high ambient acoustic noise.

As for choice, there's simply none better than Leddicons. That's because the range covers fully-interchangeable sizes and types to suit virtually every type of studio, EFP and ENG camera used in the world today.

When you add up all the facts about Leddicons, there is only one conclusion — namely, the definition of the best tubes for your camera.

But don't leave it at that.

Next time specify Leddicons for your new equipment and as replacements and find out what that definition really means in practice.

LEDDICONS

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Circle 163 on Reader Service Card

WAAL, an album rock station, has an LPB S-13C board and ITC PD-II cart machines. Also visible is the thick brick wall that existed in the old building taken over when the stations merged.

dio, one at a time, over a period of weeks. Remember, no new cabinetry was constructed, so we were severely limited in what we could do in advance. Still, we managed to move all five studios without going off the air.

vote
BALLOT ON PAGE 41

WKOP is a country station and most of the music is on cart. The board is a Gatesway 80 and the carts are played on an ITC 3D. There are two Russco turntables for the few records that are played. While the control room is in mono, the AM production room is in stereo. The AM and FM production rooms, while differing in equipment, can be used almost interchangeably.

WAAL is an album rock station and as such, almost all of the music is played off disks. The board is an LPB S-13C and the turntables are Technics SP 10 MK II with SME tone arms and Russco Fidelity Pro preamps. The production room uses a smaller version of the control room board. We use a Scully 280B and an Ampex 351 for reel-to-reels. Both studios use ITC PD-II cart machines. The only new cabinet we constructed was for the monitors and remote-control units. The slope on the front makes the meters easy to read and the back is open to allow accessibility. The whole unit is on wheels to make it easier to move around.

The entire experience was challenging, but, as a result of the effort, we have, for a minimal investment, studios that look good, sound good and are very functional.

The IVES $6950 all-inclusive editing system outperforms others costing up to twice the price. If you include their add-ons, they cost more money than IVES. If you don't include their add-ons, they don't offer the features of IVES. And with or without add-ons, IVES outperforms them all! Check it out in the Price/Performance Chart. You'll find a lot of blank squares and a few add-ons.

The revolutionary IVES editing system is a complete postproduction 2-VTR system that offers precision SMPTE Time Code or control track editing as well as all pre- and post-editing functions. The exclusive VideoMaster™ control allows you to perform seven different motion control and edit preview functions from a single control. No other editing system even comes close.

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The IVES editing system is brought to you from the people who designed the first practical time code editing system.

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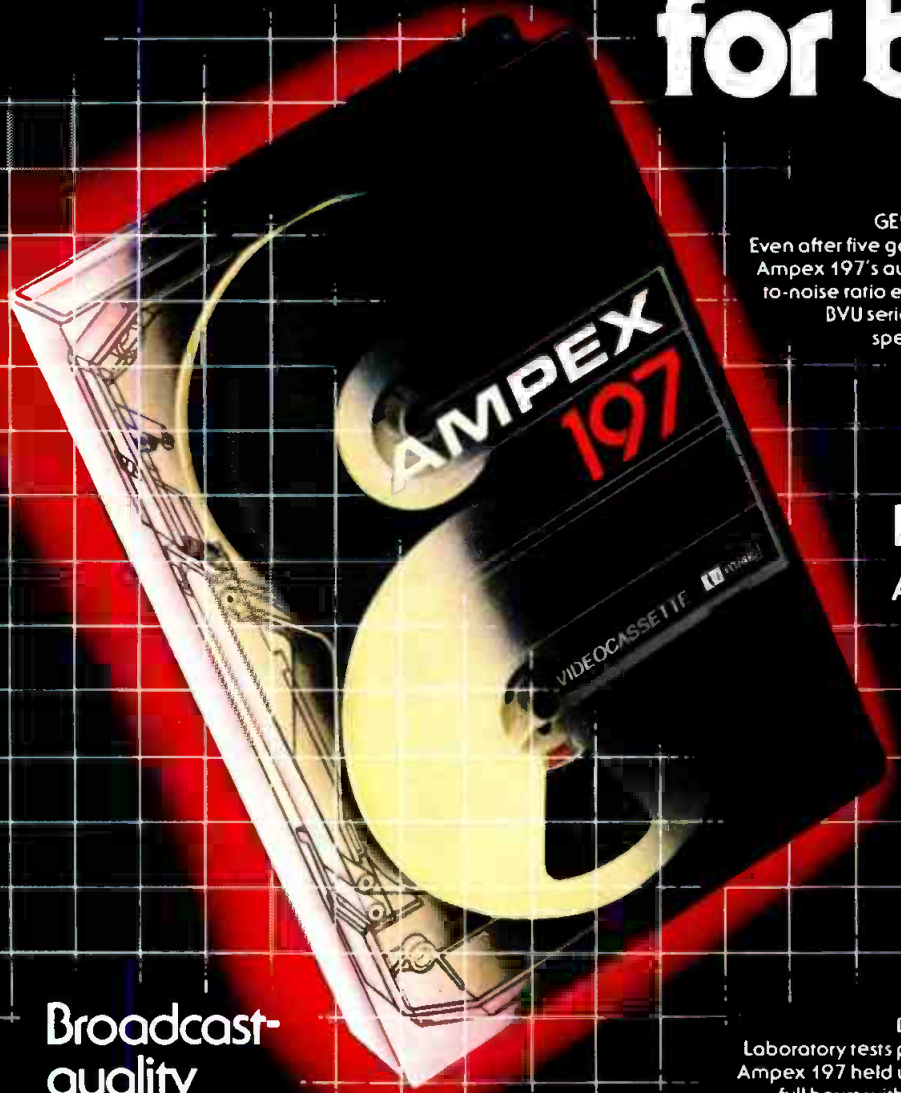
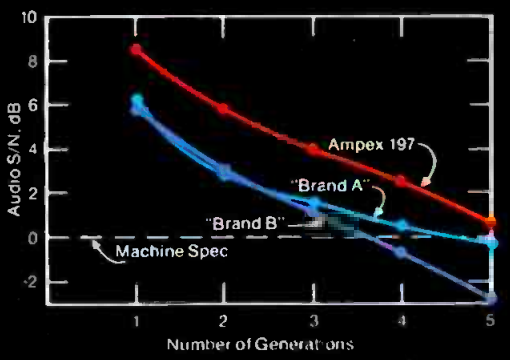
	IVES	ECS-90S	VE-92	NV-A500	NV-A970	AU-A70	RM-440	BVE-800
SMPTE time code editing	√							
Built-in pre-striping capability	√							
Built-in audio mixer	√							
Built-in audio/video routing switcher	√							
Programmable audio/video fades	√							
Non-volatile memory	√							
Printer output	√							
"Mix and match" VTRs with smart interfaces	√							
Price	$6950							

