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JANUARY 1971

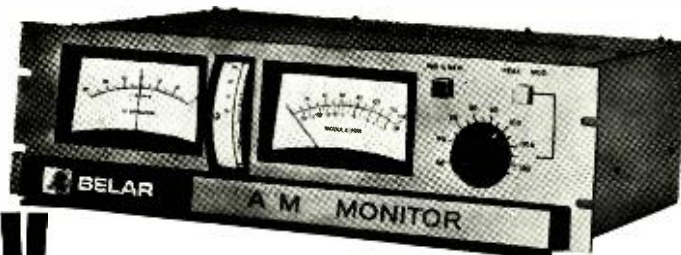
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BROADCAST MANAGEMENT/ENGINEERING

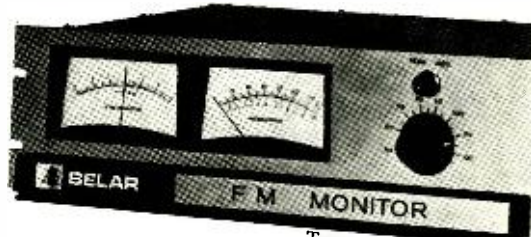


***News Reporting:
Getting Behind The Scene***

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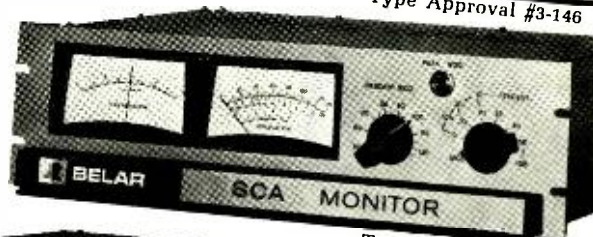
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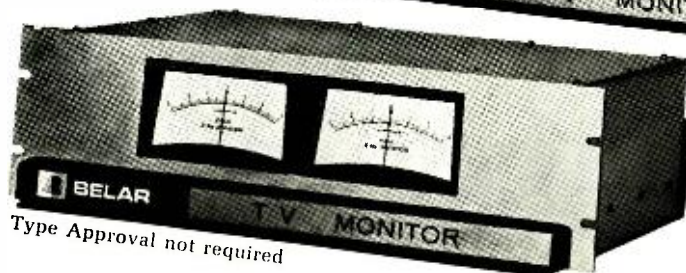
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BM/E

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This month's cover: News today needs revealing—as well as reporting. For in-depth coverage you must have well chosen equipment (page 14) and well trained newsmen (page 20). If you happen to follow the example artist Sudduth suggests, you'll need the courage of your convictions, too.

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The FCC's New Fees

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CM/E Magazine—inserted for cable readers only; introducing *The Bold Ones*, a regular feature covering the most dramatic technological innovations in cable, and the operators who are making them work.

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The Second Year in the Decade of the 70s

Mactier Publishing Corp.
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HELICAL SCAN VTR PROCESSOR SYSTEM

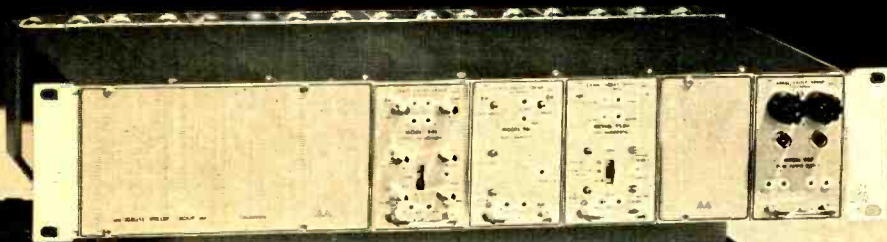
940H PROCESSING SYSTEMS RELIABLY REPLACE ALL SYNC AND BLANKING PULSES MISSING DURING THE PERIOD OF THE HELICAL SCAN (SLANT TRACK) VTR DROPOUT. BY INSERTING STANDARD PULSES INTO THE VIDEO SIGNAL, DUBS TO OTHER HELICAL SCAN OR QUADRUPLEX MACHINES CAN BE MADE. IN ADDITION, SYNC-TRONIZING PULSES AVAILABLE FROM THE 950H SYNC GENERATOR CAN BE USED TO DRIVE CAMERAS AND SPECIAL EFFECTS SYSTEMS FOR TITLE INSERTION, ETC.

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MODEL 940H-1	\$1 390
(Monochrome)	
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MODEL 940H-4	\$2 065
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Circle 102 on Reader Service Card

Scrappy New Year hits broadcasters

The battles over cigarette commercials and prime-time limitations and operating fees seem concluded for the moment—part of the legacy of 1970. And whatever else 1971 brings up against radio and TV, the broadcasters are already in trouble in a number of ways:

- The FCC's renewal policy, developed in 1970, was welcomed by broadcasters for the clear preference it gives at renewal hearings to licensees serving public interest "substantially rather than minimally," (*BM/E*, March 1970, pp 6 and 12). Now it has been vigorously attacked in detail, by the formidable House Investigations Subcommittee report, as contrary to legislative requirements and anticompetitive.

- The renewal policy (while vulnerable to such criticism) has not resulted in automatic renewal for many broadcasters, however. Pressure-group protests—with allegations ranging from claims that station coverage does not include minority-group needs, to demands that more minority-group members be hired by the stations—have held up more than 60 license renewal proceedings in recent months.

- And such community action at renewal time is being encouraged by the FCC. In the Commission's mind are these requirements: that

stations make regular broadcasts (perhaps twice a day, two days a month) stating the station's obligation to serve public needs and asking for comments on performance; and that stations keep on file for public examination all complaints they receive of the type considered by the Commission.

- Another demand: increasing call for public access to the airwaves. Community groups and political parties are growing more aggressive in efforts to get their points of view and issues before the public—and in the background is pressure from the FCC, sitting in judgment of station decisions as to how much time to allocate to whom.

To counteract these New Year woes, broadcasters are turning to promoting their own strong points. At a recent Broadcasters Promotion Association gathering an impressive group of speakers urged broadcasters to "let our industry spirit shine" through individual station promotion, as NAB's Willard Walbridge put it. Mike Shapiro, of A. H. Belo Corp., urged support of the NAB ad and programming Code as a way of winning and holding public confidence.

The Code may not be able to help, however. A former Code official, Warren Braren, is the new executive director of the National Citizens Committee for Broadcasting, a revitalized group (*BM/E*, December 1970, p 6) hammering at broadcasters' social consciences. Braren has called the Code "nothing more than an industry defense

mechanism designed to cover up selfish interests."

But the battles of 1971 may be helped by industry efforts to enhance the image. According to Television Information Office Director Roy Danish, TV is where most adults get most of the news—and they consider it the most credible of the news media. Danish's source is a survey by R. H. Bruskin Associates. Radio also scored high on credibility, although lower as a source of news.

Government—BC Study

The 1971 Broadcasting Industry Symposium will spend three days finding answers to questions about government regulations and relationships in the broadcasting industry. Planned as a working symposium under the chairmanship of former FCC Commissioner Kenneth Cox, the session will feature broadcasting and FCC speakers, as well as cable representatives. Workshop sessions will cover such topics as license renewal and challenges, minorities and broadcasting, legal aspects of news broadcasting and basic technological threats.

Sponsored by Educational Communications, Inc., National Communications Club, and Symposium Management, Inc., the event takes place January 18-20 at the Washington (D.C.) Hilton Hotel. Reservations at \$250/person (lower for multiple or early reservations) should be made with Symposium Management, Inc., 898 National Press Bldg., Wash., D.C. 20004.

William K. Gaylord has been appointed CATV marketing and sales manager of Anaconda Electronics, Anaheim, Calif. . . . **Donald Amell** is the new chief engineer at WLS(AM) Chicago, having been promoted from engineering supervisor at WABC AM-FM New York . . . Telecommunications Training Corp., New York, has elected **Jack R. Poppele** to its board of directors. He is president of Tele-Measurements Inc. and a member of the board of directors of Laser Link Corp. . . . **J. Everett Kochheiser** has been appointed general manager of Kern Cable Co., Bakersfield, Calif. . . . At WCNW AM-FM Hamilton-Fairfield, Ohio, **Ron Toller** was recently appointed general manager . . . New chairman of the board of Television Bureau of Advertising is **Terry H. Lee** of Storer Broadcasting Co., Miami Beach, Fla. . . . **Paul D. Deckman** has been named manager of the new Suburban Cablevision Inc. of Culpeper, Va. . . . **Kenneth K. Kaylor** has been appointed director of sales,

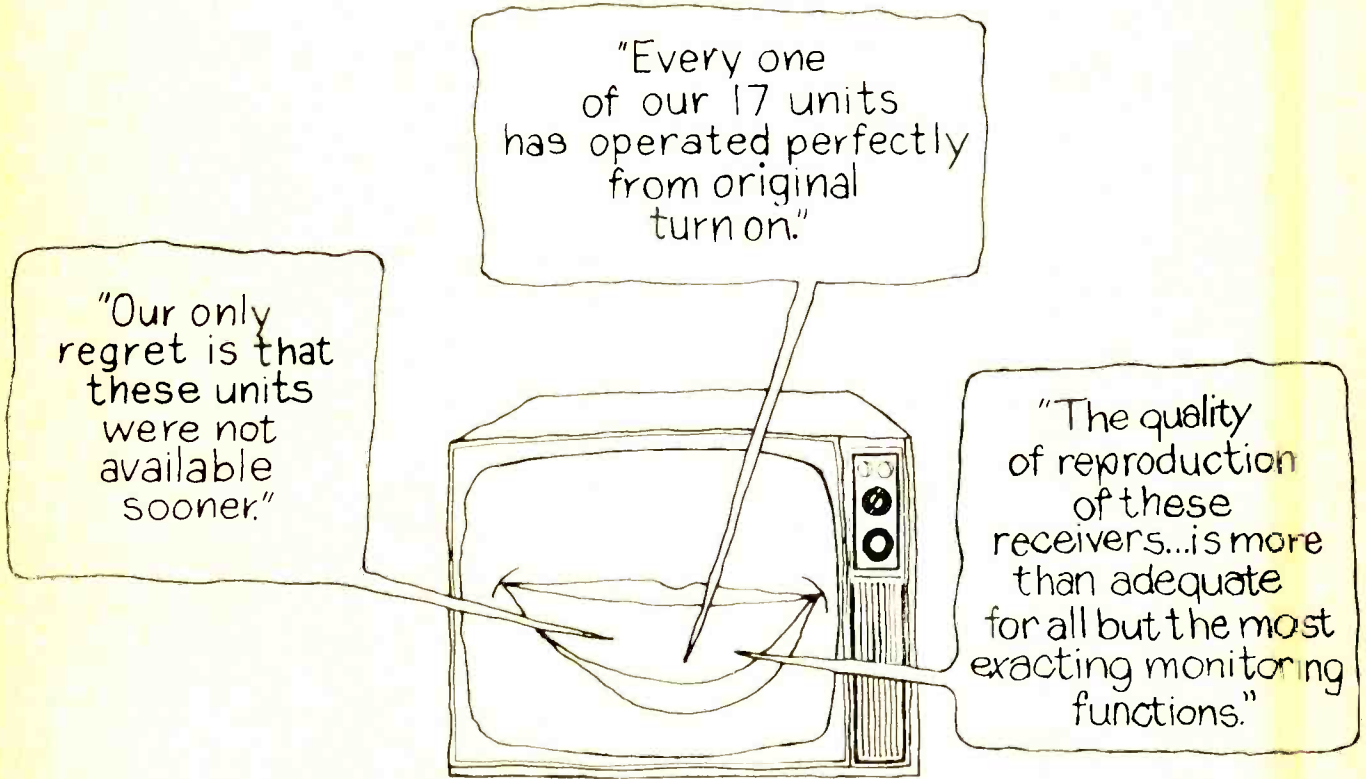


Audio-Video Systems Division, Philips Broadcast Equipment Corp., Montvale, N.J. . . . WABY(AM) Albany, N.Y. has named **Robert H. Badger** vice president and general manager. Station is owned and operated by CCA Electronics Corp. . . . **Manus R. Swords**, manager of Suburban Cablevision Inc. of Bennettsville, S.C., was recently elected to the board of directors of the South Carolina Cable Television Association . . . **James G. Babbs, Jr.** has been promoted to vice president and managing director of WWBT(TV), Richmond, Va. . . . American Electronics

Laboratories Inc. (AEL) has appointed **George L. Rosol** manager of its Antenna Laboratory . . . **Dennis Dunbar** was recently promoted to post of chief engineer of WSKG-TV, Binghamton, N.Y. . . . 1971 NAB Engineering Conference Committee chairman is **Charles Abel**, manager of engineering, KFMB-TV, San Diego. Other committee members: **Ralph F. Batt**, WGN, Chicago; **William J. Clark**, RKO General, New York; **James H. Hoke**, Southern Broadcasting Co., Winston-Salem, N.C.; **Leslie S. Learned**, Mutual Broadcasting System, New York; **James D. Parker**, CBS Television, New York; **Royce G. Riddle**, WDSU-TV, New Orleans; **Leonard A. Spragg**, Storer Broadcasting Co., Miami Beach, Fla.; and **William H. Trevarthen**, NBC, New York . . . **C. K. Perkins** has assumed general management of all CATV activities of Kaiser Aerospace & Electronics Corp. in Phoenix. He is vice president of the Electronics Divi-

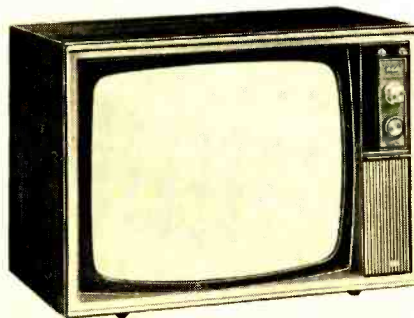
COLOR MONITORING FOR UNDER \$400 ...AND THE QUALITY SPEAKS FOR ITSELF!

