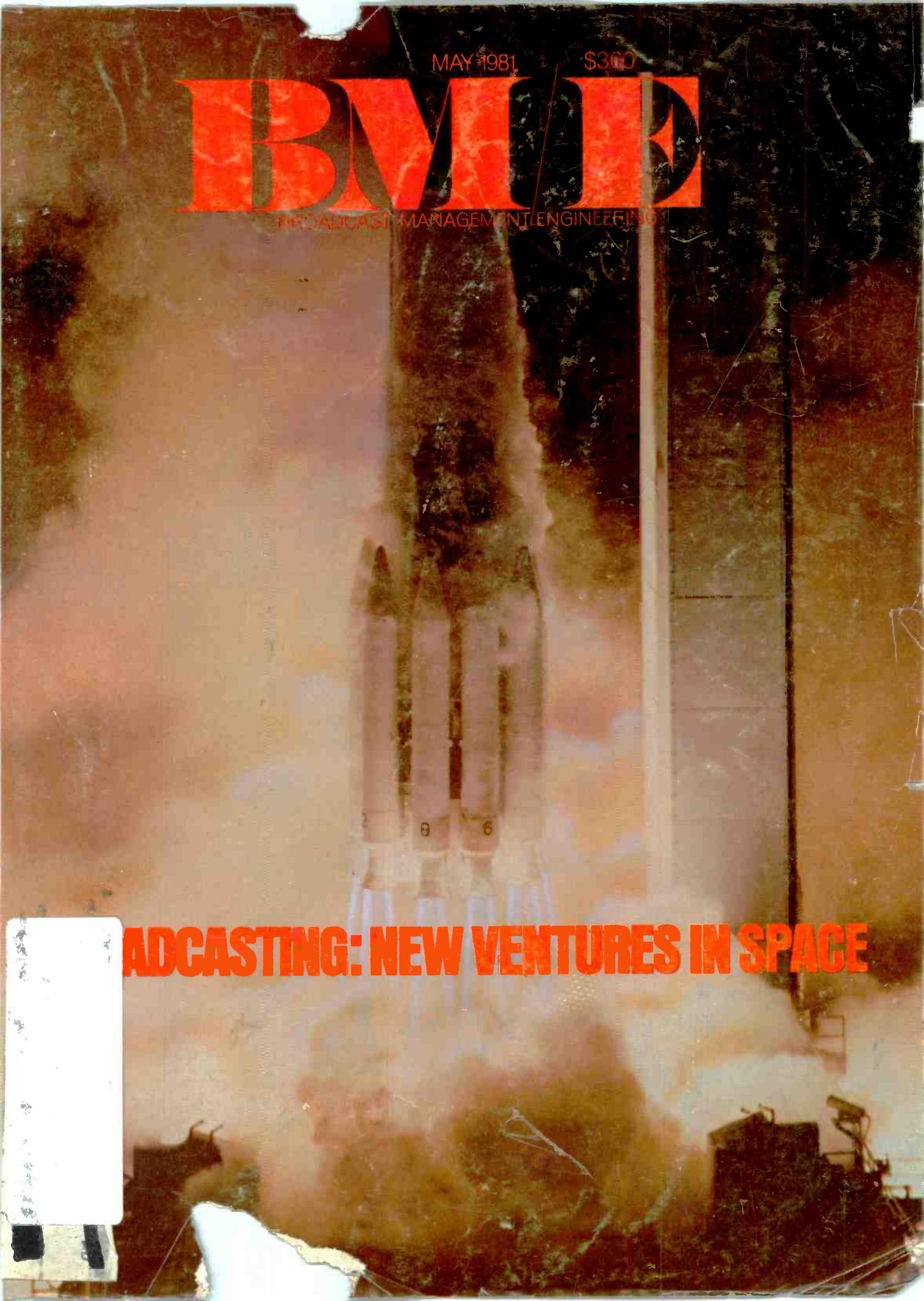


MAY 1981

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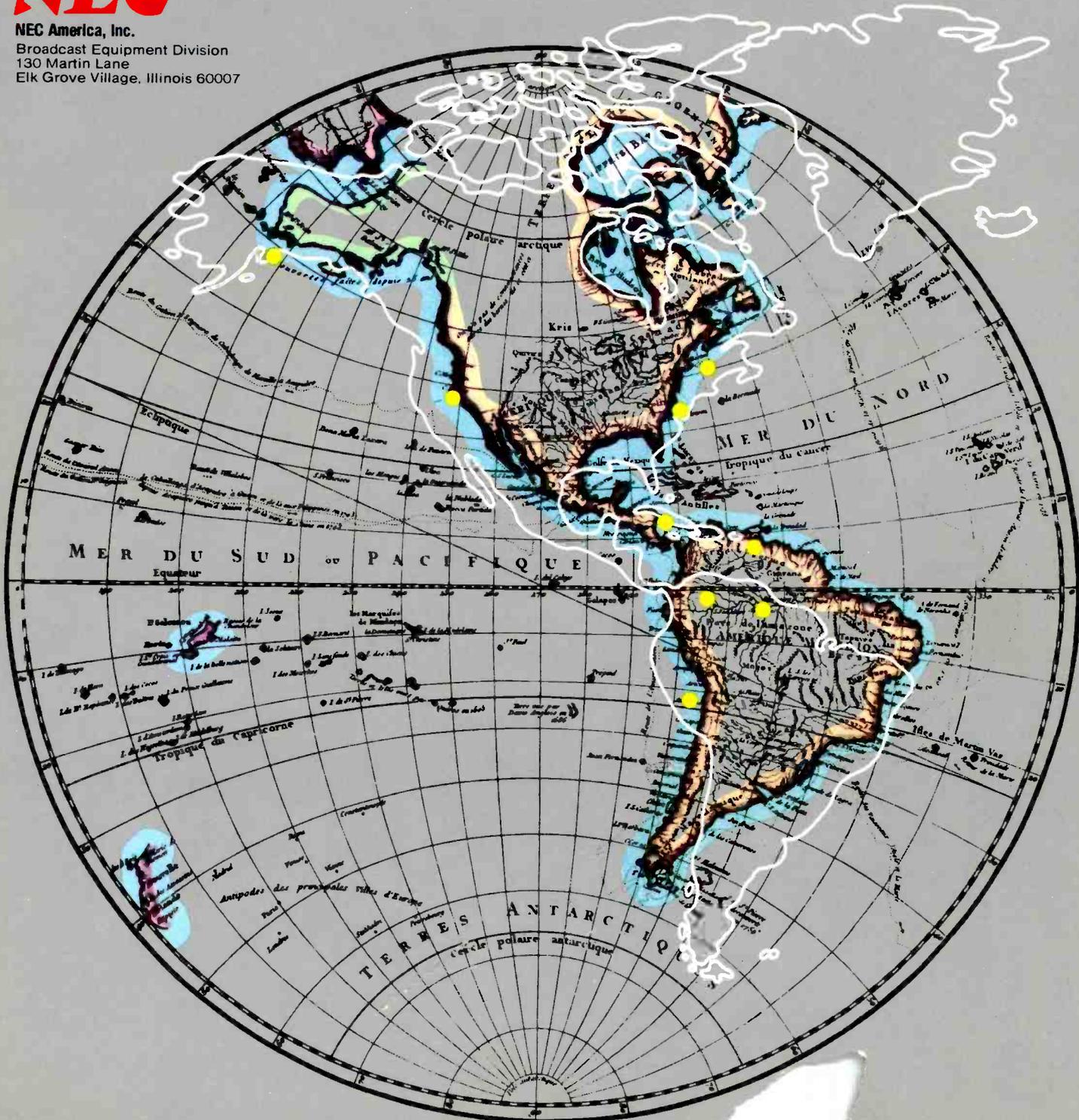
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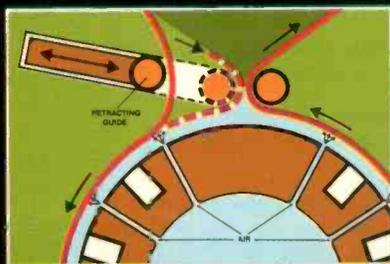
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The others only let you *see* what you're taping. We let you *see* and *hear* everything being recorded...simultaneously.

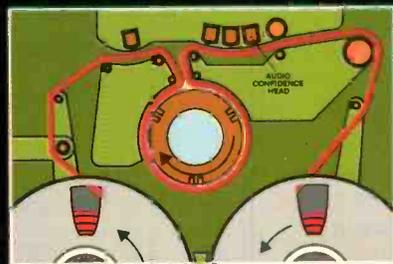
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• Full audio and video confidence
• "PRO" tape path reduces dropouts

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BM/E

BROADCAST MANAGEMENT/ENGINEERING

MAY 1981/VOLUME 17/NUMBER 5



With the success of the space shuttle "Columbia", the conventional and costly launch methods for satellites are about to be retired. Broadcasters now join other pioneers in the "industrialization of space."

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Hennessey, P.C.**

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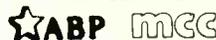
Win a calculator - enter the Great Idea Contest!

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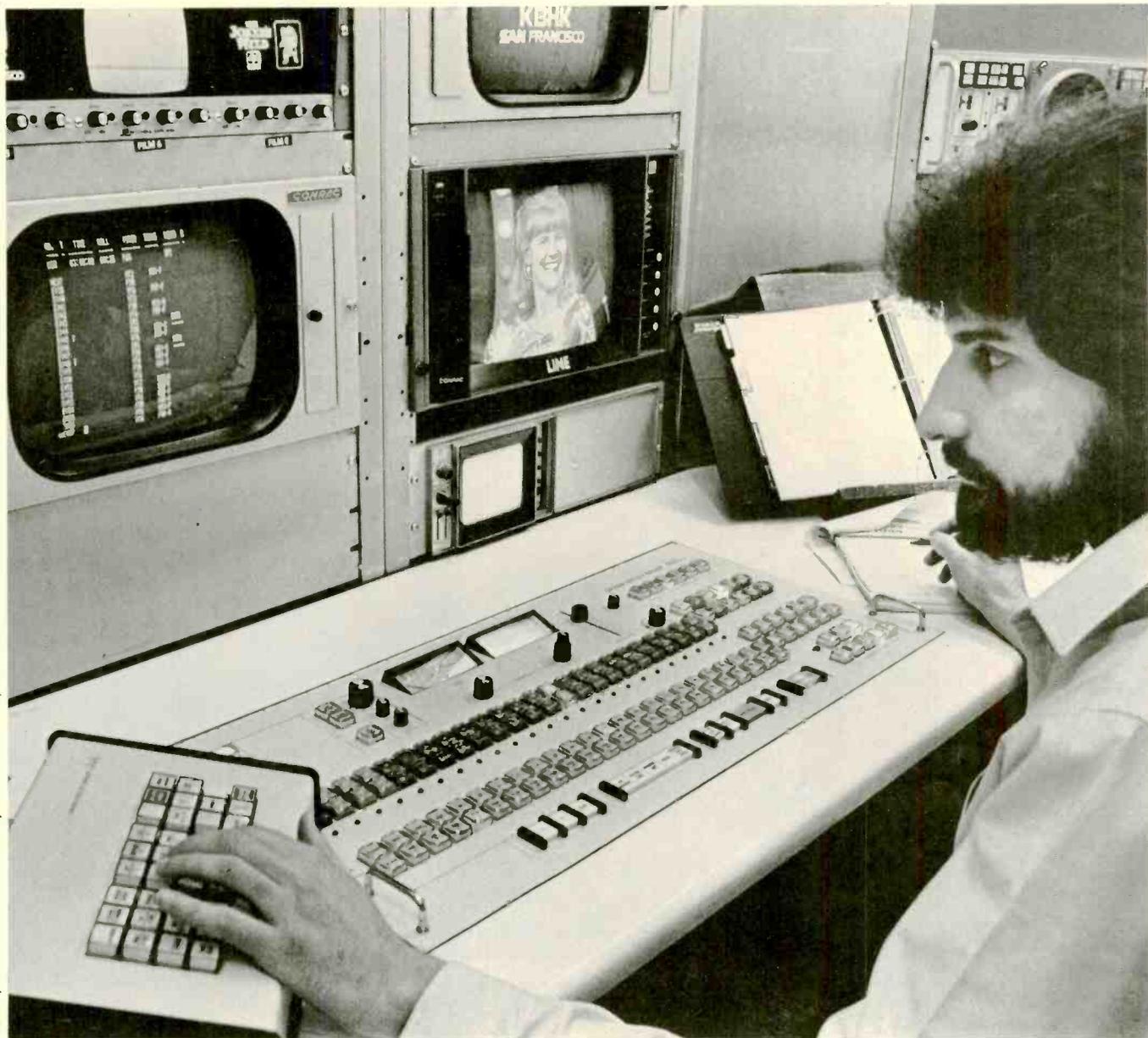
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BROADCAST INDUSTRY NEWS

Fowler Named To Chair FCC

Communications lawyer Mark S. Fowler has taken over the reins at the FCC, replacing Charles Ferris as chairman. The Reagan appointee is a former broadcaster, starting his career as an announcer on radio station WABR, Winter Park, Fla. and WHOO-AM/FM, Orlando, when he was 17 years old. After graduating from the University of Florida College of Law in 1969, Fowler joined Washington, D.C. communications law firm Smith & Pepper. He formed his present firm of Fowler & Meyers in 1975 with David Meyers.

A U.S. citizen born in Canada, Fowler is particularly noted for his strong pro-business leanings and is considered likely to move ahead with the FCC's deregulation efforts. He will take the seat vacated by Tyrone Brown.

Meanwhile, former FCC chairman Charles D. Ferris is returning to private life as a partner in a Boston-based law

firm, Mintz, Levin, Cohn, Ferris, Glovsky, and Popeo. Ferris will be located in the firm's Washington offices.

High Court Backs FCC's WNCN Decision

The "marketplace" and the FCC won a major victory late in March when the Supreme Court ruled that the FCC was not obligated to consider proposed format changes in license renewal hearings.

The decision overturned a finding by the U.S. Court of Appeals for the District of Columbia that abandonment of a "unique" format could jeopardize a station's license, especially if there had been significant public outcry over the proposed change. The Commission had asserted that market forces were a sufficient guarantee of program diversity, a stance it has taken for the last 10 years. The case in question involved WNCN, a classical station in New York City that switched to a rock format. The Com-

mission's refusal to take the format change into consideration was challenged in court by listeners' groups; the U.S. Appeals Court subsequently upheld the format doctrine, which required public hearings when a licensee facing renewal or a new applicant sought to abandon a "unique" format. The FCC subsequently appealed the case to the Supreme Court. (See the *FCC Report* on pg. 103 for details.)

The case had attracted wide interest on both sides, with broadcasters generally lining up on the side of the FCC. Justice Byron R. White wrote the majority opinion for the seven-to-two decision, saying that the FCC had demonstrated to the court's satisfaction "that reliance on the market is the best method of promoting diversity in entertainment formats."

"Postcard" Renewal Form Adopted By FCC

Broadcasters whose licenses are up for

BM/E "Best Station" Winners Honored At NAB



Award winners, from left to right, Jim Lippke, editorial director of BM/E, accepting for John Francioni, WQOK-AM; Larry Calhoun, engineering supervisor, and Ted Newcomb, vice president and chief engineer, of KOCO-TV; C. Richard McBroom, general manager of WNDH-FM; Kenneth W. Stout, chief engineer of WPAT-AM/FM

Four stations selected by *BM/E*'s readers as 1980 Best Station Awards Contest winners received commemorative plaques and hearty congratulations at a cocktail party hosted by *BM/E* at last month's NAB Convention.

The winners, whose entries appeared in the December, 1980 issue, are: WNDH-FM, Napoleon, Ohio (entry submitted by general manager C. Richard McBroom); WPAT-AM/FM, Paterson, N.J. (entry prepared by *BM/E* in collaboration with chief engineer Kenneth W. Stout); WQOK-AM, Greenville, S.C. (submitted by chief engineer John Francioni); and KOCO-TV, Oklahoma City, Okla. (submitted by Ted P. Newcomb, vice president and chief engineer).

Once again, *BM/E* congratulates the Best Station winners for 1980. If you feel that your station could be a winner this year, why not enter? Just send *BM/E* a postcard with the station's call letters, address, phone number, and the name of the person we should contact. Rules for the 1981 Best Station Contest will be mailed out this summer.

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News

renewal have had their burdens considerably lightened with the FCC's adoption of a new, simplified renewal form. The postcard-sized form, first proposed last summer (see *Broadcast Industry News*, *BM/E*, August, 1980) asks only five questions and is expected to relieve much of the paperwork associated with license renewal, both for broadcasters and FCC staffers.

Random audits will be conducted of

five percent of television licensees and five percent of noncommercial radio licensees, who will receive a long renewal form, similar to those previously used. In addition, 10 percent of all licensees, chosen at random, will receive Field Office inspections of their files and technical operations.

Licensees will still be required to file model EEO programs and to make pre- and post-filing announcements. Field investigations may also be made if the Commission is notified of any serious compliance problems.

FTC Recommends Ending Kidvid Ad Study

Pleasing broadcasters and displeasing consumer groups, the staff of the Federal Trade Commission early in April urged that agency to drop its three-year study of children's television advertising.

Although the staff found many faults with current advertising directed at youngsters, it was unable to suggest any "workable solutions" short of a full ban — an action it found overly broad.

Action against "unfair" children's ads was effectively precluded by legislation enacted last year by Congress, although false or deceptive advertising was not protected. The FTC inquiry staff had found that young children do not evaluate advertising in the same way that adults do, failing to understand the difference between ads and programs and believing all information in ads to be true.

NAB president Vincent Wasilewski was quick to applaud the recommendation, saying his organization was "delighted." NAB, of course, has been a long-time foe of the proceeding. On the other side of the fence were supporters of the inquiry, such as Action for Children's Television — disappointed, but not surprised.

WGN, United Video Face Teletext Duel

United Video's practice of deleting the teletext signal of superstation WGN-TV has landed it in court. WGN filed a suit in Chicago in March charging United Video with copyright infringement, claiming that deletion of the teletext changes the station's news programming in violation of CATV retransmission rules.

The suit also charges United Video with interfering with the relationship and "economic expectancies" of WGN and Albuquerque Cable TV. The station had been planning to conduct marketing surveys of teletext's reception in Albuquerque. United Video, however, is itself testing a teletext service.

One of WGN's major arguments is that because material for its teletext service comes in part from its news reports, the teletext is part of its news programming.

U.K. Teletext Group Files With FCC

A U.K. group has urged the FCC to make British teletext the standard for the United States. The United Kingdom Teletext Industry Group's proposal calls for a multi-level "defined for-

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- Alarm circuits that monitor the audio subcarrier, video, and RF level. A summary alarm contact closure, as well as front panel LED indicators. Internal logic prevents a summary alarm for a loss of uplink modulation.

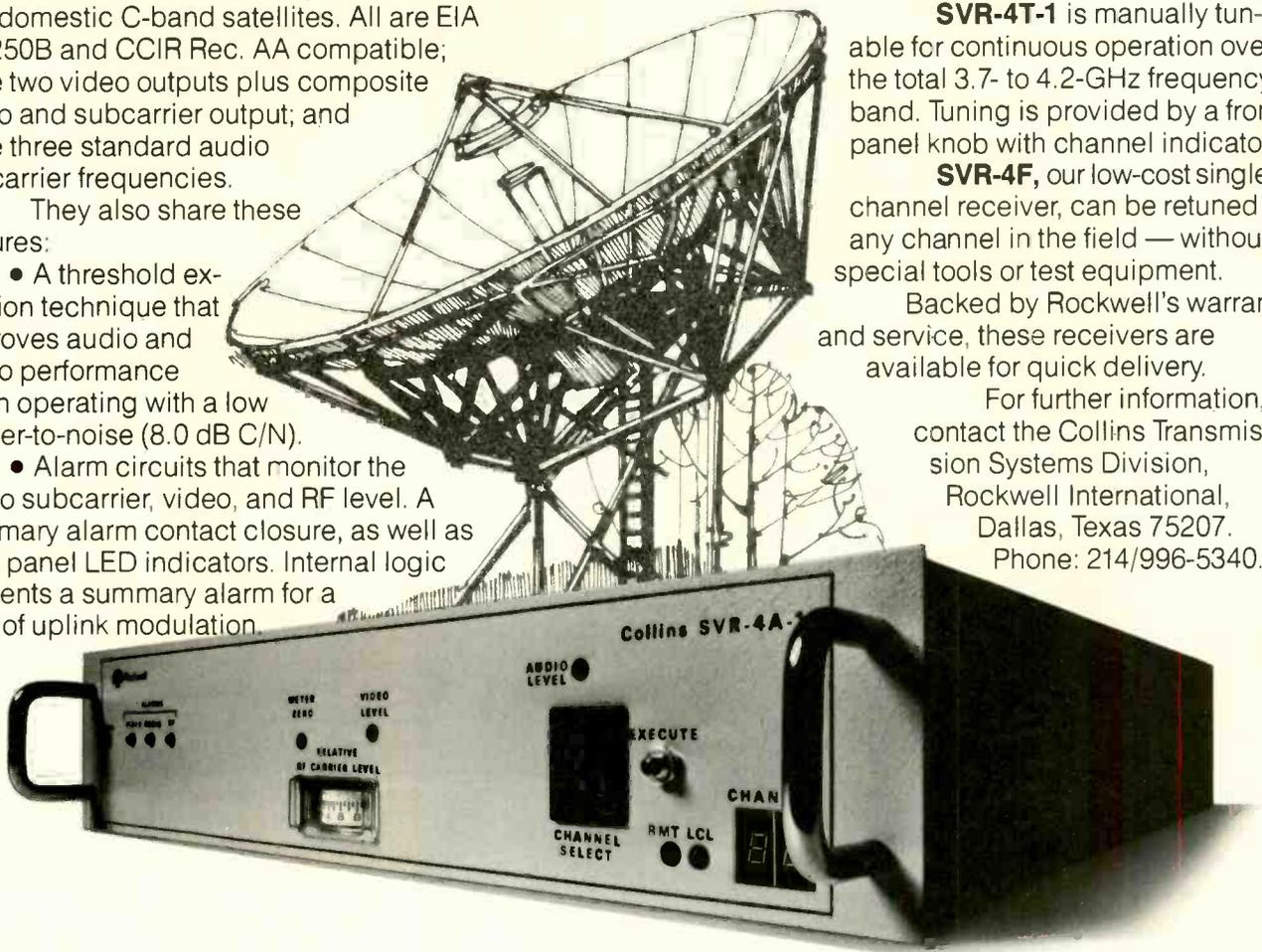
SVR-4A-1, our frequency agile 24-channel receiver, is our most versatile model. It has a front panel local channel selector and a rear chassis BCD interface for remote selection. Channel designation matches the RCA satellite frequency plan. Odd numbered channels match the 12-channel frequency plan.

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Circle 105 on Reader Service Card

News

mat" teletext system that the group claims has several advantages over the French Antiope system, including simpler and less expensive decoders and an inherently more "rugged" format.

The five levels start with level 1, currently in use in the U.K. and several other countries, and build in complexity through level 5. The sophisticated display capabilities of the higher levels include non-spacing attributes, multi-language coding, and full color pic-

tures, among others. In addition, the group says that British teletext is fully compatible with the Canadian Telidon system and with line 21 captioning for the hearing impaired.

Also included in the proposal is "tele-software," which would transit computer programs to be processed in home or business computers.

RKO Radio Adds Two New Nets

The RKO Radio Network, only a year and a half old, has announced a major

expansion of its offerings with the formation of two new networks.

RKO II, aimed at a somewhat older audience than the original RKO net (henceforth known as RKO I) will start up on September 1, 1981, aiming at listeners 25 to 54 years old. Special emphasis will be on the 35 to 44 age group. The programming will feature a "hard" news approach, short features, sportscasts, and music specials.

RKO III, also to premiere on September 1, will first feature a live overnight talk show. Joining that in January, 1982 will be programming elements to fit in with specific station formats. Affiliates of RKO's other two nets will get first crack at RKO III. Both the new nets will be delivered over Westar 3.

Rep Firm Forms Broadcast Subsidiary

The Katz Agency, Inc., a New York City-based station rep firm, is forming a wholly-owned subsidiary to own and operate broadcast stations. Park City Communications and its four radio stations will form the nucleus of the new group, to be known as the Katz Broadcasting Co. In addition, Katz Broadcasting will acquire KWEN-FM, Tulsa, Okla.

The Park City stations are WEZN-FM, Bridgeport, Conn.; WAAF-FM/WFTQ-AM, Worcester, Mass.; and WZZK-FM, Birmingham, Ala. All the sales are subject to FCC approval.

Park City president Richard A. Ferguson will take over as president of Katz Broadcasting. Other divisions of the Katz Agency include Katz Radio, Katz American Television, Katz TV Continental, and Independent TV Sales.

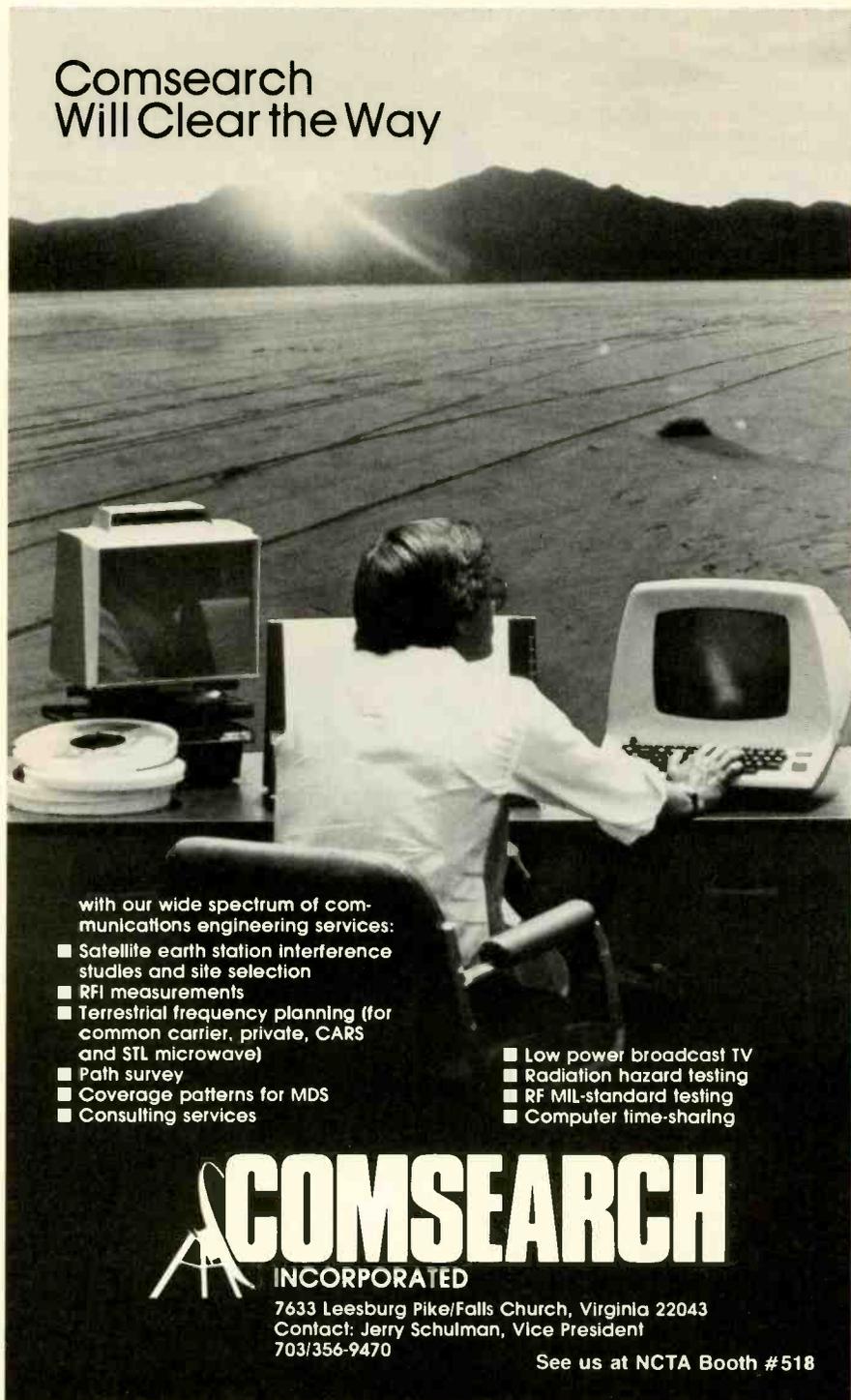
Katz took the recent NATPE conference as an opportunity to announce two other new programs: a programming-oriented computer system called Comtrac for its repped TV stations and "Partners in Programming," in which the firm would assist TV stations in financing and developing pilot programs.

Jerrold To Make Earth Stations

Under an agreement in principle with SED Systems, Inc. of Canada, General Instrument Corp.'s Jerrold Division will manufacture and market SED-designed television receive-only and DBS earth stations.

The equipment initially will be manufactured in Toronto and Delhi, Ontario, where existing facilities will be modified for high-volume production of DBS and TVRO receivers. The products will be marketed in North

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Our new Weathermation Satellite Digital Color System II* delivers a weather satellite picture unlike anything you've ever seen on broadcast TV.

In fact, it's such an incredible picture, the only way you're going to be able to get a better one is to go up into space and take one yourself.

Like most weather radar systems, (even our own industry-leading Color Eadar System I) our Weathermation Digital System II translates GOES images of clouds into color digital display of selected geographical areas of North America.

Weathermation System II receives a fully digital signal more precise than any weather picture ever possible before.

It lets you acquire and display this more precise image of the weather in any area of North America within 15 minutes of when it happened.

Obviously this allows your local television station to produce weather reports at a technological level you've never been able to achieve before.

But System II also includes display options that can make the weather broadcast of any local station the equal of any network.

You'll have a choice of numerous colors and levels of shade, and different areas of North America that can be as large as the whole continent, or as small as your own county. There's also the capability for animation and a floating enlarger that will enable your weathercaster to pinpoint precise conditions.

But perhaps the best feature of the Weathermation System II is that all these capabilities can be accomplished in a local phone call that won't last more than 2½ to 3 minutes.

Yet, a system that can change the shape of your weather reporting forever is not all that expensive.

So call us at 312/263-3921 or write Weathermation, 190 North State Street, Chicago, Illinois 60601, for details.

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News

America at first, with international marketing to follow.

Direct broadcast satellite terminals and other new technology developments are the focus of a recent restructuring at Jerrold. The restructuring is intended to provide better focus in critical areas of technology and product development. Michael Jeffers, recently promoted to vice president, advanced development for the Broadband Communications Group, will oversee pro-

grams to develop advanced technology, especially for DBS terminals. Other appointments included Frank Ragone to vice president, distribution products engineering and Anthony J. Aukstikalnis, who has joined the company as vice president of subscriber terminal systems engineering.

New Company To Make Digital Imagers

A new company, formed early this year, will soon introduce its first product for the television studio. Grove

Video Corporation, headed by Philip K. Edwards and located in Washington Grove, Md., will develop and market a line of digital imagers that capture high-contrast color separated images and store them on floppy diskettes.

Grove Video's first product, the Imager I, will be introduced this month at the Los Angeles Videoshow.

News Briefs

FCC commissioner Anne Jones has asked for **repeal of the Fairness Doctrine** in a speech before the American Newspaper Publishers Association The final report of the FCC's **Network Inquiry Special Staff** is available through the Government Printing Office Comments have closed in the FCC's **VHF drop-in proceeding**; reply comments are due June 15 The Commission has denied two rulemaking petitions asking for **limits on TV commercials** and non-program material. The petitions came from Watchers Against Television Commercial Harassment (WATCH) and the National Citizens Committee for Broadcasting (NCCB) A motion from the United Church of Christ asking a **stay of the FCC's radio deregulation rules** has been denied; the rules went into effect April 3.

NAB president Vincent Wasilewski has praised proposed legislative changes in **TV licensing requirements**, saying that the new law would mean increased license stability if passed The **new AM channels** allocated by the 1979 WARC should go to broadcasters as much as possible, NAB told the FCC Ten **researchers have received grants** for their broadcasting work in the NAB's 1981-82 research grant program, now in its fifteenth year.

NRBA's Board of Directors has reaffirmed the association's **commitment to radio deregulation** legislation, calling deregulation "our number one priority" Under a one-year grant from the CPB, NAEB is sponsoring a project to **recruit executive-level women and minority group members** into administrative positions in public telecommunications Action for Children's Television (ACT) has announced a campaign to **oppose the "censorship" crusades** of the coalition for Better TV and Moral Majority (see Broadcast Industry News, April, 1981). ACT president Peggy Charren called the CBTV's proposed advertiser boycott campaign "a censorship crusade that threatens the free exchange of ideas in a free society."

Legislative hearings will begin soon in the Senate Rules Committee on a resolution to provide **TV coverage of**

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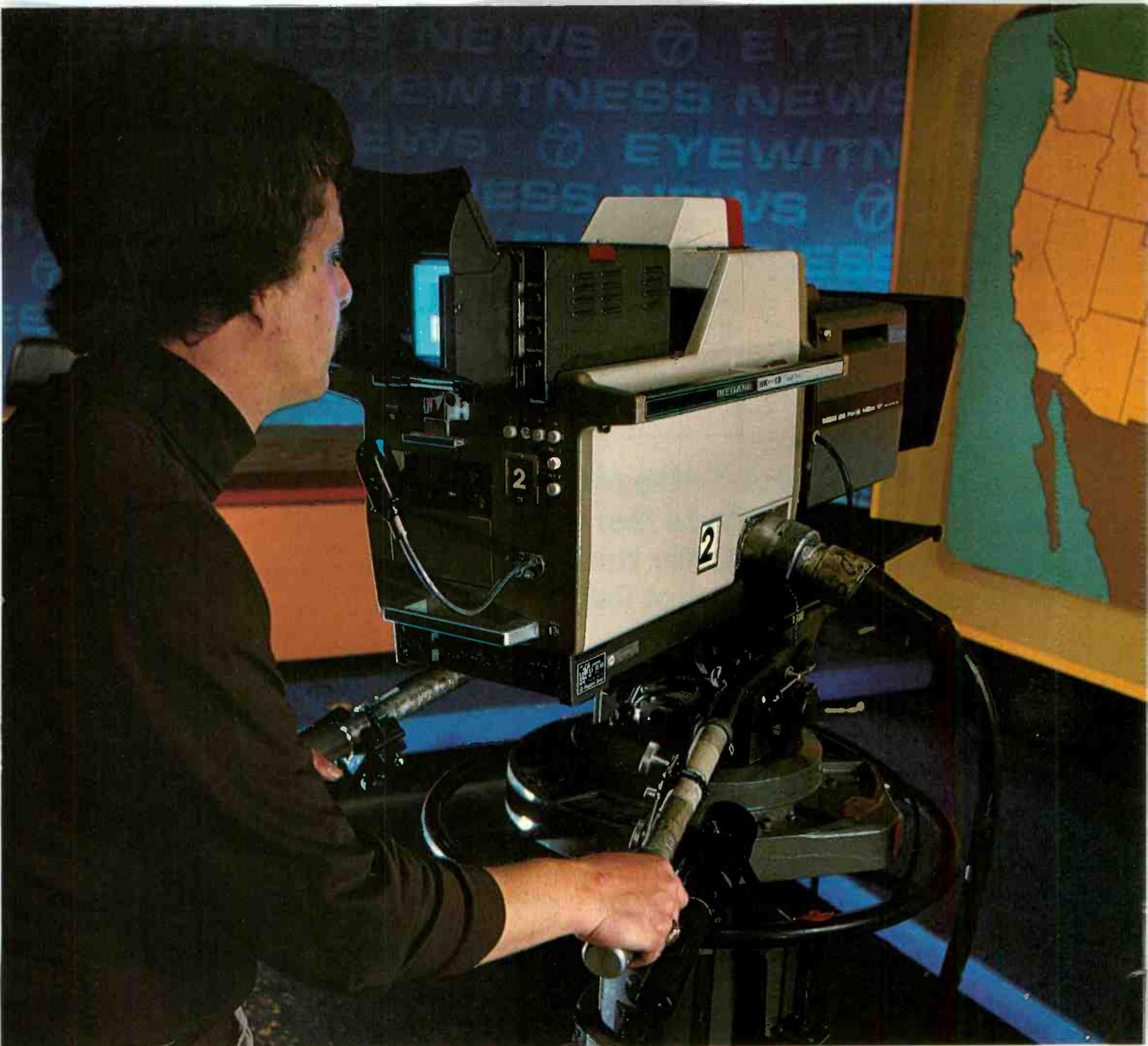
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Computer set-up and triax too

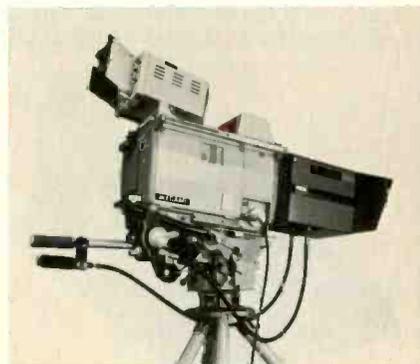
Today, broadcasters are classing computer setup and triax as necessities. Ikegami offers you a choice of two such cameras. Both are proven in the studio and field.