COMPARE THE IVES EDITING SYSTEM WITH THESE . . . YOU'LL FIND A LOT OF BLANK SQUARES AND A FEW ADD-ONS.

Ampex 197: designed especially for broadcast.



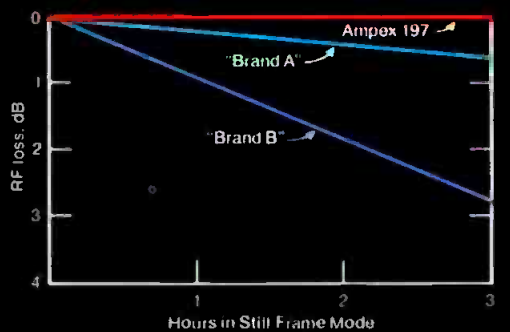
AUDIO MULTIPLE GENERATIONS
Even after five generations, Ampex 197's audio signal-to-noise ratio exceeds the BVU series machine specifications.



Broadcast-quality sound.

Ampex 197 offers superior signal-to-noise and low distortion characteristics. This means crisper, cleaner audio performance under heavy editing conditions and multiple generation dubbing. Plus excellent stereo fidelity when used for music recording.

STILL FRAME DURABILITY
Laboratory tests proved that Ampex 197 held up for three full hours with no RF loss.



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The Ampex 197 ¾" videocassette was developed with nothing less than perfection as the goal.

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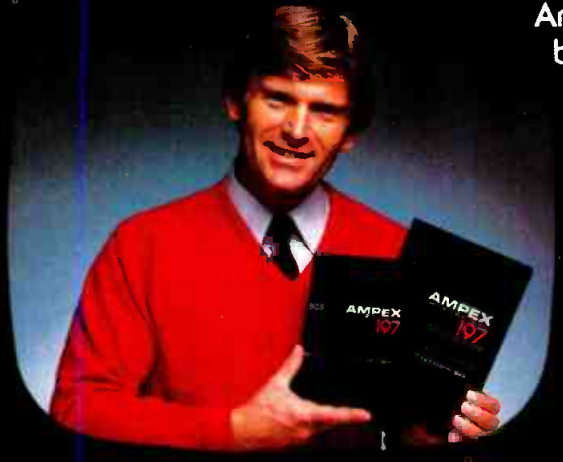

Ampex 197 has been especially formulated to optimize the performance of Sony BVU recorders.

Broadcast-quality reliability.

In blind field testing, Ampex 197 got the highest marks from broadcast professionals for picture quality, stability, and durability.

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Circle 166 on Reader Service Card

Beware, Fine Time Is Back

By Harry F. Cole, FCC Counsel

While they may not have realized it, broadcasters have enjoyed a three-year period from 1980 to 1983 of freedom from routine and Mass Media Bureau-imposed fines and forfeitures. The reasons underlying this benevolent hiatus are a matter of speculation. Some observers attribute it to the Commission's budgetary cutbacks which, it is thought, necessitated reassignment of the personnel normally responsible for investigating possible rule violations and issuing forfeiture notices. However that may be, broadcasters should be aware that the party's over—the Commission is back in the fining business and there is good reason for concern.

The Commission's power to penalize errant broadcasters derives from Title V of the Communications Act. That title authorizes the FCC to issue fines of up to $20,000 for willful and repeated violations of the Act or of the Commission's rules. To fine a licensee, the Commission must determine that the alleged malefactor has indeed violated a rule (and not just a mere policy not specifically included among the Commission's rules), and that it has done so willfully and repeatedly.

Normally, the FCC will open an investigation of potential violators based either on a complaint by, say, a disgruntled former employee, or maybe by a competitor, or as the result of an inspection by the local Field Operations Bureau. The licensee is generally notified of the inquiry/investigation and given an opportunity to respond. The FCC's staff then weighs all the evidence it has gathered and either washes the whole thing out or notifies the licensee that it is being fined a particular amount. The licensee may then contest the fine through the appeals process. Alternatively, it may simply refuse to pay, thus forcing the FCC to bring action in U.S. District Court for the amount of the fine. (The appropriate course to take in any particular instance depends entirely on the facts involved, and the decision to go one way or the other should be made only after consultation with counsel.)