Listen to what Otto Claus, Chief Engineer, WBAL-TV, Baltimore, says about general purpose monitoring with RCA's low-cost commercial color receiver:



Broadcast Engineers all over the country are raving about this special model. Unlike color sets intended for home use, this receiver is equipped to accept RF or bridged direct video and audio line feed without the need for costly adaptors. For under \$400, you get every non-critical monitoring function you can ask for — picture, sound, live or tape, color or monochrome. It's especially suitable for monitoring needs back-stage, for the band, for the audience, and similar applications.

For complete details, send the coupon. We'll show you cold cash reasons why RCA's commercial color TV is your best answer.



RCA Commercial Products

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RCA Service Company M-143
 A Division of RCA
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Please furnish further information about RCA commercial color sets for broadcast monitoring purposes.

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CONVENTION

LOG

AES Fall Meet

Highlight: Video on a disc . . . quad stereo . . . how recording studios work . . . electronic music . . . broadcast audio systems.

AUDIO ENGINEERS GATHERED at the New Yorker Hotel October 12—15 for the 39th Convention of the Audio Engineering Society. Despite a generally soft economy, 65 exhibitors showed their wares to the just under 3000 persons attending the show.

Perhaps the hottest demonstration—to a standing-room-only crowd—was the Teldec Video Disc developed by a group from British Decca and Telefunken. The AES demo was first in the U.S. Like videotape, the disc uses an FM carrier, in the region of 3—4 MHz. Video and audio are impressed on that carrier, which then drives a cutterhead. The recording medium is a sheet of PVC plastic foil riding on an air cushion. The disc turns at 1500 rev/min, and 3000-3500 lines per inch are cut at constant amplitude. Tracking is no problem—the playback transducer uses belt drive. Sound is carried in blanking intervals, by pulse-duration modulation.

Video bandwidth was given as 3 MHz, and the black-and-white picture quality was very good. White sound seemed to lack high-frequency response, that may have been a deficiency of the demo material presented. Teldec personnel were close-mouthed about the inner workings of the system, but said color was on the way. The playback system furnishes modulated rf to the receiver antenna terminals.

Quad stereo a hit

Another standing-room-only session was the four-channel presentation. Peter Tappan of Bolt Beranek and Newman explained a system for combining four channels into two for conventional processing on tape, disc, or FM. Peter Scheiber explained more about the newest version of his system for doing substantially the same thing. John Earle of Mercury Records said many two- and three-channel master tapes can be reprocessed into the

four-channel format. John Woram of RCA Records described studio experiments in four-channel mike placement. John Chowning of Stanford University told how he used a computer to simulate moving sound sources in a four-channel system.

Up in the exhibit area Electro-Voice demonstrated a matrixing system which puts four channels into two. And JVC America displayed its compatible quad disc system. The sum signal (A + B) for each pair of stereo channels is frequency-modulated in the low-frequency range, while the difference (A - B) signal is phase-modulated in the high-frequency range.

Recording studio techniques

More than 600 persons jammed into a hall to hear a panel of engineers and producers discuss the ways and means of recording classical and rock music today. John Woram of RCA Records demonstrated a 16-track tape recorder and an 8-track mixdown console. Rock producer Steve Schwartz explained why he prefers taping each instrument on a separate track, then mixing later. Classical producer Max Wilcox took the other point of view, preferring to record directly into two-track. David Greene of A&R Recording and Jack Richardson of Nimbus 9 joined the discussion with their views about getting sound on tape and processing it for subsequent disc release. During the demonstration, a multitrack recorded tape was mixed into four and two channels, and a live guitarist added one track. An outstanding feature of the evening was CCTV coverage in the hall, so the audience could see engineers Woram and Bill Windsor (D.B. Audio Corp.) running the tapes and mixing at the console.

Broadcasting session

Emil Torick of CBS Labora-

tories surveyed the field of audio signal processing, and gave recommendations on where and how to use limiters, compressors, loudness controls and presence equalizers. Leonard Feldman of SCA Services Co. reviewed the various proposals for broadcasting quad sound on FM. New console designs were discussed by John Gable Jr. of ABC and W. F. Hanway of RCA. J. A. Wissner of RCA presented results of his research on crosstalk in printed circuits, twisted pair, and shielded cable. Conclusions: PC tracks have worst crosstalk; twisted pair next; shielded cable is best. Finally, William Brandt of Altec Lansing showed a light-line audio level indicator for monitoring and gain riding.

Goodies on display

Dolby Laboratories showed its new B-Type S/N stretcher, along with the A-Type version, and Dolbyized cassette decks from Advent, Fisher, Harman-Kardon, Vivitar and Kellar.

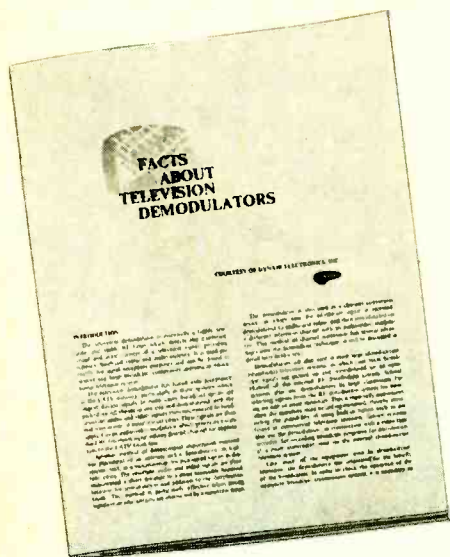
Shure premiered an Audio Control Center, and Scully demonstrated a cartridge system using nitrogen as power. The Institute of Audio Research held mini-classroom sessions abstracted from full-term courses on audio engineering subjects.

Multitrack consoles abounded, from such firms as Automated Processes, Electrodyne Corp., Fairchild Sound Equipment Corp., Daniel N. Flickinger & Associates, Gately, Olive Electro Dynamics, Philips Broadcast Equipment Corp., Quad-Eight, RCA.

Nagra showed a new subminiature battery portable tape recorder, Model SN, which uses 150-mil cassette width tape in a reel-to-reel format. It includes a tiny volume level meter and runs on two AA size batteries.

Ampex displayed the new MM-1000 Auditec sync system which allows linking up to six audio or video recorders. Allison Research demonstrated its Kepex keyable program expander. Crown International had a new Model IMA intermodulation distortion analyzer.

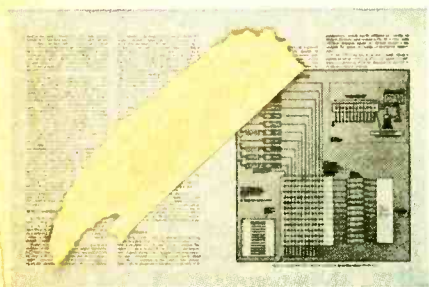
An entire session was devoted to composing and playing electronic music. Six new instruments were introduced, including Robert Moog's mini-moog, Ionic Industries' Putney, the Arp Synthesizer from Tonus, Inc., the Electro Comp from Electronic Music Laboratories, and a low-cost synthesizer from Ohio University. **BM/E**



If you're wise, you won't purchase a demodulator until you read this free paper.

You learn a lot while spending five years and several hundred thousand dollars in a research and development program. And, when you tell your story, wise people listen.

DYNAIR has included a wealth of original information about demodulators in an 8-page paper called "Facts About Television Demodulators." We think that you will find it very informative, particularly if you are planning a system which involves the pickup of off-the-air signals.



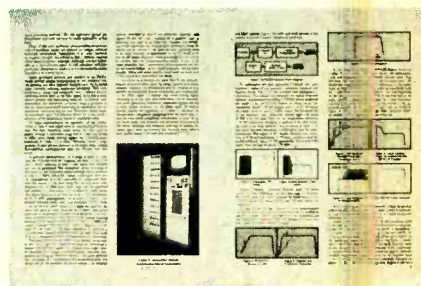
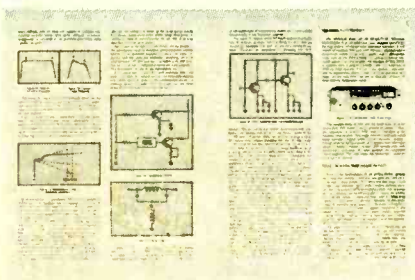
At first thought, it would appear to be a relatively basic design task to engineer a demodulator. Logically, it is often related to the tuner, IF and detector portions of a standard television receiver. However, it is one thing to design a demodulator which is acceptable for driving an ordinary viewing monitor and entirely another thing to design a demodulator which will be acceptable for testing purposes or for the regeneration of broadcast quality television signals. The demodulator portion of even the most sophisticated commercial television receiver

would prove highly inadequate for applications such as those mentioned earlier in terms of sensitivity, stability and the amount of distortion introduced in the process of demodulation.

Until recently, the only available demodulators were of vacuum-tube vintage. These were designed years ago for monochrome applications; however, the complex NTSC color signal and its critical phase relationships require a much more sophisticated approach.

DYNAIR has been involved in a continuous research and development program on the color demodulator problem. After experimenting at great length with virtually every known approach to demodulation, a design was arrived at which contains many new and unique circuits, particularly in the areas of trapping, the control of envelope delay and other distortions and signal restoration. The design is now a product and, at this writing, a large quantity of the units are in the field, performing to industry standards.

The paper we are offering describes many of the problems we encountered



in designing the first quality solid-state color demodulator. The product is also briefly described, along with the many problems it will solve for the cable systems and broadcast engineer.

Shouldn't you add it to your information file?

It's yours for the asking.

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Circle 104 on Reader Service Card

INTERPRETING THE **FCC** RULES & REGULATIONS

The FCC's New Fees

After being in effect for several months the Federal Communication Commission's new fee schedule has resulted not only in substantial fees on all broadcasters and CATV operators, but also in many questions as to the new rules' applicability in certain situations.

Background

The Commission first adopted a schedule of fees in 1963. Delegation to the Commission of legislative power to impose fees was held constitutional in 1964.*

The only unresolved question regarding the Commission's authority to require fees is whether the new fee schedule is arbitrary or exceeds the Commission's authority under the empowering statute, the Independent Authorization Act of 1952. However, it is doubtful that a challenge to the legality of the fees would be successful.

The first Commission fee schedule produced revenues of about 25% of the FCC's annual budget. The new fee schedule, however, "reflects estimated fee revenues which generally approximate our budgetary request for fiscal year 1971. . . ." The fees are expected to bring in nearly \$25,000,000—the total FCC budget for fiscal 1971.

The FCC described the rationale behind the new schedule as giving recognition to the "value to the recipient" of the privileges granted, "as well as the public interest served and the direct and indirect cost to the Government." This rationale has resulted in (1) fees for CATV systems; (2) separate fees for the *grant* of broadcast CPs; (3) fees for filing and approval of assignments or transfers of control; and (4) *annual license fees* for all broadcasters.

Broadcast fees

Annual License Fee. With the adoption of its 1963 Fee Schedule, the Commission required all license renewal applicants to file a nominal filing fee with the renewal application. This filing fee has now been abolished.