- The HK-312, with 1¼-inch pickup tubes, is a proven computer setup camera. More than 100 are in service throughout the ABC Network, at WGBH, and at other major stations.
- The HK-357A with 1" diode gun pickup tubes offers the same high standard of performance along with the convenience of field capability.

Both are extremely stable cameras that can be operated manually. And both accept computer control for automatic setup for on-air readiness in 45 seconds.

Both cameras can be used with multi-core cable. With triax the cameras can be a mile from their base station.

Of course, in colorimetry, automatics, circuitry excellence, and range of options, both are incomparable. But seeing is believing. Experience a demonstration soon at Ikegami Electronics (USA) Inc., 37 Brook Avenue, Maywood, N.J. 07607; (201) 368-9171. West Coast: 19164 Van Ness Ave., Torrance, CA 90501 (213) 328-2814; Southwest: 330 North Belt East, Suite 228, Houston, TX 77060 (713) 445-0100; Southeast: 522 South Lee St., Americus, GA 31709 (912) 924-0061.



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News Briefs

Senate floor proceedings. The measure was introduced by majority leader Howard H. Baker (R-Tenn.) . . . The Association of Independent Television Stations (INTV) has petitioned the FCC to **reject a proposed rate increase by AT&T** that would "increase significantly the charges for commercial television transmission service" . . . A review of **television trial coverage "experiments"** by state courts found most such tests without scientific valid-

ity, according to the University of Pennsylvania's Annenberg School of Communications. Catherine Boggs, looking at 22 studies from 11 states, found that explicit definitions, procedures, and controls were lacking in the majority of the tests.

CBS Radio Network announced in mid-March that **16 new affiliates** had joined it since the beginning of the year . . . Cable News Network has **topped the 5 million mark** in subscribers and now is carried by almost 900 cable systems. CNN made history recently with its live coverage of the "Scopes II"

trial in Sacramento, Calif., which it claimed was the first trial to be broadcast live nationally.

San Joaquin Communications has purchased **KMJ-TV**, Fresno, Calif., and has changed the station's call letters to **KSEE**. The NBC affiliate was formerly owned by McClatchy Broadcasting . . . Cosmos Broadcasting Corp. and Orion Broadcasting, Inc. have reached an agreement for the sale of **WAVE**, Louisville, Ken., to Henson Broadcasting Co. . . . Former Green Bay Packer Willie Davis has purchased 500 W daytimer **KQIN**, Burien, Wash.

KOOL-TV received an **Iris Award** from the NATPE for a program on the juvenile justice system . . . Capital Cities Television Productions has received the 1981 **Ohio State Award** for its *Family Specials* series . . . **WNAC-TV**, Boston, received UPI-Tom Phillips Broadcasting Awards for its coverage of the Boston Marathon and an editorial series on public transportation . . . **WPCQ-TV**, Charlotte, N.C., received two awards for outstanding programs from the Carolina UPI Broadcast Association.

The **1981 Video Forum**, sponsored by Peirce-Phelps, Inc., will be held May 5 through 7 in Philadelphia and May 12 through 14 in Washington, DC. For information, contact Ronnie Hill at (215) 879-7171 . . . The seventh annual **Los Angeles Professional Video-show** will run May 20 through 22 at the Los Angeles Convention Center. Info from Ellen Parker, C.S. Tepfer Publishing Co., Inc., 51 Sugar Hollow Road, Danbury, Conn. 06810, (203) 743-2120.

The University of Wisconsin-Extension will conduct a "**Technical Management Seminar for Broadcast Engineers**" May 27 and 28 in Madison. For information contact Don Borchert, UW-Extension, Seventh Floor, Vilas Communication Hall, Madison, Wisc. 53706, (608) 263-2157 . . . International Seminars, Inc., will conduct "**Microcomputers for Managers**" seminars in Salt Lake City May 27 and 28 and in Denver July 22 and 23. For information, contact the company at P.O. Box 7029, University Station, Provo, Utah 84602, (801) 375-5379.

FOC '81 West, the west coast's **fiber optics and communications exposition**, will occur September 1 to 3 at the Hyatt Regency Embarcadero in San Francisco. Information from Ellen M. Bond, Information Gatekeepers, Inc., 167 Corey Rd., Brookline, Mass. 01246, tel. (617) 739-2022. The 1980-81 edition of Information Gatekeepers' **Fiber Optics Handbook and Buyers' Guide** is also available now . . . **SMPTÉ's 123rd Technical Conference and Equipment Exhibit** will be held October 25 to 30 at the Century Plaza Hotel in Los Angeles .

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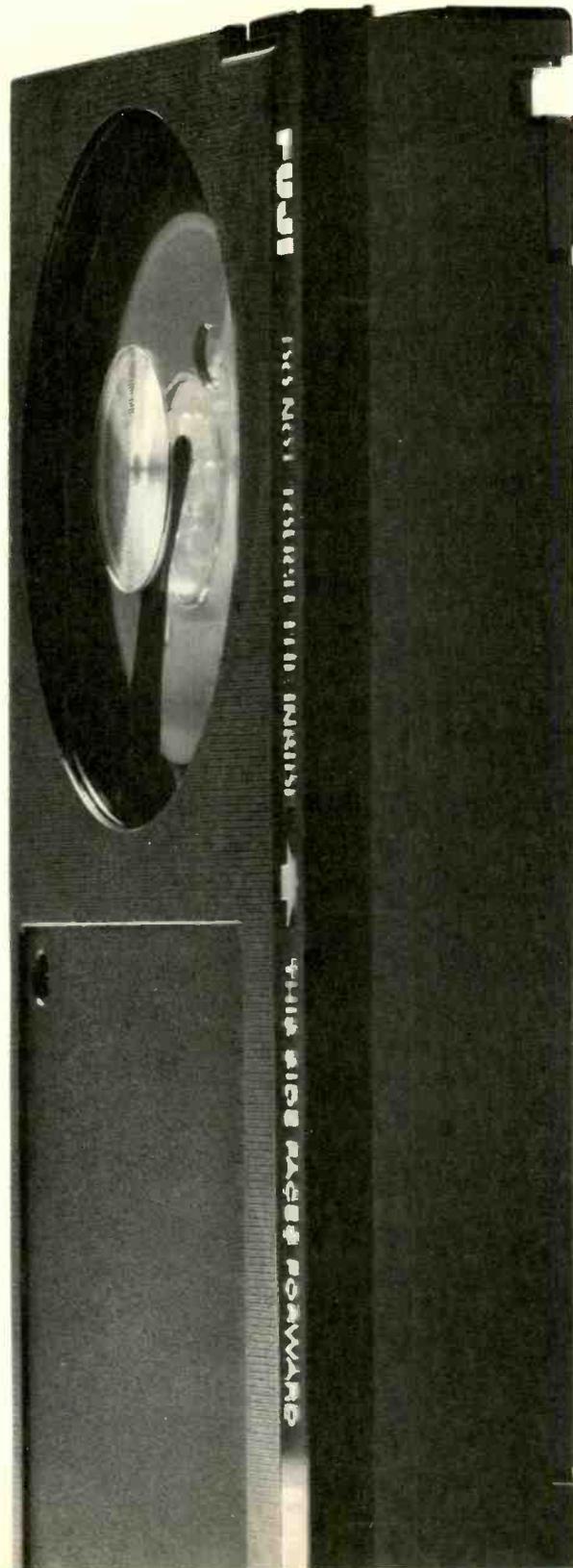


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Business Briefs

Corporex Technology has been formed to offer videotape technology services, including turnkey tape manufacturing plants. Harry G. Hensman, formerly of Memorex, will head the company . . . Comsat subsidiary **Satellite Television Corp.** has moved to new offices at Suite 1200, 1301 Pennsylvania Ave. N.W., Washington, D.C. 20027, (202) 626-3600 (after April 27). Comsat recently announced that it has leased its ten-thousandth in-

ternational satellite communications circuit . . . **McInnis-Skinner and Associates** has moved to new headquarters at 6529 Classen Blvd., Oklahoma City, Okla. 73116, (405) 848-4246 . . . Audio-Video Rents of San Francisco has changed its name to **Audio Video Resources, Inc.** . . . **Sharp Electronics** has adopted the VHD videodisc format for marketing in this country early next year.

Plastic Reel Corp. of America has announced a major expansion of its manufacturing capability. Also new is a subsidiary, **21st Century Video**

Corp., which will produce video software and accessories . . . Professional audio dealer **Audiotechniques** has opened the Audiotechniques Equipment Exchange, a used equipment sales showroom, in New York City . . . A new California company, **Record Straight**, is dedicated to dewarping records. Contact them at 1109 N. Palm Canyon Dr., Palm Springs, Calif. 92262, (714) 320-6418.

Warner Amex Satellite Entertainment Co. has ordered 12 VPR-2B VTRs and three ACR-25 VCRs worth \$1.8 million from **Ampex Corp.** which recently sold its first AVA system in Europe, to Unic Films GmbH, Hamburg, West Germany. The company has raised prices for its quad and helical videotape by 12 percent . . . CBS Television Network has agreed to buy up to 30 **Hitachi SK-100** studio cameras for its CBS Broadcast Center in New York . . . **WLNE**, New Bedford, Mass., has switched to circular polarization with a new antenna from **Harris Corp.**

Also making the switch to CP is **WHAS-TV**, Louisville, Ky., which will install an **RCA Tetra Coil** next year. **RCA** has also sold production equipment to **Midwest Video Productions** of Tulsa, which purchased quad and one-inch recorders and editing systems, and to **Pollaro Multi-Media Co.**, Denison, Texas, which bought studio and portable one-inch recorders and quad VTRs . . . **KGO-TV** San Francisco, has purchased 45 **Sony WRT-27/WRR-27** wireless microphone systems. The first **Sony PCM-1600** digital audio processor and editor in the midwest has gone to **American Gramophone Records** of Omaha . . . **Pro-Vision Productions**, New York, has installed three **3M TT-7000** VTRs, two with Automatic Track Following.

TCS Productions of New Kensington, Penn., has accepted its new 45-foot mobile studio, **Video Voyager I**, built by **A.F. Associates** of Northvale, N.J. The truck is equipped with **Ikegami** cameras, **Grass Valley Group** switchers, **Quantel** digital effects, **Arvin-Echo** still store, **Chyron IV** character generator, **Audio Design** console, and **CMX 340X** editor. **A.F.** will also build a complete videotape post-production facility for **Today Video** in New York City . . . **Anaheim, Calif. distributor Broadcast Communications Devices, Inc.**, has delivered its first full production mobile unit to **TYJ Telemedia** of Huntington Beach, Calif.

Comsearch, Inc. of Falls Church, Va., has received a contract from **Satellite Business Systems** to perform computer prediction analysis and required electromagnetic radiation surveys on their Ku-band earth stations . . . **United Cable Television Corp.** of Denver

Behind every great camera is a great battery



Philips new LDK-14S Camera

The years-ahead, 2/3-inch field and studio camera is now greater than ever. Greater sensitivity, greater flexibility, greater value. Plus, the LDK-14S offers several design advantages for battery operation: • Provides remote control capability when operating from battery (snap-on or battery belt) for studio control in EFP. • Exclusive flat bottom design allows positioning of shoulder brace for proper balance with or without snap-on battery. • snap-on mount for battery pack is compatible with Philips triax adaptor mount for quick conversion.

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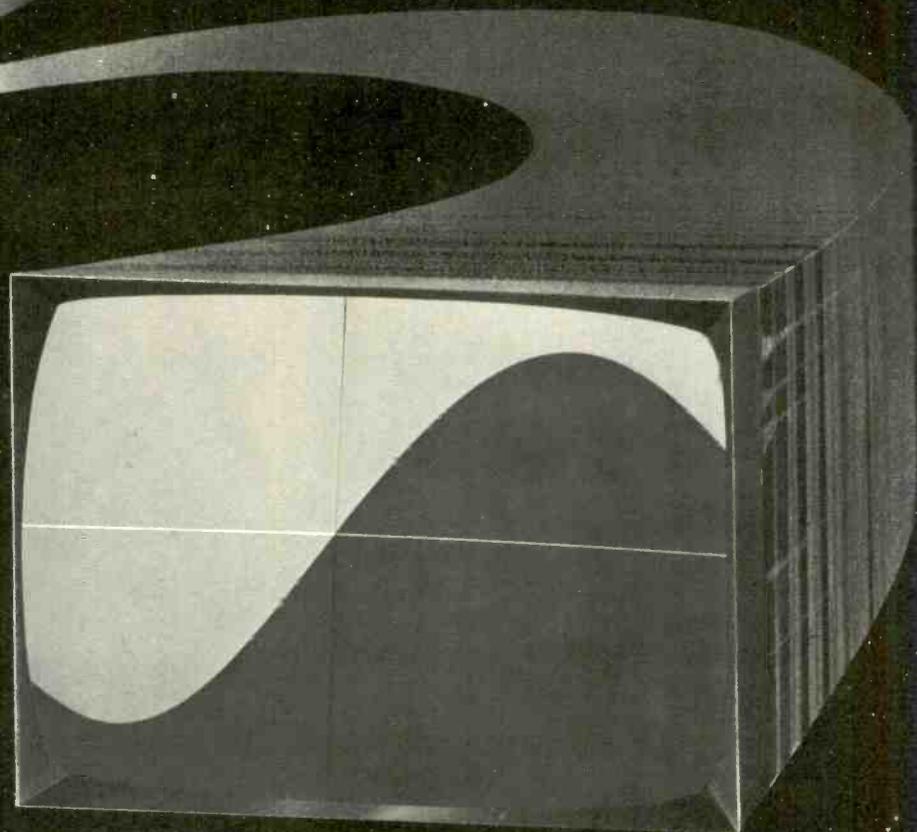
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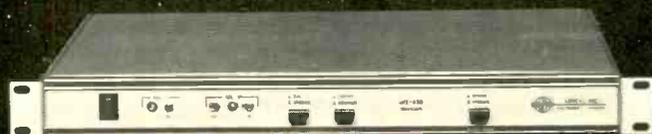
The Videoscope will display a full cycle of sub-carrier and will tell you when correct SC/H phase is (or isn't) on the mark.

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Want to know more about the Videoscope? Write on your letterhead for a complimentary copy of "An Accurate Method for Certifying Timing, and Analysis of RS-170A."



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Business Briefs

will buy \$7.5 million of converters and distribution equipment from the **Jerrold Division of General Instrument Corp.** during the next year. Jerrold recently delivered its first Starcom Addressable Pay System to Rollins Cablevision in Wilmington, Del.; the company has orders for over 30 more systems.

Valerian F. Podmolik has been elected president and CEO of **RCA Global Communications Fernseh, Inc.** has announced several key appointments. Scott K. Bosen is International Sales Manager, Dietmar Zieger is senior vice president, marketing and product management, and A. R. Pignoni is vice president, sales. . . . **Scientific-Atlanta** has named Delwin Bothof vice president, marketing. . . . Robert T. Cavanagh has been elected senior vice president and Albert A. Ruttner vice president of **North America Philips Corp.**

Michael K. Solomon has been promoted to marketing product manager for distributor microphones at **Shure Brothers**. . . . **Gardiner Communications Corp.** has named Doug Smith general sales manager and Gary H. Morley national sales manager, eastern U.S. . . . **Audiotronics Corp.** has appointed George H. Wagner director of marketing, Video Display Division. . . . **Philips Test & Measuring Instruments** has named Robert C. Joseph vice president and general manager.

Studio Film & Tape, Inc., of Hollywood, Calif., has announced a major expansion in its cleaning and evaluating operations. Both New York and L.A. offices have been equipped with new Recortec 3/4-inch and one-inch equipment. . . . **Audiotronics** is establishing a central Engineering and Research & Development Center at its corporate headquarters in North Hollywood, Calif. Engineering staff is being expanded significantly.

Skaggs Tele-communications Service of Salt Lake City has opened branch sales offices of its Skaggs Video division in Denver and San Diego.

A new Seattle station, **KCPO-TV**, has begun broadcasting with RCA circularly polarized transmitting systems worth over \$3 million. In addition, **EUE Video Services** has installed an RCA TK-29 telecine system for its New York City teleproduction facilities, and **Glen-Warren Productions** of Toronto has installed four TH-200 one-inch VTRs and associated TBC-200 TBCs.

RCA has broadened its non-exclusive marketing agreement with **Orrox Corp.** to include CMX/Orrox's new computer-assisted editing system, **The Edge**.

U.S. Tower Co. has received contracts for towers and antennas from six different CATV and communications companies for a total of \$300,000. . . . **James B. Lansing Sound, Inc.**, recently supported two live experimental music broadcasts over KPFK, Los Angeles, with the loan of amplifiers and studio monitors. . . . **Digital Communications Corp.**, an M/A-COM company, has won a contract from Comsat for network coordination station equipment for the **IN-MARSAT Atlantic Region**.

Sam La Conte is new director/project planning department at **Ikegami Electronics (USA) Inc.**. . . . Joseph Ewansky has joined **Nurad, Inc.** as systems sales engineer.

Datatron, Inc. has appointed Frank B. Logan as marketing manager of the Video Systems Division. . . . Andy Rector has been named executive VP of manufacturing for **International Tapetronics Corp.**. . . . Myrddin L. Jones assumes the post of senior vice president, marketing, for **N.A.P. Consumer Electronics Corp.**

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"I chose Sony for its advanced technology, but also because I knew I could get maximum performance out of it," says Jim Kitchell, Senior Vice President of Operations and Production for Cable News Network.

CNN has its headquarters in Atlanta, with bureaus in major cities in the U.S. and abroad. All bureaus have Sony equipment. In fact, CNN owns about 53 BVU-200A editing recorders, 17 BVE-500A editing consoles, and 28 BVU-110 field recorders.

"Our 200A's and 500A's get a real workout in the studio," says Kitchell. "We run them 24 hours a day, week after week. And they're trouble-free. Occasionally we send 200A's out on the road, and they take even more of a beating, knocking around in the back of a truck for hundreds of miles. But we haven't had any problems.

"As for the field recorders, the 110's, Sony equipped them with more functions at a lighter weight than anything previously available. They're the mainstay of our ENG operations.

"Another thing I like about Sony is that the equipment is operator-oriented. Easy to use without a lot of super-technical know-how.

"Sony's U-matic technology is state of the art. That's because the company responds rapidly to the needs of broadcasters. When I have an idea on how to develop the equipment further, I talk to Sony. And Sony listens. That's good news in our business."

Of course, Sony makes a full line of ¾" and 1" broadcast equipment, including cameras, recorders, editors, and the BVT-2000 digital time base corrector.

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The PR 99 offers balanced inputs and outputs; XLR-type connections, with calibrated or uncalibrated levels; and ASA-VU metering with LED peak indicators.

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RADIO

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Health Series Wins Pediatrics Academy Award

IN AUGUST, 1979, *BM/E* described a new series of 90-second daily radio programs addressed to health problems of every kind. Called *Medical Journal*, the series is funded by the Prudential Insurance Company of America and is produced by New York's Scott Broadcast Services (SBS) in cooperation with the Columbia-Presbyterian Medical Center. It is free to the radio station.

The series recently won a first-place award in the radio category of the 1980 Journalism Awards Program of the American Academy of Pediatrics. The awards have been set up to recognize "...journalism that contributes to a greater understanding of child health, disease, and treatment. . ."

During the year, 55 of the programs in the series of 260 segments were concerned with pediatric subjects. Among them were treatments of the effects of smoking and drinking during pregnancy, the importance of breast feeding, the prevention of crib death, the sources of juvenile violence, and advances in therapy for childhood cancer.

The series is narrated by veteran radio newsman Lester Smith, and also often carries the voices of researchers and clinical specialists at Columbia-

Presbyterian Medical Center. Three weeks' programs are forwarded to the subscribing station on a seven-inch reel of magnetic tape. The programs can be scheduled at the station's convenience during the designated week, with repeats if the station wants. More than 200 stations now subscribe to the program.

Radio programmers who want more information on *Medical Journal* should address Scott Broadcast Services at 1440 Broadway, New York, N.Y. 10018, or telephone (212) 921-8280.

Americans at their best

A daily series that tells about Americans who perform acts of heroism, compassion, and strength in the face of adversity, *The American Character*, has after three years on the air built its subscription total to 328 stations in all 50 states. It is also broadcast by the U.S. Army Information Service overseas.

The American Character is produced by Infocom of New York and is narrated by the noted minister, Norman Vincent Peale. It is underwritten by the International Telephone and Telegraph Company and is free to the radio sta-



New Age Radio hosts, Ed and Irene Martin, discuss topics of importance to senior citizens on daily three-minute spots

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Radio Programming

tion. There is a very brief ID for ITT in each program, but no commercial. The stories are true; they are intended to show Americans at their best, a splendid way to inspire the rest of us.

The program has won many awards. One was the National Media Award of the National Council of Christians and Jews. The Boy Scouts of America honored it for "broadcasting in service to youth." The Council of Churches of the City of New York cited the program

as one that "... exemplifies and inspires the best in human endeavor."

Infocom is a sister company of Scott Broadcast Services and is at the same address, 1440 Broadway, New York, N.Y. 10018, telephone (212) 921-8280.

Life counsel for seniors

Another program previously reported here that has expanded greatly in the last three years is *New Age Radio*, a series of daily discussions of the problems of older people. It is produced by Jameson Broadcast, Inc., of Colum-

bus, Ohio.

The discussions are each three minutes long, and 65 segments, or 13 weeks' supply, go out to a radio station at one time on five LP discs. At the time of *BM/E's* earlier report, the series was reaching about 20 stations in Ohio in an experimental operation sponsored by the Ohio Commission on Aging.

Today the program is distributed free to any station east of the Mississippi under sponsorship of the Nationwide Insurance Company. The producer, Jameson Broadcast, is negotiating as this is written for sponsorship in the West, so that any radio programmer interested in the series should get in touch with Jameson, wherever the station is.

The discussions have as hosts Ed and Irene Martin, a retired couple, who talk about important topics or answer questions from listeners. Some recent topics have been alternative health care programs, food and drug interaction, media-gap insurance, nutrition, retirement planning, housing, and dealing with the loss of a partner. The hosts end each program with an invitation for questions from listeners. The mail is extremely heavy, with a strong element of gratitude.

Programmers can get more information from Jameson Broadcast, Inc., at 3919 Sanbury Road, Columbus, Ohio, or telephone (614) 476-4424.

"Country" in central Canada

Country music has been strong in a few Canadian radio markets for up to a decade, but a recent station opening in Prince George, British Columbia, demonstrates the ability of Country to win a footing in a broad sweep of the country. The first FM-stereo station in the market, CIOI, went on the air March 1, 1981, to compete with two AM stations, one the local Canadian Broadcasting Corporation outlet and one a commercial station with an MOR format. CIOI will be on the air 24 hours a day with the syndicated country format of Live Sound, Inc., of Los Angeles. Agnes Peterson, president of Live Sound, described for *BM/E* the elaborate launch ceremonies of CIOI. On hand was a platoon of local and national dignitaries, including Mayor Mercier; members of Parliament from the district, Frank Oberle and Lorne McCuish; members of the Legislative Assembly, Bruce Strachan and Jack Heinrich; and local aldermen and other civic officials.

Also on hand were a number of the initial time-buyers who had helped to make the station a pre-opening, 24-hours-a-day sell-out for its first two months. The lesson seems to be that FM stereo and Country music are both potent in markets that still lack them. The combination is likely to give a radio station a strong takeoff. **BM/E**

Case History #437

Electronic News Gathering is one of the toughest environments a microphone will ever encounter. Every mike we've seen has compromised the demand for low handling noise, fine audio quality and virtual indestructibility.

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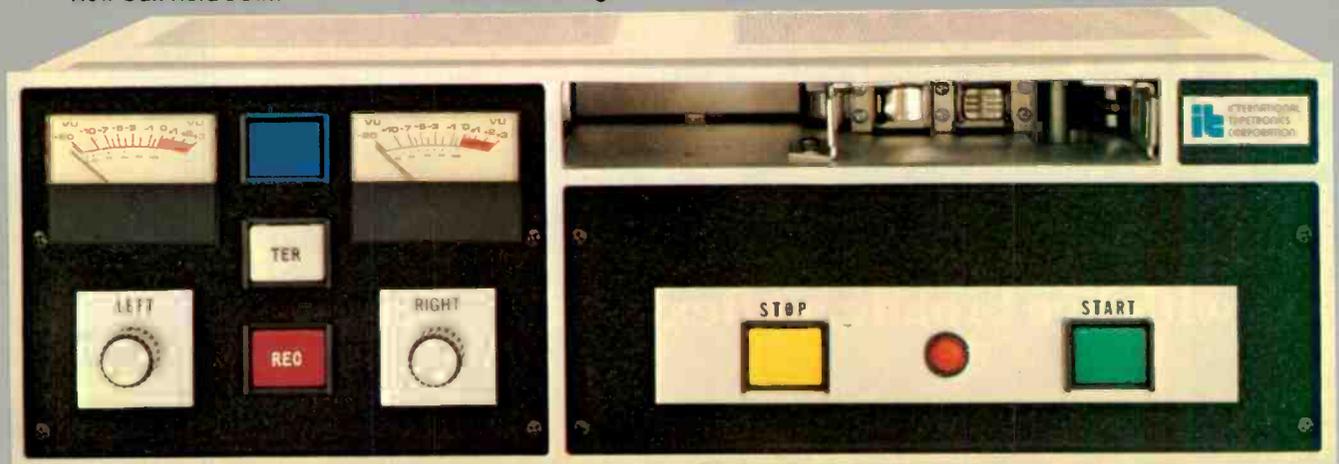
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says Graham Simmons, Chief Engineer at Miami's WPBT — Channel 2. “Auditronics developed this 36 in — 16 out audio mixing console to give us all the EQ, reverb and signal processing we need for studio quality multi-track recording of our productions.”

“When you're a national production facility like we are, you've got to have an audio signal path that's strictly state-of-the-art. For example, our Auditronics 720 preamp design is the latest generation and gives us the best signal-to-noise performance available. It allows us to do multiple generation dubbing and mixing without noise build up.”

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Program Marketplace

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THE DEMAND of radio listeners for serious music can't hold a candle to that for Country or Contemporary, but the classical audience is a solid minority that keeps growing. *BM/E* reviewed the considerable evidence for this in this column in September, 1980. Another important part of the story is the heavy demand for the use of the "concert vans" described in the April, 1981 issue.

Strong evidence also comes from the success of the classical syndicators, including especially WCRB in Boston and Parkway Productions in Washington. A flourishing classical syndication operation not covered here earlier is that of fine arts station WCLV-FM in Cleveland. One basic WCLV series consists of all concerts of



Permanent recording installation in Cleveland's Severance Hall is used to make tapes of all Cleveland Orchestra concerts

the Cleveland Symphony, which is of course among the top handful of music organizations in this country. The Cleveland Symphony concerts are issued in an operation called Cleveland Orchestra Broadcast Services, a joint venture of the orchestra and WCLV.

Severance Hall, the home of the Cleveland Orchestra and admired far and wide for its acoustics, has a permanent recording installation for the purpose of making "live" tapes of the concerts. Robert Conrad, vice president and general manager of WCLV and director of the syndication operation, told *BM/E* that the hall was recently rebuilt at a cost of more than

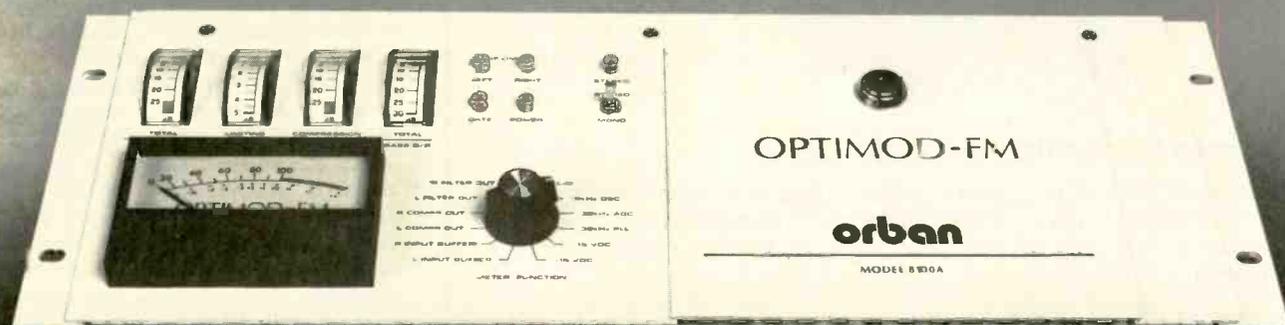
\$50,000 to bring it to "state of the art" fidelity. A multi-channel Spectrasonics console feeds several Ampex ATR-100 tape recorders. There is a battery of more than a dozen Neumann condenser microphones, which can be disposed for best pickup of the music.

Audio processing and equalization units are included, as well as a DBX noise reduction system. WCLV commonly makes two masters, one DBX encoded and one "straight."

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Program Marketplace

WCLV's recording personnel have developed excellent skill in the difficult art of the "live" mixdown.

The distribution of the recorded concerts is to both commercial and non-commercial radio stations. For the non-commercial broadcasters, WCLV sends the tapes to public station WGUC in Cincinnati, which has an uplink to the National Public Radio satellite net. The NPR uplink there includes DBX decoding equipment, so the DBX masters go

to WGUC for decoding just before they go up to the satellite. Thanks to a grant from Exxon, public stations get the Cleveland Orchestra programs free.

Commercial subscribers will ordinarily get the tapes themselves, having the choice of DBX encoding or straight. WCLV bases the rates for commercial stations primarily on market size. The Cleveland Orchestra series is currently carried by 80 stations; it has been for many of them a staple of programming for a long time.

Seaway Productions is the operational package for the other specials and

series issued by WCLV. One of them is *Adventures in Good Music With Karl Haas*, a daily 55-minute "music appreciation" program. Haas is a multi-faceted performer, conductor, musicologist, and music impresario who has been delighting large audiences for years with his presentations of music with entertaining and enlightening comment. Haas says he does not set out to be "educational" but does his material because he loves it. Nevertheless, he gets heavy fan mail from grateful people who say he got them interested for the first time in "his" kind of music.

His credentials as a professional are impressive; he had a long period of study with Arthur Schnabel and has conducted orchestras all over the world. About 70 stations now regularly take the daily Haas program. Rates to commercial stations are, again, primarily based on market size.

Music From Oberlin is a weekly one-hour concert program, underwritten by that institution as a public service, that involves faculty members of the Oberlin Conservatory of Music in a wide variety of programs. The program is free to both commercial and noncommercial stations and is currently carried regularly by more than 75 broadcasters.

Micrologus is a weekly 30-minute program of early classical music, supplied free to commercial and non-commercial stations thanks to a grant from the TRW Corporation. The programs are produced at Case Western Reserve University, with Dr. Ross Duffin, a professor of music there, as host. Dr. Duffin plays several of the Renaissance instruments, such as the sackbut, shawm, krummhorn, and recorder. He directs or plays in numerous performances of early music. About 40 stations now take *Micrologus*.

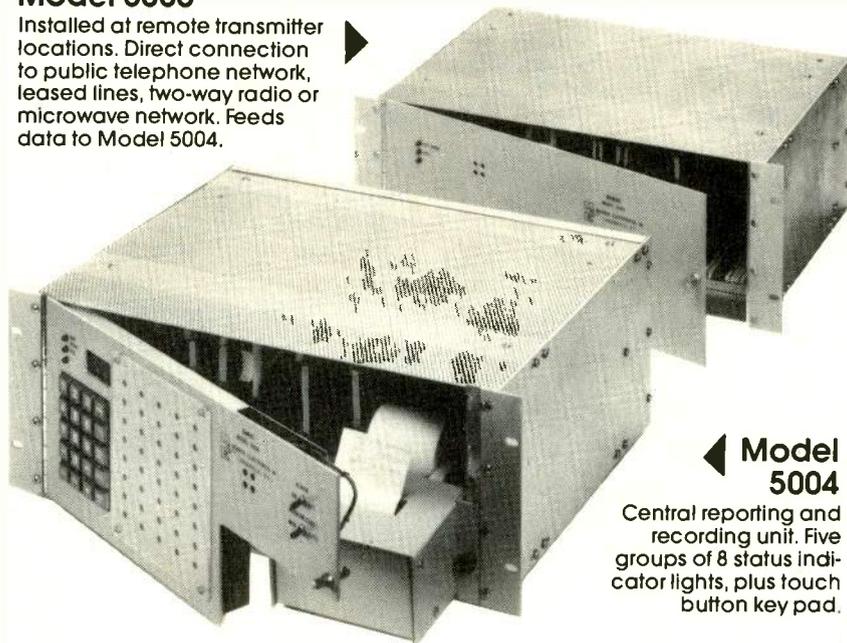
In addition to the regular series, Seaway produces a considerable number of one-time specials every year. Recently these have included concerts in Cleveland by Pavarotti, Jean-Pierre Rampal, Victoria de los Angeles, and Lazar Berman. The tapes of these and other similar concerts are available to commercial and noncommercial stations at a variety of rates.

With an eye on the main topic addressed in this issue, satellite distribution of programming, *BM/E* asked Conrad how he thought the coming availability of hundreds of programs, literally in the sky, would affect the job of the radio programmer. He said that in the future the programmer's job would be far more demanding of knowledge and of skill in assembling a variety of materials into a viable program package. Without strong ideas of what they want, programmers of the future may tend to get lost in program richness. **BM/E**

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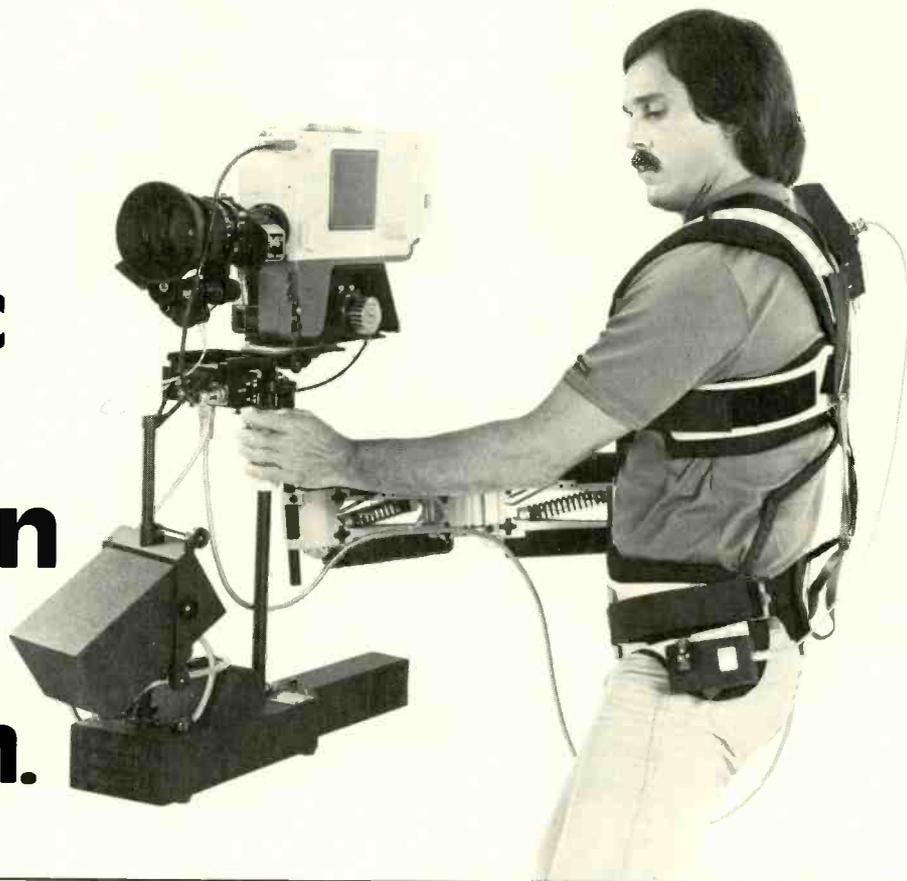


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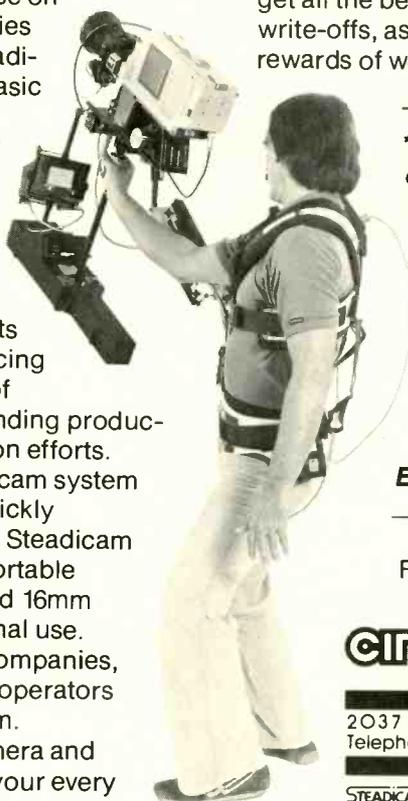
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Newsweek Video: More Than A Name Change

NEWSWEEK BROADCASTING was one of the first of the broadcast news feature services. It began 10 years ago to provide additional material for the then expanding local news market. Stations were just moving from half-hour to hour formats, requiring more editorial material than many stations were geared to handle. Newsweek Broadcasting moved in to help fill the void. The 70 or so subscribers can attest to that fact.