In the late 1970s, the FCC meted out numerous fines. The general average number of fines issued by the Bureau was about seven per month. While some reached the $5000 to $10,000 level—even, in rare instances, $20,000—by far most were limited to under $1000. The types of violations involved included failure to make equipment measurements, failure to make tower light observations, failure to keep proper technical logs, and use of unlicensed operators.

Then, in 1980, without notice or explanation, the Broadcast Bureau simply stopped issuing such routine fines to broadcasters. Some major-league transgressions still generated occasional actions, including fines, but, for the most part, the routine issuance of monetary penalties by the Bureau pretty much ground to a halt . . . until, that is, 1983, when it began again with a vengeance. Between May and September 1983, the Commission issued more than 50 fines. That may not, at first blush, strike fear in the heart of the average broadcaster. But consider this. Of the 55 fines assessed, 39 were for $1000 or more. Of those, five were for $4000 or more. And of those, one was for $10,000 and one hit the jackpot for a whopping $20,000. While some well-heeled stations might absorb one or more fines in the four-to-five figure range, that kind of fine could have a significant impact on many stations' bottom lines. And that, of course, does not incude the additional costs—in particular, attorneys' fees.

What warrants the FCC's wrath? Starting at the top, the unfortunate target of the $20,000 fine had, in effect, been

FCC RULES & REGULATIONS

operating outside its authorized limits for some time and had (perhaps more importantly) apparently not been particularly candid with the FCC's staff. It seems that the licensee had received a construction permit in May 1980 to increase power and change its transmitter site and transmission system. It completed the changes in October 1980, and, according to the FCC, the station began operating with the new facilities in January 1981. The only problem was that program test authority was specifically conditioned on the submission of certain data which, as it turned out, had not been submitted.

The Commission was concerned about that "oversight," but, based on the licensee's assurances that the data would be forthcoming, the staff went ahead in April 1981 and granted limited program test authority. It was understood that the data would be filed in May 1981, but it wasn't. In fact, it took until the end of September 1981 to submit some of the data, and it wasn't until the end of January 1982 before the remainder was filed, despite repeated inquiries from the Commission's staff. Perhaps coincidentally, the station filed the remainder of the data just two days after the staff, apparently frustrated by the licensee's nonresponsiveness, revoked its limited program test authority.

Upon receipt of all the data, the limited PTA was reinstated January 29, 1982, and full PTA was granted in late February 1982. Station logs indicated, however, that during the four days during which the PTA had been revoked, the station had continued to operate as though nothing had changed. And, when a Commission inspector arrived in February 1983, he found at least one document containing technical data differing in some respects from that which had been filed with the FCC. As a result of all of this—particularly the continued operation of the station for four days after its PTA had been revoked—the Commission hit it with the maximum allowable fine.

The subject of the $10,000 fine was caught operating pursuant to automatic program test authority with an unauthorized antenna height at a site "at substantial variance" from the site specified in its construction permit. And the recipient of a $4000 fine was found to have operated "without authorization"; the recipient of a $1050 fine was found to have operated after its special temporary authorization had expired and after its application for PTA had been denied; and the recipient of a $1000 fine was found to have operated at an unauthorized site with an unauthorized antenna height.

All of these fines related to technical matters. But there were others: seven fines—two for $3000, three for $2000 and two for $1000—meted out for the broadcast of information concerning contests meeting the FCC's definition of a lottery. Another fine of $4000 covered violation of the lowest unit rate law. Two $1000 fines for failure to provide the required sponsorship identification were also imposed. Not only are these nontechnical, program-related problems; they involve the kinds of violations which can, from time to time, slip by even the wariest broadcaster. Another example: some 22—that's right, 22—different licensees were hit with a $1000 fine for failing to file Annual Employment Reports (FCC Form 295).

This return to regulation by monetary penalty does not appear to be temporary. Conversations with members of the FCC's staff have indicated that the Commission is cur-

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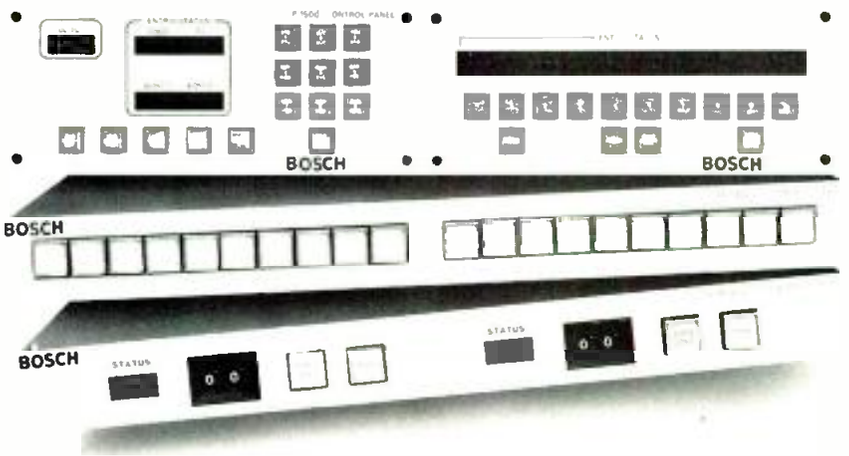