Instead each broadcast licensee is required

to pay an *Annual License Fee*. This yearly fee is based on the station's rate card. For AM and FM stations it equals *24 times the highest one-minute rate*. If the station's highest priced one-minute commercial announcement is \$100, then the yearly license fee would be \$2400. For television stations the annual license fee equals *12 times its highest 30-second spot rate*. A television station with a top-priced spot of \$1000 would pay \$12,000.

In place of the abolished "license renewal" filing fee, therefore, will be total annual license fees of *three times* the above figures over a regular renewal period.

Annual operating fees for broadcast stations are now payable on the anniversary date of the expiration of the license. If your station's license was issued on February 1st of a given year, your annual fee will be due *each* February 1st. During the first year under the new fee schedule, the fee is to be prorated over the number of full months of operation beginning on August 1, 1970, until the next payment date. If your total annual operating fee is \$1200, and the next anniversary date of your license is February 1, 1971, you would have to pay \$600 for the six-month period of operation between August 1, 1970 and February 1, 1971.

Licensees are required to file with the Commission a copy of their rate card in effect on the preceding June 1. *The rate card must be filed yearly, at the time the annual operating fee is payable*.

There are certain *minimums* to the Annual License Fees which must be paid. For AM and FM stations the Annual License Fee must not be less than \$52, regardless of the "highest one-minute rate." For television stations, the minimum fee is \$144.00.

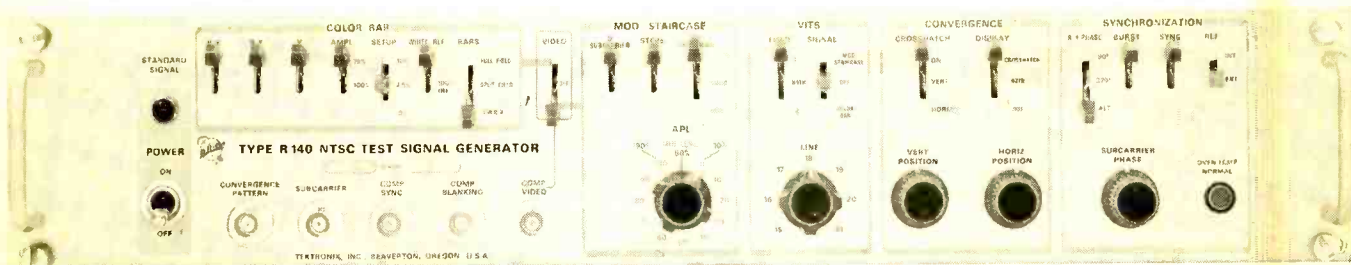
What about Annual License Fees for joint AM-FM operations, where a substantial amount of programming is duplicated? *Joint AM-FM operation annual fees are 24 times the highest one-minute JOINT rate*. The FCC does not propose that any allocation be made between the AM and FM stations. Similar provisions apply to satellite television stations.

Assignments and Transfers. All applications for assignments and transfers (FCC Form 314 and

*Aeronautical Radio, et al. v. FCC. 2 RR 2d 2073 (1964).

*stable
accurate
compact*

new TV signal generator



A choice of rackmount or cabinet mechanical configuration, compact size and low power consumption (40 watts) make the 140 NTSC TEST SIGNAL GENERATOR ideal for either control room operation, bench testing or field operation.



For a demonstration call your local Tektronix field engineer or write: Tektronix, Inc., P. O. Box 500, Beaverton, Oregon 97005

*use it: on your bench
in studio or control room
in remote field operation*

■ The Type 140 NTSC TEST SIGNAL GENERATOR is a compact, solid-state source of high-quality television test signals for 525-line, 60-cycle field NTSC color TV systems. Combined in one compact unit are: ■ NTSC ENCODED COLOR BARS with 75% and 100% amplitude, full-field or split-field bars at 10%, 7½%, or 0% setup level. ■ MODULATED STAIRCASE with variable APL, 10% to 90% and fixed APL, 50%. The staircase contains 5 steps plus blanking level with subcarrier phase locked to burst. When variable APL mode is selected, an additional component consisting of subcarrier, phased to lead burst by 90°, may be added to the low-frequency lines either as a constant 30-mV amplitude signal or amplitude modulated to constant 30-mV, 305-mV and 610-mV amplitudes. This new signal capability provides a means to check luminance signal distortion caused by rectification of the subcarrier signal. ■ CONVERGENCE CROSSHATCH for picture monitor linearity evaluation in accord with IEEE standard IEEE 202 and color picture monitor convergence adjustment. ■ VERTICAL INTERVAL TEST SIGNALS, staircase or color bars can be applied to line 15 through 21 of either or both fields. ■ EIA COLOR STANDARD AND SYNC GENERATOR with a temperature controlled color standard providing excellent frequency stability. Digital integrated circuits are extensively used to achieve stability, accuracy, and reliability. Outputs are subcarrier frequency, composite sync and blanking, vertical and horizontal drive, burst, composite video and the convergence pattern signal.

140 NTSC Test Signal Generator \$1800
R140 NTSC Test Signal Generator (includes mounting hardware) .. \$1800
U.S. Sales Prices FOB Beaverton, Oregon



Tektronix, Inc.

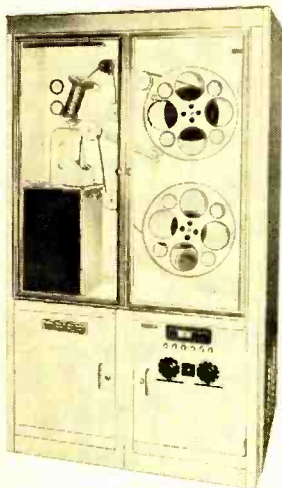
committed to progress in waveform measurement

Circle 105 on Reader Service Card

NEW

CF₂ FILM CONDITIONING SYSTEM FOR TELEVISION STATIONS

The NEW CF₂ film conditioning system automatically — CLEANS — LUBRICATES — COATS — CONDITIONS motion picture film, providing full brilliance, resolution and clarity to soiled and damaged films and commercials for TV transmission.



COATS — fills film scratches and surface defects, preventing further build-up of dirt, and uniformly coats both cell and emulsion sides.

CLEANS — ultrasonic cleaning removes all surface contamination, even from scratches and abrasions, providing clean, static-free film.

LUBRICATES — makes brittle film pliable, less liable to cracking, breaking and sprocket slippage during transmission.

Drastic reduction in kinescope maintenance costs by reducing projector wear caused by abrasive film, particularly on film gates.

CF₂ pre-projection run-through permits inspection and repair of open splicing and broken perforations eliminating embarrassing and expensive downtime while "on the air".

After conditioning, film may be stored for prolonged periods of time, available for immediate re-use.

This new system was developed from the patented Lipsner-Smith CF₂ Ultrasonic Film Cleaner which is "standard equipment" in every major film laboratory in the U.S. and 46 other countries the world over.

For full details, write or call



LIPSNER-SMITH CORPORATION

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11803

Circle 106 on Reader Service Card

315) now require an *initial application fee of \$1000*—plus an additional grant fee to be paid *after the transaction is consummated*. This fee will equal *two percent (2%) of the total consideration paid*. A sale price of \$500,000 would result in a \$10,000 fee upon consummation.

Obviously, many problems will arise in the area relating to grant fees. Many station sales contracts make provisions for services rendered, promises not to compete and the like. To establish an exact dollar value for such provision will be difficult; yet the Commission will make the attempt.

With these substantial new grant fees, sellers and buyers of broadcast facilities should consult legal counsel early during negotiations. Critical terms of a sales contract can result in substantial savings on fees.

Who is responsible for paying the grant fee of 2% to the FCC? The Commission has declared that the financial burden of the fee may be allocated between the parties by contract; however, *the assignee/transferee is liable to the Commission for payment*.

What would the grant fee be in a situation where an assignment or transfer is made by *gift*? This is a question that has yet to be answered by the Commission. Normally, in a gift situation, no money or other consideration is involved. Just how the Commission intends to levy a grant fee under these circumstances remains to be seen.

Construction Permits. The new FCC Fee Schedule provides for an enormous "jump" in fees. For example, construction permits for new facilities now consist of a *filing fee* and a *grant fee*. The filing fee is to be paid when an FCC Form 301 is submitted to the Commission; the grant fee is to be paid *within 45 days after the Commission authorizes construction*. The new fees are scaled for (1) vhf and uhf television stations in the Top 50 Markets, (2) vhf and uhf television stations in the Next 50 Markets, and (3) vhf and uhf television stations in the remainder of the television markets. Similarly, rates are scaled for Class A, and Class B and C FM stations, as well as for daytime and unlimited-time AM stations, according to power. Filing fees plus grant fees range from a total of \$50,000 for a vhf television station in the Top 50 Markets to total fees of \$250 for a 250-W AM daytimer.

If a construction permit for a standard broadcast station is filed requesting a different power for day and night operation, *the applicable fee will be for the highest power requested*. For example, if the application requests 250 W nighttime and 1 kW daytime, the fee for the 1 kW operation would be assessed.

Other Applications. All other applications (that is, for modifications, other than *major* changes in facilities and other general applications) will require a filing fee of \$50—an increase of \$20 over the old fee. Applications for "short form" (FCC Form 316) assignments or transfers require a filing fee of \$250.00; there is no grant fee. An application to replace an expired construction permit (FCC Form 316) requires a single filing fee of \$500.00. Applications for a change of call

Continued on page 37

Get "in" gear



Titling Generators, like the TCG-225, handle news flash and titling needs with one or two lines of twenty-five characters each—one line horizontal crawl.

Want to know about the latest in sophisticated terminal equipment?

Talk to TeleMation!

Or talk to any of literally thousands of smart satisfied users of TeleMation products who know our equipment has achieved a standard of excellence in quality, flexibility and reliability that others are hard-pressed to meet.

For the finest in gear,
TALK TO TELEMATION.

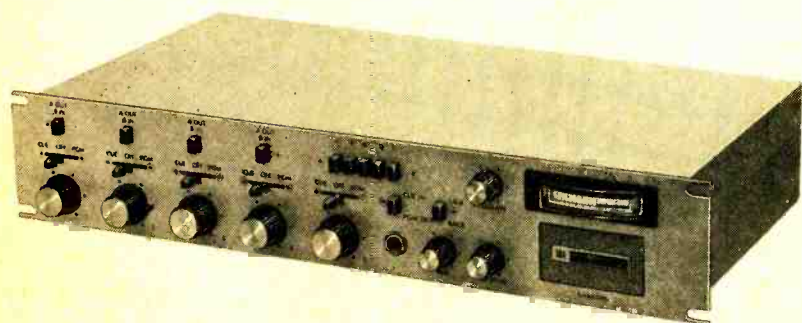


TELEMATION

BROADCAST SALES

3941 East Bayshore
Palo Alto, Calif. 94303
(415) 969-9260

50 East 42nd Street
Suite 2301
New York, N.Y. 10017
(212) 687-0370



TeleMation's new, solid-state audio control unit, the TAM-105, is the industry's most compact and versatile unit with five microphone mixers, thirteen inputs, separate cuing facilities and other features found only in larger, higher-priced production units.

BRANCH OFFICES: ALBUQUERQUE • ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER • HOUSTON • INDIANAPOLIS • LAS VEGAS • LITTLE ROCK • NEW YORK • NORWALK • MILWAUKEE • PALO ALTO • PASADENA • PHOENIX • SAN DIEGO • SALT LAKE CITY • ST. LOUIS • TULSA • WASHINGTON • RIO DE JANEIRO • SAO PAULO

Circle 107 on Reader Service Card

Covering Local News

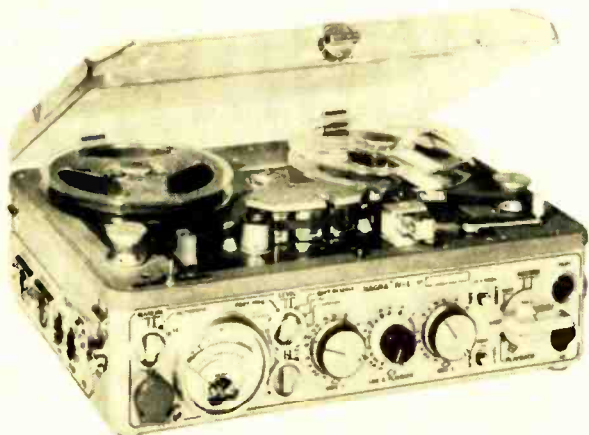
Entertainment is fine, but perhaps the strongest commitment a station can make to its audience is good coverage of local news. In these pages you'll find tips on gathering and handling news in your community.

Getting Radio News in the Field

Television news must struggle with a four- or five-man film crew, or an even larger video remote unit. But a single radio newsman can get to a news scene in a hurry. There he can do a live report or feed an actuality tape to the studio within minutes. Mobility is the key—mobility made possible by today's compact, portable field gear.