The backbone of service is a package of 13 news features that is sent to the station every week. The stories are a mixture of hard news, series, sports, and light features.

But the service has not been standing still for the last 10 years. Seven years ago it started a new insert package called *Today's Woman*. The series of two- to three-minute stories is offered every two weeks with 10 separate pieces. Stations have the option of how to use *Today's Woman*. Some insert it into the newscast, others run it within daily talk shows aimed at women, and others use it as a standalone stripped throughout the broadcast day.

In 1978, another new feature was introduced called *Cartoon-a-torial*, which animates the political cartoons of some of the best editorial cartoonists in the country. Each *Cartoon-a-torial* takes about 20 seconds; there are five new ones every week. *Cartoon-a-torial* has been one of the most popular of the features. The year that it was introduced it won a Peabody Award for Outstanding Achievement.

Now Newsweek Broadcasting is taking another step by changing its name to Newsweek Video. Bernard Shusman, vice president and executive producer of Newsweek Video, said the name was changed to more accurately reflect what the service is evolving into. "It's a natural thing for us to do," he explained. "We have the production capability and we have the editorial capability so why not develop into the new technologies?"

As part of that development, Newsweek Video is planning three new services, two of which are full half-hour shows. One, *Inside Sports at the Cowboy*, is aimed at the cable market, but Shusman wouldn't discourage those broadcasters who might be interested in the program.

Inside Sports at the Cowboy features

former baseball player Jim Bouton and the editors and writers of *Inside Sports* magazine, published by *Newsweek*. The show hopes to take a somewhat irreverent look at what happened in sports over the preceding week. Bouton, who has been a sportscaster for a number of years, is the author of *Ball Four* and is noted for having a slightly jaundiced view of professional sports. He was once sued for running backwards with no

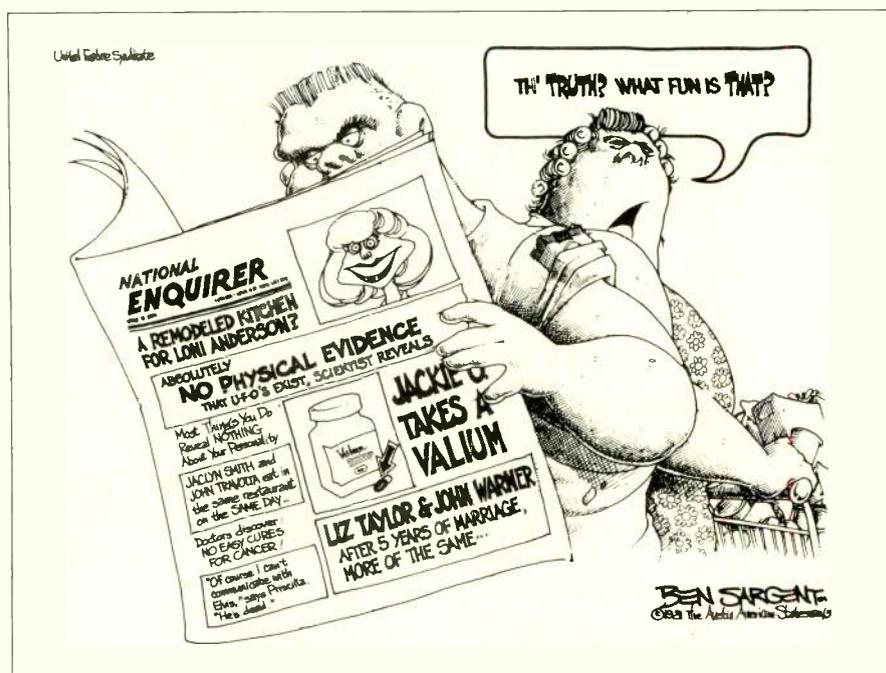
audio an interview with former Giant football coach Alex Webster.

The show will be aired live to cable systems from a New York sports hangout owned by Clint Murchison, who also owns the Dallas Cowboys. There will be taped inserts from various sporting events.

Also in the sports vein, Newsweek Video will begin a new sports package called *Sports Reel* — not a highlight



Inside Sports at the Cowboy is aired from the popular sports hangout. Host Jim Bouton prepares to discuss sports with the editors and reporters from *Inside Sports* magazine (photo by Ken Howard)



Cartoon-a-torial takes the political cartoons from leading newspapers and animates them in 20 second segments

TV Programming

package, but more of a mini-magazine. There will be five segments to *Sports Reel*: "One on One," "Playback," "Sports Quiz," a Jim Bouton commentary, and a segment dealing with sports stats.

"One on One" will be a simulated debate on some sports issue. "In the pilot," explained Shusman, "we dealt with the fact that there are no black head coaches in the NFL. We used the Quantel to place the participants, the head of

the players association and the head counsel for the NFL management, together. We made it look like they were face to face and it was very effective."

"Playback" will be an update on some sporting event. The first one dealt with former heavyweight champion Floyd Patterson and his final fight with Iqmar Johannson. There was footage of the fight and an interview with Patterson about the fight and what he has been doing since.

"Sports Quiz" and Bouton's commentary are self-explanatory. The form of the segment on sports statistics is still

to be finalized. Originally the package was to include an animated version of the popular comic strip *Tank McNamara*, but that has been spun out for use in a different format to be announced later.

The most ambitious project announced for Newsweek Video is a weekly show called *Bureau Report*. This will be a look at the news from the perspective of the Washington news staff of *Newsweek* magazine.

"There are three sections of the show," says Shusman, "Background On the Issue" is a video backgrounder. In the middle of the show we have four or five of the reporters and correspondents discussing that main issue or other issues relevant to the total subject in the background piece — what's happening with it and how it is going to be covered.

"The third section of the show deals with what we call 'Reporter's Notebook,' following one of our reporters on assignment and showing what it's like either to cover a story or what it's like to work in the State Department. In the pilot we looked at what it was like to work with the White House Press Corps."

What is hoped for the show is to make extensive use of the technology to enhance what could be, especially in the middle section, a collection of talking heads. Shusman says that there will be video inserts to show exactly what the reporters are discussing. For example, if the Secretary of State is being discussed and one of the reporters alludes to a quote from Haig, the actual quote will be inserted.

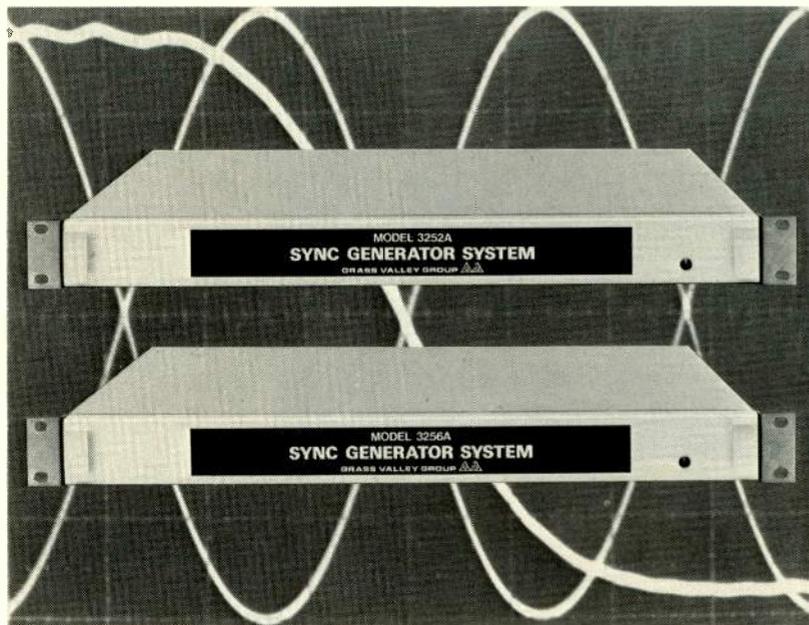
"We want to use the medium," says Shusman, "and not have talking heads all the time. We feel it's a good use of television."

One other project is in the works at Newsweek Video. Last year in a joint production with WQED, a series of three shows called *Cover Story* aired on PBS. While the programs dealt with a single subject, they were more in the magazine format. The first show was a look at the year 2000 titled, "Your Future Isn't What It Used to Be." The second was, "It's Only Your Money," which looked at the effect of inflation, and the final show was, "Adoption in America."

The series wasn't picked up again by PBS, but Shusman thinks that the program has commercial applications and is pursuing a way of producing more shows for commercial broadcast. There is no timetable for when *Cover Story* will return but the hope is soon.

The new projects will keep the production staff of Newsweek Video busy for the time being, but as has been the case since its beginning as Newsweek Broadcasting, there is always something new to look forward to. **BM/E**

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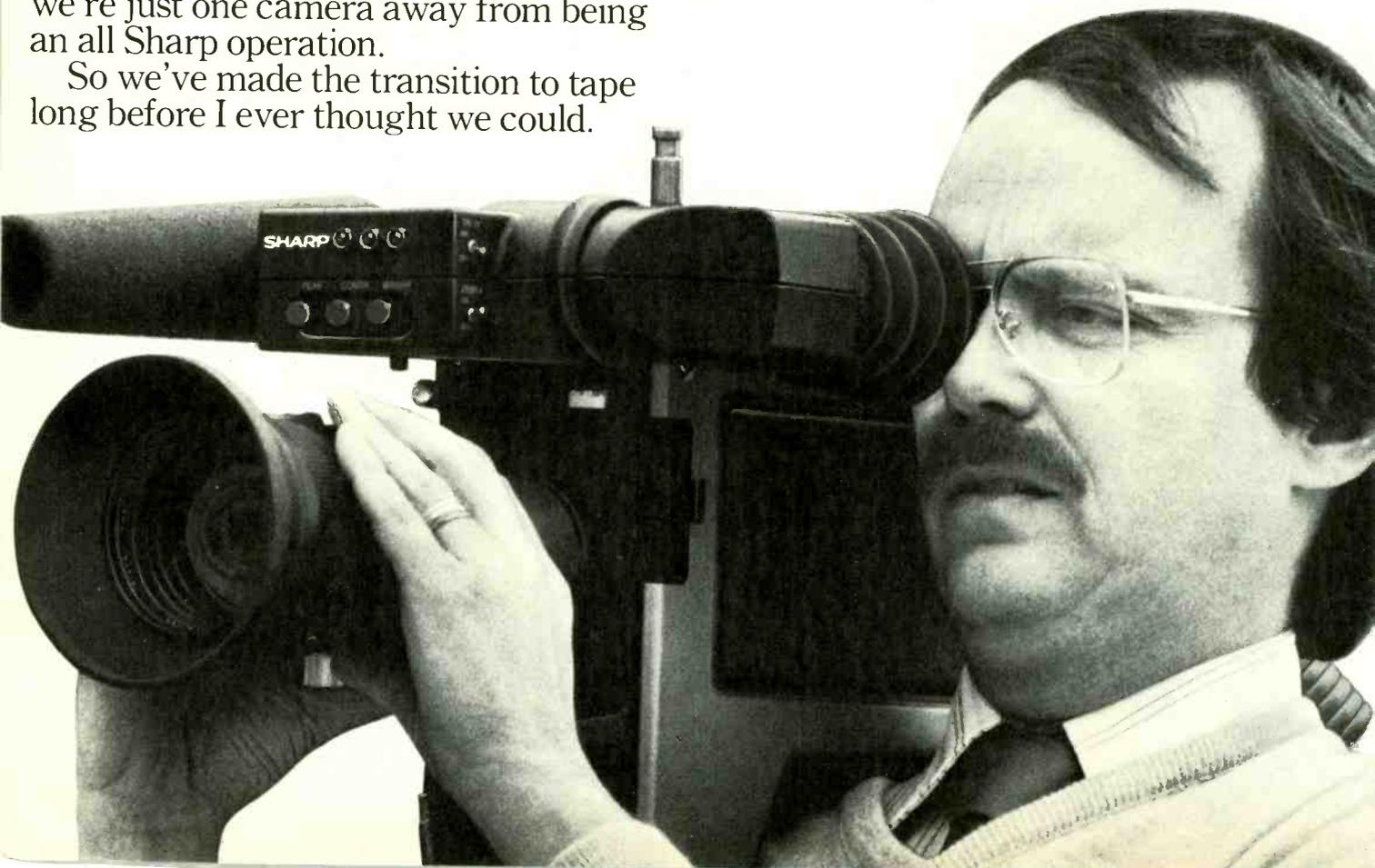
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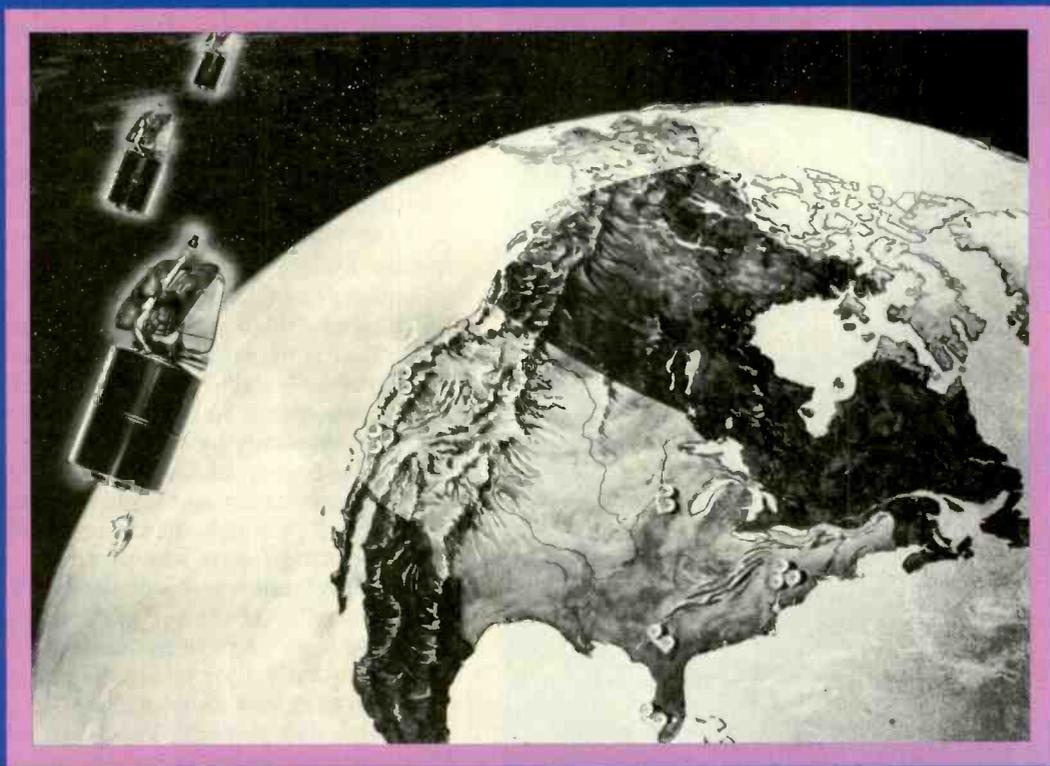
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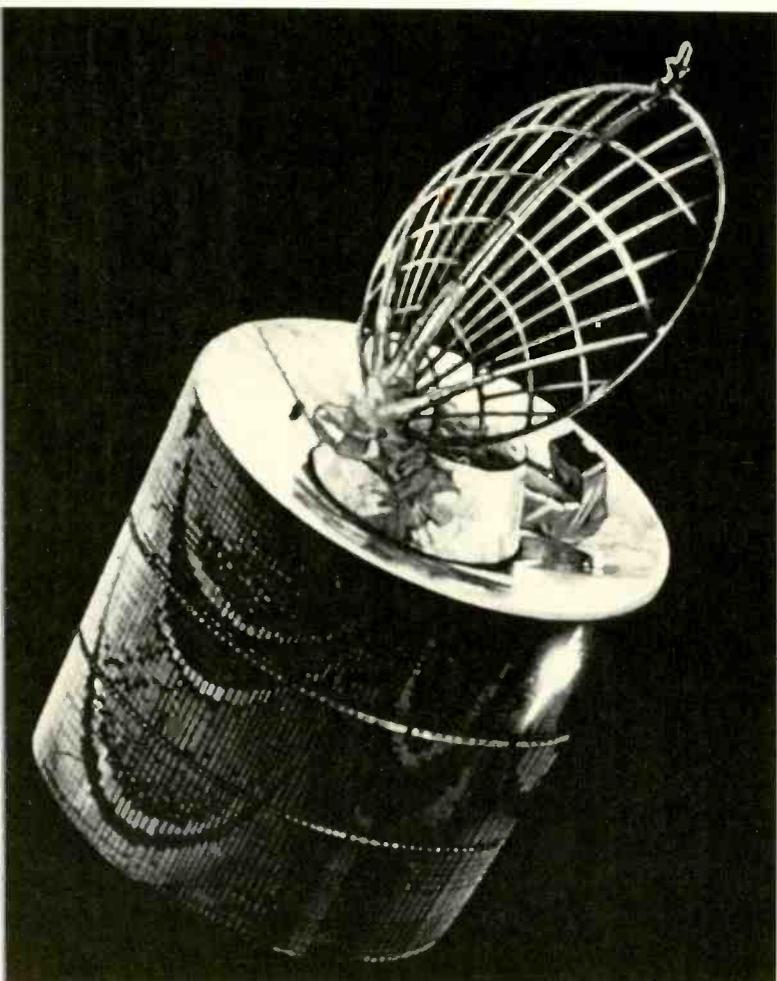
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BROADCASTING: NEW VENTURES IN SPACE



Often, the future is upon us before we have planned for it. Broadcasters, as the following report shows, are turning to satellite communications with solid plans not only for the enhancement of their current businesses but also with an eye towards new business.

WHAT'S UP? PROGRAMMING BY SATELLITE



The current Westar Satellites have 12 transponders each. The new birds, Westar IV and V have 24 transponders each. The first of the new satellites will be launched in early 1982

The amount of programming being distributed by satellite is increasing daily and is starting to be limited only by the scarcity of satellite space.

IT'S NOT EXACTLY manna from heaven, but there is certainly a lot of programming material available via satellite — and with the building of more ground stations it should increase. Many program originators are looking closely at the availability of satellite delivery.

One program that is taking a big step in the satellite delivery of programming is Paramount Television's *Entertainment Tonight*. The show is for prime-time access and is scheduled for air next September, when it will be delivered completely by satellite.

The show is a sort of newscast that deals only with the doings in the entertainment world. Because of the need to be current, it is almost mandated that the program be delivered in the fastest way possible — and the only economically feasible way is by satellite. The show is sold in more than 70 markets. That's wonderful for Paramount, but it does present one major problem — most of the stations that will be taking the program are without downlinks to receive *Entertainment Tonight*.

To solve that problem, Paramount has signed with Wold Communications to provide the distribution network for *Entertainment Tonight*. Even Wold, whose people are probably more adept than anyone at setting up satellite distribution systems, is having to stretch in order to accommodate the program. Between the time this is being written (early April) and September 14, Wold Communications is going to have to install between 25 and 50 downlinks at stations which bought *Entertainment Tonight* but have no ground station currently.

Wold, in turn, has signed a multi-million dollar deal with Microdyne to install the dishes at all the stations that need them. They will be seven-meter antennas with two receivers.

The actual number of antennas to be installed will depend on how many of the stations will opt to install their own, accounting for the wide range of the estimate. Wold will pay for the dish and its installation, while the station will furnish the land and the technical maintenance of the



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Burt Lippman,
Executive Vice President
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Programming By SAT

equipment. Wold retains ownership of the dish.

There seem to be real advantages on both sides of this arrangement. For little investment a station can acquire a steerable downlink that can be used for purposes other than receiving *Entertainment Tonight*. Of course, Wold will charge the distributor for use of the link. "If the station says, 'Okay, we'd like to start receiving program X,' then there will be a downlink charge," explains Robert N. Wold. "We wouldn't charge the TV station, we would charge the distributor. The distributor would pay the delivery cost."

According to one distributor, who prefers not to be named, "You've got to admire what he is about to accomplish. In one fell swoop he is linking about 60 to 70 network affiliates and he owns the links. He has his own transponder and controls blocks of time on others. It's going to make it easier for me to distribute my program in the future, but I'm going to have to do it through Wold."

That may be a little overstated, but Wold is certainly one component in the acceleration of linking stations to the satellite distribution system. RCA Americom is also making it easier for stations to acquire ground stations for little investment. SMARTS (Selective Multiple Address Radio and Television System) is still in the testing stage with the Post-Newsweek stations, with the test scheduled to run until August.

The original concept of SMARTS was that Americom would furnish the downlink with the station furnishing the land and the technical maintenance. Once the downlinks were in place, programming could be distributed for a modest charge on one of the Satcom satellites.

When the test period is over RCA plans to offer an earth

station to any television or radio station that requests it.

The PNS stations were receiving several Viacom shows on the SMARTS network until the first of the year. Viacom is now evaluating the test and is expected to decide soon whether to enlarge its participation in satellite delivery of its syndicated programs.

Currently, PNS is running a daily exchange of news material among its four stations in Detroit, Hartford, Miami, and Jacksonville. It's similar to the one run by Group W (see story on page 68) though it isn't interactive. The PNS stations have only downlinks and can't transmit directly from the individual stations.

PNS's weekly discussion program, *Agronsky and Company*, is also distributed by satellite shortly after its taping every Friday in Washington, D.C., though most of the stations that receive *Agronsky* are PBS affiliates.

Several news services are available on satellite. The Independent Television News Association (see March, 1981 *BM/E*) would not be in existence without the satellite. Independent Network News (April, 1981 *BM/E*) also owes its being to the availability of satellite technology.

The proliferation of local stations having reporters or full bureaus in Washington, D.C., is in part due to the access to satellite uplinks in the Washington area. There are probably more feeds out of the Washington area than any place else in the country, though, according to Gary Worth, president of Wold Communication, "most of it takes place between 3:00 and 7:00 p.m." Some of those in Washington using the satellite on a regular basis include ITNA, INN, PNS, Storer, Cox, Bonneville Broadcasting, Group W, Capitol Broadcast News, and KING-TV. There are many others, especially when there is a major news event. It is unclear just how many stations were able to pick up satellite reports following the assassination attempt.



Scientific Atlanta's seven meter steerable dish is similar to the ones installed recently at all the Storer Stations



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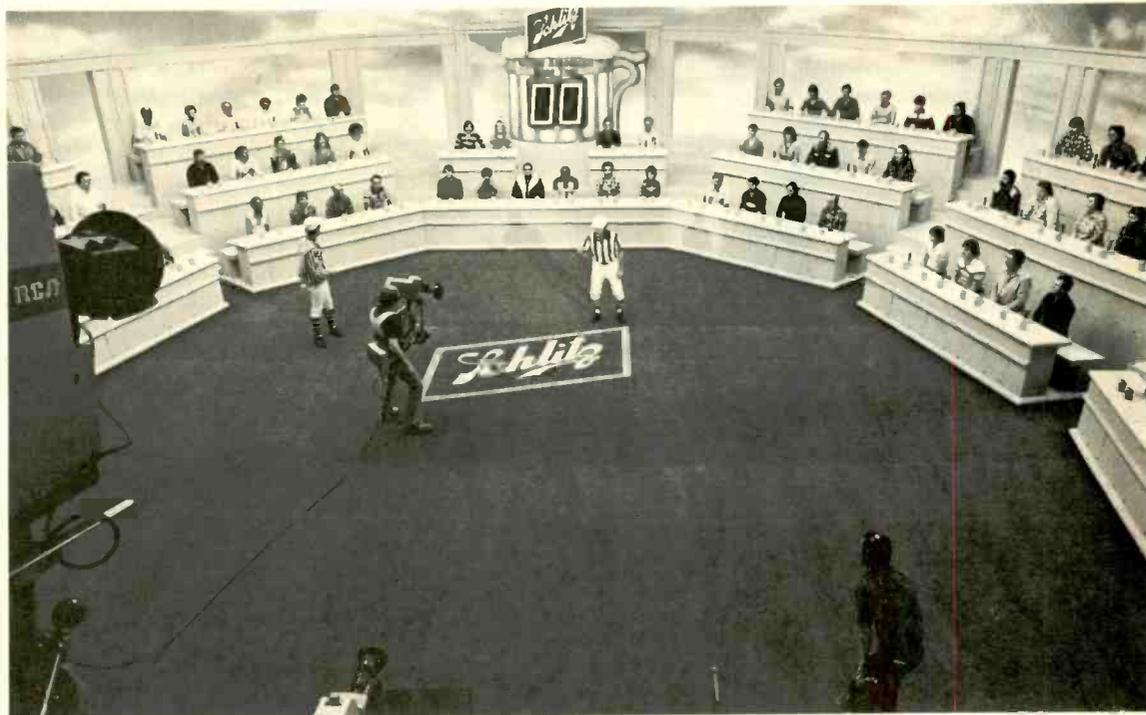
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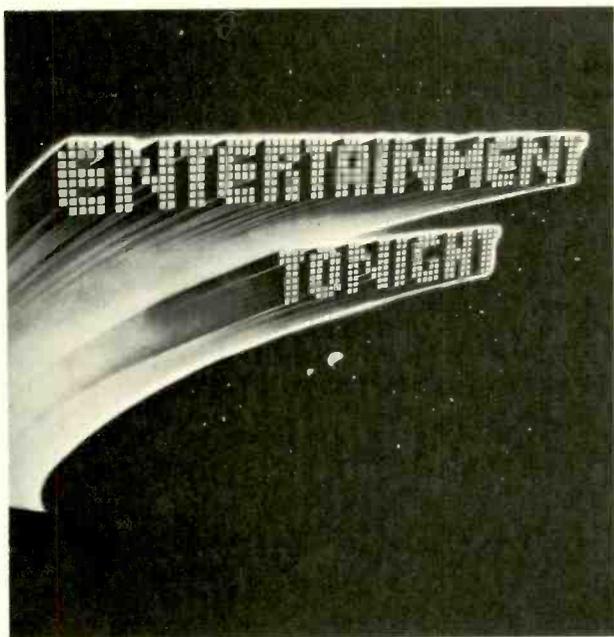
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Programming By SAT



Wold Communications provided the satellite distribution for the live transmission of a Schlitz beer commercial which aired during the Super Bowl



Entertainment Tonight is the first first-run syndication show to be distributed entirely by satellite

With all this activity it is no wonder that the PBS earth station (the only broadcasting uplink out of Washington at the moment) is always booked. That situation should be eased somewhat in the near future. Wold Communications and Storer are constructing earth stations. Wold's should be operational this summer.

Aside from *Entertainment Tonight*, the *Merv Griffin Show* will be available via satellite this fall. There are two reasons why Metromedia Producers Corp. is moving to satellite distribution. The first has to do with the number of independent television stations that have earth stations.

More independents have installed at least downlinks than the network affiliates. This makes it as cost-effective to satellite the show as the more traditional distribution methods.

The second reason is that it will allow the producers of the *Griffin* show to keep the show more timely. Because there can be a lag of as much as eight weeks from the time the show is taped to when it airs, there must be an ever-green quality to the show's themes. If the show had been satellited during the first week in April, it would have been possible to schedule guests who could respond to the events in Washington without worrying that it would be eight weeks before some markets would air the show.

But for those television stations who air the *Merv Griffin Show* and still do not have downlinks, Wold Communications is making the same arrangements that are available for *Entertainment Tonight* customers. Wold will install an antenna with no cost to the station except the land and maintenance. It is unclear at this time how many more stations would be affected.

Group W is also about to offer some of its syndicated shows on the satellite. *PM Magazine* will be the first of the Group W shows to be available on the bird. At last count, about 25 of the stations that air *PM Magazine* had their own earth stations.

The advantage to Group W is that it can save the cost of dubbing the tapes that have to go out to the *PM* stations. The advantage to the stations is that they will get the material on a more timely basis and the quality will be improved. One of the problems of the *PM Magazine* material is that by the time it reaches *PM*'s headquarters in San Francisco it is already a generation or two from the original and then must be dubbed again on to the national reel. With satellite delivery the taping will be done by the station and most probably will be done on one-inch machines, with the quality that implies.

If the *PM Magazine* distribution works, it should follow

Programming By SAT



Mike Cerre and Danille Folquet host *PM Magazine* at WNEW-TV in New York, one of the stations that might receive the service via satellite later this year

that the other Group W shows (*Hour Magazine* and the *John Davidson Show*) would be satellited. In addition, other talk shows would likely investigate satellite delivery. Few would like to lose the competitive edge that timely satellite delivery would afford.

Despite the increase in the number of downlinks that will be installed in the next several months, there are some key questions that must be asked by both programmers and stations about satellite delivery. "The crucial aspect of satellite delivery versus tape is what does it do for the program?" explains Wold. "It's not so much that one

form of delivery is less expensive than the other, but is it a necessary ingredient to the program? In the case of *Entertainment Tonight* it is very necessary because that is a news program and must have day and date delivery, otherwise the program loses its meaningfulness.

"It's not as crucial to distribute *The Mary Tyler Moore Show* or *Happy Days* by satellite; there is not much reason in terms of program content. But in terms of *Entertainment Tonight*, the *Griffin* show, and shows of that type, they are prime candidates for satellite delivery and should be on the satellite within a year."

Another question is, what kind of satellite strategy should a station adopt to be able to gather in all the kinds of programming that will be available on the satellite within the next couple of years? George Sperry vice president and general manager of Group W's Television Syndication Center has some suggestions for minimum standards in planning for a station's satellite strategy.

"A station needs to do a thorough search for a spot to locate the earth station," Sperry contends. "Prime consideration should be given for both an uplink and a downlink, even if only the downlink is going to be built now. Proper site selection will avoid having to move the site when you plan for the full earth station. And by all means install a steerable dish."

The debate is no longer over the usefulness of satellite delivery of programming, but over how to best take advantage of what is and will be offered. With the prospect of the installation of 50-plus satellite receivers within the next six months, a new kind of program planning is necessary. The answer to the question of "what's up" is everything — if you've got a dish.

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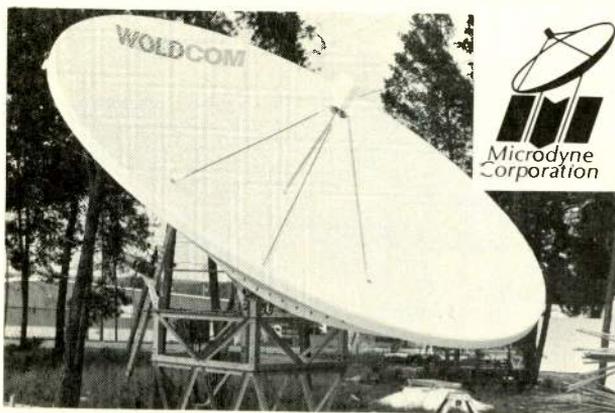
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SATELLITES WILL CARRY IT ALL FOR RADIO

Satellites are now delivering a large volume of short-span programming – news, sports, specials – to about 500 radio stations. Before the end of this year that number will pass 1000 and the satellites will add to their repertory a wide range of entertainment programming, including full-format music 24 hours a day.

THE "FUTURE" OF SATELLITES in radio broadcasting is turning into the "present" fast enough to make the careful prophesy of last year or even last month look foolish.

It was logical only a little while ago to consider that large-scale exploitation of the advantages of the satellites would begin only after the radio industry was broadly equipped with earth terminals. Now we can see that the only hold-up is the scarcity of transponders in orbit. If there were plenty of channels in the sky, rather than the present squeeze, a grand satellite revolution for radio would begin to sweep in. In two or three years it would send the present way of life for a lot of radio programmers off to join the dodo, and bring a new, much richer way, cheaper for the broadcaster.

It is coming pretty fast, even with the present limits on transponder capacity, as the examples to be given here will show. And in the next two years, as shown in the accompanying box, additional satellites are scheduled to go into orbit and the pace of the satellite revolution will be quickened.

This positive reassessment of the readiness of the radio industry for the satellites comes largely from the relative ease and low cost of getting earth terminals at radio stations. Software producers with satellite plans are no longer waiting for potential customers already equipped with terminals to appear. They get their operation underway and go out to sell the programming, taking it for granted that an earth terminal can readily be installed in one way or another if a station wants to join.

As frequently reported here, several organizations are furnishing earth terminals free to stations signing up. Mutual Broadcasting System was the pioneer in this and has been followed by the Associated Press, Enterprise Radio, and the Robert Wold Co., which recently announced similar plans.

When the radio broadcaster needs to buy the terminal, the software producer will often help him or her in one way or another. For example, spokespersons for the new Satellite Music Network, described further along in this article, said they would install a terminal and lease it to the broadcaster, or would finance it on easy terms. The fact is that the cost is moderate, relative to the accepted costs of equipping a radio station, and it is apparent that a large proportion of successful radio stations will be well positioned to get the terminals.

It is also important to remember that a radio station in many circumstances can get programming from a satellite without having an earth terminal. The Robert Wold organization has made a specialty of hooking satellite paths into broadcasters via local telephone loops from nearby terminals, and other groups are beginning to follow that lead.

There are obviously a number of different arrangements that can be made to get the broadcaster to a satellite terminal via a telco loop. One of the most interesting suggestions is for the broadcaster to lease a channel from the local cable television company, which more than likely has an earth terminal, and get the programs via high-grade telco line. The procedures for setting up this kind of feed and others involving telco loops are discussed in more detail in the accompanying NAB satellite report in this issue.

Some developments on the software front illustrate what the satellites can do and will be doing on a large scale in a few years. The programs delivered are in three main

Radio Satellites



In one of RKO's control-room-studios, Barry Luchkowec operates Pacific Recorders' BMX console. Six Tomcats, Pacific Recorders' cart machines, are at his right

categories: one-time "specials" of many kinds — sports pickups, concerts, important news events — with the radio station part of an ad hoc net set up for the purpose; continuous daily feeds of vital program elements, such as news, short discussion programs, sports coverage, and the RKO and Mutual kind of thing, with the radio station itself still doing the backbone of the program; finally the latest operation to appear on the scene — full-format programming for the station, with material filling the main program slots up to 24 hours a day.

One-shots: easy via satellite

The growth of one-time specials has been large simply because the satellites make it easy and economical to get them out to a large ad hoc net of stations, with the stations selected precisely for the coverage the software producer and the sponsor want. Wold has carried out literally hundreds of such operations, with every conceivable mix of stations at the receiving end. A handful of examples: carrying stereo sound for a simulcast of the Grammy Awards, with 40 stations taking the feed; carrying stereo sound from a New Year's show at Omni to subscribers to the NBC "Source"; carrying concerts of rock bands and of the Boston Pops orchestra for Starfleet, a Boston software producer operating a large concert van to originate live concerts on the spot (described in the October, 1980, *BM/E*.)

As more broadcasters get their own terminals, this kind of distribution will become even easier. But the advantages of satellite distribution have already put it strongly on the map, even with the frequent necessity for more or less elaborate telco links to make it go. The number of organizations working this way is going to zoom upward over this year and the next.

News, talk, sports around the clock

The biggest segment of satellite distribution practice at this moment is in the second category, the essential short-take programming being produced with enormous success

by Mutual, RKO, and others.

The RKO net, as *BM/E* described in detail in September, 1980, was created specifically to use satellite distribution for a daily body of programming designed carefully and intelligently to fill vital slots in radio station fare. The intent is to furnish strong material that fits seamlessly into the station's own programming. There is a 24-hour news service, with three-minute slots on the hour or half-hour. There are 90-second mini-documentaries called *Lifesounds*, discussions of a wide range of topics that can be fitted by the radio station into any part of the day's programming. And there are occasional rock music specials, sent out in stereo.