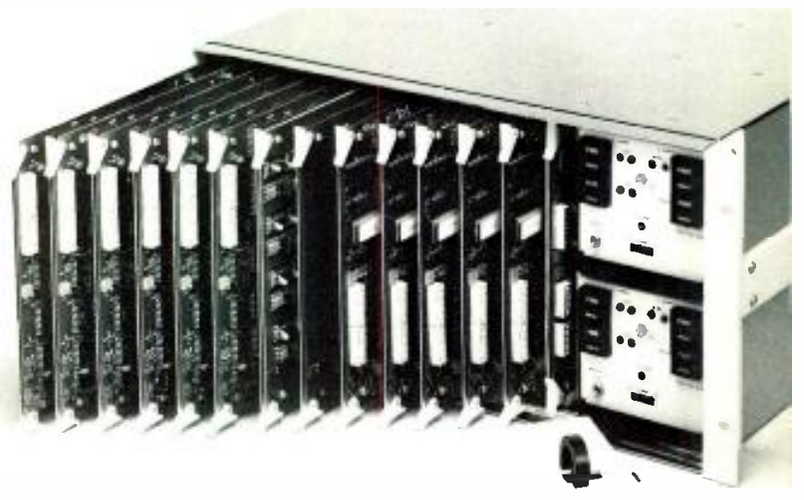

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Circle 169 on Reader Service Card

rently intent upon seeing that its rules are enforced, and that it is not disposed to overlook or easily forgive violations. Indeed, it has been suggested that fines for shortcomings in stations' emergency broadcast system procedures may be in the offing. This should provide some idea of the depth and breadth of the FCC's desire to enforce the few rules remaining in the post-deregulation era. Why is the FCC suddenly getting tough? It is, like it or not, part of the price the broadcast industry must pay for deregulation. In deregulating substantial, previously regulated, areas, the Commission has made it clear that the rules left on the books *will* be enforced. And it has emphasized that it may not be especially tolerant of those who choose to take advantage of their new-found freedoms and, in so doing, abuse the limited regulations still in place. In the FCC's view, life in a deregulated industry entails increased responsibility on the part of licensees to regulate themselves.

As the Commission is aware, in most, if not all, instances, others are waiting in the wings to take over if a license is lost. Thus, there is no particular urgency in the FCC's mind to protect miscreant licensees. The Commission's willingness to levy numerous, relatively high-dollar fines may be simply an initial step in the direction of increased license denials, a punishment meted out relatively rarely in the FCC's 50-year history.

This trend should not surprise anyone who has followed the track of deregulation since its early stages. It should, however, provide a forceful reminder—and perhaps even a spur—to those who may not quite have gotten around to tying down the loose ends in their operations. The FCC is serious about its enforcement program, and licensees should not necessarily expect a sympathetic response if they are determined to be in violation.

What to do? Probably the most useful step is to line up talented engineering and legal assistance. The regulatory terrain, deregulated though it may be, is still tricky enough to contain some surprises. As an example, at the National Radio Broadcasters Association Convention in October, a broadcaster asked an apparently knowledgeable, well-intentioned sales representative from a programming company whether use of an automatic, full-time network feed could eliminate the need to have an operator on duty all night. No problem, responded the sales rep, the FCC has deregulated that. While that may have been the desired answer, it was not necessarily the correct one: the Commission has deregulated its technical logging requirement, but it has *not* eliminated the need to have a licensed operator available and in charge of the transmitter whenever it is turned on and working (except in limited instances involving specially authorized automated transmission systems).

The moral is that reliance on the advice of nonexperts may lead in the wrong direction. Thus, even the wary can fall prey to pitfalls. Some broadcasters may have convinced themselves that deregulation means that they can live without the guiding assistance of expert advisors, that they have been relieved of the concerns which caused them to hire such advisors. It should be clear that the FCC's sudden, and dramatic, resumption of fines and forfeitures has rendered that conclusion wrong. Even today that small ounce of prevention is *still* worth a pound of cure. **BM/E**

ADVERTISER'S INDEX

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broadcast EQUIPMENT

NEW AUDIO EQUIPMENT

Neve Takes Step Toward Digital Console

In an effort to move the studio further toward the all-digital audio realm, Neve has introduced a production system at the recent AES centered around a digital console it calls the DSP (Digital Signal Processing). The design concept began with an attempt to keep analog circuitry and A/D conversions to a minimum, retaining as much signal processing in the digital domain as is currently possible. Carrying the idea through the chain, this would allow production studios and stations to interface other digital devices with the console while avoiding D/A conversion difficulties.

To accomplish this, Neve has made use of modern bit slice processing to ensure that the digital word length is always appropriate to the signal manipulations required within the console. Thus, while the input signal may be 16-bit, the DSP is caapable of using up to 32-bit words internally, avoiding the problem of overload.

All normal functions of a console are implemented digitally. Thus, the EQ sections operate the same as in an analog board, though the EQ is digital, and each channel can have a full-function compressor/limiter and a digital delay with on-board control.

A major advantage of the digital console is that the digital audio and digital control signals are carried together, allowing the processors in the board to pick up the appropriate signals and send them to the proper destination. The result is a fully assignable, integrated mixdown automation feature that allows for easy reconfiguration to any audio balancing requirement.

An important feature is the storage on floppy disk of all control settings for later use, and the further capability to reset all settings to zero immediately, thus allowing for instant recall of all console settings.