Popular with newsmen, the Sony 110 Cassette-Corder contains an inbuilt electret microphone, is also supplied with an external, remote-control cardioid dynamic mike. Still, a broadcast-quality dynamic seems favored by newsmen and engineers, for better sound. Sony 110 has ac facilities, and a nickel-cadmium battery pack is also available.



Nagra's Model IV-L is a familiar sight at press conferences where engineers assist newsmen. Among the features of this industry workhorse: Precision speed control, switchable ALC, two mike preamps. Reel size is 5 in. with case cover closed, 7 in. open. Approximate price of a 7½-in. non-sync mono version is \$1300.

WHILE NETWORKS KEEP listeners informed about international and national events, local news is a strong audience-grabber for any radio station. Reading copy which summarizes an event is fine for brevity, but what makes a newscast come alive is that on-the-scene report, interview, or actuality tape.

To find out how radio news is gathered today, *BM/E* talked with engineers and newsmen at several New York radio stations. All-news WCBS(AM) and WINS(AM) eat up a lot of news material every day. Both broadcast 24 hours live, and their operations are similar.

Chief engineer Mort Goldberg of WCBS has equipped his newsmen with Norelco 150 Carry-Corder cassette machines. Some use the Norelco-supplied mike, while others use Shure 35A cardioid dynamics. At WINS, chief engineer Bruce Ratts reports his men have Sony 100 or 110 cassette recorders and Electro-Voice 654A dynamic mikes. (Other suitable dynamics in the \$50-\$60 price range: AKG D-190E, RCA HK-111, EV RE-635A.)

The consensus seems that a nontechnical newsman needs a simple, foolproof tape machine which is small and lightweight. Probably ALC (automatic level control) should be included, so the newsman doesn't have to ride gain. And you get better frequency response by using a broadcast-quality dynamic mike with the recorder. We found that opinion shared by Bill Gilmore of ABC Radio, Giff Campbell of WOR(AM), Bob Kanner of WMCA(AM) and Tom Whitmore of WBAI(FM).

For scheduled news events NBC's Sammie Aed sends along an engineer equipped with a Nagra IV (WCBS and WOR do the same.) While reel-to-reel portables in this class (see photos) cost much more than a cassette machine, you get a much cleaner sound. So clean, in fact, that WNEW(AM)

newsmen themselves use Nagras, says news director Mike Stein.

Getting it on the air

All right—you've got a man on the scene. What does he do now?

If immediacy is paramount, use a mobile unit with remote pickup two-way radio and go live. In the canyons of Manhattan, that means 450-MHz gear, which is practically universal. WINS has six mobile cruisers, each equipped with a 70-watt Motorola unit. Four cars have automatic relays, so the newsmen can step away from the car with a 1-watt handie-talkie. Near the base station in midtown Manhattan, the 1-watt units can work direct.

WCBS has three mobile units with GE 35-watt stations. Newsmen there also use 1-watt handie-talkies (on 450 MHz) which are repeated through the cars. NBC Radio has two cruisers equipped with RCA two-way gear. WNEW and WOR also use 450 MHz for their mobile cruisers. And that frequency is used by the WCBS and WOR helicopters. (Remote-pickup gear is also available from Marti and Moseley.)

Some operations seldom do live reports. ABC Radio feeds four newscasts per hour to its four networks, and Mutual does two five-minute feeds per hour. ABC has but a single mobile cruiser, and Mutual has none, in New York. Their newscasts are preassembled from copy and field tapes.

ABC Radio's system is fairly typical, and is also used by WCBS and WINS. The field newsmen can carry in an actuality tape, or can feed it through an induction coil into a standard telephone receiver. In either case, the raw cassette is dubbed to a standard studio reel-to-reel machine for editing. Once the cut is finished, it's dubbed to a broadcast cartridge. At WINS, the only tape gear in the twin air-control rooms is cartridge type. Similar situations prevail at ABC Radio and WCBS. NBC Radio tries to avoid the R-R stage, dubbing directly to cartridge.

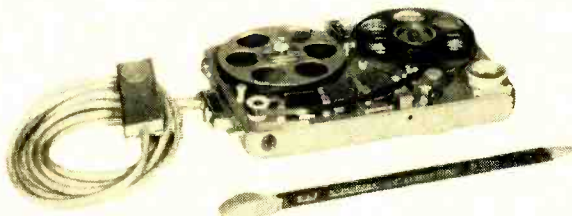
It's essential that a newsmen be able to feed a story into the editor promptly. WINS maintains five unlisted lines for that purpose. The other stations have similar arrangements. **BM/E**



A compact shoulder-strap cassette recorder, Craig's Model 2603 uses five C cells or a detachable ac power cord. Rechargeable battery pack is also available. Tape motion is done with the T-control at top. A miniature external speaker is furnished.



Available in mono or stereo versions, the Stellavox SP-7 has four speeds: 15, 7 1/2, 3 3/4, and 1 7/8 in./s. Reel size is 5 in. with cover closed, up to 10 1/2 in. with cover off and using adaptor. Close speed control, balanced mike input, wide frequency response are other features. Cost of mono non-sync model is approximately \$1500.



Newest portable from Nagra is Model SN, which uses special 2.68-in. reels of 0.15-in. (cassette-type) tape. Palm-sized recorder has frequency response of 80-15,000 Hz within 2 dB, tape speeds of 3 3/4, 1 7/8, and 15/16 in./s. Recording time at 3 3/4 is 27 min. Power supply is two AA cells. Approximate price is \$1100.

Battery Portable Audio Cassette Recorders

Make	ALC	Approx. Price	Circle No. on Reader Service Card
Allied 1150	YES	\$75	301
Ampex Micro-14	YES	80	302
Craig 2603	YES	54	303
Lafayette RK-100	YES	55	304
Norelco 150 Carry-Corder	NO	50	305
Panasonic RQ208S	NO	70	306
Sony 110	YES	75	307
Wollensak 4500	YES	80	308

All are half-talk mono, using the standard Philips 60-minute cassette. Most also work on 117 Vac with an adaptor. Frequency response is generally within a few decibels from 100 Hz to 8 or 10 kHz. Note: Wollensak model requires accessory nickel-cadmium battery pack for portability.

Edit Actuality Tapes Fast

By Herbert Greenberg

Today's fast-paced radio news gobbles up actuality voice tapes like a hungry tiger. Here's how you can speed up editing those raw tapes from field reporters, and keep that tiger well fed.

PREPARING NEWS INSERT CARTRIDGES for air use usually means dubbing from reel or cassette, except when using experienced personnel familiar with "count-down" or "mark" systems for "voicers" or "wrap-arounds." Actuality tapes recorded from beepers or interviews often need cleaning up at the beginning or end, before using on the air. You can eliminate undesired material by physically cutting the tape and splicing blank tape or leader. A faster method is to use a small magnet, wiping the undesired material away from the editing mark. You have to pull the tape away from the heads, though, to prevent unwanted magnetization.

If you're using a three-head professional transport (such as Ampex or Scully studio models), you can use the erase head instead of a separate magnet. First make an edit mark on the tape, at the center of the playback head, which is at your right as you face the transport (fig. 1). Remove the tape from between the capstan and the pinch roller, to prevent tape motion. Then move the edit mark section of tape to the left, to the center of the erase head.

Push the "run" or "play" button; the tape shouldn't move, but if it does, help the brakes by holding the takeup reel in place. Center the edit mark in front of the erase head, press the "record" button, and move the section of tape toward the supply reel. You will erase any garbage ahead of the desired material, thus cleaning up the start

Herbert Greenberg is an engineer with all-news WINS (AM), New York City.

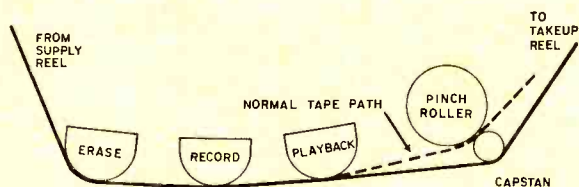


Fig. 1. Heart of technique is to put the tape machine in the "record" mode while preventing normal tape motion. Thus remove tape from between pinch roller and capstan. You may also have to hold the takeup reel with your right hand to immobilize the tape. Then use your left hand to pull the tape across the erase head and wipe away the material you want to lose. And with your third hand . . .

of the voice tape.

To clean up the tail of the tape, use a similar technique, but with one important difference. Not only must you move the tape in the opposite direction, or toward the takeup reel, you must also keep the tape away from the record head (in the middle) to prevent loss of recorded material due to bias voltage. On the Scully machine, a lever in front of the record head can be used as a separator. On other machines, such as Ampex, insert a nonmetallic pencil between the record head and the tape.

Treat tape gently

Other tips: Keep a sharp razor blade handy; keep tape heads clean; stretch the tape before removing it from the edit block; discard the air-dried portion of editing tape if a dispenser is used; and don't handle tape ends to be spliced.

Finally, if you wish tape to run backward, to identify "tails-out" material, or to time a program without rewinding after coming to the end, just wind as shown in fig. 2, using the "play" mode. If you're timing, use double speed and multiply the timing by two.

When a piece of tape is to be aired, think of it as a machined part. It should have no burrs and no scratches; it should have precise quality and dimensions. That is, the audio levels should always be similar to prevent noticeable changes or even loss of a few words due to low-level starts.

Keep your standards high and the air sound will reflect it. **BM/E**

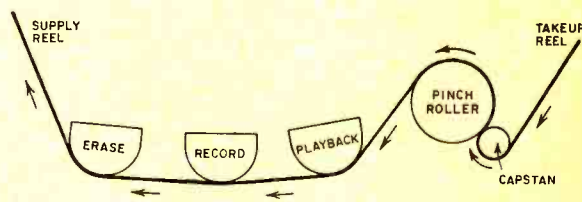


Fig. 2. Looks impossible, doesn't it? This gimmick works because tape motion is controlled chiefly by the capstan and pinch roller, while tension is supplied to both takeup and supply reels by brakes, on professional studio-type machines such as Ampex and Scully. Just reverse thread the tape around the capstan and pinch roller, then put the machine in the "play" mode. Then time your actuality tape while rewinding.

Free Weather Reports

By Jack B. Thornton

Regular aviation weathercasts can be heard on low-frequency and vhf bands—an excellent source of reliable meteorological information for broadcast stations.

YOU CAN EXPAND your station's weather reporting at low cost by taking advantage of services offered by ESSA (Environmental Science Services Administration) and FAA (Federal Aviation Administration). Temperature and forecasts in every area of the U.S. are given in greater detail than on the usual newswire. Weathercasts may be monitored for data, or taped for broadcast. The most widespread services are aviation-oriented, but contain valuable general information. There are three basic services:

Transcribed weather broadcasts: TWEB continuously repeats weather synopses, surface temperatures, aviation forecasts, and special warnings for cities within a 250-mile radius of the station. More than 100 stations are located in nearly all states and the District of Columbia and Puerto Rico. Transmissions are AM in the low-frequency band of 200–400 kHz, and can be received within 50–100 miles of the transmitter.

For the location and frequency of the station nearest you, write a Weather Bureau Regional. (See box.) If you want to tape and broadcast the TWEB, ask for Form WB657-6, with which you must apply for such permission.

Scheduled aviation broadcasts are given at 15 minutes after the hour—as the workload permits—by FAA Flight Service Stations. Most transmissions are AM in the 108–110 MHz aviation band. Rebroadcasting generally isn't practical, but much useful information is furnished. For frequencies and schedules, call your local airport, or the nearest one with an FAA station. (You should be aware of this office anyway; FCC rules require you to notify it whenever your tower lights fail.) You can also get information from FAA headquarters at the Department of Transportation, Washington, D.C. 20590.

ESSA VHF-FM Radio Weather is the newest service and has the greatest potential for broadcasters. The present limitation is that there are only 20 stations. Write a regional Weather Bureau office for the location of the nearest.

ESSA continuous transmissions include not only weather, but matters of safety and recreational interest, such as river conditions, snow warnings, marine outlooks, and surfing conditions. Transmissions are FM at 162.55 or 162.45 MHz.

TWEB and ESSA services may be rebroadcast adjacent to a commercial under certain conditions, which will be outlined by the Weather Bureau.