This RKO operation has attracted more than 200 radio affiliates since the operation started in late 1979, using space on the AP transponder and reaching primarily the stations with AP-supplied earth terminals. But any station that wants RKO can subscribe and pull the programs in with a terminal from any source, including one the station buys itself.

The success of the operation has led RKO to plan two additional network operations, announced just as this article was written. The three nets will be known as RKO I — the original and continuing operation, RKO II, and RKO III. RKO I, as planned, will keep its objective of reaching the younger demographic, 18 to 49, which it is evidently doing so well. RKO II, according to the plan, will get underway September 1, 1981, with a mix much like that of RKO I but aimed at an older audience, the 25 to 54 slot. RKO III will program "block" and format-oriented material of some variety.

An important element of the RKO experience has been the adoption of the original net by national advertisers, according to a statement by Thomas Burchill, vice president and general manager, in his announcement of the new nets. RKO keeps time for advertisers on each program. The station also gets some time for its customers.

The fact seems to be that a satellite net opens up a *new* radio market which the advertisers are eager to reach, and the satellite operation makes it easy for them to reach it. This is a positive element of the satellite future for radio, basic in the planning of other such operations.

Mutual, the first organization to plan large-scale use of satellites, was passing the 200-mark of affiliates with earth stations as this story was written and is going full steam, about 50 terminals a month, toward its eventual total of 650. Mutual's programming represents an enlargement of the style set for a number of years, with a heavy regular news program and more short documentaries, discussions, specials, and reports. Important public affairs discussions are aired, for example, at 9:00 p.m. every day.

Mutual has been constructing its own uplink transmitter at a Virginia site near its Alexandria headquarters, and will launch the uplink in June. The company is also planning additions to its programming in the form of music specials and live concerts distributed in stereo, as well as radio drama and other entertainment programming.

Enterprise Radio, as described in this magazine last month, is a kind of "specialist" in using the satellites. Enterprise supplies sports reportage 24 hours a day in short on-the-hour programs, plus a considerable quantity of commentaries, summaries, interviews, and a growing number of live sports remotes. Again, the response from radio programmers has been positive.

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Radio Satellites

A different kind of satellite programming is that of Dow Jones, which has space on the AP satellite and links to the ground through the AP earth terminals. Dow Jones has more than 200 subscribers for a series of three-minute business news reports, transmitted 11 times a day. This, too, is special-interest programming. By leasing a corner of the space held by a major user such as AP, the special-interest programmer now can afford to reach hundreds of stations regularly. We can expect special-interest material to increase greatly as time goes on.

Another kind of material that is going to be big on the satellites is the radio commercial, sent out to stations in ad hoc configurations. The obvious advantages are the timeliness and speed of the delivery, with all material reaching the relevant stations quickly and at the same time. The technical quality of recorded ads, one of the main gripes of the radio programmer, could be high and very uniform.

The "Space Segment" Will Expand Several Times Over In The Next Three Years

The services of the satellites for radio broadcasters are now restricted by the inadequacy of the channel capacity in space to carry all the material that software producers would like to send aloft. There are now nine satellites in orbit, each with the 12-transponder complement of equipment that has been standard so far. After RCA lost its Satcom 3 in space, readers of the industry and general press were treated to the drama of software producers threatening to sue RCA for contracted capacity from which they were being "bumped," and finally accepting a lottery to determine who got what was left.

In the next three years, however, about 12 additional satellites are scheduled to go up. The new ones will carry 24 transponders each, to add between 250 and 300 transponders to the space array. Both radio and television program producers will get a lot more satellite room, and the satellite revolution now held under the tight lid of the present undercapacity will take off.

Some of those with authorization to launch satellites are: Western Union, with one in early '82 and another in summer '82; RCA, with one to replace the lost Satcom 3 in summer '81 and three more for late '81, fall '82, and spring '83, respectively; Hughes, which has been building satellites for a number of operators, but has none of its own aloft now, will get two in summer '82; Southern Pacific Communications will get one in early '83, another in spring '83; GT&E will get one in '83 and one in '84, both on Ku-band, the 12 to 14 GHz satellites that have expanded program capacity.

A startling aspect of the invasion of space by the birds is that the FCC is already having trouble fitting all the satellites the operators want into the orbit slots available. Incredible as that might seem, we are running out of satellite space in space. To reach the whole continental United States plus Alaska and Hawaii, a bird must be squarely on the mid-continent "track" and within certain east-west limits. The satellites must be a certain angular distance apart on the track to avoid interfering with each other — this has been established at four degrees, up until now, for the 4 to 6 GHz satellites. With these limits, the number of available slots will be at or near exhaustion when all the presently planned satellites get aloft. And there are a number of organizations lining up behind those listed, also wanting satellite slots on the U.S. track. Closer spacing, based on better technology, is one proposal to reduce the pressure, but a comprehensive resolution seems to wait on a more radical change in satellite system design.



The creators of Satellite Music Network (SMN), from left, John Tyler of Tyler and Assoc., Dallas; Kent Burkhardt of Burkhardt/Abrams and Assoc., Atlanta; Roy Bliss executive vice president of United Video, Inc., Tulsa; not present is Jim Rupp, executive vice president of WCCO Radio AM/FM and Television, Minneapolis

BLRSAT, the satellite operation of the John Blair Co. of New York, will be an early user of the satellites to take radio commercials to groups of stations. The ease, speed, and high quality of the results make it certain that this satellite service will expand.

Some highly significant new moves in the use of the satellites have come just as this article is written, and they tell us that the satellites will, indeed, carry it all for radio. Although details have not been released, the Robert Wold Co. and Drake-Chenault, veteran radio syndicator of Los Angeles, have said they are organizing a joint venture to supply a full package of entertainment programming to radio stations. Wold's great skill in providing satellite connections to broadcasters with or without earth terminals makes it certain that the material will be widely available. Drake-Chenault is, of course, a master of popular music and can be expected to develop material that many radio stations will want.

Jim Kefford, president of Drake-Chenault, told *BM/E* that the operation will not substitute in any way for the firm's present syndication operation: that will continue unchanged. The satellite programming will be new and separate.

The logic of using the satellites for syndicated programming has been clear from the beginning, but it seemed something for the future, when a lot of stations had earth terminals. As already noted, the entrepreneurs of the satellite are no longer waiting for that.

The advantages of the plan for the radio station are the ease and speed of the delivery and the high technical quality that can be maintained. Speed is often an important element if the syndicator is keeping the radio programmer up to date with popular music. New material can be sent out and received in very short order.

Another advantage for the radio station is that national advertisers will carry part of the cost in small commercial segments sent along with the programming. It is again the attractiveness of a network of stations of known characteristics that the national advertiser can buy all at one time through the programmer that induces the ad buys. Presumably this will reduce the cost of the programming to the radio station.

Wold and Drake-Chenault have indicated that they will release further details of the operation at the NAB Con-

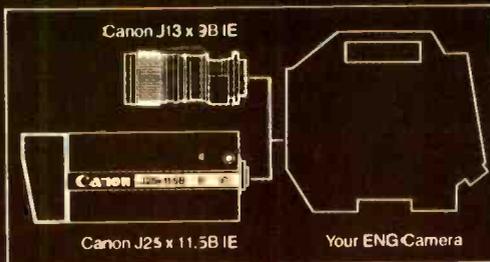
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Radio Satellites

vention, after this article is written. If they do, the story will be enlarged somewhat in the special satellite report from the NAB appearing in this issue. Gary Worth of Wold made it clear to *BM/E* that the satellite venture with Drake-Chenault is not going to be an isolated case. Negotiations are under way with other software producers to establish other similar operations.

Another joint venture, announced to the public very recently, shows even more emphatically the rapid progress of the satellites into the center of radio programming. Four organizations — Burkhart/Abrams/Michaels/Douglas, syndicators of Atlanta; United Video, satellite "special carrier" of Tulsa; WCCO-AM/FM, radio broadcasters of Minneapolis; John Tyler and Associates, radio operators and consultants of Dallas — have joined to form Satellite Music Network, as first revealed to the public at a press conference in New York on March 31.

Satellite Music Network leads the satellites into the big future in a number of ways. First, it will supply two different full-format music programs, 24 hours a day, to fill all a station's program needs except for local ads, PSAs, IDs, local public affairs, and the other material commonly part of a station's community identification. SMN will also supply regular news, weather, certain features, and customized IDs if the station wants them.

The two program formats will be called Modern Country and Pop Adult, and will be developed on the basis of comprehensive audience research, a field in which Burkhart/Abrams/Michaels/Douglas has already established high credentials. The plan is to franchise up to two stations in each market, one for each of the formats.

Second, as with the Wold/Drake-Chenault operation, SMN will get a major part of its revenue from national ads inserted into the programming, making the service very inexpensive for the radio station. Kent Burkhart, president of Burkhart/Abrams/Michaels/Douglas, pointed out at the press conference that national advertisers are already delighted with the idea: SMN will allow them to reach, easily and inexpensively, a large *new* audience of

identifiable demographic character. Buying a large number of radio stations separately for a message has always been difficult, a real headache for the advertiser or agency because each station has to be researched individually. With advertising messages being more and more directed to specific segments of the audience, an operation like SMN, delivering specific audiences at low cost, will have great success.

A third and striking innovation is the construction of a "live" studio of top-most audio grade solely and specifically for origination of the programs. It will be built a few miles from the Chicago uplink to the Satcom bird, used by United Video for its distribution to cable systems of the programs of WGN and WFMT in Chicago. The studio is being designed by James Loupas, one of the best-known radio engineering consultants in the country, especially known for studio design of state-of-the-art audio quality. SMN's own announcers and music commentators will work in the studio, which will centralize the assembly of all the programming supplied by the operation. This is almost certainly the first studio built in this country specifically for production of full-format music programming to be distributed only by satellite.

United Video is a part of the operation as the special carrier to get the programs up to and through the satellite. Roy Bliss, vice president of United, explained to *BM/E* that the SMN stereo programs will be on a subcarrier just above the WGN television programs, alongside the similar subcarrier for the WFMT radio programs. Bliss noted that there is space in the channel for a total of four stereo radio programs or eight mono. With two stereo subcarriers occupied, United Video could take through the satellite two more stereo programs.

This part of the operation emphasizes the fact that the kings in the satellite business right now are the organizations that "own" extra transponder space in an operating satellite. United Video is clearly beginning to put this resource to expanded use, to everyone's benefit. The Robert Wold Co. is another that is evidently expanding the use of transponder capacity available to them, with new ventures in programming for radio (and television, as another article in this issue relates).

Kent Burkhart told of trying out the SMN idea on a number of radio station managements. In virtually every case it was readily apparent that getting the programs from SMN would save large amounts of money for the radio station. SMN promises that the on-air personalities will be among the best available, far beyond the capacity of most radio stations to hire, or even to find.

Burkhart also exhibited to a high degree the confidence noted at the beginning of this article that stations wanting the programming will get earth terminals without difficulty. He said that SMN was prepared to discuss various plans with appropriate radio managements, including leasing a terminal to the station or financing it through easy payments. Basic to this confidence, of course, is the moderate cost of a radio earth terminal, and it can be expected that many radio stations will be willing to buy one without further ado.

From the foregoing we can see that the great advances inherent in the satellites from the beginning are going to reach radio broadcasting on a large scale in the very near future. If a group of the new satellites with 24 transponders each is successfully launched in the next couple of years, as now planned, the satellite revolution in radio cannot be blocked from a massive roll-in. **BM/E**



Ken Harris, director of RKO Affiliate services, operates Interkom, a system which provides direct communication with subscribing stations over the satellite circuit

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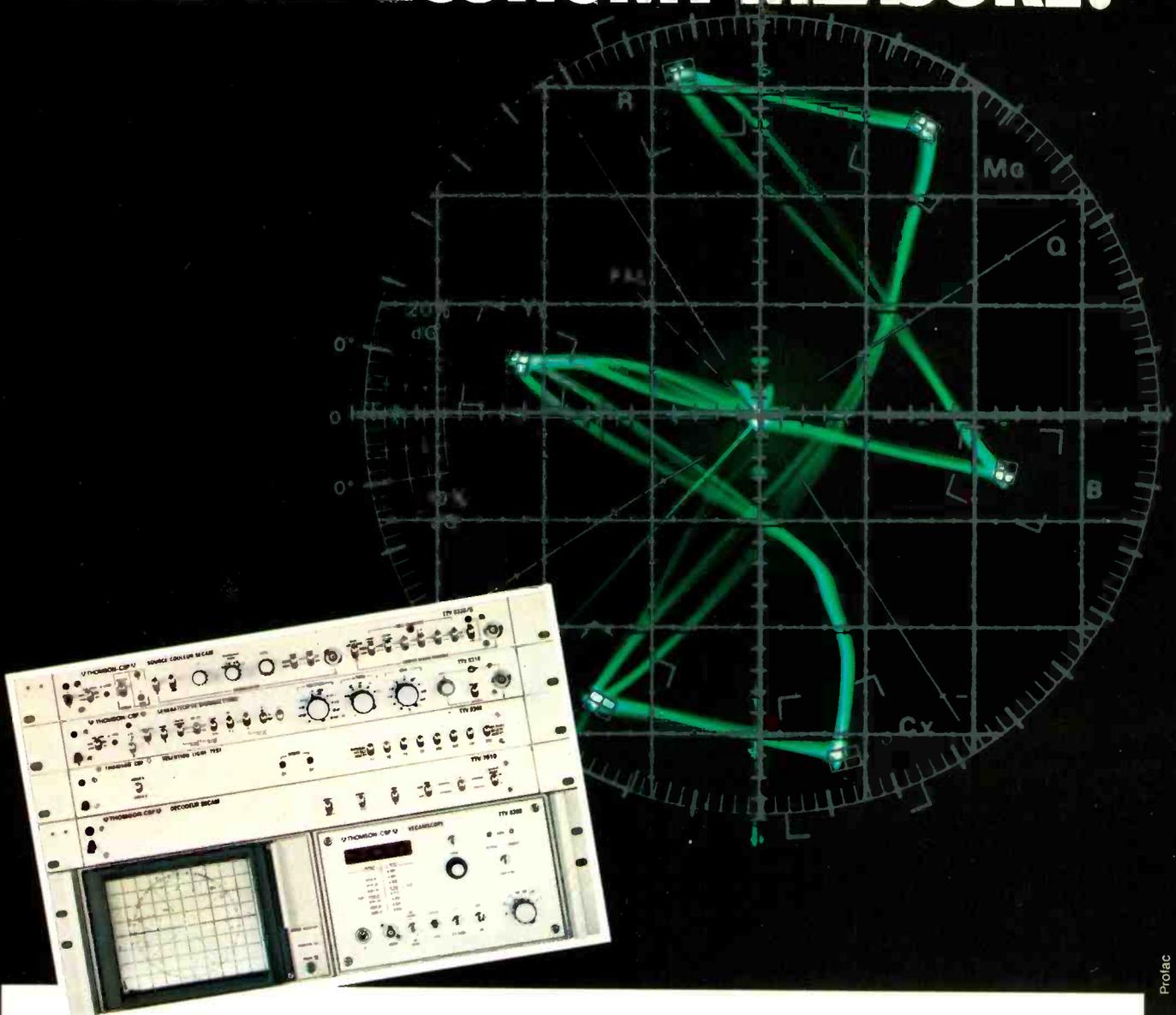
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LINKS TO SPACE MAKE NAB A SATELLITE SHOW

New hardware, new services, and many live connections between the NAB exhibit floor and satellites in orbit made broadcasters see their future in space more impressively than ever before.

FROM A DISTANCE it looked like a field of gigantic mushrooms. Actually it was one of the huge parking lots outside the NAB convention hall in Las Vegas, and the "mushrooms," an array of satellite dishes covering several acres, gave spectacular evidence that the era of the satellite is here. The parked dishes and the exhibits in the hall said clearly that explosive growth is inevitable because the technology is ready, the economic advantages are compelling for program producers, advertisers, and broadcasters, and the manifold enlargement in program choices will multiply broadcasting's appeal to its audiences.

A number of the dishes on the lot were not simply "parked" but were actively transmitting or receiving program material to and from the satellites, programs that were fed into the hall for live demonstrations. This account of those exhibits had to be capsulized to match the space available in this issue, but *BM/E* will discuss many of the developments at the show more fully in later reports. Companies with important hardware exhibits are listed first.

Andrew Corporation, veteran manufacturers of radio, TV, and microwave antennas, had a 4.6 meter dish on the lot, joined with NEC electronic units (see below) in a receive-only terminal. The 12-meter antenna is used for uplinks by Intelsat, RCA Americom, AT&T.

Antenna Technology of Orlando, Fla., brought an antenna of radical de-



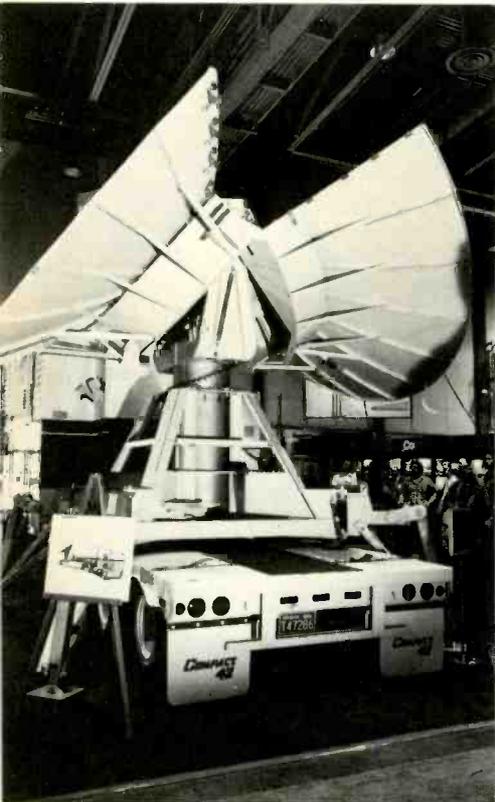
Part of array of satellite dishes on parking lot outside Las Vegas Convention Center

sign, a 7-meter dish with two "slices" across opposite, parallel chords. The maker claims good gain over a reception angle of 52 degrees so that a stationary antenna can bring in a number of satellites (up to 14 with the four-degree spacing). The antenna was actually in use to pull in five satellites simultaneously by Satellite Communications Network, a service group (see below) that will market the antenna.

Avantek, Inc., long established in microwave gear, showed a new satellite receiver, the AR-1000, with modules for up to six programs. Also shown were LNA's and down converters.

California Microwave has already built and installed about 200 radio terminals for Mutual, AP, and others, and has several hundred to go. Cal Microwave moved into a new area with electronics for home video satellite terminals. This will be distributed to home buyers by a national consumer marketing firm (to be announced) which will supply the three-meter antennas. Asked if this equipment could be used by radio broadcasters in very small markets who want inexpensive downlinks, a California Microwave spokesperson told *BM/E* that this would require some re-design, a future project.

Compact Video showed very large



Large mobile uplink shown by Compact Video has 7-meter antenna that folds for easy transport



Visitors to AT&T booth watch as their images are sent up to satellite and back to booth

transportable uplinks with 7-meter antennas. One is in use by Transportable Earthstations Inc. for a rapidly growing number of services.

Gardiner Communications showed complete video earth stations with 3-, 4-, and 5.6-meter antennas. One 5.6-meter dish on the lot was connected to the exhibit booth by a fiber optics link and brought in a variety of programs. Gardiner also makes all the electronics. The antennas are of fiberglass and are petalized for easy assembly. Gardiner will put up a complete terminal on a site constructed by the buyer.

Fort Worth Tower showed a complete transportable terminal with antenna by Fort Worth and electronics from Microdyne.

Harris Corporation demonstrated expanded activity in earth terminal construction for both radio and television. A radio terminal with three-meter antenna, developed primarily for United Press, is available to all radio broadcasters. It includes a receiver with modules for six programs. A 6.1-meter system for television is getting into use for portable uplinks, CATV, and TV station reception. An uplink-downlink system with 9-meter antenna has motorized positioning. Harris has also adapted the 9100 facilities control system for broadcast stations to the complete control of a remote earth station. The company will supply complete installation.

Microdyne Corp., long established in the field, had antennas on the lot in 3.6-, 5-, 7-, and 11-meter sizes. The brand new 11-meter antenna provided the feed for a live demo at the booth and showed the operation of the motorized drive system.

Microwave Associates, leading makers of complete microwave systems, showed a full line of antennas and electronics for satellite earth stations. Included: an uplink exciter; Klystron high power amplifier, 6 GHz, with 3 KW output; automatic protection switch; remote frequency control; receivers; 4.6, 7, and 10 meter antennas.

Microwave Specialty Corp., based in San Diego, has a background in microwave antennas and accessories. It exhibited a 5-meter satellite antenna on a mobile rig with complete electronics. The system is already in use by Southern Satellite Systems, a service group.

NEC showed complete downlink electronics, including LNAs, down converters, and receivers.

Oki Electric Industry Company described their receive-only KU-band (12 GHz) receivers for both radio and television, supplied with antennas in the range of 0.75 meter to 1.6 meter, often used for home earth stations.

RCA Americom announced at the show a new satellite transmission technique called "Optimized Video Transmission" (OVT). It is designed to reduce vulnerability of the system to interference from local microwaves and other noise sources. This allows earth terminals to be put into downtown areas, close to studios. OVT controls bandwidths to reduce noise and interference that may impair the picture quality, especially the impulse noise often found in small video terminals. A "with and without" demonstration was convincing.

Scientific Atlanta, at present the largest maker of video terminals, showed a complete line of new electronic components, including a new remote control system for antennas. S-A had a steerable 7-meter antenna on the lot in active use, with electronics to bring in five programs simultaneously from a satellite. When the control system repositioned the antenna to another satellite (about 20 seconds) the monitors showed that the new one was squarely in the satellite's eye.

It is not only the growth of available hardware but also the tremendous expansion in services that tells the future. Primary in this area is **Wold Communications**, pioneer in the art of setting up satellite-aided pathways from program producer to broadcaster. Wold announced a number of additions to its already phenomenal number of ac-

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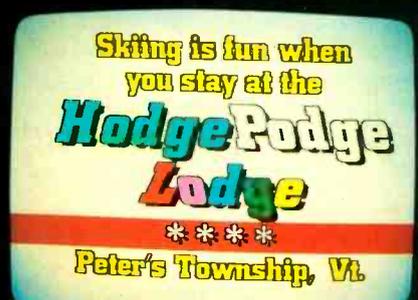
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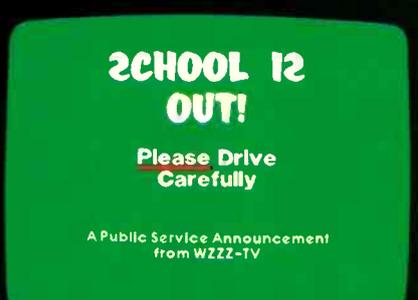


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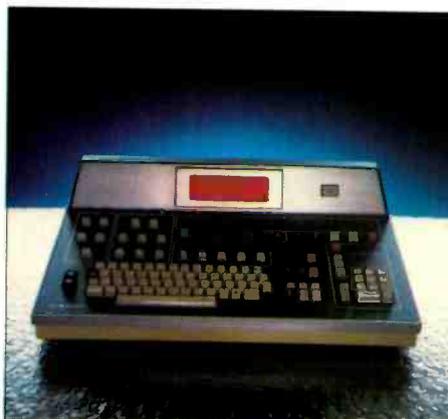
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ivities. One is an agreement with aramount to carry on a regular basis a daily half-hour program, *Entertainment Time*, to a large group of satellite earth terminals at Paramount subscribers. Wold is aiding additional subscribers to get terminals by ordering 100 from Microdyne; the buyers will then benefit from Wold's quantity price.

A similar enterprise for Wold is carrying the *Merv Griffin Show* regularly for Metromedia Producers Association. Again, Wold will help subscribers get earth terminals. A third is carrying Boston Pops and rock concerts, in stereo, to FM stations for Boston's Starfleet Blair. And further along this line is Wold's plans to go into joint program production with leading syndicators, now a topic of negotiation with several companies.

Gary Worth, president of Wold Communications, told *BM/E* at the convention that the explosion in the activities of his company showed that satellite users would flood in as fast as pathways for them were opened up.

American Telephone and Telegraph Co. (AT&T) presented a highly significant exhibit. The Bell System was kept out of using satellites for broadcast program transmission by the government's desire to let other, competitive firms get started. Now, how-

ever, Bell is near a complete go-ahead, and its display showed plans for both radio and television program carriage. The radio will be digital (as is RCA's "ADDA"), which suggests a strong trend toward that technique.

AT&T had two complete terminals on the lot, one a video uplink/downlink that took the video images of visitors to the booth, sent them up to the satellite, and brought them back in, a 44,000-mile round trip while the subject stood by. AT&T also had a system called "Edcom," a complete uplink for voice which can be rushed to an emergency site to provide 24 lines of telephone linkage virtually instantly.

AT&T had planned to announce at the show that television service for NBC would start in late May, with CBS and ABC some months later. At the last minute, though, the FCC failed to approve the tariff for the NBC service, so the whole plan was postponed. Despite this setback, it is certain that in the near future Bell will become a main factor in satellite use for broadcasting.

Transportable Earth Stations, Inc. is a new service operation in Burbank, Calif. offering to uplink local programs using one of the Compact Video's large transportable uplink systems.

Enterprise Radio, a 24-hour sports network for radio (see accompanying

satellite article) is now reaching more than 60 subscribers, for 40 percent of the YS ADI population. Enterprise sent its subscribers live coverage of the Holmes-Berwick prize fight in Las Vegas using a transportable uplink and reaching more than 65 stations, some on a one-shot basis, with the help of the Wold organization. An Enterprise spokesman at the convention told *BM/E* that such "specials" would greatly increase in Enterprise's future programming.

United Press International, as noted in the paragraph on Harris Corp., has ordered a large quantity of radio terminals with three-meter antennas from that company. UPI announced a plan to help subscribers get the terminals. First, if the broadcaster buys a terminal for \$6165 (which includes installation and maintenance), UPI will credit the broadcaster for up to \$1200 per year on the subscription fee, up to \$6000. Second, if the broadcaster prefers, UPI will lease the terminal for as little as \$12.25 per week — nothing down.

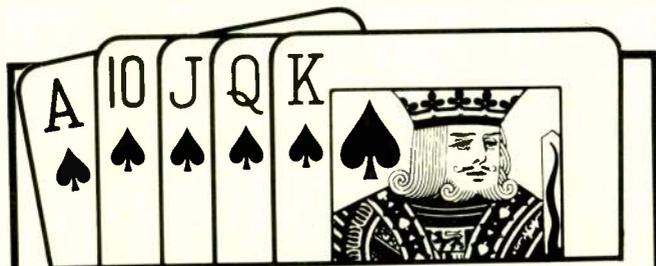
Satellite Communications Network, another "carrier" putting satellite nets together for program producers, is building an uplink in New Jersey, an easy microwave hop from New York. It has space on three transponders. Among customers so far is the Las Vegas-based American Satellite Net, which is producing entertainment programming, soon to reach 24 hours a week, from Las Vegas. Satellite Communications Network has a transportable uplink and will get more.

The **Western Union Company** emphasized the tremendous success of their three Westar satellites now in orbit, pointing out that they are handling a total of 174 hours of programming every 24 hours. A "Who's Who in Space" via Westar ran to more than fifty organizations.

Comsearch, Inc., described their very elaborate and complete frequency coordination service for satellite earth terminals. Included are a microwave survey, site test if needed, preparation of FCC filing, etc.

Mutual Broadcasting System, though not on the exhibit floor, was strongly present in a luncheon for affiliates and in news releases telling the status of the Mutual cut-over to satellite distribution. More than 200 affiliates already have terminals; Mutual hopes to have the whole 650 installed by the end of 1981, to make the largest satellite net now in view.

Continental Radio is a new enterprise based in Portsmouth, VA, which promises full-format programming via satellite starting September, 1981. The emphasis is on "wholesome" adult contemporary music, with some admixture of Christian music. **BM/E**



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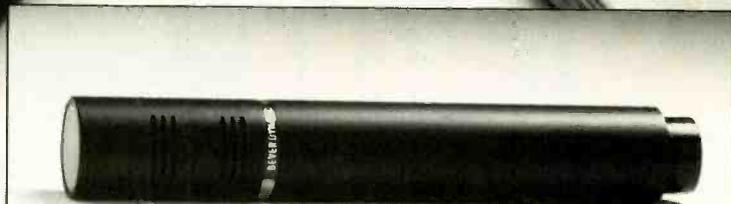
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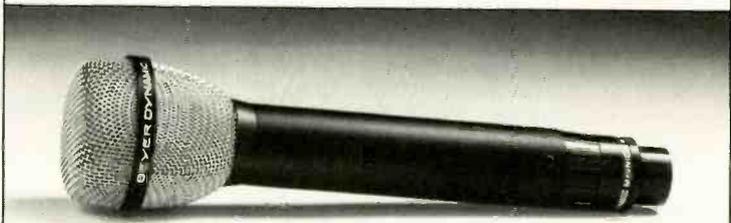
M 55



M 201



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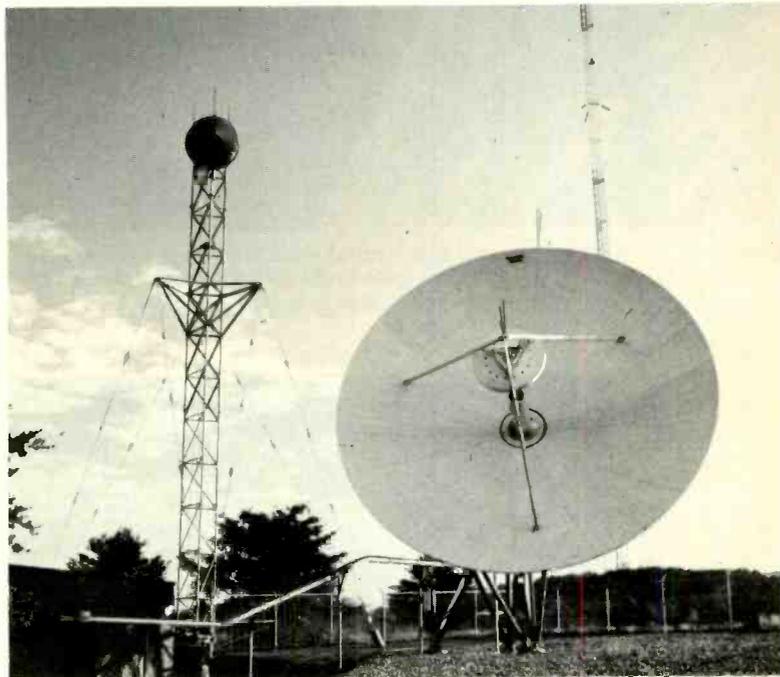


One corporation's daring enterprise maps out the way satellite communications will work for broadcasters in the future. While downlinks represent the first step, uplinks and ultimately, networking, are in the cards for the progressive broadcaster.

WESTINGHOUSE BROADCASTING COMPANY, INC. has known for a long time that it is in a variety of businesses. There is the Group W Broadcasting Company with both radio and television stations, Group W Productions which produces and syndicates a number of popular programs including *PM Magazine*, *Hour Magazine*, *The John Davidson Show*, *Fight Back! We're Movin'*, and others either in the works or planned. There is also the distribution business, and Group W is there with its TVSC (Television Syndication Center) which celebrated its 20th anniversary early last month. Pending is the merger of Group W Broadcasting Company and Teleprompter, one of the nation's largest multi-system cable TV operators. It seems fair to say that Westinghouse is committed to mass electronic communications in all its many forms. Yet, it is only within the past year that Group W's six television stations could routinely exchange news and entertainment programming.

To a novice unfamiliar with the differences between networks and group station operation or ignorant of the common carrier system, the inability to routinely exchange program information would seem an appalling oversight. But then, most lay persons have little or no idea as to how programs are distributed. What broadcaster hasn't had to go into convoluted discussions with "Aunt Tillie" during a long distance telephone conversation to explain why they don't each have the same programs on at the same time.

Satellite communication won't clear up "Aunt Tillie's" dilemma, but it will clear up the even more vexing and pragmatic, communications problems that broadcasters have faced. More importantly, satellite communication itself opens up an organized way of viewing the developing communications business. For Group W it means that the news resources of its six television stations



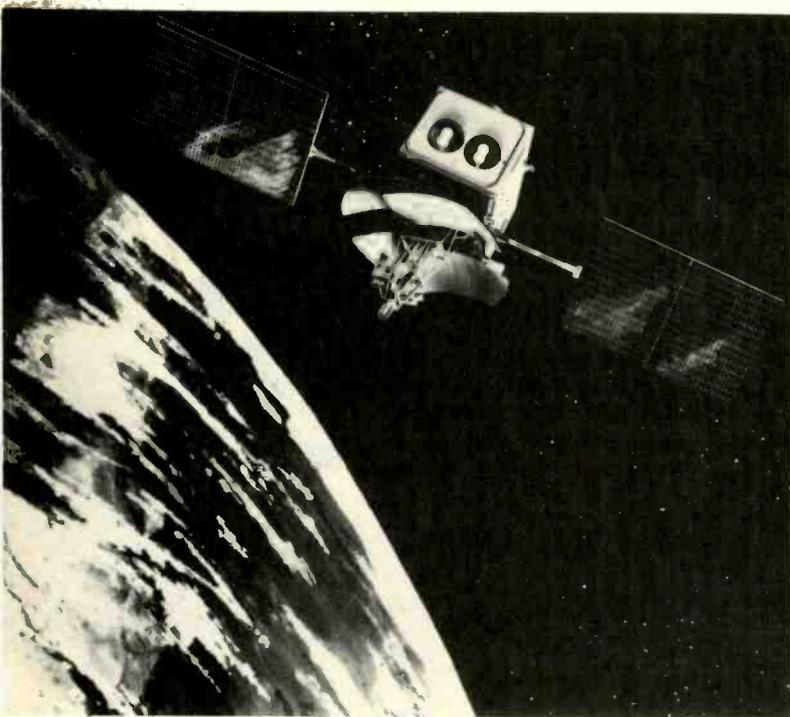
Group W's Pittsburgh facility. Both KDKA and TVSC use the facility. A second dish is expected to be completed this year

can be included in the development of each station's news package. It means that each of its stations can largely dispense with the cost of bicycling tapes and reduce the harried tempo of program alteration. It means that, increasingly, Group W stations will be airing the latest, most timely magazine programs. It means that these stations will be able to rely on fresh, first run syndicated product. Down the road, there are new businesses yet to be realized.

As satellite earth stations sprout up across the landscape like inverted mushrooms in a Walt Disney slow motion sequence, Group W contemplates an ever richer, headier brew of communications services which will keep the company in the forefront of modern broadcasting.

The hub of the Group W satellite network is located at its Pittsburgh, Penn. location, home of both KDKA and TVSC. TVSC, which has for 20 years specialized in video tape duplication and program distribution, has entered a new phase with its satellite operation. Some of its 128 existing clients and some new clients are opting for dis-

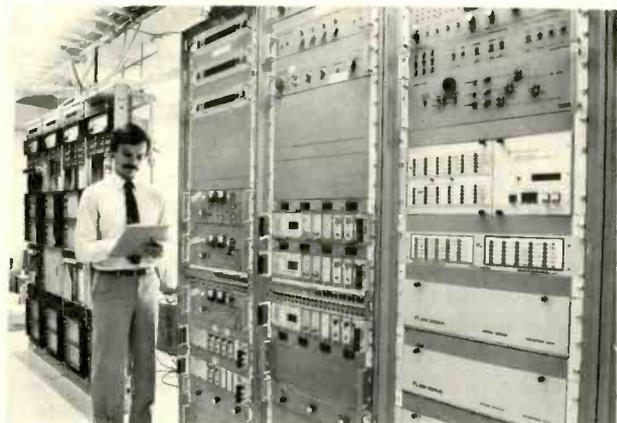
Group W Uplink



RCA's Satcom I and II will be joined by others in the next few years. Group W has gone to the added expense of rotatable dishes in order to have access to all planned satellites in the geostationary orbital arc



Currently, Group W earth stations look at Westars I, II, and III



Control of the earth station, both technical and traffic, is handled from this first-rate site

tribution of their syndicated programs via VIDSATTM TVSC satellite distribution service. Producers are not only interested in satellite distribution for simultaneous airing of specials (an obvious reason) but also want to take advantage of longer lead times between program completion and distribution date. Satellites can also help meet multiple schedule needs of client stations. According to Group W's David Beddow, vice president of television operations and technical operations, "There are some syndicators we've been talking to that are so anxious to do this that they are willing to pay more money." In fact, according to Beddow, syndicators right now could distribute their programs via satellite for about the same cost as bicycling if about twenty of their client stations were able to receive the program direct from satellite.