For More Information
Circle 250 on Reader Service Card

Shure Adds ENG/EFP Mic Mixer

A new addition to the Shure mixer line is a portable microphone mixer designed for ENG/EFP use, the FP31. Providing a wide frequency response from 30 to 20 kHz, the unit offers low distortion and up to +18 dBm output. The FP31 also contains switchable low-cut filters for each input to help reject low-frequency handling and wind noise.

Three XLR connector inputs and two outputs are provided, each switchable for either mic or line level operation. A master level control sets the output level. Incorporated into the mixer is a built-in slate microphone for voice announcements. The mic is controlled by a pushbutton that also activates a timed (one second) low-frequency slate tone.

Other features of the FP31 include a flashing LED on-indicator, VU meter, timed meter lamp, peak LED overload/limiter indicator, adjustable limiter, tone oscillator, and stereo headphone mini and quarter-inch jacks.

The headphone outputs can be used as additional unbalanced line feeds for connection to tape recorders, power amps, or the Shure acoustic coupler. Further, the mixer is enhanced by switchable phantom or A-B power at each input for use with condenser mics.

For More Information
Circle 251 on Reader Service Card

Soundcraft Takes on Broadcast Challenge

Along with a newly introduced line of power amplifiers and a two-track mastering recorder, Soundcraft has stepped into the broadcast audio world with the recent unveiling of its TS24 In-Line console, on display at the AES. The design of the board allows the user to take advantage of in-line design techniques while still making it easy to work the console, especially in regard to group

and master facilities.

A new set of master conditions on the mixer can reconfigure the whole console with one button in each particular stage in recording, mixing, broadcasting, and video post-production. The design concept relates to the handling of mix and channel signals.

As with any in-line console, each module contains two signal paths. One is generally used for sending to the multitrack machine, and the other for monitoring. With both split and in-line consoles, when it comes to the mix, the monitoring section is largely unused, or provides extra inputs, and the signal paths which previously went to the multitrack are reused. Because of this, the signal paths are connected to the mix bus.

The TS24 eliminates this problem, since the signal-path-designated channel always goes to the multitrack routing and the mix path is always connected to the mix bus. Thus, the monitor automatically becomes the mix.

The four-band equalizer, with high pass filter and patch point, and each pair of auxiliary sends, can be used in either signal path. Usually the position of the EQ, filter, and patch point block is set by the master status: an LED indicates whether it is in channel or mix mode.

Frame sizes are available to accommodate from 32 to 48 I/O modules or up to 40 modules and eight optional stereo modules. Customized modules with tape remotes and other special features are also available. Blank modules for user-customization can be purchased in one-, two-, and four-module-wide formats. All modules (other than the command module) can be placed in any location on the frame.

The TV 24 version of the TS24 is de-

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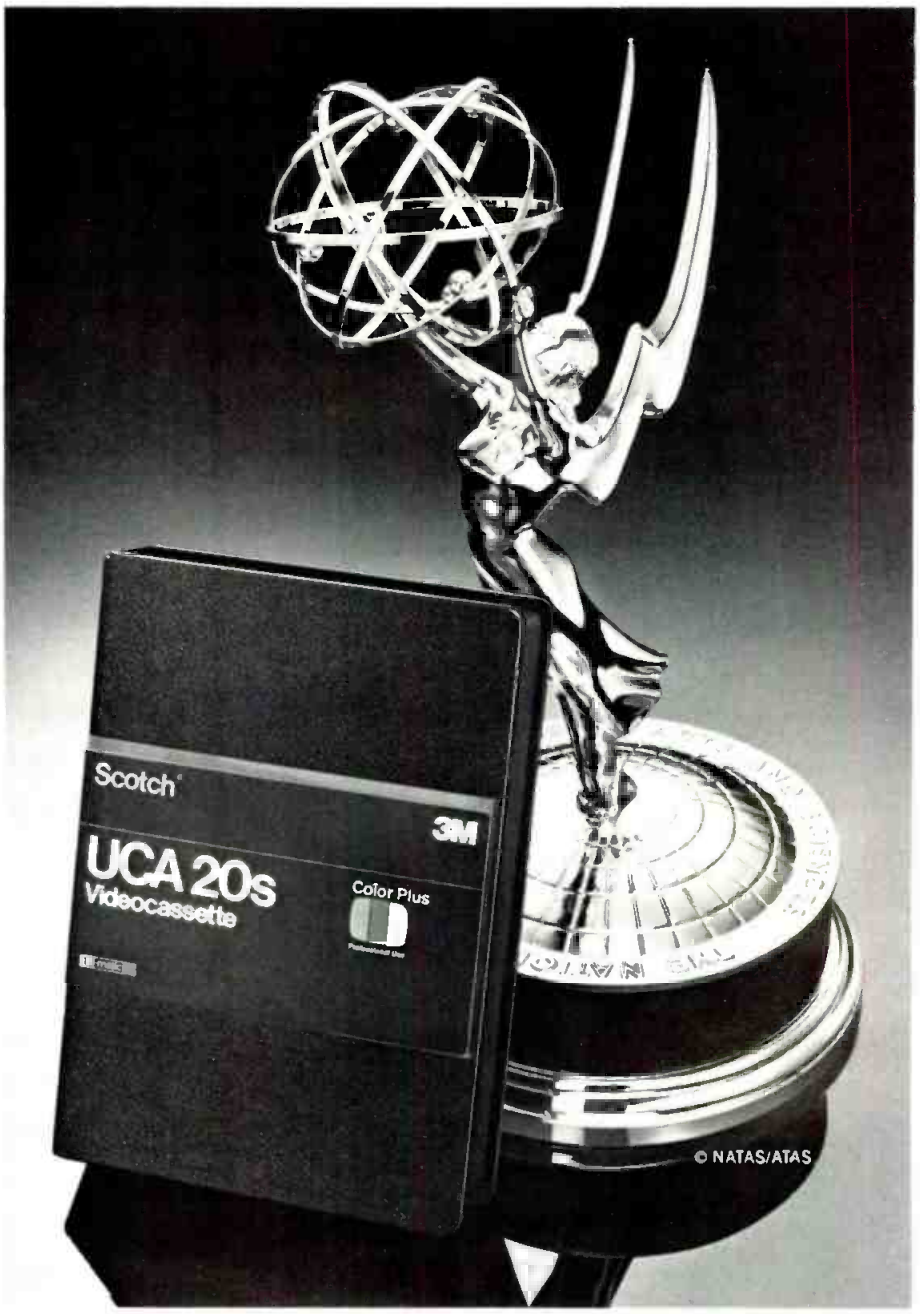