For the low-frequency 200–400 kHz weathercasts, you have several options. Multi-band receivers—some of which will cover the vhf broad-

Regional Weather Bureau Offices

585 Stewart Ave.
Garden City, N.Y. 11530

819 Taylor Street, Room 10E09
Fort Worth, Texas 76102

Room 1836, 601 E. 12th Street
Kansas City, Mo. 64106

Box 11188, Federal Building
Salt Lake City, Utah 84111

632 Sixth Ave.
Anchorage, Alaska 99501

P.O. Box 3650
Honolulu, Hawaii 96811

casts as well—are stocked by major suppliers such as Allied Radio, Lafayette Radio Electronics, and Burstein-Applebee. You might also check local distributors.

Electronics surplus houses stock old military receivers. For example, get a BC-453 from:

C & G Radio Supply Co.
77B Leonard St.
New York, N.Y. 10013

The R-111 receiver is available from:

J. J. Glass Electronics
1624 So. Main St.
Los Angeles, Calif. 90015

Two other sources of such receivers:

Fair Radio Sales
P.O. Box 1105
Lima, Ohio 45802
Columbia Electronics Sales
4365 West Pico Blvd.
Los Angeles, Calif. 90019

The third option is to convert a standard AM receiver. The typical model has a 180-pF oscillator capacitor and a 365-pF converter capacitor. To pad the tuning range down, first install a 10–120 pF variable capacitor across the existing oscillator capacitor, which is the section with the fewer number of plates.

Next install a 10–120 pF trimmer across the converter capacitor. Additionally, install a fixed capacitor across the same terminals in the following value:

350–500 kHz: 300 pF
295–350 kHz: 680 pF
220–295 kHz: 1500 pF (mixer)
100 pF (oscillator)
Below 220 kHz: 2700 pF (mixer)
200 pF (oscillator)

A number of multi-band receivers from parts houses and distributors cover the 108-MHz aviation band. The 162 MHz transmissions can be heard on many police-band receivers. **BM/E**

Jack B. Thornton is chief engineer of KBND (AM), Bend, Oregon.

Live Color From a 'Copter: How to be No. 1 in TV News

Unique in its field, the KTLA Telecopter gets a live video feed from a news event within minutes, while film crews take hours. The airborne color camera puts KTLA first in news coverage for Angelenos.

HELICOPTERS ARE WIDELY USED by radio broadcasters for traffic reports. But probably the only permanent news helicopter used by a TV station is the Telecopter at KTLA(TV) Los Angeles. It



Telecopter checks freeway traffic enroute to a story. Left outboard ball contains antenna. Camera's in right-hand ball.



Cameraman-engineer Harold Morby remote-controls the Norelco PCP-90 Minicam from the right rear of the Telecopter cabin.

furnishes live color TV (not film) coverage of nearly any news event or disaster, from a freeway accident to a forest fire.

In sprawling Los Angeles, getting a film crew to an accident scene can take an hour or more via traffic-clogged freeways. The Telecopter makes it to most stories in 10-15 minutes, and if desired, goes on the air with a live picture. This capability gives KTLA's two daily hour-long news shows a competitive edge in a 12-station market which includes three network O&Os.

A customized unit

The Telecopter is a Bell 206A Jet Ranger capable of 110 miles/hr. It has been modified by the addition of two outboard balls (see photo). The larger ball contains a Norelco PCP-90 Minicam, mounted on a Wesscam gyro-stabilized platform made by Canadian Westinghouse. The assembly was modified and customized by KTLA Chief Engineer John Silva and Canadian Westinghouse for the PCP-90. The result is that rotor vibrations are cancelled and the picture is steady, even on long closeups.

The smaller ball contains a microwave antenna assembly with automatic tracking. The operator doesn't have to steer the antenna, and the picture gets back to KTLA regardless of which way the Telecopter is flying.

Inside the cabin, engineer-cameraman Harold Morby sits at the remote controls of the PCP-90. He controls pan, tilt, focus, iris and zoom. Fifty-four camera control adjustments can be handled by him or by the video operator via remote control from KTLA master control.

In the front of the craft, pilot-announcer Larry Scheer maneuvers the Telecopter to the site and does commentary, while simultaneously monitoring vhf radio and keeping in touch with airport control towers.

A color monitor is visible to both men, and engineer Morby has an additional, closer, B&W monitor.

Video and audio output from the Telecopter go to the Mt. Wilson transmitter location of KTLA, thence down to the studios on Sunset Boulevard. Additionally, the Telecopter can receive picture and sound from a ground mobile unit and re-transmit them to master control. This allows the ground unit to cover a story beyond line-of-sight distance to the transmitter site, or while in motion.

The Telecopter is often used to establish the location of a news event. The story may open with

a wide shot of the entire Los Angeles basin. Then Morby zooms in to a closeup of the accident scene. Then perhaps the ground unit takes over. But often the Telecopter swoops in and lands at the scene. Leaving power on, Scheer hops out and does an interview.

The Telecopter crew is on 24-hour call, under control of the KTLA news director. Several times the networks have taken Telecopter feeds, with appropriate credit to KTLA. Particularly outstanding was the Telecopter coverage of the 1965 Watts Riot, for which KTLA won a Peabody Award. Other notable coverage: Baldwin Hills dam break; Southern California forest fires.

The station promotes its competitive news edge by using the Telecopter as a logo in 50% of its IDs. Telecopter service began on KTLA in 1958 (black-and-white). Color was added in 1968.

BM/E



Morby (left) and pilot-reporter Larry Scheer are on call 24 hours a day for coverage of fast-breaking news in the Los Angeles metro area. Most material is videotaped, but KTLA goes live from the Telecopter if story warrants.

Local News in Small-Market Radio

By George Dietrich

It doesn't take much money. Just time, dedication and more time and more dedication. But it's worth it to set up an efficient and responsible news service for your community.

ANY RADIO STATION can afford a news operation. The cost in equipment can begin under \$1000. Basic equipment at WEMD includes four tape recorders—two Wollensaks, a Roberts four-track and a portable cartridge recorder. Wollensak puts out a nice rugged model for around \$100. Also in use: a police radio. The news director has his own office, one that can be used as a studio. For mobile units WEMD uses two-way radios installed in the personal cars of two employees; both are engineers and announcers. The radios are Allied 23-channel Citizens Band transceivers.

All eight WEMD staff members (three women, five men) have had at least rudimentary training in general news coverage by the news director. They are made aware of the importance of local stories; taught by the news director how to get

a story, what questions to ask and how to write for broadcast. They must also know when *not* to release a story. Their stories must be approved by the news director, following the procedure of newspaper editors when working with cubs.

A secretary trained in shorthand is invaluable to the newsman for phone-in stories. The announcer on the board can set up a beeper for fast-breaking stories. The copy writer can help in preparing news stories and editing releases. The salesman in the course of a day often picks up tips the newsman can follow up later . . . in fact the entire staff must be made to feel that news is the

Continued on page 25

George Dietrich is manager and news director of WEMD (AM), Easton, Maryland.

Local news: Who needs it?

The news director at WEMD, a 1000-W day, 500-W night directional AM in Easton Maryland, is also the station manager. George Dietrich, who worked up to this position over four years, feels local news is essential to small-market radio success. Here's his reasoning:

"Without local news as a drawing card, small market radio can never become a complete success. You have nothing else to sell: Music, mystery tunes, gimmick contests are basically fillers. Local news, social notes and sports—these are what build a small market audience and keep it coming back each day.

"While music is nice to hear, stereo tape cartridges for home and car have infringed greatly on all-music stations. And while metropolitan stations cover national and world news, only in the small-market station can local news of the area

be heard—unless it is big enough to make the wire. People care about their neighbors; they enjoy hearing them interviewed on the radio. The small market station has the time to do this.

"The market covered by WEMD on the Eastern Shore of Maryland covers four counties. The station is operated much like a daily newspaper. WEMD has found that when a station gains the respect of the community it serves, when it can be depended upon for factual, impersonal reporting, then the demand for the station's commercial time will increase accordingly.

"Also a feeling of pride and satisfaction will surround your staff and thread its way through the community when you have a successful news operation which begets a successful station. Local news is the greatest asset a small market station has . . . don't sell it short."

WANTED:

Trained TV News Cameraman. Should know equipment, editing, sound, lights and have good news sense. An Equal Opportunity Employer.

Contact Charles Jefferson, Job Placement Advisor of the Community Film Workshop Council, 17 West 60th Street, New York, New York 10023, (212) 247-3192.

THE COMMUNITY FILM WORKSHOP COUNCIL may be able to send you a recent graduate of its news cameraman training program, a rigorous session that used to last six weeks and now takes nine. The program is an Office of Eco-

CALL
CFWC

conomic Opportunity sponsored effort to give minority-group men and women the necessary training to qualify them for TV news staffs—and also to give television in this country a source of skilled people sensitive to minority interests and viewpoints.

The fifteen trainees of each session spend the entire period living and working as TV news cameramen—meeting deadlines, doing on-the-spot filming along with professionals from local and network crews, editing, narrating and then criticizing their results. This is done under the guidance



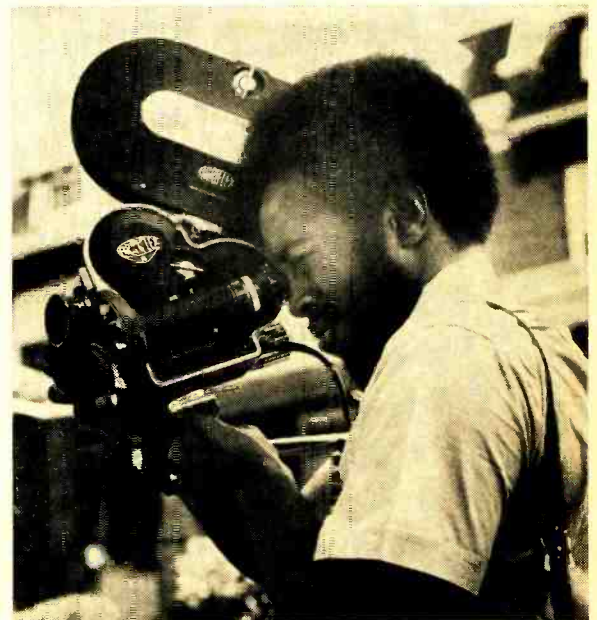
George Williams, one of the first CFWC trainees, is now with WSOC, Charlotte.



Ernest Dunkley, now at WCKT, Miami, shoots background for fashion report.



CFWC graduate Dave Adams, left, is now Assistant Director of a workshop in Whitesburg, Kentucky. William Reed, a trainee, watches while Sandra Holmes, right, instructs film editing techniques.



Another graduate from the first CFWC program: James McIver, now with ABC.

of trained news pros such as NBC's Sandra Holmes, ABC's John Fletcher, Franke Tonello from Howard Lester Productions, New York freelancer Bruce Harding, Dick Wood and Bob Rubin, director of the workshop.

Training begins with silent 16-mm filming (Bolexes) and moves to sound (using Auricon equipment). The trainees live in the YMCA near their studio, handy for late-hour shooting, evening evaluation sessions, etc. Each trainee is paid \$75 a week for the long hours and attends special screenings (*Medium Cool* and *Midnight Cowboy*, for example) as well as covering news events whenever they happen—parades, Moratorium Day, fashion shows.

A typical week (see page 36, Five Days' Log) will concentrate on particular equipment, while maintaining the news-filming routine. To work on the Auricon sound recording camera and portable quartz lighting equipment, for example, the class divided into four groups, four men on each: one on camera, one sound, one for lighting

and correspondence duties, and one silent cameraman for cutaways. First day they familiarized themselves with the equipment; the second day was on-camera interviews indoors; the rest of the week was spent covering assignments taken from the UPI daily log. The correspondent for each team had the ultimate responsibility for that assignment. Duties were switched among the team each day.

So far the Workshop has graduated 26 trainees, placing 24 in TV stations around the nation. There are the usual problems of adjustment and occasional personnel conflicts to be faced by the trainees—but most have worked out well in their new situations.

Beginning this month the Workshop will train 45 more TV news cameramen—recruited from the young minority-group people with low incomes throughout the country, trained in New York or Chicago, and ready to step into skilled, responsible positions wherever they're needed.

Continued on page 36

CFWC—What is it?

The Community Film Workshop was formed in 1968 by the American Film Institute with a seed grant of \$50,000, to help local film organizations recruit minority-group members. Within a year the Workshop had established itself as an active, independent body, setting up small film groups in many cities and engaging in such studies as one funded by the Ford Foundation, "to determine projected goals and trends of employment in the motion picture and TV industry and to correct any imbalance in the hiring of minorities in these industries."

The current training program began with a grant from the Office of Economic Opportunity awarded June 15, 1969. The funding supported two programs: One was the establishment of ten community film workshops throughout the country; the other was the training in two six-week cycles of a total of 30 poverty-level, non-white candidates to become news cameramen. Some of the recent trainees from the CFWC Workshop got their initial film experience at local community workshops established under the OEO grant.