A case in point is Group W's own *PM Magazine*. According to George Sperry, vice president and general manager of TVSC, a recent study of *PM Magazine's* more than 100 client stations revealed that 26 of them were equipped with receive/only earth stations. Of that 26, some 16 to 18 said they would accept *PM* via satellite. This puts *PM Magazine* very close to the point where it will be cheaper to distribute by satellite than via traditional air freight methods.

C.G. "Buck" Perry, Group W's vice president of broadcast operations, points out that *PM* will very probably go to satellite distribution for some client stations by this fall. Said Perry, "It happens to be a very appealing show for satellite since it requires the active participation of the receiving station."

Those familiar with *PM* realize that the format calls for the client station to produce its own locally hosted transition segments. Group W provides a selection of magazine stories and some special minisegments. This package is delivered to the receiving station for inclusion of the locally hosted segments and any locally produced story.

Obviously, the receiving station would like to have as much time as possible for this work. Satellite distribution is one way to provide more time. Eventually, since stations in the *PM Magazine* cooperative supply segments to the Group W *PM* team, Perry expects that satellites will be used to transmit segments from stations as well as to them.

Satellite distribution also adds an air of vitality to other Group W programs. In February, the mechanisms were set up to augment *Hour Magazine* with satellite distributed interviews and special segments if circumstances required. The day after the assassination attempt on President Reagan, *Hour* managed to get an exclusive interview with the president's daughter, Maureen Reagan. This interview was taped and distributed to Group W and NBC O&O stations in ample time for them to edit it into the next regularly scheduled airing of *Hour Magazine*. According to Beddow, a similar approach may prove useful for *The John Davidson Show*, or any other program in which immediacy is important.

Other "perishable" programs are also moving to satellite for distribution. *World Championship Tennis*, for instance, is aired on some 70 or more stations. Ten of these stations now receive the program via satellite. A new *Chuck Barris* program is planned for satellite distribution as are some specials such as the "Clairol Crown Tournament." According to Sperry, Group W estimates that there will be at least 150 earth stations installed at television outlets by September. As this number increases, the economic balance swings perceptibly toward satellites for distribution.

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Group W Uplink

In fact, the recent NATPE convention in New York generated a lot of discussion regarding the need for "first run" syndicated product. George Sperry predicts that there will be a lot of this first run programming available and much of it will be the type that needs a sense of immediacy. Said Sperry, "By 1984-85, the majority of

first run product will have a mix of satellite and tape distribution." With the spread of earth station installation, the shift will be to satellite not only for economy but to enhance "immediacy."

News distribution

Obviously, there is no program material more in need of immediacy than news. In fact, this need was the catalyst that got Group W involved in the satellite business.

Newsfeed: Group W's Interactive News Service

Newsfeed moves with such precision that the only way to know that a different feed is coming in is by the station slide

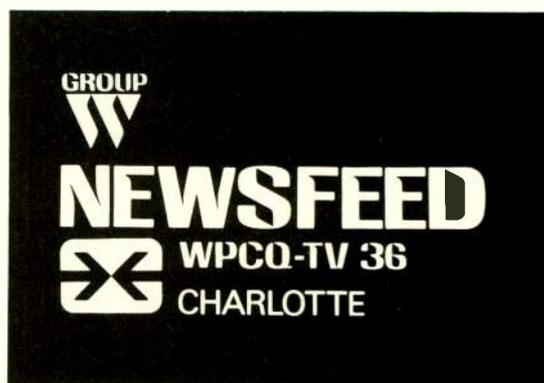
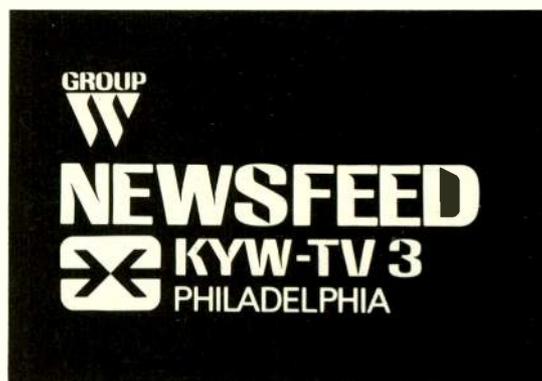


She is the virtuoso of the Touch-Tone®. She conducts multiple telephone conversations the way Zubin Mehta conducts the New York Philharmonic — with style, skill, and a touch of humor. As executive producer of Group W's Newsfeed, Anita Klever seems to spend most of her life on the telephone. The phone lines are her tentacles into the news operations of the six TV stations and the Washington news bureau. She uses that connection to coordinate the orderly swapping of stories among the group.

Newsfeed is a cooperative that is confined to the Group W stations. The cooperation among the Group W news departments is nothing new; many projects are run jointly. But what makes Newsfeed different is that it is all done via satellite and it is interactive. All the stations have access to both up- and downlinks.

Group W has always had a commitment to news (see "The Care and Feeding of I-Teams," *BM/E*, January 1981) and there has always been a history of cooperation among the stations. Political convention coverage tends to be a joint effort and the reports of the I-teams are sent to all the stations for their use if they wish. But until the advent of Newsfeed the attitude had to be, "Here is the way we aired it — take it or leave it." Stories could be tailored for sister stations, but it was always chancy since there was no way to know what was in the story until you saw it.

"Because the stations get a chance to see each others' work daily," says Klever, "they get a sense of what each is doing. And because they talk to each other frequently they can request special angles for their markets."



A prime example was the recent transit strike in Philadelphia. The issues involved were similar to those in Boston. Because WBZ had seen some of the KYW stories on the feed, the station was able to ask for a report that was based on what KYW had, but which could be shaped for Boston.

"That's one of the advantages of the service," adds Klever. "We're trying to give our stations a new resource that will give them a competitive edge."

A more telling example of the flexibility and power of the Newsfeed system was the recent assassination attempt against President Reagan. When the story broke, Group W's Washington bureau was on the air with live and tape reports within an hour of the incident. And live inserts were available during the early newscasts.

Through Anita Klever's contacts (as she jokingly described it, "The Godmother called in some of her markers"), arrangements were made with WFAA in Dallas, where the Vice President was visiting, and KOA and Cable News Network in Denver, where the suspect, John Hinckley, lived, to feed material on the satellite for live inserts into the 11:00 newscasts. "The stations loved it," explained Klever. "They had stuff that no one else had."

The six Group W stations — KDKA, Pittsburgh, KPIX, San Francisco, KYW, Philadelphia, WBZ, Boston, WJZ, Baltimore, and WPCQ, Charlotte, N.C. — all take part in the feed. Each normally feeds several stories during the hour long feed at 4:00 p.m. EST. The transmission order is coordinated by Klever in Philadelphia and by each station's Newsfeed coordinator.

After the horrendous experience of Three Mile Island, where communications channels were seriously overcrowded, Group W redoubled its efforts in the satellite communications area. It became clear, that a major news organization would have difficulty controlling its own destiny if it did not have its own means of gathering and distributing news.

With stations in Baltimore (WJZ-TV), Boston (WBZ-TV), Philadelphia (KYW-TV), Pittsburgh (KDKA), San

Francisco (KPIX), and Charlotte (WPCQ), news and information potential of a link-up look positive. A plan was made to provide each of the stations with satellite up- and downlinks, an admittedly expensive prospect.

The criteria set up for the installations demanded fully redundant up- and downlinks in the large diameter dish range (10 or 11 meters). A fully redundant earth station costs \$800,000 to \$900,000 but as Perry points out, this has to be measured against the value of the program being



During the day the stations swap information concerning what stories they are covering. If any has a particular interest to another station, a request can be made to customize it for that market. Another way to aid in using material from other stations is feeding without graphics. That way a station can use only the pictures or a sound bite and not have to worry about working around a super.

After all the information is firmed up, Newsfeed Central sends out a list of all the stories available and pertinent data such as reporter, time, and supers to each station via the Group W computer network. Shortly before the feed, Klever sets up a conference call to all the Newsfeed coordinators to clear up any last-minute changes, problems, or requests.

During a recent visit by *BM/E* to observe Newsfeed, Klever placed the calls to the stations, went down the list of 15 items to be fed, made three changes, cautioned the non-NBC stations that using some material without NBC's permission was a no-no, reminded everyone that there would be a special feed of NCAA material for WTHR in Indianapolis and any use had to be cleared through them ("...and you can reach them by calling area code (317) 000-0000 and asking for..."), and because the feed would start five minutes later than usual, cautioned, "Once you start to fly, don't stop." All this took place in less than three minutes. At that point Anita Klever sat back and watched her birds fly on autopilot.

The only time that Klever gets involved during the feed is when there is some problem. Occasionally a station will have transmission problems and ask for a re-feed. Klever

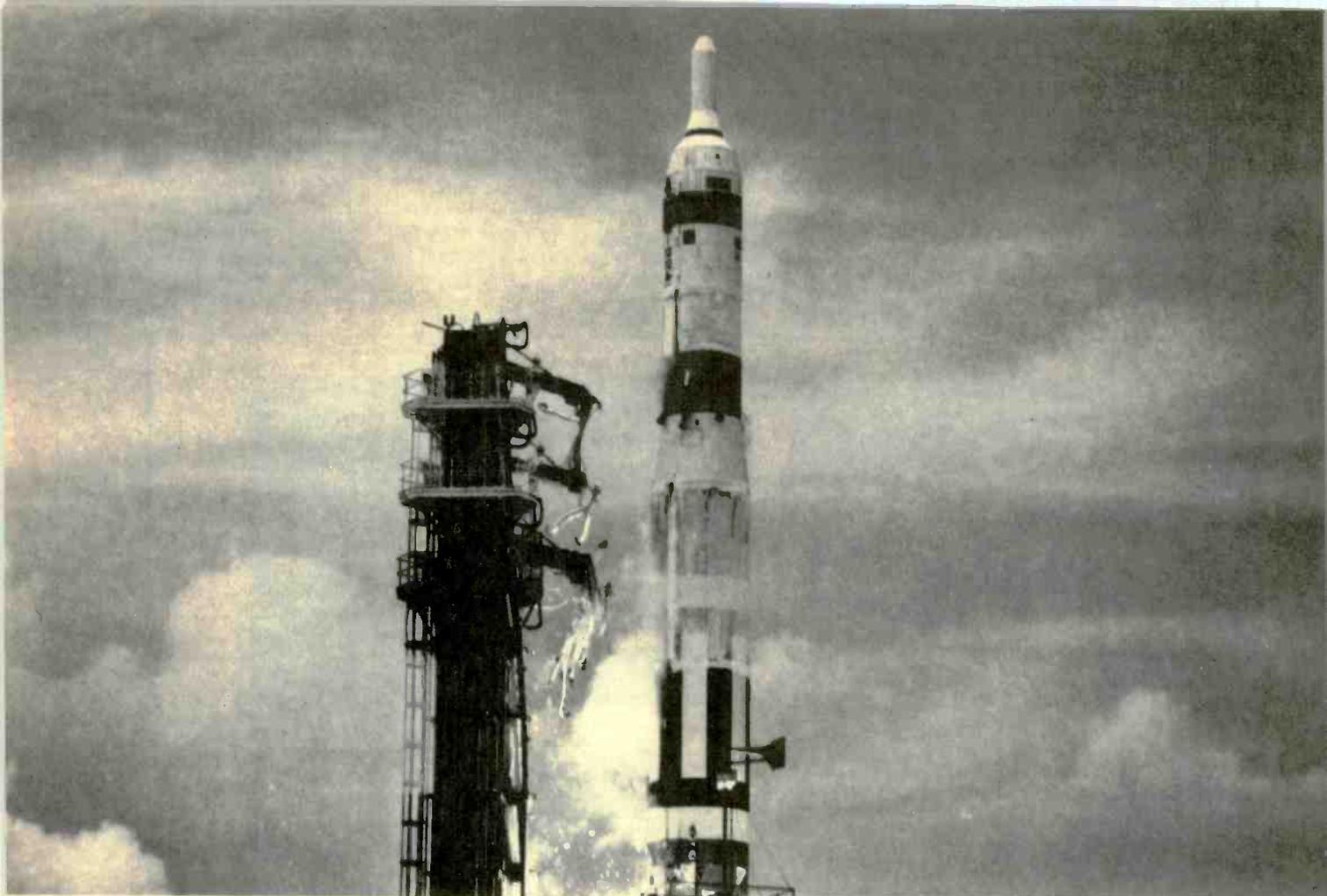
usually agrees and at the proper moment asks the transmitting station to re-feed the particular story. That interaction is what seems to make the Group W stations so fond of Newsfeed. "It's not some big conglomerate in New York making all the decisions," says Klever. "We decide what we want and when we want it."

The thing that makes Newsfeed different from similar feeds offered by the networks is responsiveness and customizing. If a Group W station needs something special, someone will respond to that need and that need only. It also will tailor that request to exactly what is needed. Due to the number of network affiliates, it is impossible to provide that kind of custom service. The networks are also in the business of producing their own newscasts and tend to save all the good material for their own use.

While Newsfeed is confined to the Group W stations (though there are occasional "favor feeds" such as the NCAA feed for WTHR), there are indications that the service might expand to other stations.

"It's something that we're looking into," says Richard Sabreen, VP for TV news operations, "but no firm decision has been made yet. Newsfeed was conceived as a service for our news departments. We want to see how that goes first."

For a project that is only a couple of months old, Newsfeed seems to be going extremely well. A number of television stations around the country have been literally watching Newsfeed every day to see how it is developing. To paraphrase Anita Klever, it flies.



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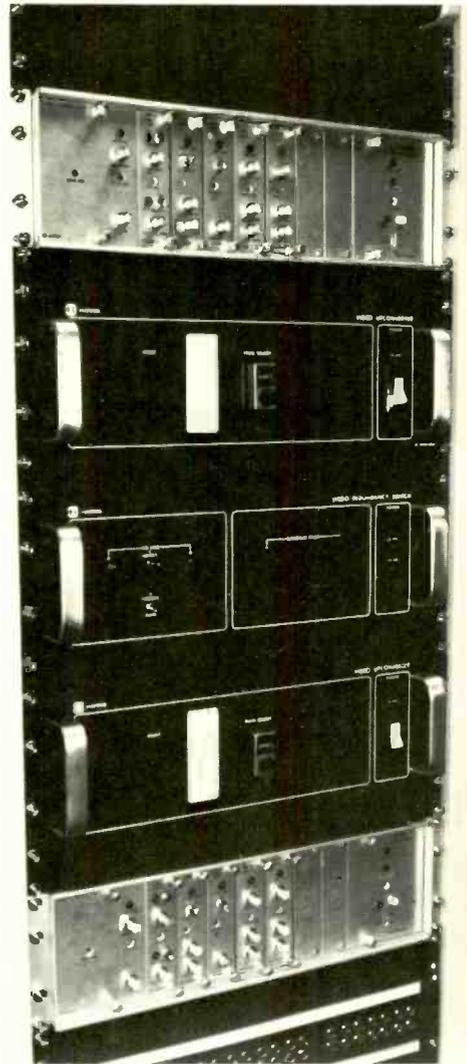
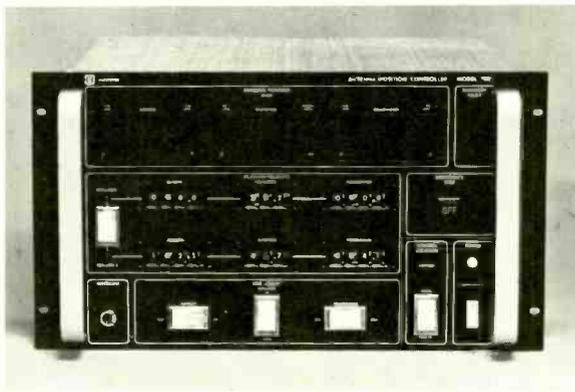
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Group W Uplink



Uplinks are a considerably more complex level of earth station than are downlinks. Most broadcasters will opt for the tunable type in order to take advantage of current and future communications satellites. Such installations require a positioner for the antenna (bottom, left), associated radio equipment (above), and, of course, a large diameter dish such as this Harris equipment (top, left)

carried. Though a non-redundant transmit/receive earth station could be had for \$125,000 or less, such a choice would lead to a scaling down of growth expectation in addition to the risk of a communications crash.

Moreover, the Group W earth stations, again with an eye to future needs, are fully rotatable so that any geostationary communications satellite could be tuned in. This flexibility was deemed important, not only because of the existence of multiple communications satellites now, but also in anticipation of satellites yet to come. In fact, opting for the large diameter dish figured into these considerations as well since Group W anticipates ever more crowded parking conditions in the geostationary orbital arc. With satellite separation likely to decrease to as little as 3 degrees, uplinks are going to have to be very accurate.

While Group W was apparently ready to spend money,

they were not intemperate. Negotiations were opened with Western Union which eventually yielded an agreement whereby Group W earth stations would be made available to WU and CPB (Corporation for Public Broadcasting). In turn, Group W was permitted to use Western Union and CPB uplinks. This sharing has helped to trim costs for all concerned.

At KDKA, Pittsburgh (also the site of TVSC) Group W built a fully redundant transmit/receive earth station. The same is true for WJZ-TV Baltimore. In Boston, Group W shares use of the CPB uplink which is located at the WBZ transmit site. Philadelphia's KYW-TV is nearing completion of a fully owned and operated earth station while the WPCQ site is currently leased a downlink only. KPIX is linked to the Western Union facility in Sun Valley, California, for both transmit and receive functions. The Group

Group W Uplink

W Washington, D.C. newsbureau feeds the system via a deal with Capitol News Service. The first regularly scheduled use of the system is NEWSFEED (see sidebar p. 68).

Already, Group W has begun to benefit from the system, most notably with its spectacular coverage of the MGM Grand Hotel fire in Las Vegas. In time, each station will begin to make routine use of NEWSFEED, offering Group W stations one of the most sophisticated national news systems.

Satellite caveats

For other broadcasters considering satellite communications at the level that Group W has undertaken, there is more than just the capital costs to be concerned about. As Perry points out, the technology of uplinking is simply the "granddaddy of all microwave systems."

As such, Group W's Altan Stalker, director of transmitter engineering, cautions that stations will need some of their best technicians to maintain and operate the systems. Test and monitoring equipment support for an uplink is not cheap — a spectrum analyzer might cost as much as \$14,000 and a sweep frequency analyzer could cost another \$14,000.

According to Perry, the klystron tube commonly used in uplinks has a life expectancy of "one year — two if you're lucky," and costs about \$19,000 to replace.

Appropriate people will also be expensive. According to Stalker, a knowledge of digital circuitry, mechanical

engineering, and RF technology are all essentials for technical personnel at earth stations. "We've scheduled three, one week schools to train about 30 of our top technicians," said Stalker.

While the levels of technical skill are not outside the range found at typical television stations, they do represent the cream of the crop. Advises Perry, "The skills are in line with what you'll find at television stations, exclusive of technical directors and camera operators." Perry maintains, "We (Group W) are blessed with fairly good maintenance staffs all over," but suggests that other organizations may find a need for training support superior to any that they currently offer. Fortunately, according to Perry, "the Harris' and Scientific Atlantas' are doing pretty good," at providing schools and technical support. Currently, all Group W earth stations are of Scientific Atlanta manufacture.

Another reason for seeking the absolute highest level of technician is the increasing risk of catastrophe caused by crowding in the arc. "As things get more crowded," said Stalker, "the chances of a sloppy technician coming up on the wrong transponder or satellite becomes greater."

A rich future

The satellite age promises Group W and other satellite broadcasters a new age of opportunity. If the future is to be stereo audio in television, the second high grade audio channel is there. If it is to be high definition television, or theatrical satellite release using high definition techniques, it will probably be via the satellite network. Whatever the future of commercial telecasting is — it is looking up. **BM/E**



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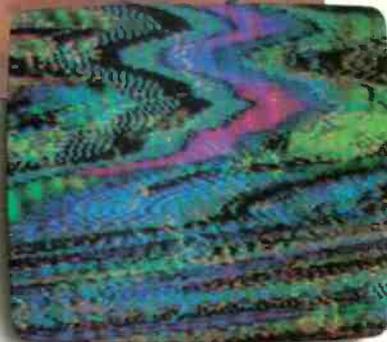
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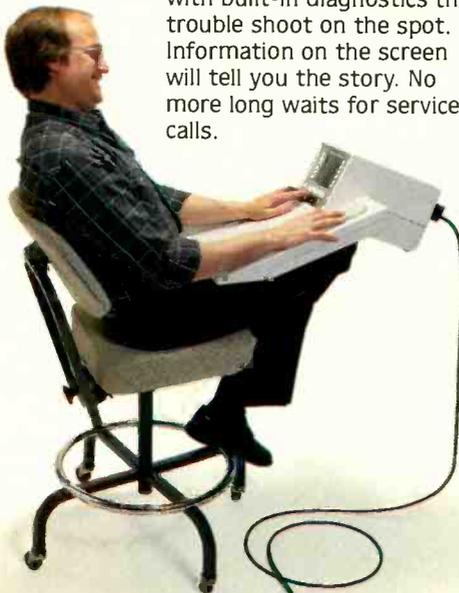
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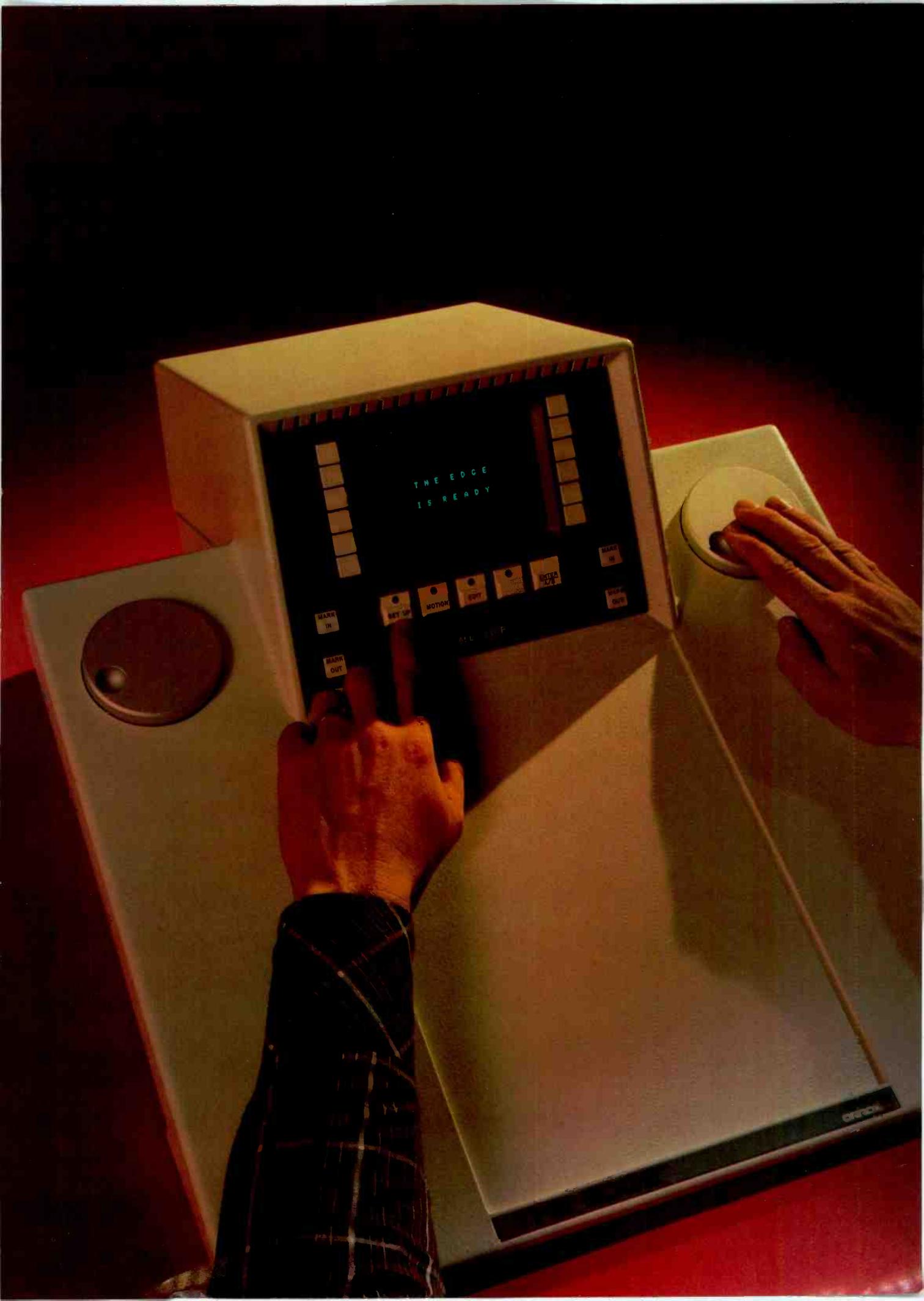


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AM RADIO TRANSMITTER DESIGNERS are under pressure from many directions to raise audio quality substantially above the levels accepted in the past. Some are responding, and their efforts, representative examples of which are described here, indicate that a new AM transmitter is emerging, far more refined than the transmitter we have been used to, the transmitter on which the radio industry was built.

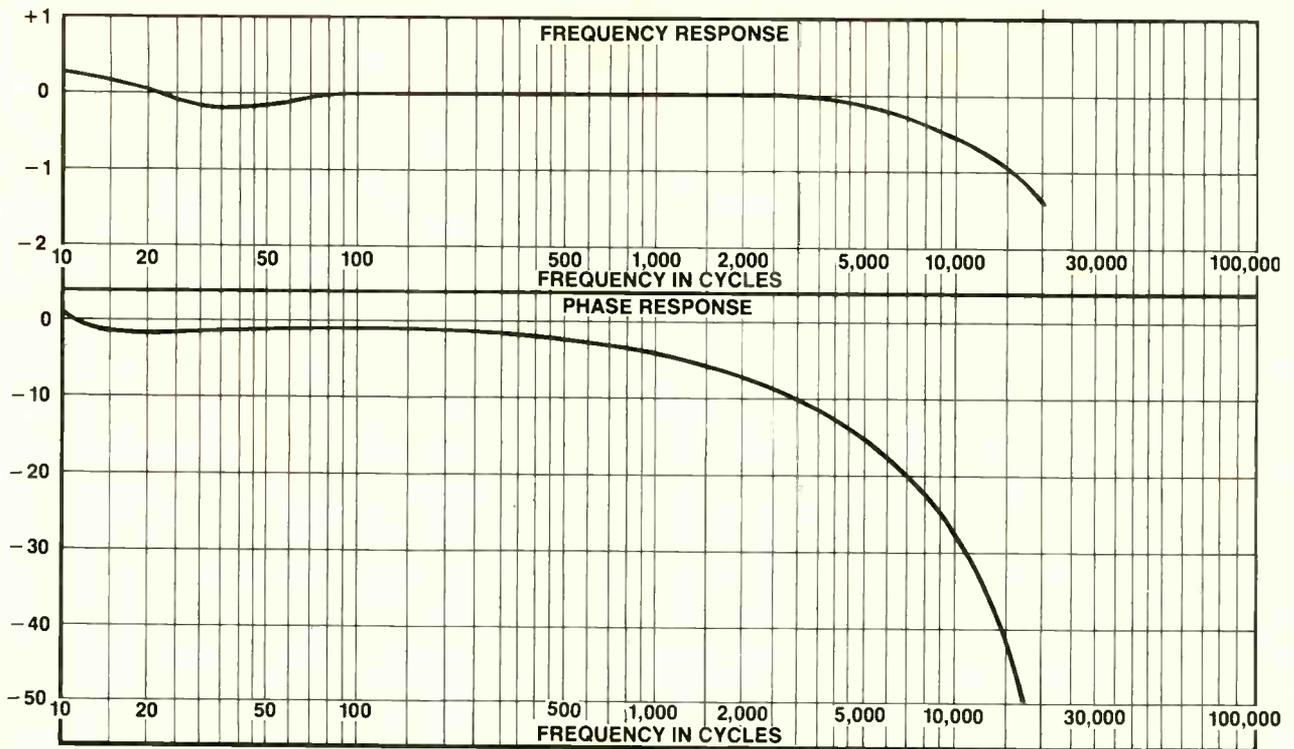
The pressures for higher quality in AM radio are rising fast. The satellites are spawning one radio network after another, carrying top-grade audio to stations around the country. FM radio continues to advance, with its superior sound acknowledged to be a main factor. Digital mastering is raising sharply the quality of commercial recordings, and in two or three years the digital disc will bring the whole digital chain to the living room, with revolutionary effects on the public's quality standards.

Another source of pressure is the sophisticated audio processor, which more and more station managements want to use to get modulation density as high as possible. We have a new generation of AM audio processors that produce highly complex signals plus high modulation levels, far above those common in the past. These processors put pressures on the transmitter in two ways: the signals themselves demand excellent amplitude and phase response in the transmitter if they are not to be distorted and if they are not to produce ringing, overshoot, or inadvertent overmodulation in some circumstances; the high modulation density puts a load on the transmitter that many older models were simply not designed to handle.

Signs of movement toward a higher level of AM transmitter design should be welcome in the industry. For a long time there was a kind of stand-patism on the AM transmitter. This could be rationalized by the extremely poor quality of the millions of AM receivers that listeners were using for AM reception.

But excuses are no longer relevant. AM broadcasting as a whole must raise its standards or start sliding toward the discard pile. The transmitter designers are in the best position to break out of the chicken-or-egg bind of which comes first, transmitters or receivers. With more and more decent AM signals on the air, the receiver makers have additional incentive to respond to the public's desire for better sound quality. AM stereo would, of course,

AM Transmitters



Continental's 317C-2 transmitter has been improved for excellent amplitude and phase response at frequencies below 100 Hz

expedite this process greatly. But the date of AM stereo's arrival again seems misty; the effect on AM stereo of the change in management at the FCC was not clear when this was written.

A new transmitter design that shows a number of the currents at work today, and some excellent responses to them, is that of Continental's 50 kW 317C-2. This is a successor to Continental's earlier 317C and 317C-1 50 kW AM transmitters that won industry acceptance; of the two together, more than 100 were sold.

The 317C-2, shown in early form at the 1979 NAB convention in Dallas, uses the screen-grid impedance modulation developed by Continental for the earlier models. New modulation methods are central to the improvement of the AM transmitter. The long-standard old style plate modulation is now seen as putting too much "iron" in the audio path, with phase distortion as the result; as being poor at low frequencies without prohibitive amounts of iron; as costing too much money in designs aimed at top quality.

Continental, in describing the improvements in the 317C-2, emphasize first the amplitude and phase response at frequencies below 100 Hz.

The company points out that this infrasonic response is needed to handle without distortion the very complex low-frequency signals produced by many processors. Both amplitude and phase response must be "flat" within close limits. Continental specifies, for the 317C-2, re-

sponse from 100 Hz down to 10 Hz flat within 0.1 dB and phase variation over the same span of two or three degrees. This low-low bass response required careful redesign of the power supply, with six rectifying phases, allowing the elimination of a filter reactor.

Changes also were made in the low level audio stages to improve the response below 100 Hertz; here the technology is fairly straightforward and widely understood, involving the time constants of the coupling circuits and the energy storage capacity of the power supplies. A new, specially designed modulation transformer was another change.

The phase response at high frequencies is another characteristic that must be excellent for today's AM service. Among other refinements, Continental developed a two-legged feedback system that provided good phase linearity with a variety of loads connected to the transmitter. Overall envelope feedback in the high frequencies from the demodulated RF output to the audio input was rejected because of the phase variations produced by unpredictable and different load factors, with the transmitter output load included in the total feedback loop.

Instead, Continental used overall feedback only for the middle and low frequencies. High frequency feedback runs from the modulator output to audio input. The two feedback legs have response curves that complement each other, producing overall output flat from about 10 Hz to about 100 kHz. This arrangement, says Continental, has

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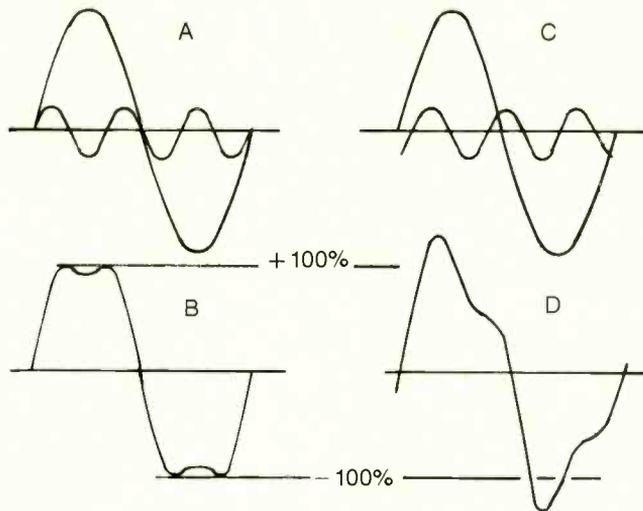
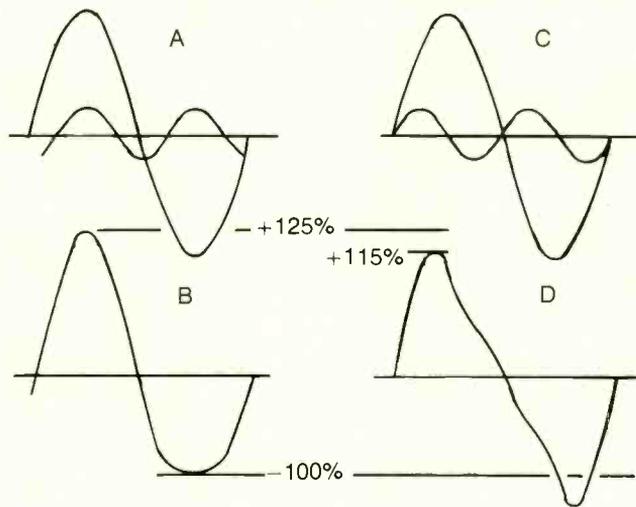


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Studies performed by Continental reveal the effects on highly processed material of large phase shifts at specified frequencies. Difficulty can arise when a processor is used to maintain negative peaks at 100 percent modulation and positive at 125 percent. This amounts to adding a second harmonic to the signal. If this harmonic is shifted to coincide zero crossings with the original signal, the amplitude will change to 115 percent of modulation at both the negative and positive peaks

much better gain-phase stability margin than the one-legged overall feedback earlier used, and reduces phase shift in the audio amplifier/modulator circuit to a very low value.

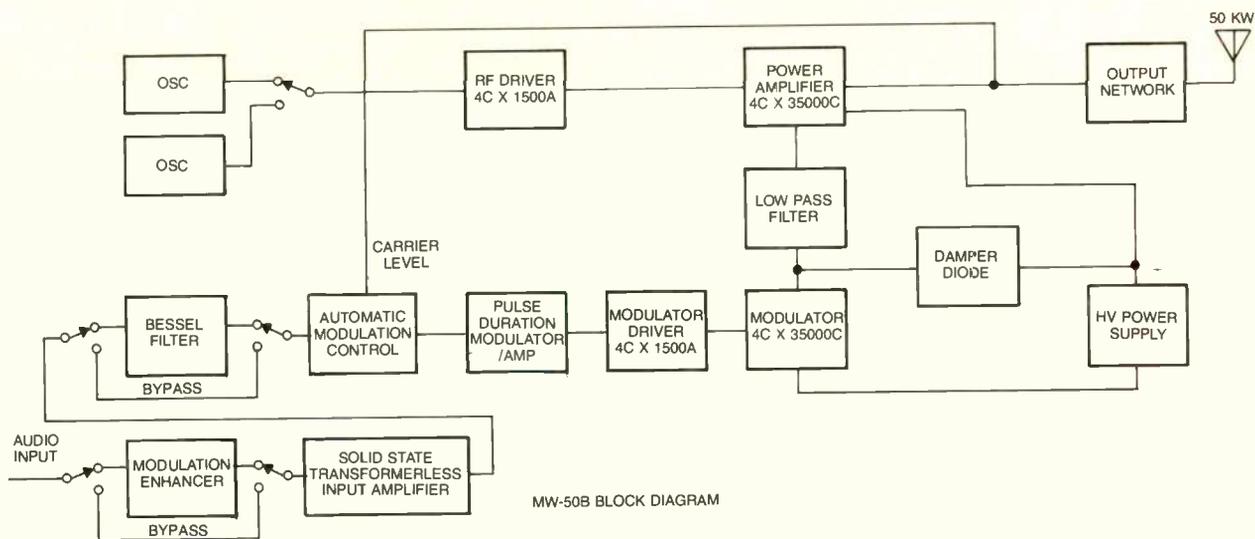
The importance of linear phase response is detailed by Continental in a study showing the effects on highly processed material of large phase shifts at particular frequencies. Difficulty can arise, for example, when a processor is used to maintain negative peaks at 100 percent modulation and positive at 125 percent. This amounts to adding a second harmonic to the signal, in phase with the original.