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signed specifically for television and radio post-production and broadcasting. With the addition of an extra 16-way routing matrix, and extra 24-track monitoring, independent multitrack backup is possible.

For More Information
Circle 252 on Reader Service Card

Yamaha Previews Digital Delay

Intending to fill what the company sees as a gap in the digital audio field, Yamaha has introduced a new compact, high-quality digital delay unit, the YDM2600. The unit maintains wide bandwidth and low distortion throughout operation, making it useful for applications such as film and video production and satellite and microwave audio links.

The digital delay consists of two sections: a main rack-mountable chassis with local control of many parameters, and a small hand-held remote-control unit with greater control capability. The remote has an alphanumeric LCD, while the main unit display operates by

back-lit LCD. The displays indicate the selected delays and whether a given output is bypassed, as well as the functions of each different channel in the system.

There are four balanced XLR inputs, each with its own recessed, detented level control, and four 16-LED level meters. A stereo headphone monitor output facilitates setup and testing, and the delayed audio outputs are accessed by eight balanced XLR connectors.

The YDM2600 has three modes of operation: one-in mode, with eight discrete outputs at up to 2.66 seconds of delay for each output; two-in mode, each with four discrete outputs at up to 1.333 seconds delay; and four-in mode, each with two discrete outputs at up to 0.655 seconds delay. Red LEDs above each of the four input level controls turn on to indicate active inputs and reveal input mode.

Entire setups can be stored in any of 12 user-programmable memories, with four memories for each of the three operating modes. Also, provisions have been made for 12 read-only memories for use in installations where regular changes are required between several fixed delay configurations. A computer interface allows effects switching.

For More Information
Circle 254 on Reader Service Card

Aphex Expands Audio Processing Line

With the introduction of the new Compellor, Aphex has added to its line of audio processing equipment a compressor/limiter/peak limiter that provides computer-controlled dynamics for increased loudness and automatic gain-riding.

The control circuits of the unit are said to be analog computers that con-

stantly monitor the input, and adapt and control a single VCA per channel for minimal signal path. The only operation required is setting the input level to control the amount of processing, adjusting the output level, and setting the balance between compression and leveling. The unit then provides complete dynamic control automatically.

The metering monitors simultaneously all functions in each of the unit's three operating modes. In the gain reduction mode, the meters display compression as a green bar and leveling as a red dot on the same scale, thus showing total gain reduction immediately. In the program mode, VU level is shown as a red bar, while peak level is shown as a green bar above the red. This presentation of dynamic range can be switched to read input or output, allowing an instant display of changes in peak-to-average ratio.

Other functions of the Compellor include a process balance control to set the ratio between compression and leveling, a dc input control that varies the output of the VCA and, thereby, the amount of processing, and a silence gate threshold for setting the threshold of the silence gate between −40 to +4 dB referenced to nominal input level.

In addition, there is a stereo enhance switch which engages a detection and matrixing circuit providing a widening of the stereo image without affecting nonstereo information. An LED indicates circuit operation. The output control adjusts the output level over a 20 dB range to compensate for heavy gain reduction. The unit sells for $1195.

For More Information
Circle 253 on Reader Service Card

Additional Broadcast Equipment

Color Corrector Offered by For-A

The new Model CCS-4200 is a color corrector designed for professional VTR editing systems and ENG/EFP applications, selling for $4500. The system consists of a slimline main unit providing RGB gain and setup corrections plus full video proc amp functions. There is also a remote-control unit included in the design.

Video proc amp functions are adjusted using the video level, chroma level, setup, and burst phase controls on the remote unit. Color adjustments are effected using either of two methods: the differential mode allows correction of colorimetry using the color difference signals, and is suited for use with live camera and VTR output: the balance mode permits correction of gamma, black, and white balance by independent control of RGB signals.

EQUIPMENT

The CCS-4200 can improve inferior sync and burst signals and the unit is transparent to high-quality studio signals.

**For More Information
Circle 245 on Reader Service Card**

Saft Produces New Battery Belt

The Portable Battery division of Saft has introduced an economically priced rechargeable battery belt offering four hours of continuous power.