Where else have the trainees come from? According to job placement advisor Charles Jefferson, it was hard to find them at first. OEO guidelines required that trainees have had annual incomes of less than \$1600 net. CFWC standards required technical proficiency in photography and a willingness to relocate to any area of the country that they may be placed. Ads in trade press and word of mouth rounded up only nine young men eligible for the first training cycle. Now that the program has become better known, applications have increased. There were more than 80 trying for the 15 vacancies in the January 1971 program.

But placing even those nine was difficult—few TV station operators felt the six-week program could qualify a person for TV news work. While

the trainees did perform well, their employers reported on weaknesses in their preparation—and the result has been the program's extension to nine weeks.

The training includes more than just how to operate equipment. Self-discipline and objectivity are stressed, according to Jefferson. "Being able to relate to people is important in the news field," he said, describing the philosophy behind the training program's approach to news reporting. Trainees have to work closely with one another in an atmosphere which emphasizes doing the job. "You can't let your personal hangups interfere," explained Jefferson, pointing out that an objective minority-group newsman would be able to give a different viewpoint to news items, one more attuned to the backgrounds of disadvantaged viewers in the community, members of minority groups whose interests and values are not familiar to white middle-class newsmen.

How have the trainees worked out? Generally quite well, judging from employer letters and follow-up done by CFWC personnel. Most went to small community TV stations—George Williams, for example, started January 1970 as an editor at WSOC-TV, Charlotte, North Carolina. Now he is a news photographer, shoots, edits and does stand-ups.

But there have been some problems. Prejudice from station personnel has affected a few trainees; some stations have abused the trainees—keeping them on for appearance's sake. "I don't want to find one of my people pushing a broom," Jefferson says. He has had to trouble-shoot in situations where stations have relegated CFWC-trained newsmen to covering occasional token "Black" news events. "We don't want our trainees hired because they're from a minority-group," Jefferson tells prospective employers. "We want them hired because they're competent news photographers."

Now It's Electronic Verification of TV Commercials

The first FCC-approved system of commercial verification by electronics uses a digital code on the film or tape, an air monitor in each market, and a polling computer. It tells an advertiser that his spot ran as scheduled—or that it didn't. Here's how the system works.

TELEVISION ADVERTISERS want to know if they're getting what they paid for. Was the correct spot run at the agreed time—and in its entirety? While various manual monitoring techniques have been used to verify commercials, the newest technique is automatic and electronic.

Developed by International Digisonics Corp., Teleproof I was approved for broadcast use by the FCC last April 15. Initially it provided proof of performance for 30 national advertisers, and expansion is planned to cover the top 53 national markets, or 70% of all U.S. TV homes.

Teleproof I is an independent third-party document which serves as verification for both buyer and seller. It provides detailed information about a commercial: date, time, market, station, color or B&W, and a record of any video or audio interruptions.

The information is gathered every 24 hours from a monitoring station in each market. The data clear through a polling computer via a data-phone network. The information is then stored in a central processing computer for monthly report preparation.

Binary coded video

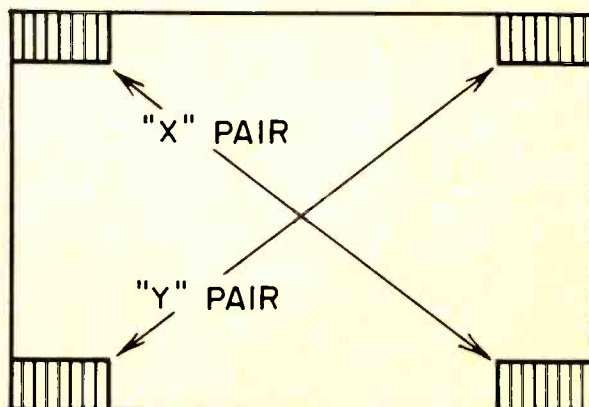
Coding a film or videotape presented a problem to Digisonics. Replacing an entire video frame with a code wasn't practical, for that would give the eye time (1/30 of a second) to see the code—and produce visual annoyance. And, of course, the FCC wouldn't permit that.

The solution was to encode the four corners of the frame (or raster) with vertical strips as shown in Fig. 1. That places the code strips off the screen of the normal home receiver, which is usually overscanned when set up by the service technician. The code strip locations are specified by the FCC as follows: Intervals within the first and last 10 microseconds of lines 21 through 23 and 260 through 262.

Although four corners are used, only two are required for monitor detection. Diagonal redundancy is used, as shown in Fig. 2. The X pairs are opposite, as are the Y pairs. Thus even if a telecine projector is misaligned, the Digisonics monitor will still be able to detect the code.



In the Digisonics system each commercial is encoded with vertical bars at four picture corners (above). For redundancy, two pairs of code strips are used (below). Hence even a misaligned projector won't lose the code strips.



The system permits the use of four binary digits, as follows:

- If X=0, Y=0, then frame = 0
- If X=0, Y=1, then frame = 1
- If X=1, Y=0, then frame = 2
- If X=1, Y=1, then frame = 3

But to convey relatively complex information such as a commercial identification number, the binary codes are arranged in successive frames. For proper motion-picture/TV camera synchronization, each code number is repeated. Thus a nine-digit identification might read: 0, 0, 1, 1, 3, 3, 1, 1, 2, 2, 0, 0, 1, 1, 3, 3, 0, 0—or 013, 120, 130.

This nine-digit (18-frame) binary code provides approximately 262,000 different numeric possibilities and an identification that takes 0.75 second to transmit. The total 18-frame code is inserted twice in each commercial—one second after the start, and one second before the end.

Coding is done at the optical negative production stage for film commercials. Equivalent processing is done in videotape work. Each commercial has a unique identification code.

The monitoring site

Each one of the IDC monitoring stations is equipped with antennas and tuner/demodulators

The IDC/BAR Flap: How Precise Can You Be?

Just after the Digisonics monitoring system got underway last summer, Bureau of Advertisers Reports chairman Phil Edwards complained to the FCC that IDC had maneuvered the Commission and several licensees into unwittingly breaking the rules. Some commercials had been improperly encoded, with the code occupying more scanning lines than Sec. 73.682 (a) (22) stipulates.

In a subsequent letter to FCC chairman Dean Burch, IDC executive vice president Glenn M. DeKraker explained the situation. Yes, some 10 commercials had been improperly encoded by an optical film company no longer in business. Digisonics was taking steps to insure that didn't happen again. DeKraker also mentioned another difficulty: Film commercials are encoded assuming that stations underscan at the telecine chain. But a few stations practice full-picture alignment. IDC is therefore conferring with the FCC Rules & Standards Division, and with networks and stations in an effort to solve this problem.

There seems no question that coding a videotape can be precisely done—electronically. The hangup is that each station's telecine film alignment is slightly different, with the result that the size of the Digisonics coding strips varies from station to station.

Whether IDC can keep that code strip size within FCC specifications at all stations remains to be seen.

for each vhf or uhf commercial station being monitored. (In the future, each station will also monitor CATV systems for local-origination commercials.) The demodulator feeds video, audio, audio carrier, and sync to the monitor. Color burst is included with sync.

The monitor also receives various clocking frequencies and a serialized time word from a digital clock. It detects the coded commercial, and feeds this information along with time, color burst (or absence), visual and aural carrier information to a tape recorder. Redundancy information is also included with each recording made. Redundancy data enable the polling computer to

detect any transmission errors in the telephone line. All commercial data records are stored on the tape—which has the capacity of storing up to two days of commercials. However, the information is normally read out by the computer once every 24 hours.

A modem provides automatic answering service for the telephone line, and interfaces the tape recorder with the line, encoding the data for transmission.

A command module plays back the tape on orders from the computer. The entire equipment complex has a standby power unit, and is immune to power-line failures.

How commercials are logged

A central polling computer interrogates each station monitor daily, requesting transmission of the tape-stored data. The binary digital data received by the computer are examined for validity. If the information is garbled, the computer orders another transmission.

An activity file containing data from all station monitors is compiled daily. This file consists of a complete record of each on-air coded commercial broadcast from stations being monitored. The central processing computer then handles the data in several programs and the proof-of-performance for each commercial is printed out.

A typical report page lists advertiser, agency, product, market, station call letters and channel number, and period covered by the report. This permits commercial verification data to be easily checked against individual station or network invoices. A discrepancy report comparing monitored data to a record of intended station time buys is also available.

For broadcasters, the monitoring reports are expected to end cash-flow problems due to delayed billings resulting from inability to provide rapid proof-of-performance reports.

Future services unlimited

While the initial Digisonics service is proof-of-performance, the company plans to eventually serve as a data base for the entire broadcasting/advertising industry.

Future possibilities include instant spot availability information for salesmen, marketing and competitive reports, and network information on affiliate operations, such as technical failure frequency, network alignment information, and market research data.

In addition, stations will have equipment to encode the entire broadcast day. With such a system, any kind of profile, report, or analysis could be obtained. Other applications would include automated accounting, billing, affidavits, electronic logs, FCC performance reports, public-service reports, and simplification of license-renewal procedures.

BM/E

CONVENTION

LOG

NAEB '70—Troubled Times



New color camera manufacturer: Magnavox.

II On the Exhibit Floor

The hard times that have befallen the nation as a whole were reflected in the extra-wide, uncluttered aisles of the exhibit floor. All of the big broadcast equipment manufacturers were absent. NAEB 1970 was a closed-circuit television show.

The year before GE had pulled out. This year big exhibitors like RCA, Philips Broadcast Equipment, Sarkes Tarzian and Visual Electronics were out. So were other traditional exhibitors such as Conrac, Ball and CBS Labs—although Conrac's presence was felt because it supplied monitors to those who did remain.

Ampex cut its exhibit about half and the only big equipment on the floor was the Gates vhf color transmitter—which was operating into a dummy load.

The hard times meant fewer girls. The only staged studio performance was that run by TeleMation. It was low-budget—the young dancer was not a professional but a student flown in from Salt Lake City. TeleMation was the biggest exhibitor present. (It also maintained the most active hospitality suite.)



I At the Sessions

There was a lot of emotion over racism at the 1970 NAEB Convention and a lot of erudite rationalization on the need for educational communicators. But about the only ebullience in evidence came from representatives of the Brooklyn Model Cities—Brooklyn College Television project—and they weren't on the over-jammed official agenda. The enthusiasm of the group's director, Mary Umola, stood in marked contrast to most everything else heard for three days, which was either frightening

or incredibly tiring. The latter can be blamed on so much "impersonality of the verbalization," a phrase used in a newsletter distributed by the National Center for Audio Experimentation.

Most convention goers who tuned in closely to the events—if they weren't tuned off by the dull language—left Washington a little disquieted: the Blacks, the Chicanos and the students said educational broadcasters were failing.

Tony Brown, chairman of the National Association of Black Media Producers and executive pro-

Continued on page 38

TeleMation's new products—including (1) a new combination disc memory (TDM-700) and titling generator (TGG-225) package with 700 lines capacity retrievable on a random-access basis; (2) a full-page character generator (TGG-1425); and (3) a new special effects generator (TSE-200)—were of interest both to CCTV users and broadcasters.

Other exhibits were more decidedly CCTV only: Sony, Panasonic, ITV, Shintron, Visual Educom, Diamond Power, Shibaden, GBC, Riker and Magnavox. Ampex had only one broadcast-quality camera on hand and all recorders were helical-scan.

Chief seen-for-the-first-time attraction was Magnavox's new color camera priced at \$6950. Shibaden drew attention with a new color camera: the FPC-1000, a three-videon job priced at \$9500.

Packing the biggest crowd was the Ampex demonstration of Instavision, the miniature 1/2-inch cartridge VTR that conforms to EIAJ Type 1 standards. Most of Ampex's space was devoted to an entirely new line of one-inch helical receivers which stressed production

capability.

Top of the line was designated VPR-7900 and billed as the "most advanced, highest performing, most versatile" closed-circuit videotape recorder introduced to date. Features included improved time base stability (less than 0.5 microseconds), a new wide bandwidth for 3rd and 4th generation color dubbing, a double tape-tension split capstan and servo system that permits horizontal and vertical switching, a three-track video/audio electronic editing format and a ferrite video head with a 1000-hour warranty. Price—\$13,000. The VPR-5800 priced at \$5600 (color) also had a three track format, a minute and second counter and allows for insert and assemble editing. The VPR-5200, priced at \$2600, also included a basic editing capability.

Better production capability with closed-circuit TV equipment was a recurring theme at many exhibits.