However, if the second harmonic is shifted so that its zero crossings coincide with those of the original, the

signal amplitude will change to 115 percent of modulation at both the negative and the positive peaks. The accompanying drawings illustrate this. They show one reason why broadcast engineers sometimes find their transmitters overmodulating on the negative peaks, even though the processor is set to hold the negative peaks to 100 percent.

Another transmitter that represents the AM uptrend is the RCA BTA-5SS, a 5 kW all-solid state model shown in early form at the 1980 NAB convention in Las Vegas. Old-style plate modulation is missing, of course, with banks of solid-state devices as the final amplifiers. The modulation method is a new scheme RCA calls Pulse Linear Modulation. There is no "iron" in the modulation path. A subcarrier at 71.43 kHz responds to the audio

AM Transmitters



This is the block diagram of the Harris MW-50B transmitter. Pulse Duration Modulation, an anti-overshoot system aimed at reducing distortion, and design directed to good phase linearity over the frequency range are all features of this AM system

signal with pulse frequency and width variations.

The modulated pulse train goes through a driver stage and an amplifier stage and then through a filter that removes the subcarrier frequency, leaving a signal varying at the audio rate. This functions as the variable power supply for a series modulation system, without modulation transformers or reactors.

Linearity and phase control circuits are included in the modulation chain. There is also an offset voltage at the negative peaks to minimize distortion. The result is audio frequency response within 1 dB, 20 to 12,000 Hz, and very low distortion. The phase response benefits from careful phase correction at both the low and the high frequencies so that the overall phase error is negligible.

Also helping with the phase response is the elimination of any input transformer. The input is an active circuit. This contributes to good transient response.

The transmitter also avoids filters that could cause ringing. It has an automatic response to heavy turntable rumble or low frequency oscillation that might overmodulate the transmitter: an attenuation pad that reduces the low frequency noise is cut in if the noise exceeds the level on a comparator. The transmitter is well adapted to one of the most important adjustments for low distortion, the broadbanding of the load: this is made somewhat less critical by the very low output impedance.

A third new transmitter that lifts AM performance several notches is the Harris MW-50B, a 50 kW unit newly on the market. It has many of the good features of the two already covered.

Harris's specialty of Pulse Duration Modulation is another way of escaping the faults of the old type of high-level plate modulator, with numerous advantages.

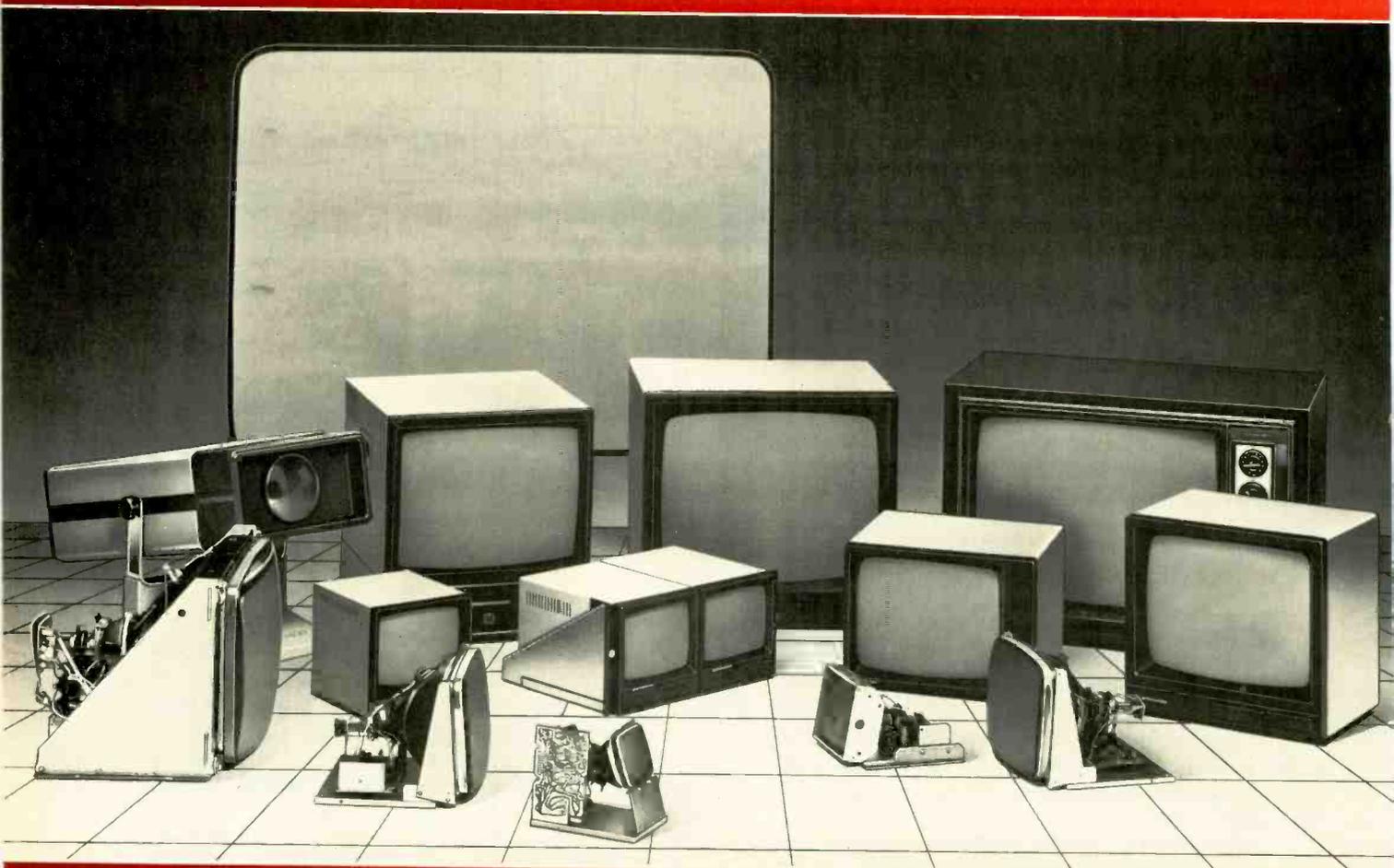
The transmitter is another one with an active input, extending the response effectively to dc, according to Harris. This gives the excellent square wave response to very low frequencies, a design objective of the other transmitters considered here. Not only is transient response far better than in earlier designs, but, again, heavily processed audio signals get much better treatment.

Numerous features of the design are directed to good phase linearity over the frequency range, and flat amplitude response to very high frequencies. A further circuit aimed at reducing distortion is an anti-overshoot system that allows users to increase modulation levels without ill effects.

It is significant in the AM uptrend that all three transmitters discussed here have excellent high frequency response above 10 kHz and they are justified in calling this the "new, brighter sound," as compared with the old standards. The fact that so many millions of AM receivers roll off heavily at 3 kHz or even lower does not invalidate the importance of this. First, it has become clear that even on terrible receivers, improvements at the transmitting end have an effect that listeners can hear and like. But beyond that, as already suggested in this article, the AM transmitter now has the burden of carrying the system forward. AM broadcasters will increasingly want to get ready for the future. One section of that future may well be AM stereo, and all three of the transmitters described are said by their makers to be fully ready to handle it.

This report is written in advance of the NAB Convention in Las Vegas. There will surely be further information and examples showing the development of the new AM transmitter at the show, and they will naturally be covered in detail in our Show-In-Print issue in June. **BM/E**

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LPTV: A POWERFUL NOTION

With more than 3500 applications already filed, and despite the tentative mood of government and industry, Low Power Television could soon be a reality. Equipment suitable to LPTV transmission is already plentiful but choosing what is right will be difficult.

THE ADVICE to would-be LPTV operators is uniform: Get a good consulting engineer, a good lawyer, and be absolutely certain of the audience you want to serve. On the face of it, the Low Power Television proposal set forth by the FCC on September 9, 1981 is simple enough but the lack of specifics in the proposal make even the most optimistic broadcaster cringe with uncertainty.

The proposed change is to Part 74 of the FCC Rules and Regulations which heretofore governed heterodyne repeaters — and/or translators. In essence, the proposal allows for the origination of signals from transmitters in the UHF band with up to 1 kW of power and in the VHF band with power up to 10 W. (Strictly speaking, VHF power of up to 100 W will be allowed for slots open on the FCC's Table of Assignments, though not many of these exist and it is unlikely that such available assignments would be granted to an LPTV installation over a high power applicant.) Whereas translators have existed up to this point as slave repeater stations for the purpose of overcoming some transmission enigma in order to extend television service, now it appears as though LPTV operators will be allowed to provide a wide range of services normally restricted to high power stations. Perhaps even more significant, LPTV will not be required to observe all the rules applicable to standard television licensees.

The highlights of the LPTV proposal are these:

- LPTV installations would have a secondary status — that is, higher power stations would be protected from interference from LPTV but LPTV would not be protected from interference from full power stations.
- LPTV would be allowed to operate within a 12 to 15 mile radius of both full power VHF and UHF stations.
- There is to be no restriction on the number of hours of operation.
- Studio facilities and/or local origination are not required.
- Existing translator may apply for a change in status to LPTV.
- STV (over-the-air pay-TV) authorization is not required. Notification to operate STV would suffice.

- CATV systems would not be required to carry LPTV signals.
- There will be no limit on multiple ownership other than one-to-a market and duopoly rules.
- Networks are prohibited from owning LPTVs (this is being appealed) while full service stations and CATV operators may not own LPTVs in their city of license or franchise area.
- There will be no formal ascertainment requirements.
- A simplified form of the Fairness Doctrine will apply depending on the operators programming capability.
- Preference for LPTV licenses will be given to those with the first complete applications, minority applicants, and non-commercial applicants.
- A "paper hearing" procedure will simplify selection when applicants are mutually exclusive.

The excitement over LPTV, therefore, is generated not only by what the rules will permit but also by what the proposal will not prohibit. This is a very open-ended proposal and, as with all such proposals, it has set the dreamers loose.

So far, applicants have included religious broadcasters (The Southern Baptist Convention has filed for 115 LPTVs), super station interests (Turner Broadcasting has filed for 25 LPTV licenses in 25 top markets), community groups, minority interests, entrepreneurs, and a host of others who foresee national LPTV networks and a gold mine in STV. NBC and ABC have announced their intentions to acquire LPTV licenses and are backed by the NAB.

Reply comments, due by April 13, are pouring into the FCC. Dick Shiben, chief of the Broadcast Bureau, said that the close of comments will probably be extended another four weeks. With luck, Shiben believes that the rulemaking could be completed by late fall, 1981. A group of "interim licenses could be granted soon," said Shiben but he did not indicate how soon. Most of the applications so far, are mutually exclusive and will therefore have to wait until the rulemaking procedure is completed and hearings are held.

If there is a fly in the ointment, it is the very broadness of the proposal. Early licenses will be granted on a risk basis, which is to say, that early license holders will have to meet any additional requirements made for LPTV in the future. While most comments filed with the FCC have been favorable, any number of interest groups are being formed to galvanize positions. American Women in Radio want a preference for women; CPB wants some assignments reserved for non-commercial stations; a San Francisco-based group, Actors and Artists to Promote Effective American Broadcasting Laws (AAPEAL) seeks to secure LPTV as a place for alternative programming; the American Community TV Association (ACTVA) seeks to have the service known as "community TV" as a

LPTV: A Powerful Notion

step towards assuring its "local nature," and also seeks to have its signals ruled a "must-carry" for CATV. Eventually, says ACTVA, must-carry rules can be suspended since they see LPTV and CATV becoming "best friends" within five years of the service's establishment. NAB, NCTA, and minority interest groups are also active in the prelude to rulemaking. While nearly everyone sees the establishment of LPTV as a positive step, it would be naive to think that these interested parties will not find themselves in opposition to each other as the form of LPTV takes shape.

The technical picture

The technical picture for LPTV is much clearer. The power ranges specified for LPTV places the technology squarely in the hands of translator manufacturers. High-power television transmitter manufacturers who have not been in the translator business show little current interest in developing transmitters for this service. Harris Corporation, for instance, is recommending Acrodyne and EMCEE transmitting equipment and sees LPTV, primarily, as a potential market for its satellite earth station equipment. This approach is far from puzzling. Nearly every LPTV scenario put forth thus far sees satellite interconnection as central to the development of LPTV program acquisition.

One notable exception among higher power transmitter manufacturers is Canadian GE. Canadian GE has filed comments with the FCC calling on them to allow power ratings up to 2 kW for CP transmission (1 kW in the horizontal plane and 1 kW in the vertical plane). The CP issue is, by no means, clear. Though Part 74 of the rules does not address power ratings in excess of 1 kW many LPTV operators will want to go CP at all other permissible power ratings.

A precedence exists as a result of the translator installation for New York's Channel 60, atop the World Trade Center. This is a 1 kW system that transmits a CP signal. Under the Part 74 rules, the installation was required to use two 1 kW translators in parallel.

Canadian GE makes the case that translators will have to be "built up" to become transmitters, while its 2 kW UHF transmitter has all the logic and controls that higher power transmitters have. Says Lou Page of Canadian GE, "Our 2 kW was built like our other transmitters . . . it uses the same exciter as the big ones, it has the same VSWR metering, logic controls, and internal diplexing. It doesn't need a notch diplexer,"

On the other hand, Nat Ostroff, vice president of engineering for Acrodyne, is certain that the 2 kW transmitter will not be permitted under the rules. "Translators amplify the visual and aural signal with a single amplifier and the rules demand that there be common amplification at a maximum of 1000 W." If this part of the rules sticks, it is clear that 2 kW amplification of the visual and aural signals even if split prior to the antenna will not qualify under the rules. Nevertheless, this is a rule modification procedure and anything can happen.

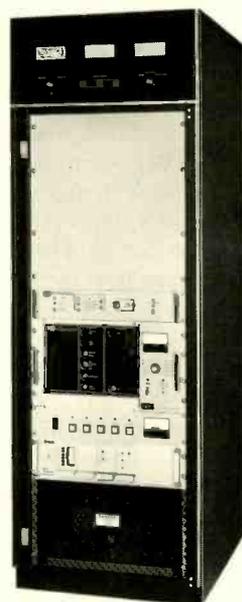
The controversy over the benefit of circular polarization, however, is liable to be clarified as a result of LPTV. Bogner Broadcast Equipment Corp., the antenna manufacturer, has applied for 49 UHF translator licenses. Though these stations will carry KTBN's religious pro-

gramming, the main purpose behind the Bogner applications is to gather data on their CP antennas, according to Steve Weinstein, assistant to Bogner's president.

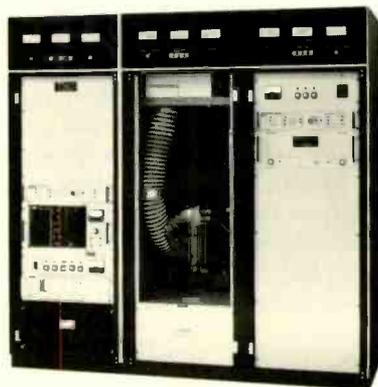
A wrap up of offerings and advice from manufacturers

Acrodyne's Nat Ostroff is of two minds regarding LPTV. So far, says Ostroff, "LPTV has created a lot of sizzle but not much steak." On the other hand, Ostroff sees a tremendous opportunity in LPTV "for someone to put together specialized program packages." But, in the near term, Ostroff sees some symbiotic relationship between pay-TV and LPTV. "There really is a legitimate application," says Ostroff, "where cable wires a town but not the countryside," for obvious economic reasons. LPTV installations can bring pay services to sparsely populated regions.

Acrodyne has had product suitable to LPTV for the past ten years and currently does 60 percent of its business overseas where this type of equipment is common. One benefit of the lower power levels is that this equipment can make better use of solid state designs than high power transmitters. Acrodyne will have LPTV equipment available in the most popular power ranges including a fully



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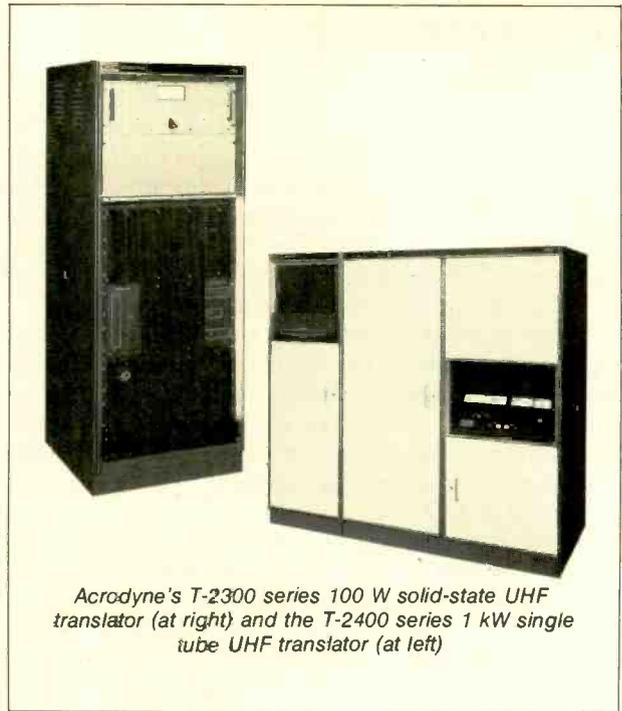
LPTV: A Powerful Notion

solid state 100 W unit. A single tube, 1 kW unit should be ready in about a year. For VHF, Acrodyne offers solid state transmitters at 10 W and 100 W.

Comark's Dick Fiori says his company will be offering a full range of translators and transmitters in the authorized power ranges. Like Ostroff, Fiori sees a chance for some people to get burned in LPTV. "You really have to know what you want to achieve," says Fiori. According to Fiori, a good consultant without any manufacturer ties is the best bet. "You have to look at price and serviceability; simplicity of design, power savings, and a whole range of other things." But before you can do that, says Fiori, you should have a complete survey done to select the best site possible given the audience you want to reach. "You may be able to do as good a job of reaching the people you want to reach with a lower power transmitter and a higher gain antenna, especially if your site is on a hill top, looking down at the valley — if that's where you want to cover."

According to EMCEE's Jim DeStefano, vice president of sales/applications engineering, "we've been in the business for 20 years." For 18 of those years, EMCEE has specialized in turnkey installations — a direction in which many of the manufacturers we spoke with are going. DeStefano says EMCEE is prepared to "do it all — transmitter and building, tower, earth station installation, studio, microwave link — whatever the customer wants."

Currently, EMCEE offers 1 W, 10 W, 100 W, and 1 kW UHF equipment with solid state gear up to 10 W. But



Acrodyne's T-2300 series 100 W solid-state UHF translator (at right) and the T-2400 series 1 kW single tube UHF translator (at left)

DeStefano says, EMCEE is developing solid state units for both the 100 W and 1 kW levels. "We're able to offer solid state at higher power ratings but we are a very conservative company," says DeStefano "and we like to wait until we're certain that the unit will give 10, 15, or 20 years of reliable service."






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LPTV: A Powerful Notion

Philips Broadcast Equipment has plans to offer equipment in the 1 kW power range through a deal with St. Clare Television Products who will manufacture transmitters to Philips specifications. Just as this article went to press, however, Philips Broadcast Equipment and its American Data subsidiary were acquired by Central Dynamics. What effect this acquisition will have on LPTV plans is unknown at this time.

Rohde & Schwarz will offer a range of transmitting equipment suitable to this market, according to spokesman, Howard Levine. Rohde & Schwarz has long supplied exciters, translators, modulators, and transmitters in these power ranges for the overseas market and expects to see an upswing in its sales to U.S. broadcasters as a result of LPTV.

Singer Products, which recently merged with CCA, will offer at least one appropriate low power transmitter though details were not available as of this writing.

According to Greg Morton, vice president of marketing, and Alex DeLay, sales engineer with Television Technology Corp., their company will use the CTM-10 modular (RCA) for both a 10 W and 100 W UHF unit. At NAB, Television Technology planned to show a 1 kW UHF model, and a 20 W UHF as well as a 10 W VHF model. Like other manufacturers who spoke with *BM/E* for this report, Morton stressed the need for good consultants and warned would-be LPTV operators that all equipment offered for sale or advertised must be FCC type accepted. Uniformly, the manufacturers we spoke with

stressed the same point.

Television Technology offers guidelines for a series of packages for LPTV turnkey installations that range in price from \$6,000 for a 10 W VHF installation that would include antenna, transmission lines, and transmitter, to \$60,000 for a 1 kW UHF installation. Obviously, such prices are only guidelines. Earth stations are likely to add at least another \$10,000 to the price and the variables involved such as building facility, studio, tower, directional or omni antenna, and many others will send prices all over the board. One source, who has read some of the applications, said that an LPTV operator offering a modicum of program origination services could see construction and facilities cost rise as high as \$400,000.

Chuck Pifher of Versacount, noted that his company currently has a 10 W VHF translator that may be offered for the LPTV Service. Like many of the other companies we checked with, such as NEC, Thomson-CSF's LGT, Bayly Engineering, and others, a wait and see approach is not uncommon. But translator manufacturers are not the only ones expecting to see new markets via LPTV. Joseph Wu, president of Time and Frequency Technology, Inc., explained that his company has a line of remote control and monitoring equipment suitable to LPTV type installations. Wu, like many others, sees a large number of LPTV's being operated remotely.

Whatever final form LPTV takes, it is apparent that the industry is technically prepared to equip a whole new service. The tricky part will be the development of a business environment for LPTV. The discussion as to what form that will take is likely to generate energy levels far in excess of government guidelines. **BM/E**

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And results, on demand, for payment is what we think professional recording is all about.

Check out the details below, then check in at your authorized TASCAM Dealer. And get the inside story from another professional.



The impedance roller is strictly professional caliber. Along with the heavy dynamically-balanced flywheel, it guarantees better tape-head interface. Therefore, reducing the possibility of dropouts during a critical recording session.

Our exclusive Function Select initiates TAPE/SOURCE, PLAY-BACK/RECORD and dbx ENCODE/DECODE modes with just one button. Additionally, FET circuits (not mechanical relays) enable you to punch in and punch out without pops.

Heavy-duty motors, bearings and brakes assure you of smooth tape handling throughout the long hours of the multitrack recording process.

Individual, removable PC cards carry the electronics for record, reproduce and bias amps. So calibration or replacement comes quick and easy. Just swing down the meter panel for quick access.

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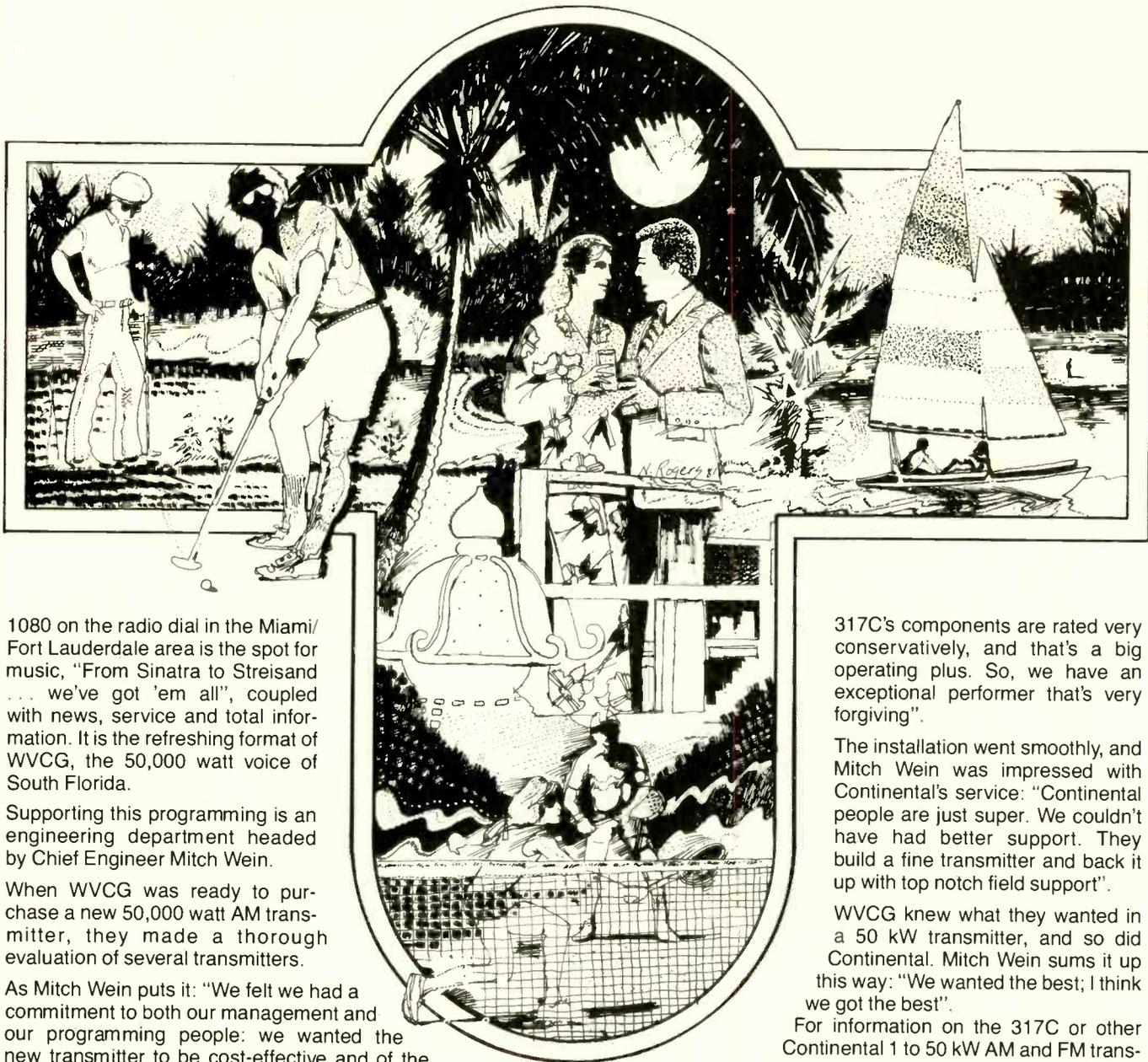
The heavy-duty power supply features a pro-quality toroidal transformer. This assures that each deck function will receive its correct voltages without any fluctuations. Even if your 40-4 runs constantly for 24 hours a day.

Thanks to our single record/playback head, you'll hear existing tracks in sync with full frequency response while over-dubbing at 15 ips.

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TEAC Production Products

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As Mitch Wein puts it: "We felt we had a commitment to both our management and our programming people: we wanted the new transmitter to be cost-effective and of the highest quality".

After analyzing performance and operating data WVCG chose a Continental Electronics 317C transmitter.

Mitch Wein comments on the choice of the 317C: "Continental's 317C is certainly top quality. It's easy to tune; it's easy to maintain; it uses a minimum of floor space. The

317C's components are rated very conservatively, and that's a big operating plus. So, we have an exceptional performer that's very forgiving".

The installation went smoothly, and Mitch Wein was impressed with Continental's service: "Continental people are just super. We couldn't have had better support. They build a fine transmitter and back it up with top notch field support".

WVCG knew what they wanted in a 50 kW transmitter, and so did Continental. Mitch Wein sums it up this way: "We wanted the best; I think we got the best".

For information on the 317C or other Continental 1 to 50 kW AM and FM transmitters, phone (214) 381-7161 or

write to:

Broadcast Sales Department;
Continental Electronics Mfg. Co.
Box 270879
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Continental Electronics

Circle 156 on Reader Service Card



REAGAN'S OLD NEW TAX PROPOSALS

By Mark E. Battersby

President Reagan's newly proposed tax cutting scheme would make big changes in the depreciation allowances for equipment and buildings, with savings to businesses estimated in the billions of dollars. Broadcasters should study the tax proposals now, when lobbying can still pay off.

DESPITE THE FACT THAT there have been two tax-cutting bills knocking around Congress for some time, President Reagan has seen fit to propose yet another. The President's version of "three, five, 10," unlike the Senate and House versions, however, is given a good chance of becoming a reality. But just what would this proposal mean to the average radio or TV station?

Basically, the President has proposed allowing every business to write off all newly acquired cars and light trucks used by them over a three-year period. The same three-year depreciable life would also apply to any machinery and equipment used for research and development purposes. All other machinery and equipment, such as that used in your station, could be written off over a five-year period rather than the staggering variety of lives now permitted by our tax laws.

The biggest break from the new proposal would seem to be the ability to write off buildings in only 10 years instead of the 40 to 80 years now required. Unfortunately, the major restriction here would limit the 10-year write-off of buildings to factories, retail stores, and warehouses — and only those used by their owners. Office buildings and property leased to others would use an 18-year write-off period, which presumably also would apply to your studios if these proposals become a reality.

Better than the fast (and far simpler) write-offs is the newly proposed investment tax credit. The new proposal calls for a five percent investment tax credit for all three-

year category assets and a full 10 percent tax credit for five-year category assets. The present investment tax credit of 10 percent, of course, applies only to assets with a useful life of seven years or longer. Assets with a life greater than three years but less than seven now enjoy only partial credits.

Backers of this controversial new proposal claim that it would save business an estimated \$2.5 billion in the first partial year and as much as \$59.3 billion by 1986. At first glance, the passage of this new bill would appear to be a boon to all businesses; the 10-year write-off for structures would be an incredible stimulus to the building and development of new buildings in general. But can anyone really afford to acquire new facilities in our present economy, even with the proposed 18-year write-off period?

Most economists agree that the current allowances for depreciation do not come anywhere close to paying for the replacement of aging and obsolete equipment. One economist, in fact, estimates that business is paying taxes on as much as \$40 billion a year in "phantom" profits that really represent understated depreciation. That amounts to over one-third of all business tax payments.

The plight of all small business people illustrates this problem. Inflation during the last few years has squeezed businesses two ways. First, the money they are getting back in tax deductions is worth less each year. Secondly, by the time a business has recovered the cost of its investment, the replacement equipment it must buy invariably costs far more.

Our present system is unbelievably complex. This is the primary reason many smaller stations use a straight-line 10-year depreciation method for their assets, even if they are entitled to more rapid recovery methods. All businesses must contend with the tax law's complicated asset depreciation range (ADR) system, 132 different asset classes, and over 107 pages of regulation defining how to determine the useful life of equipment. As a result, less than two percent of the nation's businesses currently use the ADR system.

A third problem also faces broadcast management. There simply is not enough investment money available to meet industry's needs. Equity capital is expensive to raise. Interest rates on borrowed funds are prohibitive.

As the President pointed out, few businesses or industries can generate enough cash internally because of our

Mark E. Battersby is a financial and tax consultant to the broadcast industry.

Reagan's New Old Tax Proposals

outdated depreciation system. Industry is unable to modernize plant facilities and replace worn-out machinery. In his opinion, this causes rising production costs, declining productivity, loss of jobs, and a lowered standard of living.

The proposed tax changes are being touted as the cure-all for everything that ails business today — able to cure all of these complex problems with a single tax bill. In reality, however, these sweeping changes may create as many problems as they solve, particularly for broadcasters.

Admittedly the period of capital recovery in this country is one of the longest among all Western industrial nations. Great Britain, for example, allows businesses to recover 100 percent of their investments in machinery and equipment in one year, while our neighbor Canada allows full cost recovery over two years.

The underlying tax principle that capital costs should be recovered over the economic life of an asset has been losing ground over the years. As far back as 1954, Congress for the first time allowed business to use accelerated depreciation methods. In 1962, our lawmakers approved the investment tax credit which then amounted to a seven percent (now up to 10 percent) subsidy on the purchase of capital equipment. The most recent change, in 1971, was the creation of the "asset depreciation range," which let business trim the estimated useful lives of equipment by as much as 20 percent.

The currently proposed legislation would scrap the decades-old practice of allowing stations to depreciate capital investment only in line with the useful life of the property or equipment involved. When fully effective, the law, already nick-named "10-five-three," would substitute new, purely arbitrary time limits:

- Investment in nonresidential structures, buildings, and the structural components of buildings could be written off over 10 years instead of the 30 years or more now mandated — if the building is used by the owner.
- The cost of new machinery, equipment, or fixtures could be used to offset taxes over five years. Although the current average for equipment, machinery, and fixtures in all industries is now 10 years, the useful life concept means that some depreciation schedules go over 20 years.
- The investment in a service vehicle, light truck, or car would be written off in three years, while a five percent investment tax credit could be claimed.

Because industries with typically long depreciation schedules — such as steel, cement, railroads, and utilities — would get a disproportionate benefit should this bill become a reality, the net results for some broadcasters could prove disquieting. The differing impacts among different fields are likely to pose other problems as well.

Some of the fastest-growing and most competitive U.S. industries, notably electronics and aerospace, already have relatively quick write-offs and would share proportionately less of the overall tax savings. Most of those incentives, instead, would flow to more mature industries such as steel, for which growth prospects are dimmer, although the proposal would aid them in replacing obsolete plants and equipment at a faster rate.

The other big winners would be petroleum refining, an industry already awash with cash, and electric utilities, whose average depreciation schedule presently exceeds

20 years. Both would probably wind up with more credits than they could use. One industry observer has already pointed out that unless they get rate relief, all of those credits would be carried forward and some would be lost.

Critics of this proposal also note that the major steel companies currently pay little federal taxes largely because of depletion allowances for coal and ore and weak sales revenues. It is hard to refute the arguments that these proposed changes will provide little in the way of tax relief to those who need them the most.

Proponents of similar depreciation proposals introduced earlier admit that there is little or no justification for including structures. That provision was apparently devised to win support of the retailing and service industries, which have most of their fixed investment in real estate and have little to gain from the fast depreciation of equipment.

Similarly, the three-year write-off for motor vehicles, along with an improved investment tax credit, was designed as an attraction for small business people who have often opposed depreciation changes in favor of outright tax cuts.

On the personal level, the proposed reduction in personal income tax rates — effective July 1 rather than retroactive to January 1 as the business tax cuts are — is not that substantial. What amounts to a five percent smaller tax bill this year and 10 percent less next year is not going to mean that much to the average taxpayer.

However, over the proposed three year phase-in period, the 70 percent top tax rate on unearned or investment income would fall to 50 percent. More importantly, although the top 50 percent rate on salary income wouldn't change, persons taxed at that rate would still realize tax reductions. First, they would benefit from the lower rates below the 50 percent level. Second, because of changes in the tax tables, the top rate wouldn't affect most of us until we hit substantially higher income levels.

The President's full individual tax package would also reduce the top rate on capital gains — profits from the sale of your station, real estate, stocks and the like — to 20 percent from the present 28 percent. Under our current rules, 60 percent of capital gains are deducted from income, leaving 40 percent to be taxed at normal tax rates. Under the new plan, that 40 percent would be taxed at 50 percent instead of the current 70 percent tax rate on unearned income.

Good, bad, or indifferent, every broadcast manager or engineer has a vital interest in the legislation now pending as well as in the other proposals now floating around Washington. Naturally, everyone's situation is different. The large numbers of individuals and investors who own most of the business property in this country will not benefit as much as factory owners who own their own buildings. Both they and their tenants might thus protest that they are not getting their fair share of the tax reductions. Retail or service industries that have little real need for speedily depreciating equipment or fixtures might feel overlooked. But, then, that is why this proposal contains something for everyone as well as a promise of more to come later this year.

Now is the time when lobbying can pay off. Your trade association and you can make known your views on the tax cuts that have been proposed. While it is unlikely that you will be 100 percent satisfied with what emerges, your comments can help shape a new tax package that you can live with — and maybe even profit from. **BM/E**

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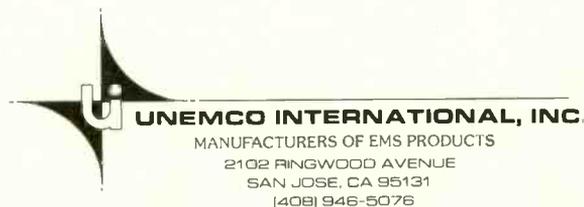
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Largest NATPE Ever Focuses On New Program Sources

WITH NEARLY 5000 delegates and 262 exhibitors, the National Association of Television Programming Executives marked its largest convention ever in New York this past March. The five day conclave produced some firsts for the organization which may alter its character forever.

Representation from abroad both among the delegates and program suppliers was up considerably over previous years, the usual downpour of new game shows was merely a drizzle this year in comparison to the flood of 'reality programs.' And, in what may prove to be the most radical change of all, the cable television industry was embraced both as program suppliers and buyers by the NATPE, a major

broadcast dominated group.