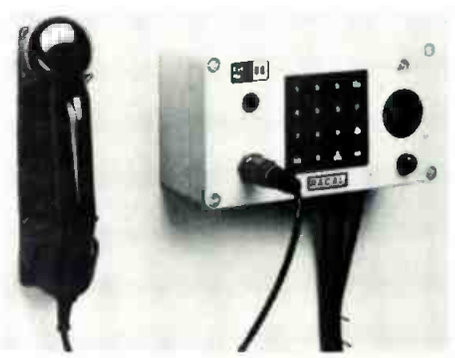
The belt features two pouches for the batteries and a third pouch for the charger and the car cord receptacle that come with the belt. The batteries are two eight-ampere cells. The charger brings the batteries to full power within 16 to 24 hours.

As an added feature, suspenders are included. The belt itself is lightweight and constructed of cordura nylon. The belt is listed at $99.85.

**For More Information
Circle 255 on Reader Service Card**

Racal Introduces Telephone/Intercom

The new Racal multiplexed automatic telephone/intercom system from Television Equipment Associates is comprised of self-contained handsets or intercom units. The units are con-

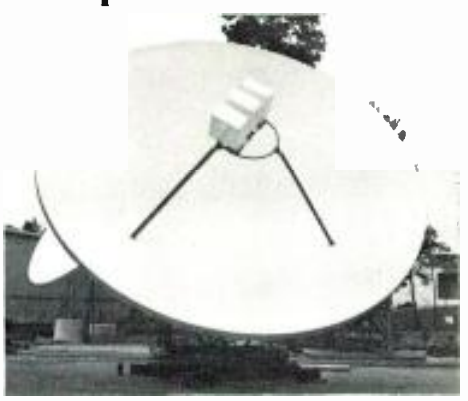


nected by low-cost, two-wire unshielded steel cable. Over 30 units will connect at any point in the three-mile cable run in less than two seconds per station.

The system provides seven simultaneous conversations, one multistation conference call, and an all-station priority call. Also, the system interfaces with existing intercom systems and local telephone and radio networks. A priority break-in facility is provided, and on-set applications, the station annunciator can be a flashing light or volume-adjustable ring with whisper communication.

For More Information
Circle 256 on Reader Service Card

Microdyne Has New Multiple Feed Antenna



The new multiple feed system, MSF-16, from Microdyne enables the antenna to receive signals from up to five adjacent satellites on the same parabolic reflector. When installed on the antenna, retrofitting involves only the replacement of spars and brackets of the feed support hardware.

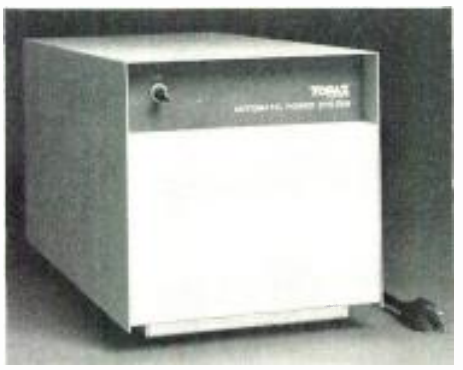
Antennas purchased from many manufacturers can be modified to accept the MSF-16. The company claims a value of up to 80 percent of the cost of a new dish.

For More Information
Circle 257 on Reader Service Card

Topaz Supplies Blackout Protection

The Powermark division of Topaz is offering automatic power systems for protecting computer-based equipment against power outages. These standby power sources provide up to three hours of power and are rated for operation at 300 VA.

The units are equipped with an internal 20 ampere-hour battery, a battery charger, a static inverter, and a power transfer switch. When commercial power is lost, the transfer switch automatically shifts the load from the ac line to the APS inverter which provides power from the battery.



After primary power is restored, the protected equipment switches back to the ac line, and the APS begins recharging the battery. The portable power systems plug into any standard 120 V outlet. Features include overload protection, short circuit protection, and UL listing. Prices start at $779.

For More Information
Circle 258 on Reader Service Card

BUSINESS BRIEFS

◀ *Attendees at the Swiderski Electronics seventh annual equipment show sample the wares of one of the 70 different manufacturers on exhibit at the Elk Grove Village, IL facility.*

The financial outlook for equipment manufacturers seems to be up. **Chyron** reported that its sales for the fiscal year ended June 1983 were up 32 percent from the previous year . . . . Sales for **Scientific-Atlanta's** fourth quarter were worth $97 million, 20 percent above the same quarter last year . . . . **Artel Communications** announced record six-month earnings, with sales up 322 percent over the same six months of last year . . . . **Tritronics** has achieved its largest sales month ever in July 1983, with total revenues of the sales division in excess of $2 million.

In a unique arrangement, **Louisville Productions** and **WHAS-TV** in Louisville are sharing an array of **Sony** video equipment, including ¾-inch U-Matic VTRs, edit controllers and 10 portable record/edit machines.

AFA Systems division will install four Ampex VPR3 one-inch VTRs at the **PrinczKo Production** facility in New York City . . . . **Ampex** recently announced the signing of a long-term agreement with **NBC** for the use of Ampex 196 and 197 videotape. Ampex will supply the tape to NBC owned and operated stations around the country.