IVC highlighted two timebase correctors to be used with the IVC-900 line of VTRs. The units reduced instabilities sufficiently to permit production mixing, dubbing and split-screen presentation without jitter. The TBC units accept a

Continued on page 39

TeleMation's page-format character generator.

Visual Educom re-introduces a Dage camera.



For information use Reader Service Card

Magnavox color camera system	309
TeleMation character generators	310
TeleMation special-effects gen.	311
Ampex production VTRs	312
IVC timebase stability unit	313
Visual Educom camera system	314
Central Dynamics video processor	315
Grass Valley video processor	316
JFD production center	317
World Video 1-gun color monitor	318
Jerrold microwave beam-bender	319
McMartin audio consoles	320
Video Aids editing device	321



Author Dietrich and wife Erald (a staff announcer with a First Phone) broadcast election returns. Dietrich has 16-year background in news, produces seven daily news casts plus specials. And he's the station manager.



Program director Tom Gregory sends in local news story via CB radio from his car.



Above: Gail Ros, copy writer and service assistant, goes over an edited story with Matt Baynard, chief engineer and announcer.

Below: Office manager Mary Foster takes story from remote announcer-newsman while he checks it out.



Local News in Radio

Continued from page 19

primary function of the station; they must be willing to work as a team at all times.

A newsman should not be an expense to the station. He should bring in revenue. Local news programs are easy to sell, as are specials. Local news can be a high school concert, a football game, a parade, horse shows, boat races . . . anything that is part of community life.

A new announcer should spend at least two weeks, an hour a day, learning to rewrite newspaper copy and wire copy so he will be familiar with news style and will learn what makes a story. With this kind of involvement WEMD has developed a staff that is close and is genuinely interested in the station and the community.

The small-market news director in radio today has a great deal in common with the medical G.P. at the turn of the century. He must be able to handle anything from a fatal accident to a quilting contest. He must be willing to be on call 24 hours a day, and to devote 14 hours a day to in-office work. In small-market radio the news director is the most important man in the office.

The news director should have training in journalism. He can come from a newspaper, another radio station or a wire service. He must be versatile, able to motivate people and able to take on responsibility. An announcer delegated to the job of news director on a part-time basis is a waste of time. However, an announcer can be a reporter and with the proper tutelage can become a news director—as can anyone interested and willing to learn. Ideally, a manager or station owner should look for someone fairly bright, moderate in his views on society, who has a working knowledge of history and is able to talk with and handle people, read aloud well, and write with a certain continuity. He must have an interest in current events, a devotion to news and a willingness to make this the primary interest in his life. It is also important that station manager or owner retain an open mind and be willing to discuss differences of opinion—be they in procedure or in the news itself.

Make your newscast the front page of a newspaper . . . use voices instead of pictures . . . do one or two brief interviews on each local newscast. Cover the police, the courts, the commissioners—if not always in person then by beeper phone. Interview the speaker at the Rotary, record discussions at the PTA. If you cannot get there yourself, invite the person to the station for an interview. Broadcast editorials; invite comment; make the public aware of your interest and let them know you are involved for them.

WEMD has been fortunate in the past eight years to win 20 regional awards from the Associated Press and a national citation from APRTA for coverage of the H. Rap Brown speech in Cambridge. These winners as well as the day-to-day stories are done with the same portable Wol-lensaks.

BM/E



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Photo Inc. 

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Video equipment

Extra-length videotape for helical VTRs permits 50% more recording time. Scotch 363 0.5-mil polyester tape is available on 4 $\frac{3}{8}$ - and 7 $\frac{1}{2}$ -in. reels. 3M. **285**

Vidicon has integral mesh construction with low-lag, high-sensitivity photoconductive surface. Type 7262A is 1-in. diameter, requires 1 fc faceplate illumination for average operation. ENGLISH ELECTRIC VALVE. **286**

Picture monitors (monochrome) are available in 20- or 24-in. models. Audio system included, with six switchable A/V inputs, black-level clamp. \$325 for 20-in. model, \$425 for 24-in. version. RANK. **287**

Zoom lens has 10:1 ratio of 28-280 mm, aperture of f/3.5. Can be used with TV cameras, or with matching viewfinder for Mitchell NC and BNC film cameras. SPECTRAN. **288**

Lighting stand extends to 108 in., weighs 2 $\frac{3}{4}$ lb. Legs on Code 152-019 expand from conventional 31-in. base to more stable 46-in. base. BERKEY-COLORTRAN. **289**

Light for Super-8 film cameras is guaranteed for five years. Model SG9 uses tungsten-halogen lamp, is rated at 350 W, produces light at 3400 K. \$12.95. SYLVANIA. **290**

Helical VTRs use $\frac{1}{2}$ -in. Japan EIAJ format for compatibility with other brands using same format. Model VTR-800 is basic recorder, costs \$695. Model VTR-820 includes electronic editing: \$950. Model VTR-450T is portable, battery-operated: \$1350. CONCORD. **291**

Video cameras use $\frac{2}{3}$ -in. vidicon. Model PVC 808 has 3-in. viewfinder with light shield, edge-enhancing circuit for ease of focus. Model PVC 818 has no viewfinder. AUDIOTRONICS. **292**

Automatic iris system operates in three modes: full automatic, semi, and manual. Model 10X12 AVB DA is part of 12-120 mm f/2.2 zoom lens with viewfinder. Designed for Auricon, Bell & Howell, Bolex and other nonreflex film cameras. ANGENIEUX. **293**

Color TV frequency standard (rubidium type) generates 3.579545 MHz subcarrier, includes continuously adjustable phase shifter. When used with Model 610 Countdown Unit, *Continued next page*

BROADCAST EQUIPMENT

For more information circle boldfaced numbers on Reader Service Card

New and significant

Educational program information providing unique systematic survey of current practices for elementary and middle-school children; available in four-page conspectuses evaluating in detail the scope and performance of such individual programs as televised mathematics in Dade County, Florida or Rochester's (New York) World of Inquiry with, among other learning environments, an audio-visual media center in which pupils air over CATV a daily news program. First series of 100 booklets (published two a week): \$85. URBAN SCHOOL ASSOCIATES. **275**

Color TV camera uses single vidicon to cover illumination range of



75-250 fc. Series 100 camera has tiltable viewfinder and 10:1 zoom lens. \$6600. MAGNAVOX. **276**

AM field-intensity meter has freq range of 540 kHz to 5.0 MHz, measures fundamental, second and third harmonics. Bandwidth 5 kHz, sensitivity 10 μ V/m to 10 V/m. Has 50-ohm input for use as tuned voltmeter or null indicator. \$1990. SOLAR ELECTRONICS. **277**

Low-light-level camera tube combines silicon vidicon with image intensifier, provides high S/N at illumination slightly greater than starlight. Type S50XQ tube has target gain factor of 3000, wide dynamic operating range, non-burn-in target, and low lag. AMPEREX. **278**

Audio consoles use plug-in modules, cover three studios, four remote lines, paging. Types B-801 mono, B-802 stereo and Type B-803 dual-channel consoles have eight input

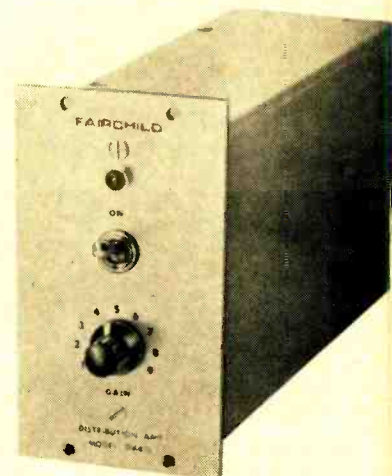
mixing channels with preselection of three sources at each mixer. Total of 27 input sources may be controlled. \$2350 for B-801; \$3200 for B-802; \$2650 for B-803. McMARTIN. **280**

CATV cross-modulation analyzer tests up to 32 channels. Model KTSS-NCTA consists of main frame modules for channels desired. Checks cross modulation, second-order distortion, S/N ratio, and hum modulation. KAISER CATV. **281**

Remote-switching relay unit is designed to operate with programmer to provide nonduplication or other switching using selective tone oscillators and receivers. Basic system includes three-tone oscillator unit and three-relay receiver unit. RICH LABORATORIES. **282**

CATV converter uses varactors, covers 25 TV channels with selective (not sequential) switching. Any channel may be blanked out by screwdriver adjustment. Control head placed near receiver, while power unit may be placed up to 25 ft. away. CRAFTSMAN. **283**

Audio distribution amplifier provides eight isolated outputs. Model DA415-8 is unity gain with freq



resp within 1 dB from 20 Hz to 20 kHz and distortion less than 0.3%. Input Z 100 k, output Z 10 ohms. \$245. FAIRCHILD SOUND EQUIPMENT. **284**

BRAND-NEW — AN INDISPENSABLE HANDBOOK ON BROADCAST JOURNALISM!

Guidelines For News Reporters

by Sol Robinson, General Manager WLAD AM & FM, Danbury, Conn.

Timely as tomorrow's headlines — this is the book with all the answers needed by modern newsmen. Here is solid guidance, based on a real pro's long experience!

There is greater pressure today than ever before for newsmen to produce . . . from public, the government, and from station management. To a far greater degree than in the past, therefore, it is mandatory for both practicing and aspiring newsmen to be aware of and practice the fine points of their craft.

Based on Actual Experience

In this invaluable new handbook, author Sol Robinson, a thoroughly experienced and dedicated broadcast journalist, relates quite specifically, and in great detail, the scores of practical techniques he has found to be successful. To begin with, he delves into the most pertinent question—just exactly what is expected of and required of a broadcast journalist. What are the problems he faces? How should he deal with news sources? How can he prepare news stories accurately and clearly?

To be successful, the practicing newsmen must have the right answers—to these and scores of other questions. And he'll find them in this vital new work written by a thoroughly seasoned newsmen.

Covers Vital Subjects

Yes, here is a ready-to-use guidebook, chock-full of practical help for both newsmen and announcers, and for salesmen and managers who should have a full working knowledge of their news department.

The first Chapter deals with accuracy, pointing out the seemingly insignificant details that can sometimes lead to gross misunderstanding. Through the use of many actual examples, the author shows how to avoid this all-prevalent pitfall. The second Chapter discusses news source relations—how to get the real facts, confidences, mutual respect and trust, recognizing false or misleading tips, etc. Included are all the obvious—police, fire officials, hospitals, etc.—plus many more that are frequently overlooked.

An entire Chapter covers style and technique—how to write the story, how to say exactly what you want to say as clearly as possible, how to avoid the trite amaturisms that brand the beginner. You'll learn how to use professional language, and how to deal with and use "slang" plus becoming acquainted with new words that have evolved and become a part of our language. Also included is a list of commonly mispronounced words—another revealing characteristic which reflects on authoritativeness and professionalism.

Exclusive Data on Minorities

Another Chapter explores the news media and their relationships with minority groups. Do news stories encourage or discourage dissent and violence, and should they? Are newsmen partial to one side or the other? The art of being absolutely fair and objective in reporting what actually happened is the job of a journalist, and the author tells how to maintain the necessary objectivity vital to the continuation of free news media.

Illustrations include many photos, charts and graphs, plus an Appendix of synonyms for over 2700 modern everyday words.

GUIDELINES FOR NEWS REPORTERS

By Sol Robinson

INTRODUCTORY PRICE ONLY \$9.95

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CONTENTS

The News Media: The Importance of Broadcast News; Broadcast News and Print Media — Accuracy: News sources, "tips" Misuse of words; Libel and Slander—News Source Relations: Fire Officials; Accidents; hospitals, Municipal, state, and federal officials, plus other sources; riots—Style and Technique; Writing for the "ear"; Language: Slang; New Words and their meaning; mispronounced words; writing style—The News Media and Minorities: The factual and the sensational; the Importance of background; Civil Rights; Trust; Handling Stories with Racial or Ethnic Overtones —Synonyms for Often-Used Words. Appendix. Index.