While there is still mutual suspicion between broadcasters and cable operators their inclusion in this year's NATPE was the first step in the development of a symbiotic relationship long implied by their mutual dependence on programming that attracts audiences. One of the CATV program suppliers debuting their product at NATPE was USA Network which through an agreement with Bristol-Myers Co., will supply ten hours a week of original programming designed specifically for cable. The program will be a magazine format show dealing with subjects, such as health and beauty care, targeted to women. Another half-hour offering will be

YOU, a magazine intended for women dealing with fashion and beauty. These programs will be in addition to a wide range of sports programming such as *Sports Probe*, a behind the scenes interview program with nationally syndicated sports columnist, Larry Merchant. USA Network, which grew out of the Madison Square Garden cable TV enterprises, continues to offer an array of live sports events to cable viewers.

The quality of these programs both technically and creatively, seems comparable to anything offered on broadcast television for these genres.

Another trend apparent at NATPE that should make non-Network programming an ever more interesting bus-

NAPTE 1981 IRIS AWARD WINNERS

CHILDREN'S PROGRAMS

WCVB TV, Boston
"Eli and the Whale"
Program Executive:
Bruce Marson
Producers: Larry Jordan and
Bob Cokkle
(Markets One Through Ten)

PUBLIC AFFAIRS SPECIALS

KXAS TV, Dallas-Ft. Worth
"The Hurt That Doesn't Heal"
Program Executive:
Russ Thornton
Producer: Lee Elsesser
(Markets One Through Ten)

WMC TV, Memphis
"The Gospel According to
Television"
Program Executive:
Ron Klayman
Producer: Stuart Zanger
(Markets Eleven Through Forty)

KGGM TV, Albuquerque
"Rage in Santa Fe"
Program Executive:
Scott Randall
Producer: Mary Malloy
(Markets Forty-One Through
Two Hundred Fourteen)

WHBF TV, Rock Island
"She Was a Mighty Good Road"
Program Executive:



Jim Major of KGO-TV, San Francisco, accepts his Iris from actor, Jack Lord

George Kaplow
Producer: Paul Meincke
(Markets Forty-One Through
Two Hundred Fourteen)

PUBLIC AFFAIRS SERIES

KGO TV, San Francisco
"The Final Frontier"
Program Executive: Tim Major
Producer: Kenneth Ellis
(Markets One Through Ten)

KTVI, St. Louis
"Extra"
Program Executive: Vic Skaggs
Producer: Carol Williams
(Markets Eleven Through Forty)

WLBT TV, Jackson
"Dorothy is Dying"
Program Executive:
Hewitt Griffin
Producer: Dennis Smith

(Markets Forty-One Through
Two Hundred Fourteen)

WVEC TV, Norfolk
"Focus: To A Prince"
Program Executive:
Lawrence Kliever
Producer: Jane Gardner
(Markets Forty-One Through
Two Hundred Fourteen)

FOREIGN PROGRAMS

CKND-TV, Winnipeg
"Children of Gael"
Program Executive:
Stan Thomas
Producer: Barry Gordon

SPORTS PROGRAMS

WCVB TV, Boston
"Lies, Legends and Lunatics"
continued on page 101

NEWS FEATURE



NATPE President, Lucie Salhany, addressed the largest NATPE convention ever

Business is the increasing number of high quality programs being offered by broadcasting companies operating as producers. Obviously, the hallmark of this trend was reached this year when WCVB was able to sell its own made for TV film, *Summer Solstice*, starring Henry Fonda and Myrna Loy, to the ABC Television Network.

Other programs, however, are more typical of the trend. Post Newsweek Productions, Inc. has three new offerings this year, each of which represents important new additions to first run syndication available to television programming executives. *The Charlie Rose Show* is a half-hour talk-interview



International 'affiliates' meeting told delegates of opportunities for co-op production. Panelists were (left to right) Bernard Chevry, MIP; Dick Ballinger, Metromedia; Ave Butensky, Ed Libov Assoc.; Willard Black, Viacom; Don Taffner and Tom Madigan, WQED-TV, Pittsburgh

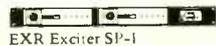


For the first time, NATPE experimented with exhibit booths rather than hospitality suites. Delegates and exhibitors seemed to like the idea

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EXR Exciter EX-3



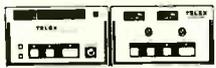
Audio & Design Limiter M-600



Eventide BD-955 Digital Delay Line



Lexicon 1200 Speech Compressor



Telex MC series Cart Machines



Otari MX-7800 Eight track

Telex Headsets



Otari 5050-B Half or full track



Otari ARS-1000 Automated tape deck

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program produced at WRC-TV. Long a popular and controversial offering in the Washington, D.C. market, the program will be offered in syndication beginning with 49 original first run weeks of programming. An even more ambitious undertaking is *Young Lives*, a soap opera dealing with the problems of maturing young people. With a cast of twenty actors and actresses and a full complement of production people, this soap is as slick as any offered by the networks.

Now, when Joel Chaseman, president of PNS is asked, "Where are the really high quality 'cultural' programs coming from?" he'll be able to point to PNS's new agreement with the famous Abbey Theatre of Dublin. Long recognized for its productions of the works of William Butler Yeats, J.M. Synge, Lady Gregory, and Sean O'Casey, these and other Abbey Theatre productions will be brought to the American viewing screen by Post Newsweek.

The productions will feature not only the Irish classics but also the works of Eugene O'Neill, Jean Genet, Brecht, Pinter, Wilder, Ibsen, and others. They will be shot film style and produced by Richard Pack Productions and Eamonn Andrews Studios, one of the best known television personalities. In addition to the teleproduction of major theatricals, the series will also include popular Irish entertainment such as

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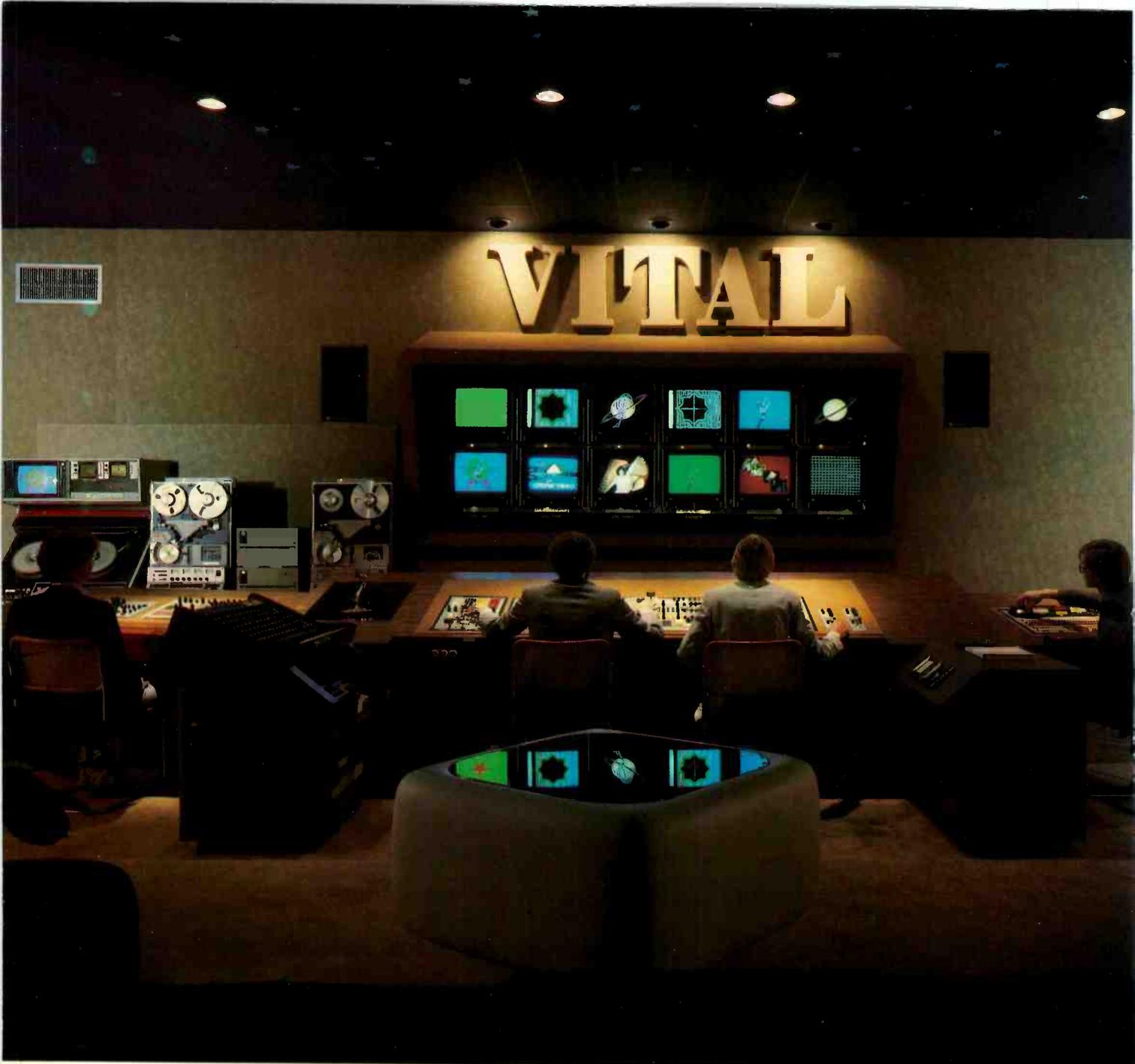
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NEWS FEATURE

Jury's Irish Cabaret, which features a mix of traditional Irish folk music, songs, dances, and comedy.

Coproduction, such as the Abbey Theatre undertaking, was heralded throughout the convention by producers and buyers alike. Both groups, complaining of ever higher production costs, saw overseas coproduction as one of the few ways out of the spiralling cost bind.

Reality programming is new king of PTAR

After years of complaining that all the syndication industry seemed able to offer was more game shows, this year saw the arrival of a true alternative. Reality programming, which promises to generate a different type of nail-biting reaction among critics, is nonetheless a viable alternative. Whether reality programming is the progeny of George Schlatter's *Real People*, or as Ralph Edwards claimed, "Reality programs can be traced to *This Is Your Life*," more and more of the genre are finding their way on to the air.

Telepictures will offer *The People's Court*, a Ralph Edwards production, that features "real-life" trials of the type found in the nation's small claims courts. Litigants will agree to a binding arbitration process and present their cases to retired judge Joseph Wappner, formerly chief judge of the superior court of the City of Los Angeles. The judge will listen to claimant and defendant, reach a decision, and explain what principles were involved in reaching the decision. Numerous safeguards have been taken to assure the legality of the decisions and the processes.

George Schlatter, of *Laugh In* and *Real People*, and who is undeniably a catalyst in this recent surge of reality programming, will be producing a series for Telepictures called *Look At Us*. This program will feature people who "scream out for attention" either with their life-style or philosophy. This strip series has already been sold to NBC O&O stations. ABC O&Os have purchased *The Peoples Court*.

The networks

The network affiliate meetings held during NATPE yielded little insight to what is happening on that score. The fundamental news was that all three networks were looking at much improved sales positions for the remainder of '81, despite a relatively slow first quarter.

ABC announced that it would begin an experiment with "advocacy commercials" as of July 1. Under the ABC plan, advertisers wishing to air advo-

cacy commercials will be allowed one minute of time between 12 AM and 1 AM. Opposing views will be allowed to buy time on the same basis or, be given time, if appropriate.

The big news coming out of CBS was the planned addition of a network news program for a 4 PM slot. This program will not be a straight news show but rather more like a *60 Minutes* format.

Other affiliate meetings

For the first time, the day reserved for affiliate meetings saw both cable TV and international groups added to

the program agenda.

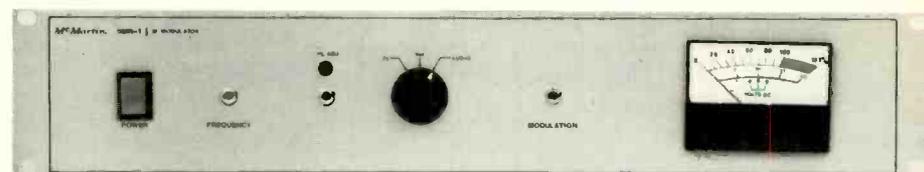
The cable TV affiliate meeting was sparsely attended and concerned itself largely with the problem of censorship. Much concern was voiced over the ability of CATV to remain uncensored without having to permit programming that threatened to make it unwelcome in American homes. Additional concern was voiced over the Low Power Television proposal and how that might eventually affect cable TV and its relationship with pay TV.

The international affiliate meeting was also sparsely attended but drew

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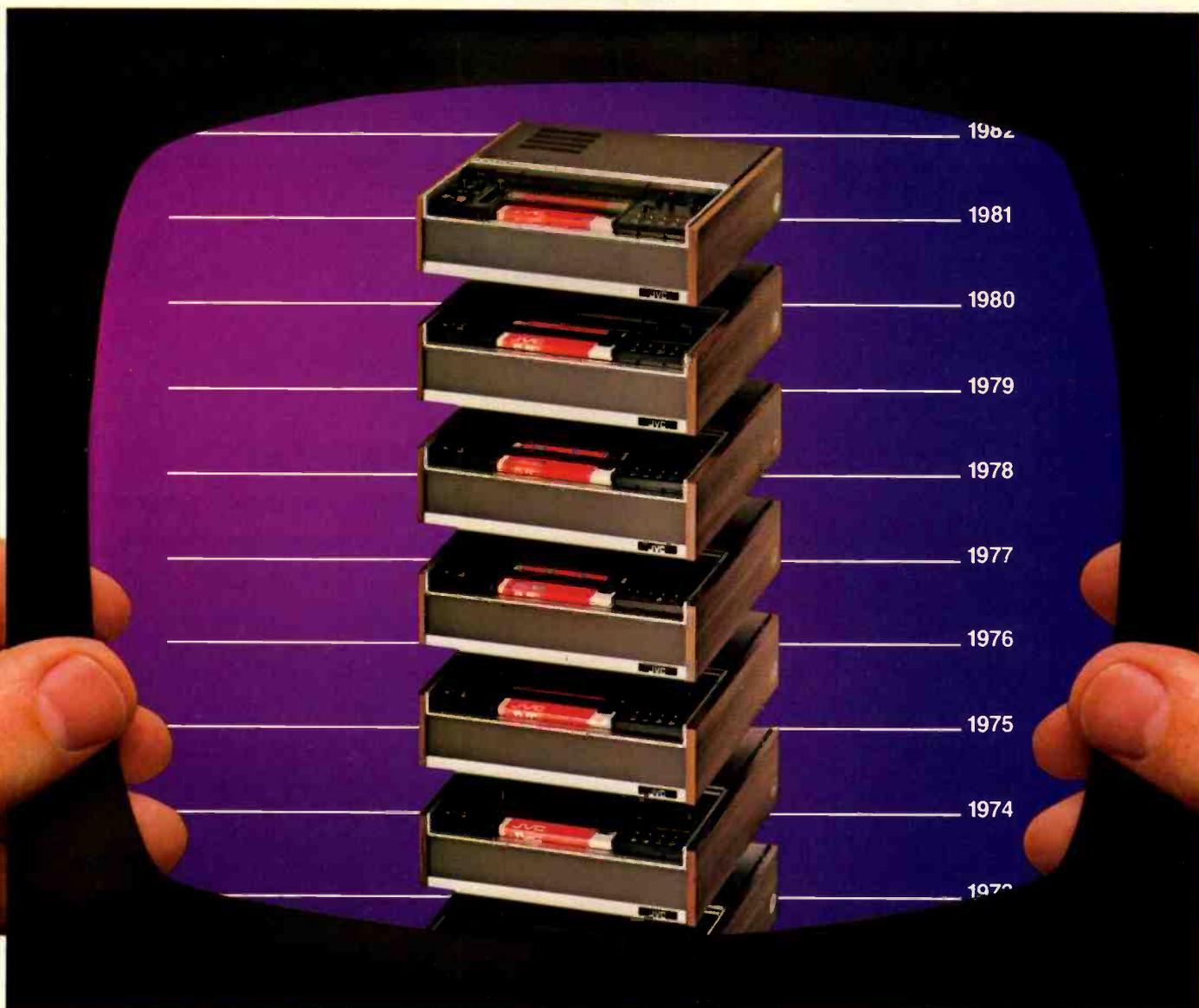
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NEWS FEATURE

1981 IRIS AWARDS

continued from page 95

Program Executive:

Bruce Marson

Producer: Dick Amaral
(Markets One Through Ten)

WTHR TV, Indianapolis
"Horses of Steel"

Program Executive: Tom Rose

Producer: Bob Campbell
(Markets Eleven Through Forty)

WLKY TV, Louisville
"The First Annual George
Lestrade Invitational
Croquet Tourney"

Program Executive: Bob Jones

Producer: Bob Jones
(Markets Forty-One Through
Two Hundred Fourteen)

ENTERTAINMENT PROGRAMS

KNXT TV, Los Angeles
"Down at the Dunbar"

Program Executive:

Larry Forsdick

Producer: Vincent Di Bona
(Markets One Through Ten)

KING TV, Seattle
"A Song For Louisa"

Program Executive: Keith Lollis

Producer: Bob Guy
(Markets Eleven Through Forty)

WLKY TV, Louisville
"The Pleasure of Their
Company"

Program Executive: Bob Jones

Producer: Bob Jones
(Markets Forty-One Through
Two Hundred Fourteen)

ALL OTHER PROGRAMS

WBZ TV, Boston
"The Tall Ship Lindo"

Program Executive:

Richard Kurlander

Producer: Gail Levin
(Markets One Through Ten)

KING TV, Seattle
"The Mountain: Rainier"

Program Executive: Keith Lollis

Producer: Al Stenson
(Markets Eleven Through Forty)

WMTV, Madison
"Terminal Madness"

Program Executive:

Laurie Leonard

Producer: Jerilyn Goodman
(Markets Forty-One Through
Two Hundred Fourteen)

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Phil Donahue.

some interesting observations. Foreign program producers were advised to retain domestic U.S. representatives if they wished to sell programming in the U.S. The opinion was that the American television business was so radically different in structure that Europeans would find it difficult to negotiate with U.S. stations. The major upbeat note at the meeting was the degree of interest shown by overseas representatives in co-production ventures. Said one Australian representative, "Nobody can afford to produce for himself anymore."

The PBS affiliates meeting was a lugubrious affair, as representative after representative lamented on the cutback in federal funding. On top of this, PBS spokespersons noted the move of cultural programming to payable services.

Nevertheless, most saw a leaner but better Public Broadcasting Service. The vision held that some advertising might be permitted and that PBSA stations were already developing the art of "narrowcasting" which might lend it the type of audience support to sustain it in the years ahead. **BM/E**

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INTERPRETING THE **FCC** RULES & REGULATIONS

Supreme Court Throws Out Format Doctrine

By Frederick W. Ford and Lee G. Lovett; Lovett Ford and Hennessey, P.C., Washington, D.C.

THE U.S. SUPREME COURT has just issued a major opinion which confirms that broadcasters have broad freedom to change entertainment formats. The 7-2 decision in *FCC v. WNCN Listeners Guild*¹ overturned the so-called "format doctrine" propounded by the U.S. Court of Appeals in a series of entertainment format cases dating back to 1970. More specifically, the Supreme Court decision overturned the decision of the U.S. Court of Appeals in the *WNCN Listeners Guild v. FCC*.² The Supreme Court held that (1) the Court of Appeals exceeded its authority when it overturned the Commission's policy statement³ on entertainment formats and (2) the policy statement was not inconsistent with the Communications Act.

This column has discussed this see-saw battle on entertainment formats in past years.⁴ This article will analyze the Supreme Court's decision, which must be taken as the final word on this matter. We will also briefly review the policy statement, as well as the Court of Appeals case which prompted review by the Supreme Court. Finally, since the Supreme Court used language in its decision suggestive of future opinions that may materially affect broadcasters, we will indicate *WNCN II*'s possible impact on other issues currently pending, such as radio deregulation and cable TV deregulation.

Previous format cases

Although the Supreme Court decision technically reviewed the *WNCN I* case, in reality it was a reversal of a series of cases stretching back to 1970 wherein the Court had ruled that there were some instances in which license transfer and renewal applications would require a hearing by the Commission if grant thereof would result in a change of format.⁵ In the 1974 *WEFM* case, the Court of Appeals determined that when the Commission is confronted with a proposed license assignment (or by inference from other cases, a renewal) that encompasses a change in a *unique* entertainment format, the Commission must consider whether the public interest would be served by the approval of the application. If there are substantial questions of fact involved, this would necessitate a public hearing to resolve the factual issues. As summarized in the

WNCN I case, the *WEFM* case stated specifically that, "No hearing will be required on a renewal application if the abandoned format is financially unviable, if it is not unique in the listening area, or if there has been an insufficient outpouring of public protest against the change."⁶ However, the Court pointed out that financial losses must be attributed to the format itself. Finally, the Court of Appeals concluded that the Commission had an affirmative obligation to find that the substitute service was indeed reasonable.

The Commission responded to the *WEFM* decision with its policy statement. The Commission determined that diversity in entertainment formats was something best left to the market place. To the Commission's mind, changes in format clearly fell within the discretion of the broadcast licensees. Furthermore, the Commission considered the court's remedies excessive intrusion into decisions about entertainment formats that would impose a "comprehensive, discriminating and [continued] state surveillance." The Commission wrote that this result:

Would be flatly inconsistent with our understanding of congressional policy as manifested in the Communications Act, counterproductive in terms of maximizing the welfare of the radio-listening public, an administratively fearful and comprehensive nightmare, and unconstitutional as an impermissibly chilling innovation and experimentation in radio programming.⁷

¹Slip Opinion, Case No. 79-824, argued November 3, 1980, decided March 24, 1981. (Hereinafter, *WNCN II*.)

²197 U.S. App. D.C. 319, 610 F.2d 838 (1979). (En banc). (Hereinafter, *WNCN I*.)

³Memorandum Opinion and Order, *In the Matter of Development of Policy Re: Changes in the Entertainment Formats of Broadcast Stations*, Docket No. 20682, 60 FCC 2d 858, 37 RR 2d 1679 (1976).

⁴"The Commission Balks at Entertainment Format Regulation," November, 1977; "Court Upholds Programming Format Decisions," March, 1980.

⁵*Citizens Committee to Save WEFM v. FCC*, 165 U.S. App. D.C. 185, 506 F.2d 246 (1974) (En banc); *Citizens Committee to Keep Progressive Rock v. FCC*, 156 U.S. App. D.C. 16, 478 F.2d 926 (1973); *Lakewood Broadcasting Service, Inc. v. FCC*, 156 U.S. App. D.C. 9, 478 F.2d 919 (1973); *Hartford Communications Committee v. FCC*, 151 U.S. App. D.C. 354, 467 F.2d 408 (1972); and *Citizens Committee to Preserve the Voice of the Arts in Atlanta v. FCC*, 141 U.S. App. D.C. 109, 436 F.2d 263 (1970).

⁶*WNCN I*, 610 F.2d at 849.

⁷*Policy Statement*, 60 FCC 2d at 865-6. Citations omitted.

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FCC Rules and Regulations

A petition for review of the Commission's action prompted the *WNCN I* decision. The Court of Appeals stated that it was "unpersuaded that our reading of the Act is wrong" and refused to abandon its previous ruling.⁸ The Court of Appeals reiterated its rationale for protection of unique formats. It also repeated the *WEFM* exceptions for holding a hearing. The *WNCN I* court added that:

One or another of these factors is surely present in most format changes. And generally, the existence . . . of these factors can be determined without the need of a hearing. The small remainder of cases are simply those in which the evidence strongly indicates that market mechanisms have not satisfied the Communications Act's mandate that radio serve the needs of all the people.⁹

The court also rejected the Commission's arguments about an "administrative nightmare" because so few format cases had ever reached the level of the Court of Appeals.

The Supreme Court decides — *WNCN II*

The deep chasm between the Commission's interpretations about entertainment format changes and those of the Court of Appeals made this issue ripe for review by the Supreme Court. The Supreme Court's *WNCN II* decision was a wholehearted endorsement of the Commission's position on market force regulation of entertainment formats and a major reversal of the Court of Appeals. In the words of Justice White, "with all due respect, . . . we are unconvinced that the Court of Appeals' format doctrine is compelled by the Act and that the Commission's interpretation of the public interest standard must therefore be set aside."¹⁰

The Supreme Court decided that contrary to the Court of Appeals' finding, the policy statement is not inconsistent with the act and is a constitutionally permissible means of implementing the act's public interest standard. The court found that, in the case of entertainment formats, the Commission had determined that the market place and the individual licensee could make a better judgement as to the viability of a particular format than could the Commission or a reviewing court. Both the Commission and the Supreme Court had noted the Supreme Court's earlier finding in the *Sanders Brothers* case: "Congress intended to leave competition in the business of broadcasting where it found it, to permit a licensee . . . to survive or succumb according to his ability to make programs attractive to the public."¹¹

Furthermore, the Supreme Court's majority determined that when the FCC bases implementation of the public interest standard on a rational weighing of competing policies, such decision should not be set aside by the Court of Appeals because "the weighing of policies under the public interest standard is a task that Congress has delegated to the Commission in the first instance."¹² The Supreme Court also noted that its opinions had repeatedly emphasized the Commission's judgement on how the public interest is best served and that the format diversity sought by *WNCN I* was not the only policy that the

⁸*WNCN I*, 610 F.2d at 841-2.

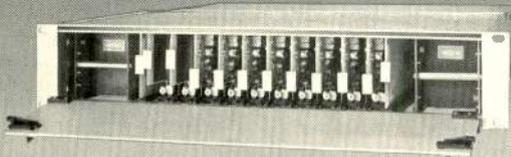
⁹*Id.*, 610 F.2d at 851

¹⁰*WNCN II*, Slip Opinion, Pg. 11.

¹¹FCC v. *Sanders Brothers Radio Station*, 309 U.S. 470, 475 (1940), cited in *Id.*

¹²FCC v. National Citizens Committee for Broadcasting, 436 U.S. 775, 810 (1978).

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Commission must consider in fulfilling its responsibilities under the Communications Act. In this case, the Commission had reached a proper balance between two central goals: (1) diversity in entertainment programming and (2) avoiding unnecessary restrictions on licensee discretion.

The Supreme Court also found that the policy statement was consistent with the legislative history of the Communications Act, as well as the FCC's traditional views that the public interest was best served by promoting diversity in entertainment programming through market forces. For example, although Congress did not specifically consider entertainment formats, it has considered and rejected proposals to allocate a certain percentage of stations to particular types of programming. Thus, the court ruled that:

As we read the legislative history of the Act, Congress did not unequivocally express its disfavor of entertainment format review by the Commission but neither is there substantial indication that Congress expected the public interest standard to *require* format regulation by the Commission. The legislative history of the Act does not support the Court of Appeals and provides insufficient basis for invalidating the Agency's construction of the Act.¹³

The Commission had argued repeatedly before both the Court of Appeals and the Supreme Court that renewal and transfer cases should not depend upon the Commission's ability to judge the complexities of factors in entertainment format changes. The Supreme Court noted the Commission's conviction that its judgement would be largely subjective and would only approximate serving the public interest. Although also an imperfect mechanism, the market forces would still be a better determinant than Commission intervention. Justice White warned that, "those who would overturn the Commission's policy statement do not take adequate account of these considerations."¹⁴

Arguments in favor of the Court of Appeals decision have stressed that since the Commission responds to listener complaints about non-entertainment programming, it should also review contested changes in entertainment formats. Justice White's opinion likened having or not having a particular format to having or not having particular programs:

Even in the area of non-entertainment programming, the Commission has afforded licensees broad discretion in selecting programs. Thus, the Commission has stated that a substantial and material question of fact [requiring an evidentiary hearing] is raised only when it appears that the licensee has abused its broad discretion by acting unreasonably or in bad faith.¹⁵

Finally, the Supreme Court answered those who sought hearings on contested format changes based on First Amendment considerations. This portion of the court's opinion was particularly cutting. The court ruled that the policy statement does not conflict with First Amendment rights since the FCC seeks to further the interest of the listening public as a whole and the "First Amendment [does not grant] individual listeners the right to have the Commission review the abandonment of their favorite entertainment program."¹⁶

Dissenting opinions

Justices Marshall and Brennan issued a strong defense in support of the Court of Appeals' decision in *WNCN I*. Justice Marshall wrote for the pair that "in my judgement, the Court of Appeals correctly held that in certain limited

circumstances, the Commission may be obliged to hold a hearing to consider whether a proposed change in a licensee's entertainment program format is in the public interest."¹⁷ Justice Marshall noted, as had the Court of Appeals previously, the paucity of hearings on format changes and added that the Commission's counsel had conceded at oral argument that the "administrative nightmare" was an exaggeration. "The Commission's reliance on claims that its own counsel later concedes to lack merit hardly strengthens one's belief in the rationality of its decision making."¹⁸

The dissenters, like the *WNCN I* court, did not disagree with the notion that market forces are the preferable mechanism for choosing formats. The *WNCN I* remedy of a hearing was intended only for those situations when the market breaks down.

Finally, Justice Marshall scored the Commission's position relative to the difficulty of classifying different entertainment formats. The Commission had based its policy statement in large measure on a study of the different entertainment formats in major markets. Justice Marshall found it difficult to see the consistency in arguing on the one hand that classifying formats is difficult and on the other hand measuring the success of the market place through a study which classifies radio stations in major markets according to entertainment formats.

Ramifications of WNCN II

The Supreme Court's decision in *WNCN II* is now law and ends years of bickering about entertainment format changes. In addition to the immediate impact upon the freedom of licensees to change formats, we believe that there are several interesting themes running through this decision.

In a general sense, the Supreme Court would seem to be cautioning the Court of Appeals for the District of Columbia Circuit about what some perceive as the appellate court's excessive zeal and activism in overturning the Commission's decisions.¹⁹ In several places in the *WNCN II* decision, the Supreme Court admonished the Court of Appeals for having substituted its judgement and expertise for that of the FCC. Conceivably, the Supreme Court might be cautioning the Court of Appeals about its conduct of cases from other agencies, too.

More specifically for the communications industry, the Supreme Court's reliance on the notion of the free functioning of the market place might have a significant impact on the radio deregulation and cable television "distant signal" deregulation reviews currently pending at the Court of Appeals level. In both of these decisions, the Commission centered its analysis around arguments about the free functioning of the market and consumer demand for services discussed. In *WNCN II*, the Supreme Court has once again supported the notion of the free market being compatible with the public interest responsibilities of the FCC. Reviewing courts might have to find particular flaws in the analysis of the cable and radio deregulation decisions or some other flaw in reasoning if they hope to overturn those decisions. **BM/E**

¹³*WNCN II*, Slip Opion, Pg. 15.

¹⁴*Id.*, Pg. 19.

¹⁵*Id.*, Pg. 20. Citation omitted.

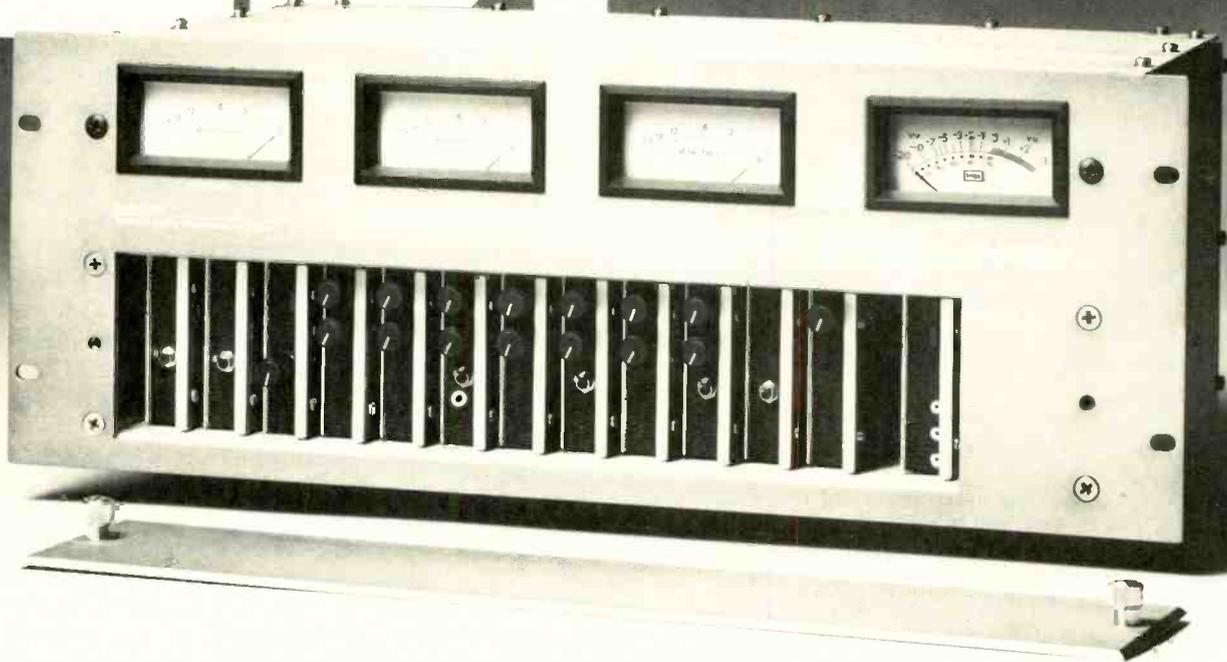
¹⁶*Id.*, Pg. 21.

¹⁷*WNCN II*, Dissenting Opinion, Pg. 2. Citations omitted.

¹⁸*Id.*, Dissenting Opinion, Pg. 14-15.

¹⁹Generally, appeals of decisions by the FCC involving broadcasters are taken at the District of Columbia circuit of the Court of Appeals.

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If the Great Idea involves any technical standards governed by the FCC, stations should make sure that the idea will in no way cause a violation of FCC rules.

13. Program Bus, Preset Bus Switching

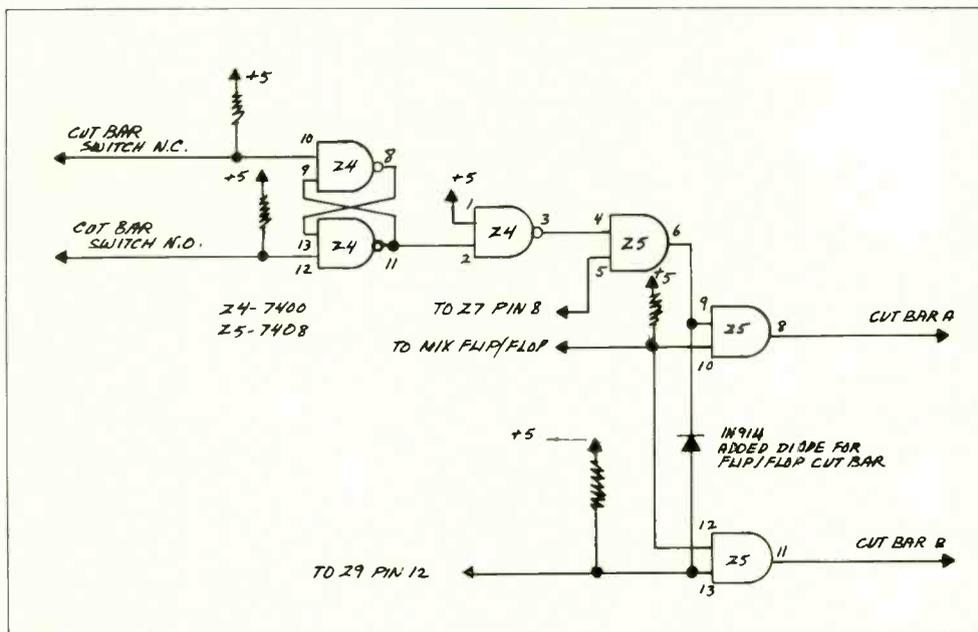
John Hartwell, Studio Engineer
KQED-TV, San Francisco, Calif.

Problem: The cutbar on an ADC 3110 master control switcher normally only causes the program bus to match what is selected on the preset bus. Our operators felt that a

flip-flop action between the program bus and the preset bus would enhance the on-air operation of the switcher.

Solution: A diode was installed between IC-Z5 pin 9 and IC-Z5 pin 13 of the automation interface card, the cathode to IC-Z5 pin 9. When the cutbar is pressed a logic high is fed to IC-Z4 pin 2, which causes a low at pin 3. This low out of IC-Z4 will cause IC-Z5, an "AND" gate, to go low at pin 5 and in turn cause both the signals, cutbar A and cutbar B, to go low. These signals going low at the same time cause the desired flip-flop action without disturbing any of the functions of this card.