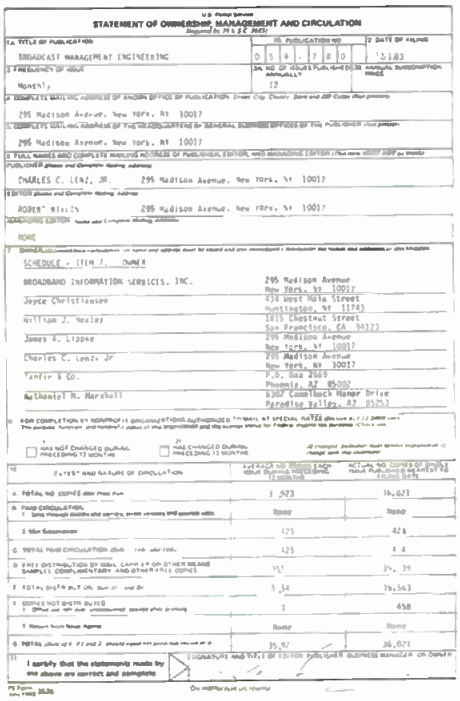
MCI/Quantel has delivered to 13 different television stations the DPE 5000/SP digital effects system . . . . Five television stations have recently taken delivery of MCI/Quantel's DLS 6030 digital library system, and two stations, **KHJ**, Hollywood, and **WCVB**, Boston, have taken delivery of Paint Box digital art/graphics systems.

Shooting Star Video in Foster City, CA, has purchased a new **Ikegami** HL-79EAL broadcast camera . . . . **Chiat Day**, an advertising agency, has installed a **JVC** ¾-inch video editing system at its Los Angeles office . . . . **The Editing Post**, a New York City video facility, has purchased an editing system consisting of the JVC VE-92 editing controller and Tapehandler VCRs . . . . **WDAY-TV**, an ABC affiliate in Fargo, ND, has purchased two JVC ProCam 950 ENG cameras.

WJZ-TV in Baltimore, MD, has ordered an **Aurora/100** for news and weather graphics. Another Aurora/100 digital videographics systems has been installed at **KSL-TV**, a **CBS** affiliate in Salt Lake City, UT . . . . MZB & Associates has sold an **NEC** E-Flex digital effects system to **KVII-TV** in Amarillo, TX. MZB has also sold several Ikegami HK-357s and HL-79EALs to KXTX-TV in Dallas, TX.

Townsend Associates has helped **WCIU-TV** in Chicago increase its power by installing a new 110 kW UHF transmitter on top of the Sears Tower in Chicago . . . . A contract to provide $1.4 million worth of turnkey television transmission system for **KLDH** in Topeka, KS, has been announced by Townsend.

KPIX-TV in San Francisco went on the air recently with its first Squeezer from **Precision Echo** . . . . Another Squeezer went on the air with **WKPT-TV** in Kingsport, TN.



STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

BROADCAST MANAGEMENT ENGINEERING — 10/83

Monthly

295 Madison Ave., New York, NY 10017

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CHARLES C. LENZ, JR. — 295 Madison Avenue, New York, NY 10017

ROBERT Bialek — 295 Madison Avenue, New York, NY 10017

NONE

SCHEDULE - ITEM 7 - OWNER

BROADBAND INFORMATION SERVICES, INC. — 295 Madison Avenue, New York, NY 10017

Joyce Christiansen — 434 West Main Street, Huntington, NY 11743

William J. Wesley — 1815 Chestnut Street, San Francisco, CA 94123

James A. Lipsky — 295 Madison Avenue, New York, NY 10017

Charles C. Lenz, Jr. — 295 Madison Avenue, New York, NY 10017

Vantir & Co. — P.O. Box 2569, Phoenix, AZ 85002

Nathaniel H. Marshall — 6307 Camelback Manor Drive, Paradise Valley, AZ 85253

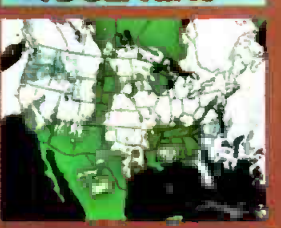
A. TOTAL NO. COPIES (Net Press Run)	5,923	36,021
B. PAID CIRCULATION	None	None
C. TOTAL PAID CIRCULATION	125	424
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS	147	35, 39
E. TOTAL DISTRIBUTION	5,54	36,563
F. COPIES NOT DISTRIBUTED	3	458
G. TOTAL	35,97	36,021

I certify that the statements made by me above are correct and complete.

Comtech Data has appointed **Allied Broadcast Equipment** of Richmond, IN, as exclusive national distributor for its line of satellite audio terminal equipment . . . . **AVTEC Industries** has been appointed master distributor for General Instruments' satellite TVRO antenna.

Dean Scott and Associates have moved to a new facility in Largo, FL . . . . **Karl Heitz** has also moved, and his new address is 34-11 62 St., P.O. Box 427, Woodside, NY 11377 . . . . The new address for **Larcan Communications Equipment Inc.** is 6520 Northam Dr., Mississauga, ONT. L4V 1H9 Canada.

Bardwell & McAlister, located in Hollywood, CA, has published detailed studio layout package lists and diagrams for LPTV studios . . . . **EECO** has released a new eight-page color brochure on the IVES editing system.



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THOMSON-CSF BROADCAST, INC.

Circle 175 on Reader Service Card

Eloquent Audio!

Custom designed production facilities make a substantial contribution to overall program quality. This is particularly true with the CBC French network's new daily TV news magazine, "Le Point".

The ability to combine voice inputs from numerous local and remote locations with studio originated sound effects and "color" is essential to the program environment.

For this custom console, Ward-Beck collaborated with CBC engineers to design a producer's dream in which one operator controls 24 inputs with submasters on the left, while another handles the 8 effects inputs and submaster on the right. A centrally located illuminated 24 × 6 integral switch panel assures clean, unambiguous switching from either station.

The results speak for themselves.

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