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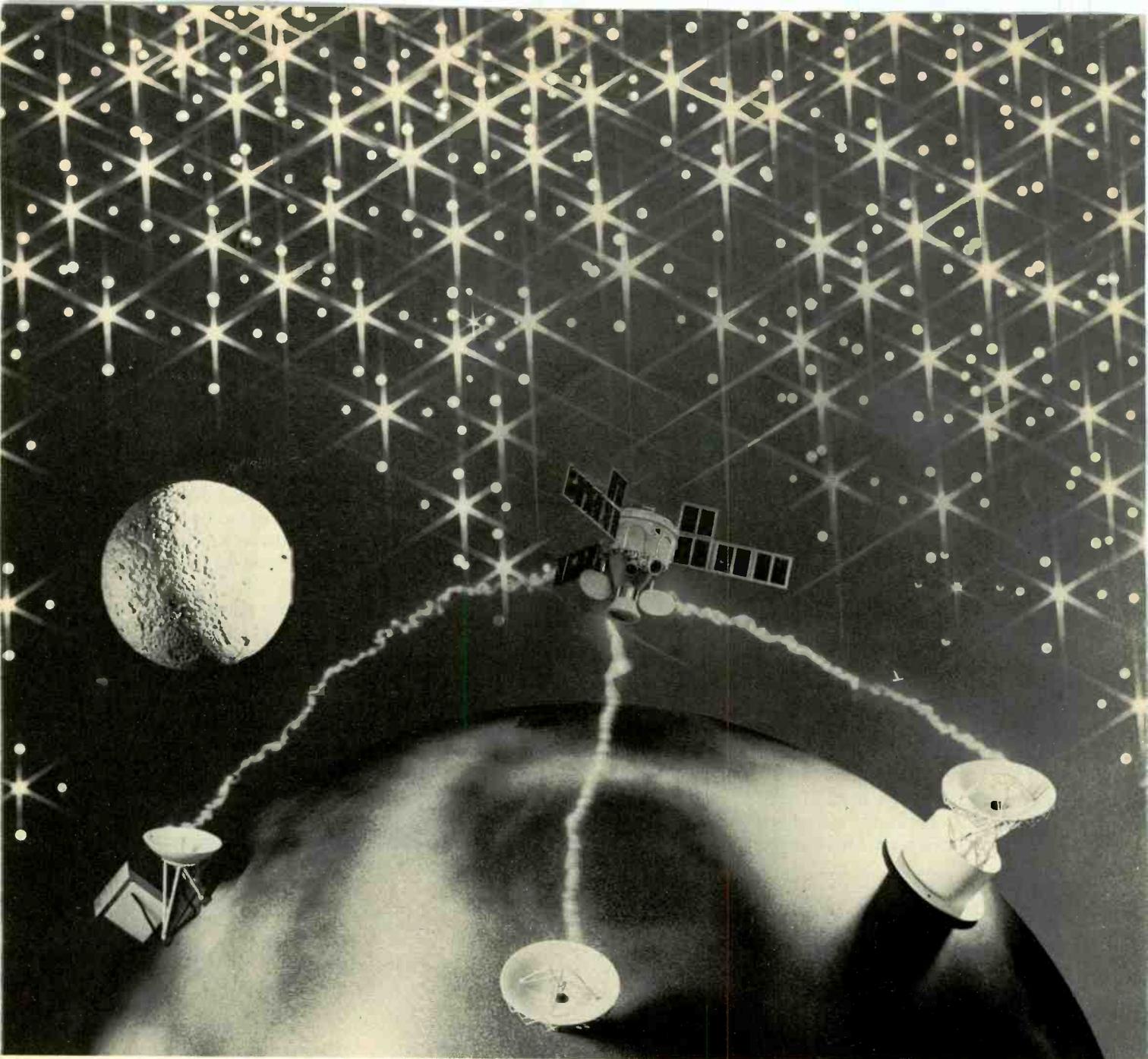
14. Printer Fail-Safe for MRC-1

Christopher A. Cote, Maintenance Engineer
WJZ-TV, Baltimore, Md.

Problem: To provide an alarm for our Moseley MRC-1 logger, should the printer be in a condition that would not

allow it to print transmitter readings. Such problems could be exhibited as the unit being unknowingly put in "local," cable troubles, or an actual malfunction of the logger or printer. This would also include the case where the printer was turned off or unplugged.

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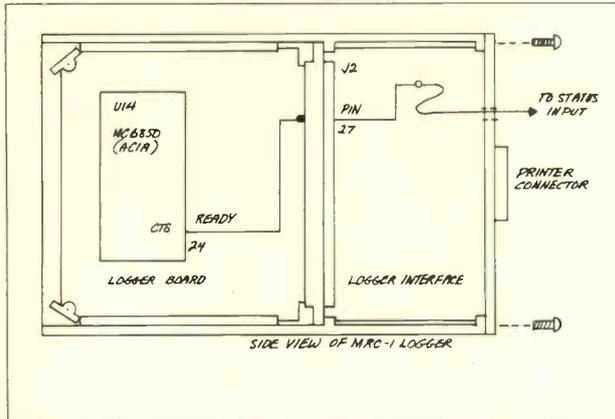
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back of the remote unit. We can then tie it to an unused TTL status input and we have our alarm, fulfilling all of the criteria stated in the problem.

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Upon completion of wiring and power up, you will have to program the status input you have selected to get the "INV" and low to high transition LEDs illuminated. (See programming status inputs in the MRC-1 manual.) Also check the manual to see how to connect the audible alarm so you can inhibit it when you do wish to go to the "local" mode.

In order to test the unit you can put the printer in "local," pull the cable off, or turn the printer off. All should signal alarm conditions. This should help prevent missed readings due to mistakes and human error.

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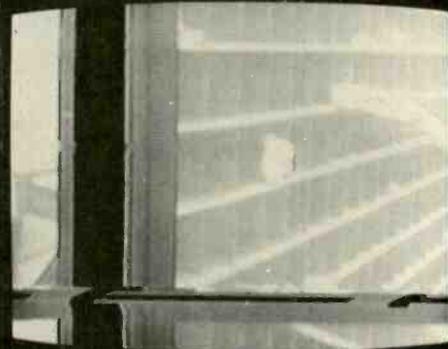
15. Automatic Transmission Line Maintenance

B.G. Parker, Transmitter Maintenance Supervisor
KCMO-TV, Kansas City, Mo.

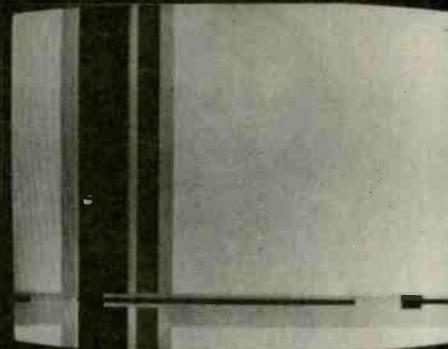
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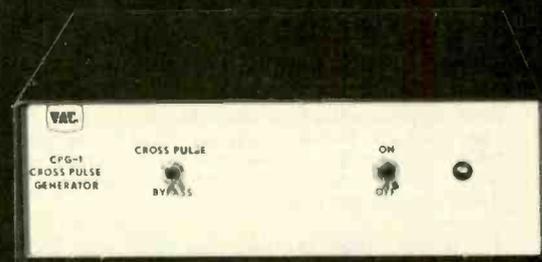


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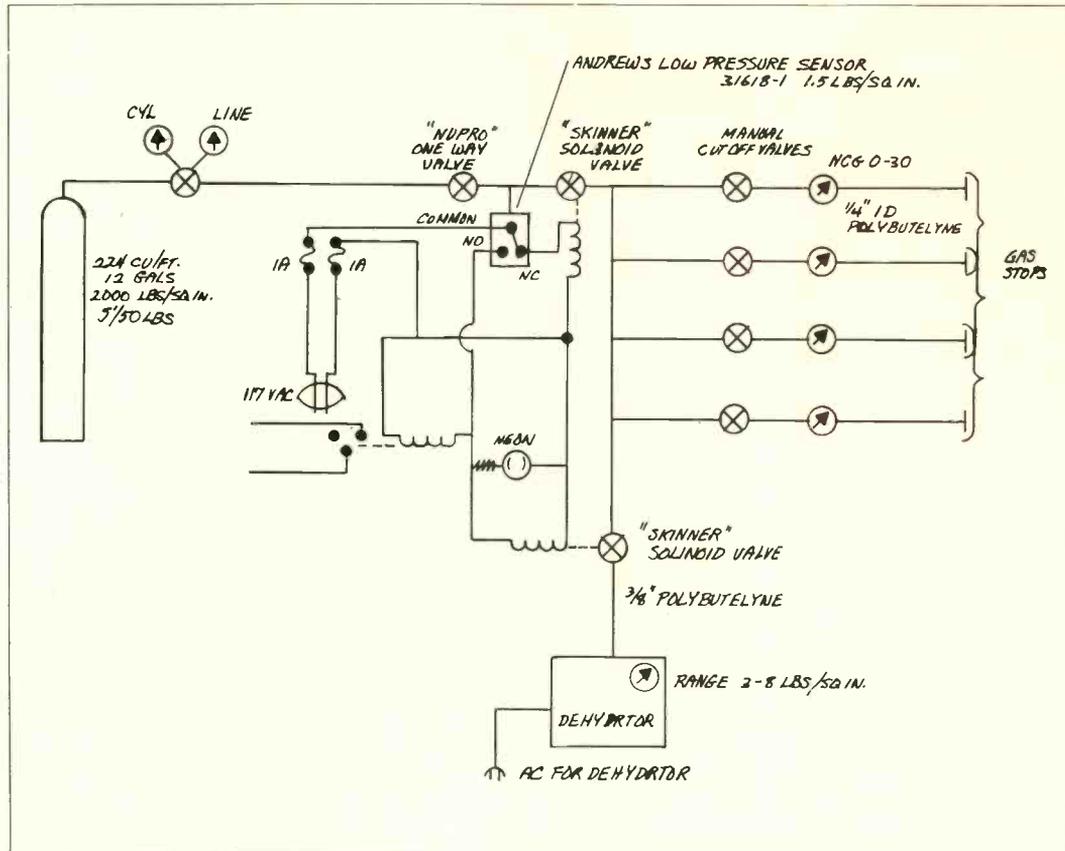
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and lose pressure. Normally some amount of either dry air or dry nitrogen is maintained in the lines to prevent moisture from entering and to take care of condensation inside the line due to weather temperature changes.

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The low pressure sensor microswitch assembly follows the one-way valve. Its purpose is to sense the nitrogen supply pressure and operate the two solenoid valves when the supply pressure has depleted to 1.5 pounds/square inch. This would indicate an empty supply tank condition. Until the cylinder is replaced, the sensor will keep the nitrogen solenoid closed and the dehydrator solenoid open, which will maintain dry air in the transmission line system.

When the nitrogen supply tank is replaced, the low pressure sensor will sense the increase above 1.5 pounds/square inch, cause the nitrogen valve to open, close the dehydrator valve. A neon lamp glows to indicate that the two solenoids are in the dehydrator mode. A relay is provided to interface with remote status of dehydrator on-line. This indication may show either a severe line leak or nitrogen supply depleted condition.

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Solution: (Use separate sheet—500 words max)

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2. How to Enter: Use the Official Entry Form on this page or simply send *BM/E* a description of your work. State the objective or problem and your solution. Include diagrams, drawings, or glossy photos, as appropriate. Artwork must be legible but need not be directly reproducible and not exceeding three in number. Camera reproducible material is preferred. Length can vary, but should not exceed 500 words. *BM/E* reserves the right to edit material. Entry should include: Name, title, station affiliation, and the class of station—TV, FM, AM. Indicate if idea is completely original with you.

3. Material Accepted for Publication: *BM/E* editors will make all decisions regarding acceptability for publication. If duplicative or similar ideas are received, *BM/E* editors will judge which entry or entries to accept. A \$10 honorarium will be paid for each item published.

4. Voting: Every reader of *BM/E* is entitled to rank the ideas published. This can be done on the Reader Service Card in the magazine or by letters or cards sent to the *BM/E* office. To vote, readers should select the three ideas they like best and rank them 1, 2, or 3.

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6. Prizes and Awards: Three top prizes will be awarded; a programmable electronic calculator will be awarded for the highest rated entry in the respective categories of AM, FM, and TV. Ten engineering slide rule calculators will be awarded as secondary prizes for the highest rated entries in the following additional categories (top three winners are not eligible for these prizes): audio (three prizes, one each in the AM, FM and TV categories); RF (three prizes, one each in the categories of AM, FM, TV); Control (three prizes, one each in the AM, FM and TV categories); Video (one prize in TV).

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- MULTI-SITE OPERATION

The MRC-2 has been engineered to provide the ultimate in cost effective, fully automated remote control. The microprocessor-based design offers user flexibility in system set up and a full range of options. Complete alphanumeric displays and a CRT display terminal simplify operator interface. A single remote terminal may be connected to multiple control points. To increase the system's versatility, virtually unlimited user-defined executive action is available. Standard features include bi-level telemetry tolerance, status indications, automatic muting, full fail-safe capabilities, and indirect power calibration.

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BROADCAST EQUIPMENT

ENG/EFP Camera

250

The PK-60 portable color broadcast camera, described by the manufacturer as the smallest, lightest portable camera available, weighs 9.4 pounds and measures 11 inches long, nine inches high, and 3.7 inches wide. It features



Digital Data Loc, an advanced plug-in digital memory adapter that operates in conjunction with the microprocessor-controlled automatic setup unit. Information stored in the nonvolatile memory of the Digital Data Loc unit maintains centering, black levels, and white levels. According to the company, the camera can be set up at the studio and then operated on remotes with no additional setup. Other features include digital base station, monitor selector setup box, microphone holder with built-in amplifier, analog base station, and triax/wireless transmission system. S/N is better than 54 dB with 0 dB gain; the camera takes 18 mm Plumbicons®, Saticons®, or diode gun Plumbicons®. Power consumption of 20.6 W allows over two hours camera operation with Ni-cad battery. TOSHIBA AMERICA, INC.

Audio Tape Recorder

251

JH-110BX audio recorder, available in stereo or mono, features two-speed (7½ and 15 ips) servo-controlled tape transport, transformerless electronics, timer/locator with four programmable

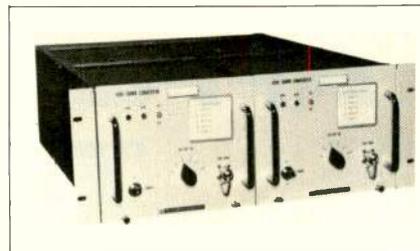


free-standing keyboard with dedicated keys for almost all functions, a Z80 microcomputer, a disk controller, and an HVS 630 synchronizer. HARRIS VIDEO SYSTEMS.

Satellite Down Converters

253

Series U-4536 dual conversion down converters for satellite earth stations operate in the 4 GHz downlink frequency band. They can receive all carriers specified in the INTELSAT B.G. specifications and are so compact in

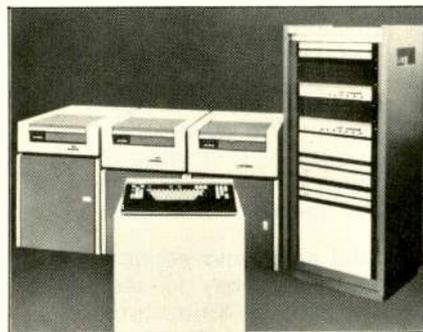


memories and tape velocity indicator. Design is modular and all circuitry is dc-powered. Variable speed control and ceramic non-magnetic capstan are standard. Electronics has separate equalizer and bias settings for each speed and is available for either NAB or IEC standards. MCI, INC.

Digital Still Store

252

The IRIS digital video still store system creates digital video stills using inputs from VTRs, cameras, network feeds, telecines, character generators, reflective artwork, and other video inputs. Up to 5840 stills can be created, stored, and manipulated on-line by as many as three operators simultaneously. All users have on-line access to the indi-



design that two can fit side-by-side on a 19-inch rack shelf. Excellent residual phase noise of less than 14 dB results from the combination of low-noise crystal oscillators and a phase-locked frequency source. Primary ac power is 117 V, 50 or 60 Hz. Frequency selection capability is excellent with the adoption of an internally built-in or external (100 to 110 MHz) frequency synthesizer, requiring no additional tuning. Six options include frequency-synthesized HLO Type 1 (in 125 kHz steps, fully automatic and applicable for FM-FDM carriers) and Type 2 (in 1 MHz steps with mechanical cavity tuning and ultra low noise characteristics for SCPC traffic). MITSUBISHI ELECTRONICS AMERICA.

Audio Console

254

The MR-2 audio console offers a full range of options and features, allowing the user to specialize the console to its own needs. Users can build their own patch bays or choose one of the maker's integral, modular patch bays; choose from several meter options; select one of two standard input modules or specialize an input module. Expansion frames and module update kits are available to meet changing needs. Metering system is the maker's new 32-channel video bar-graph meter. Input module features 48 assignment buses, eight echo sends, four-band fully para-

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Broadcast Equipment

metric EQ; automated fader, nine group buses, phase reverse on monitor and main, and more; other features include tracking VCA monitor-level, two stereo foldback systems, isolated ground-reference system, independent cue send on echo return, new "Buss" intercom system, and eight external monitor sources. HARRISON SYSTEMS, INC.

Digital Reverb System

255

Model 8X32 digital reverberation system produces a wide range of natural and artificial reverberation effects for studio, broadcast, live performance, or other applications. The microprocessor-based front panel has separate LED readout and control for each adjustable reverberation parameter for ease of operation. A bank of 32 non-volatile storage registers allows the user to store and recall 32 complete reverb setups and to edit them at will. Four basic programs are available, ranging from a small, fast-diffusing "plate" to a large, echo-



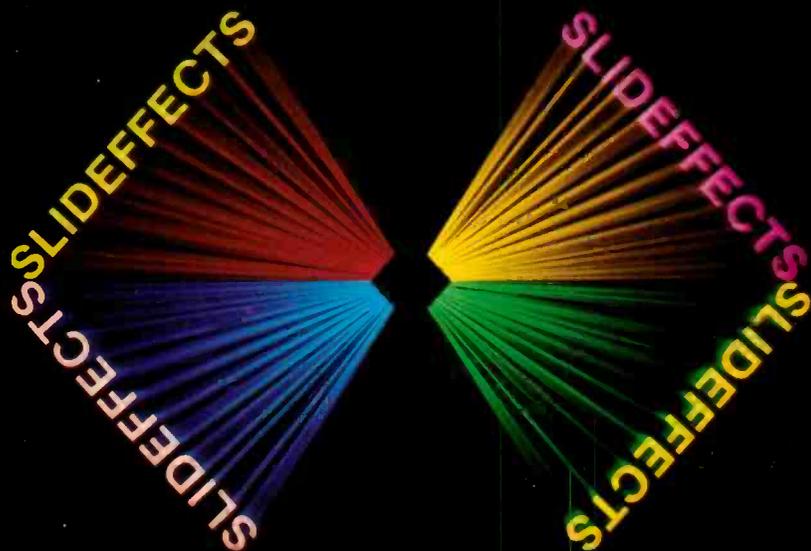
ing "space" simulation. With any program, 16 delay times can be selected and the level and delay time of both the early reflection pattern and the initial reverberation may be independently controlled. LF and HF delay can also be individually trimmed. The system has a bandwidth of 8 kHz and a dynamic range of 80 dB. \$5995. URSA MAJOR, INC.

One-Inch Videotape

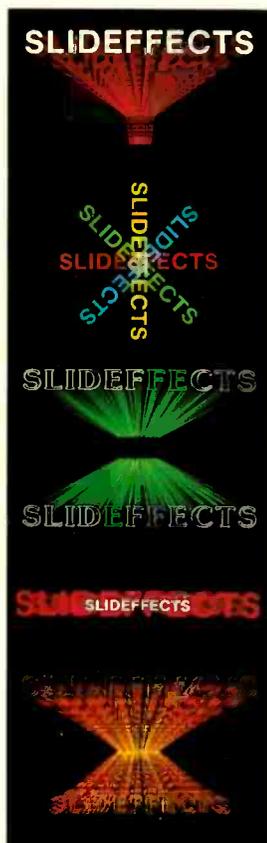
256

The new 100 percent cobalt-doped oxide formulation of 196 one-inch high-energy videotape offers 1-2 dB improvement in video S/N in the luminance channel, with a corresponding improvement in chrominance S/N and reduction in dropouts. A new, tightly crosslinked co-polymer binder system and improved processing techniques

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maximize electrical and physical performance on all B and C format VTRs, according to the manufacturer. Other improvements are coercivity, up to 650 oersteds; retentivity of 1200 gauss, up from 1000; lower scanner and guiding surface friction; a smoother surface finish and lowered abrasivity. AMPEX CORP.

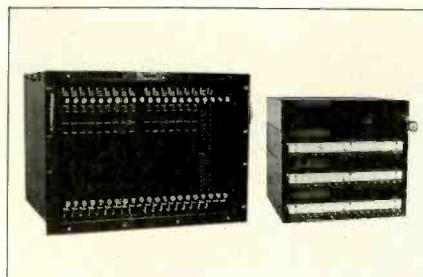
Editor-VTR Interfaces 257

Two new videotape recorder interfaces allow the ECS-90 editing system to be interfaced with 3/4-inch VTRs. The first, CCA-90/CR-8200, will link the editor with JVC CR-8200, CR-6600, and CP-5500 VTRs; the second is CCA-90/NV-9600, which works with Panasonic/National models NV-9600, NV-9240, and broadcast model AU-700. According to the company, the line of interfaces is presently being expanded to include even more VTR models. CONVERGENCE CORP.

Intercom System 258

The Communicator is a software-controlled broadcast intercom and signal routing audio system that can be provided with "smart" or "dumb" user

stations, connected to the system with two twisted pairs or ribbon cable. Man-



ufacturer claims many advantages for this system, including lower cost per crosspoint, very small physical size, improved reliability, simplified installation and troubleshooting, and a virtually unlimited capability for user modification and reconfiguration for specialized applications. The switch can be as small as eight inputs or as large as 256 by 256. Options include privacy lockout, hands-free operation, alphanumeric message display at stations, and machine control. KAPPA SYSTEMS, INC.

Machine Control System 259

The software-based Automax machine control and switching system provides

programmable, real-time clock control of VTRs and program distribution via microprocessor electronics, machine control interfaces, A/V switching equipment, a high-speed printer, and a CRT data entry terminal. It can be custom-configured for a wide range of machine control and switching applications. Its solid state memory stores up to 1000 or more user-specified events, each of which may include a VTR PLAY, RECORD, or REWIND command. Each event, displayed on the terminal as a one-row entry, consists of an event number, the day and time of the event, an eight-character description, a four-character source ID, and up to eight four-character destination IDs. Features include automatic look-ahead display of upcoming events, manual control of events via CRT terminal or standard VTR/switcher control panels, and continuous automatic control during event entry/edit. The logger records all programmed and manual events plus associated notes typed in by the operator. FERNSEH INC.

TV Color Analyzer 260

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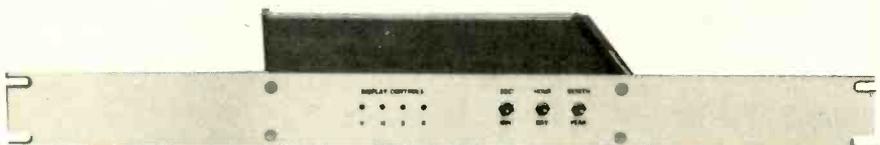
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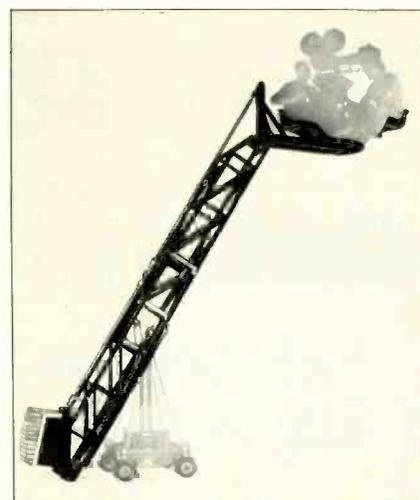
Broadcast Equipment

5539 TV color analyzer has three independent LED displays that allow the intensities of the three primary colors to be measured simultaneously. Four individually adjustable matrix circuits help compensate for different white standards; the unit's wide sensitivity range (1 to 300 NIT full scale) permits gray scale tracking. High sensitivity allows accurate setting of the color white at low luminance levels. Working with the maker's PM 5533 TV signal generator, the PM 5539 will act as the analyzing part of a studio calibration system for monitors. Power requirements are 115/230 V \pm 20 percent, 48-65 Hz; consumption is 4 W at 220 V. An optional battery supplies power for remote operation. PHILIPS.

Camera Crane

261

The Tulip crane carries both camera operator and assistant, reaching a

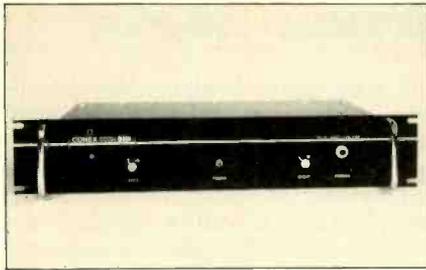


maximum height of 20 feet in operation. It rides on its own dolly and uses balance weights to control the vertical movement. Any video, 35 mm, or 16 mm camera system will be accommodated. For transit, the crane folds into a compact unit eight feet long by 2½ feet square, weighing approximately 200 pounds. MATTHEWS STUDIO EQUIPMENT, INC.

Stereo Power Amplifier

262

PA-30 is a 30 W per channel stereo amplifier designed for studio monitoring and general purpose applications. It features plug-in circuitry for ease of maintenance, front-panel headphone jack, phone plug input connectors, short circuit protection, five-way binding post output connectors, and front-panel level controls and carries a one-



year warranty on parts and labor. Specifications include: distortion, less than 0.1 percent THD at 30 W, 1000 Hz; input sensitivity, 1.5 V input for 30 W output; input impedance, 25K ohms; frequency response, ± 0.5 dB 20Hz–20 kHz; output impedance, 4 ohms or greater. \$265. CONEX ELECTRO SYSTEMS.

Silver/Ni-cad Discharger 263

The SNDS silver/Ni-cad discharger is a diagnostic device for battery evaluation that automatically determines battery capacity and pinpoints weak cells while actually "exercising" the battery and enhancing its life, according to the



manufacturer. Pressing a single button initiates discharge. A digital display indicates battery discharge, voltage and current, while a digital clock indicates running time and freezes at the end of the discharge, precisely indicating running time. Features include digital clock, digital voltmeter/ammeter, switchable cutoff voltages, switchable loads, external input for camera or VTR as load, and output for chart recorder. ANTON/BAUER, INC.

SMPTE Time Code Reader 264

Model SP-710 SMPTE time code reader decodes and displays SMPTE code from one-twentieth to 60 times play speed with frame accuracy. The unit's integral character generator inserts numerical time data in any position over the raster in four selectable sizes. Characters can be displayed in the vertical blanking interval as a standard feature. Character readability may be improved by inserting a background mask and/or deleting the "frames"

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display. Other features include a hold function to freeze the display count, a switch to delete the character display, a loop-through video input, two video outputs, and regenerated code output. \$1890. DATAMETRICS.

Video Distribution Switcher 265

The updated 9100 Series video distribution switching system consists of off-the-shelf modules that can be assembled into simple or complex systems with any number of inputs and outputs. The modular construction allows any unit to be removed or changed easily, enhances serviceability, and permits economical expansion. System is equipped with one video switch card for each active input and one amplifier card

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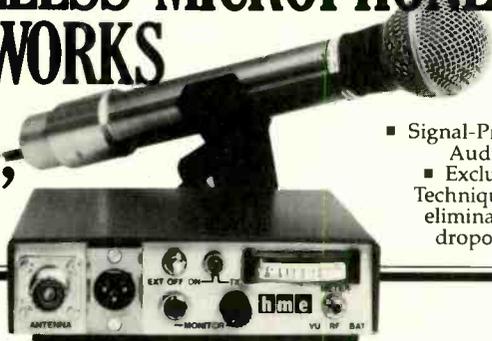
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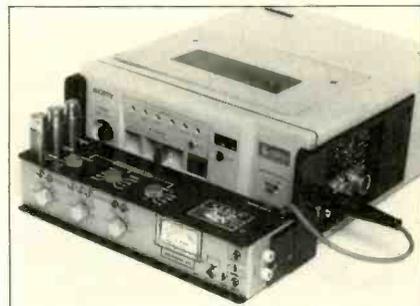
Broadcast Equipment

for each active output; cards may be either high impedance (loop-through) or 75 ohm terminated type. Power for pushbuttons, alarm switches, or relays controlling the matrix switch points is supplied by the built-in chassis power supply. A typical system consists of a 20 input by five output matrix occupies only 5 1/4 inches of vertical space in a standard rack or cabinet. COHU.

VTR Sound Mixer/Preamp

266

A-97 is a three-channel sound mixer/preamp for portable VTRs that requires no adapters or modifications to the recorder. It mounts easily, snugly, and solidly with unimpeded access to all VTR and sound mixing controls. Standard mount is for the Sony BVU-50, but the manufacturer notes that it will work with purchasers on mounts for



various portable VTRs. Features include: two microphone units (-70 dBm to -40 dBm) plus a third input for mic or line, with phantom power 12 V on each; high pass filter (125 Hz) and presence filter (3200 Hz); illuminated VU meter; LED for peak measurement; 1000 Hz oscillator; mic level output -51 dBm; and balanced line output at +4 dBm with output transformer. Weight, 2.5 pounds without batteries (10 R6-AA 1.5 V cells). LTM CORP. OF AMERICA.

SMPTC Coder Reader

267

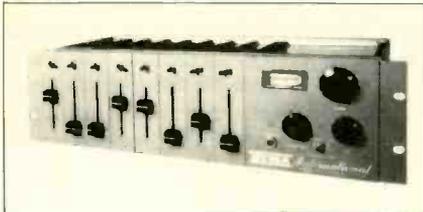
This compact SMPTE edit time code reader requires only 1 1/8 by 4 1/4 inches of panel space. It features front-panel selection of either time code or user bits



in large 0.3-inch LED displays. Drop frame flag (color timing) is also decoded and displayed on the front panel. The display can be frozen for off-line edit decision logging or to enable/disable the self-contained error bypass logic. The unit will display code from machine going forward or backward over a wide range of playing speeds. It is supplied wired for either 110 V ac or 220 V ac with external connections for alternate power sources of 6 to 10 V ac or 8 to 13 V dc. \$495. J.S. WIENER ASSOCIATES.

Rackmount Audio Console 268

The "International" rackmount audio console for small production facilities, editing suites, news booths, or remote vans occupies only 5¼ inches of rack space. It features eight input modules, a



headphone jack, and rotary gain pots for master output, headphone, and cue. Each channel has two inputs, selectable from the front panel, and a slide fader with cue. For greater versatility, each preamp is switchable for mic and line level. Available in both mono and stereo configurations. DYMA ENGINEERING.

Clock/Interval Timer 269

Model 8231 DigiTec clock/interval timer can be simply and easily programmed to operate as a real-time clock or interval timer. The interval crystal-controlled clock and NMOS/LSI design insure accurate timing even in harsh electrical noise environments. An optional "single line enable" parallel



BCD output provides all controls for system interface. The unit has LED digital indicators for display of hours, minutes, and seconds. The front-panel

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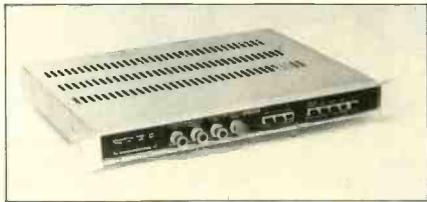
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Broadcast Equipment

six-digit thumbwheel performs as "time set" and to provide a programmable precise time interval form C relay contact output. UNITED SYSTEMS CORP.

Character Generator 270

VCG-750 is a microprocessor-based video character generator that reads and displays longitudinally recorded serial SMPTE/EBU time code and/or vertical interval time code. The unit reads standard time code from videotape or other



sources at speeds ranging from zero to 60 times normal. From this input, it extracts tape time and user bit data and outputs this data as video characters that may be burned into or superimposed over the source video for display. In the vertical interval time code mode, it is capable of reading time code

at 30 times play speed, forward and reverse. In auto code source mode, switchover from serial to vertical interval code occurs automatically at tape speeds below one-fifth play or whenever serial code drops out or becomes invalid. Two parallel video outputs supply NTSC, PAL, or SECAM compatible composite video. Front panel or remote controls allow character height to be either 28 or 42 raster lines. EECO, INC.

Computer Graphics Card 271

A new VCO/Encoder card, offered as an optional insert for the maker's 6214 and 6212 Colorgraphic computer devices, modifies the standard computer graphics output signal so that it can operate with broadcast television and other RS-170/189-compatible equipment. Some possible applications are election coverage and weather reporting. Functions on the card include voltage control oscillator, synchronization generator, generator lock, color/video processor, and encoder. It accepts external SC or VBS/sync signals, synchronizing the computer device to the external signal source. The resulting RGB video signal provides two separate electrically isolate encoded color outputs with broadcast-quality resolu-

tion. Output is compatible with NTSC; PAL compatibility is optional. FCC certification has been applied for. \$8000. RAMTEK CORP.

SMPTE Setup Cassette 277

This SMPTE 3/4-inch receiver/monitor setup cassette is designed to verify that the video cassette playback system is operating normally. It also can supply reference signals for adjusting operating controls on the receiver or monitor. Features include a commentator describing each scene and what it is intended to check as well as testing patterns to check skin tone, indoor and outdoor illumination, and picture tube convergence and purity. SONY VIDEO PRODUCTS CO.

Dynamic Cardioid Mics 272

The new 671B series of dynamic cardioid microphones includes two models, 671BL and 671BH—low-impedance and high-impedance versions, respectively. According to the manufacturer, the mics have close-up bass



boost and high-frequency characteristics that make them ideal for vocal applications. They have a built-in "pop" filter and are resistant to mechanical and handling noise. Also featured is a locking on/off switch. 671BH, \$97; 671BL, \$95. ELECTRO-VOICE, INC.

Audio Time Compressor 273

The Model 1200 digital time compressor allows the user to play back recorded audio or videotape faster or slower than normal speed without altering the original pitch. According to the manufacturer, the unit provides broadcast-quality sound free of distortion and easily compresses or expands material to fit time requirements. Playback or on-air time may be reduced by up to 25 percent without audio degradation, the

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manufacturer states. Keypad control and digital display of operating parameters make the unit easy to operate and accurate, with all major functions controlled automatically by a computer. It will operate with virtually any variable-speed tape recorder, VTR, or film projector. LEXICON.

Audio Console

274

The 8000 audio console, with a standard configuration of eight channels and 24 inputs, is expandable to 16 channels and 48 inputs. Easy accessibility to barrier strips makes all inputs and outputs patchable. Maintenance is simplified with plug-in circuit boards and power supply and incorporation of



flat ribbon cable instead of hard wiring. Successor to the maker's Centurion series, the console has five lighted panel meters and two peak LED enunciators to provide the announcer with any of five alarms or messages. All basic features are standard, and the

console is delivered ready to go on-air. Standard features include Penny and Giles attenuators, LCD clock/timer, built-in intercom, 4 W cue amplifier, and ready/play cart machine indicator. THD is a stated 0.008 percent at 1 kHz +27 dBm output. CETEC BROADCAST GROUP.

TVRO Earth Station

275

Model SVS-1000 is a 24-channel television receive-only satellite receiver designed for easy operation. Its simplified front panel layout includes controls for audio level, subcarrier fre-



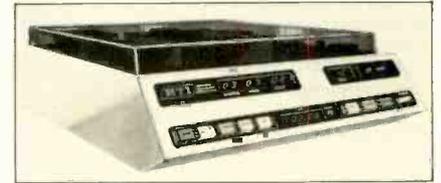
quency, fine tuning, and a 24-position rotary switch channel control for instant transponder selection. Features include built-in regulated power supply with dc block to provide power to the LNA through the coax, and switchable modulator with 75 ohm output on VHF

channels 3 or 4 for feeding the signal directly to the TV antenna terminals. The unit is designed to receive satellite TV transmissions in the 3.7-4.2 GHz range, with audio subcarrier of either 6.2 or 6.8 MHz. HUSTLER, INC.

Videotape Cleaner/Evaluator

276

VEC 750 is a new videotape cleaner/evaluator that thoroughly inspects, cleans, polishes, and rewinds 3/4-inch videocassettes at 30 times normal playback speed, with erase capability. The user can opt to inspect, clean, or erase, or perform any of the three functions simultaneously. Front-panel LED indi-



cators include: five-digit timer, two-digit control track defect counter, two-digit video track defect counter, two-digit audio track defect counter, and two-digit total defect counter. Internal controls include defect sensitivity, tape running speed, and erase defeat. Power requirements are 117 V ac, 60 Hz, 4 A. RTI.



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