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holds plant sync drift to less than 4 ns/hr or 5° of 3.58 phase. TRACOR. 294

Color TV camera includes metering system to simplify setup. Single meter on CC panel permits operator to establish color balance, master gain and master pedestal by pressing push-buttons and adjusting for correct meter indication. Feature is option on IVC-90 camera, which costs \$7500. IVC. 295

Video AGC amplifier accepts composite video from 75-ohm or hi-Z source in range of 0.4-4.0 V pk-pk, delivers constant 1.5-V pk-pk to 75-ohm load. Freq resp of Type IT-334 is within 0.5 dB to 10 MHz. 60-Hz square wave has less than 1% tilt. ITI ELECTRONICS. 296

Color TV slide scanner handles 2×2-in. 35-mm transparencies. Mark VIII flying-spot scanner permits remote control on-air RGB mix, fade, or cut-in blanking with no color error during mix. RANK PRECISION. 297

Audio gear

Stereo console has five mixers, nine stereo inputs, plug-in cue amplifier driving inbuilt speaker and headphone jack. Also contains inbuilt monitor amplifier and speaker. Model QRK-5S is all solid-state, \$1595. QRK. 298

Sixteen-track recorder uses combination record/play heads, eliminating complicated switching for overdubbing. Transport switching done by HTL (high-threshold logic) ICs. Model 100-16 costs \$13,750. Companion 8-track Model 100-16(8): \$11,250. SCULLY. 299

Tape-playback system is available in both mono and stereo versions for audio automation or other playback jobs using ¼-in. reel-to-reel mode. Speeds are 3¾ and 7½ in./s. Remote control available. Model RT-20 requires 19¼-in. rack space. RCA. 300

Portable mixer handles six mikes or lines as six mono or three stereo inputs. Both high and low-level outputs available. Distribute switch allows adding pannable center to stereo mix. Battery or ac power. \$99.50. SONY SUPERSCOPE. 326

Cable equipment

Test generator provides reference signals including bar, dot, window, flat field, gray scale, multiburst staircase. Model 204 accessories include 3.58-MHz subcarrier modulation to

gray scale, sync generator, cabinet and handle. VISUAL INFORMATION INSTITUTE. 329

Connectors are F series, in sizes 0.340, 0.412, 0.500, and 0.750 in both brass and aluminum. LRC ELECTRONICS. 330

Phase-lock generator eliminates co-channel beat between cable RF signal and direct air pickup of broadcast TV signal. Generator furnishes CW signal to replace modulator carrier oscillator, eliminating beat. CW signal is locked to broadcast station carrier frequency. PHASECOM ENGINEERING. 331

Line extender has two-way capability. Model SDV-30/60 is push-pull amplifier for high and low-sub bands with high- and low-pass filters included. Has plug-in equalizers for high band, and return-leg equalization. JERROLD. 332

Automatic noise measuring set has 75-ohm, 10-250 MHz tuned amplifier input, 75-ohm, 10-1000 MHz noise head. Input bandwidth is 5 MHz from 10 to 170 MHz, 10 MHz from 170 to 250 MHz. Continuously variable in 12 overlapping frequency bands. Noise figure accuracy is ± 0.5 dB. Input IF can be ordered preset to TV channel frequencies. Type 792-A meter costs \$840. KAY ELECTRICS. 333

Transmitting equipment

Direct-FM exciter is type accepted by FCC. Model 2202A solid-state exciter has environmental AFC, delivers 10 W into 50 ohms over range of 15% line voltage variation. Price \$2250. Companion stereo generator available. AEL. 334

UHF 2-W portable two-way radio has 15-KHz FM deviation and 100-5000 Hz freq resp. Model MCP-6B-EA works in 450-MHz band for remote pickup service. Has AGC and modulation limiting. MICRO COMMUNICATIONS. 335

FM 10-kW transmitter has been type accepted by FCC. Model FM-10KCG uses 3CX10,000A7 tube in ground-grid final stage, driven by 4CX1000K IPA. AEL. 336

Balun matches single 50-ohm unbalanced line to one 200-ohm balanced line or two 400-ohm balanced lines in parallel. Rated 500 W at 30 MHz, 100 W at 1000 MHz. VSWR less than 1.3:1 for any 6% bandwidth from 30 to 1000 MHz. PHELPS DODGE. 337

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Naturally we were very proud. But the point is . . . these routers were really designed with **you** in mind . . . not MOL. So may we send you more information on VVS routers? (When you find out how reasonable priced they are you'll also have new respect for the Government's ability to get full value for a dollar).



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3. "The TCR saves us time during station breaks...We're actually logging 30% more promos since we got it. And we're starting to piggy-back our promos."

4. "I'd say the TCR-100 is a bigger advance over reel-to-reel VTRs than the audio cartridge was over reel-type audio recorders...

and reliability has been terrific."

5. "It can help sell prospects because it really gives the station more production time...and that's going to help us become the most cooperative station in town."

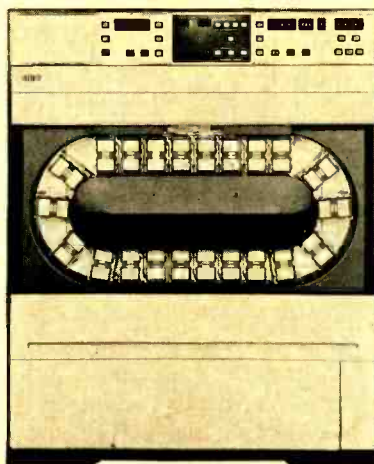
6. "We're changing our station's whole visual image. We're redoing all promos and slides...and the 'cart' machine is giving us the extra production capability to get the job done."

7. "The TCR-100 is the equivalent of at least three reel-to-reel VTRs...I frankly don't think any of our engineers would trade it for five regular video tape recorders."

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CROSS-TALK

Dear BM/E:

I would like to make some comments about your July article on summer-to-winter changes in coverage for AM stations, by Paul F. Godley, Jr.

In an article in *Broadcast Engineering* for July 1970 entitled "Measuring RF Output" there is a mention of calibrating the RF ammeter. This says that the meter readings vary with temperature. These meters are calibrated at about 70°F and have a curve descending at lower temperatures and ascending at higher temperatures.

I did some experimenting this past summer and used the following procedure.

I checked the remote (studio) meter at 0830 and, at the same time, the phase monitor reading. I also checked the antenna meter when the tuning house was at about 70° and used this as a standard point. In one day when the temperature was low (45°) at 0830 I read the antenna meter and found it was reading low compared with the studio and the phase monitor. At noon when the outside temperature was about 70° and the temperature in the tuning house was over 80° I read the meter and it read quite a bit higher, over 0.1 A. Now if I had calibrated the remote (studio) meter at this time I would have had to lower power quite a bit and raised the remote meter indication.

In the morning the antenna read 4.4 A (normal 4.5 A) and at noon it read 4.62 A and at night it was back down to 4.5 A. The output of the transmitter did not change. This means that if the meters were calibrated at noon the studio would not know that we were putting out less than we should be at 0830 and also at 1830—because this is not taken into consideration when field strength readings are taken, especially when the output of the transmitter is maintained at the studio

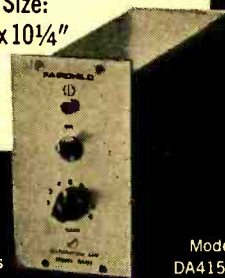
or by direct readings of the tower meter. So my observations indicate that the output of the transmitter could be off considerably depending when the meter was calibrated.

For instance. Using the standard licensed value of 4.5 A and 50 ohms we get a power output of 1010 watts but if the meter was calibrated at noon on a hot day and the antenna meter read 4.6 A, as it might, and the power is lowered to 4.5 A, as read on the meter, then the output power should be figured on 4.4 times 50 or 940 watts and as the field strength varies as the square root of the power change then the field strength would be down.

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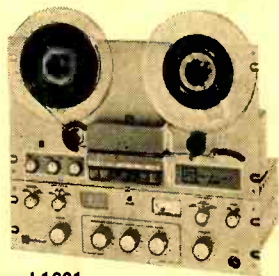
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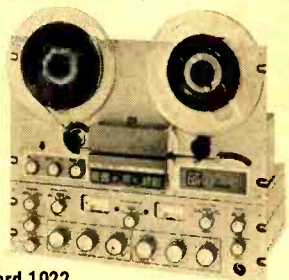
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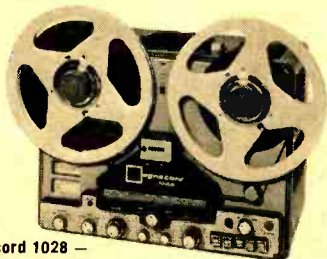
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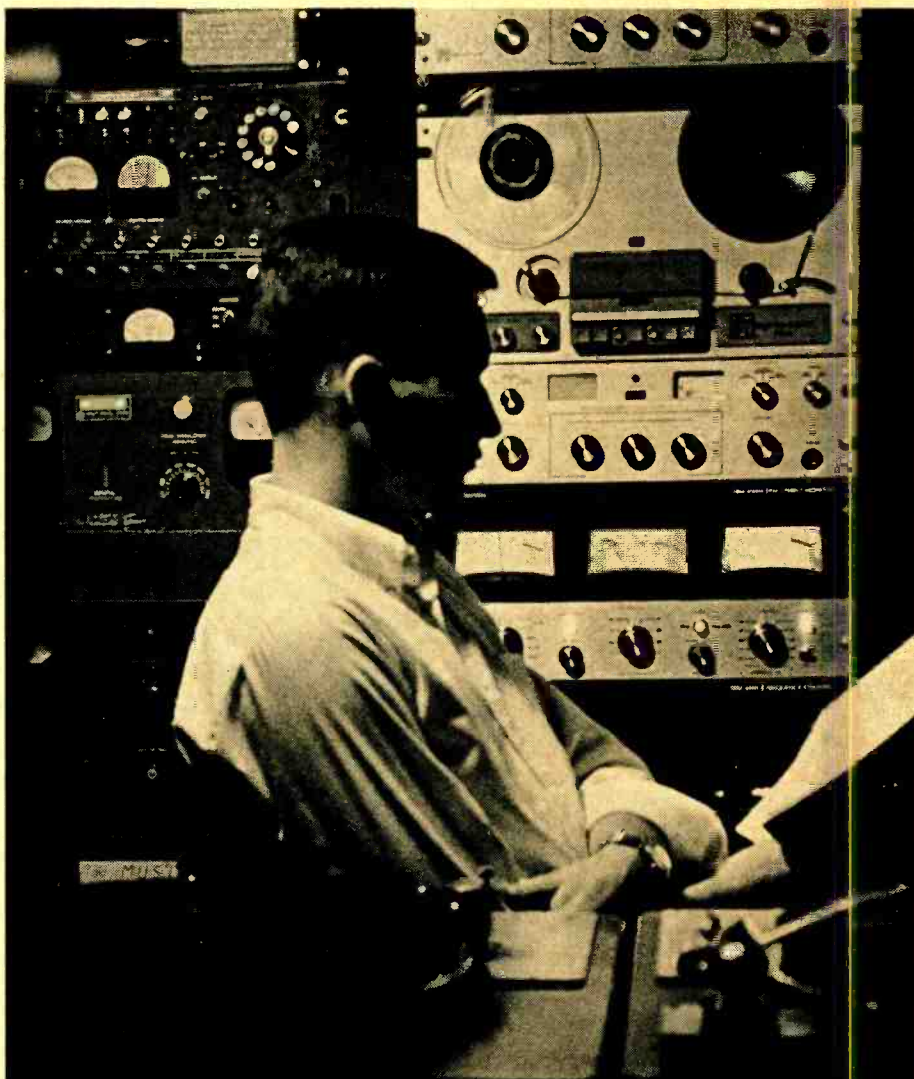
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Now if the studio meter was calibrated when the tuning house was at, say, 40° then the transmitter would have to be raised up and if the reading was 4.4 A at the tower and the output was raised to 4.5 A then the output would be actually 4.5 squared times 50 or 1060 watts, technically outside the plus 5% allowed by the Rules. This would not be indicated at the studio. But if the meter is read at noon after being calibrated at 0830 on a cold day, and if at noon the sun is hot and the building has heated up considerably, then an out-of-tolerance citation could be given by the Inspector, using the antenna meter reading.

Of course the changes occasioned by the above would be small depending upon the power of the station.

Using 1 kW and 10 mV/m at 10 miles, the increase with the summer high reading would be 0.25 mV/m. On the other side the decrease with the winter change would be a little more, or 0.3 mV/m. The difference between the 100° days and the zero degree days is considerable especially in the spring. In New England we may have a frost in the morning, cooling off the building and the meter, and with the noon sun we could have over 60° or more. The change in the calibration of the meter, according to the curve, would be considerable.

I have proven this by taking readings at a point while the output of the transmitter was varied to keep the antenna current constant as read at the tower on a day when the morning temperature was low,

about 25° and the temperature inside the building reached over 80°, then backing down as the building cooled off. These readings were taken using a tuning house of wood with a black tar roof and little ventilation. I wonder how much these meters would change when they are mounted out in the open in a tin can as some are.

If I am not mistaken the transmitter and tower of WMTR, mentioned in your article, are together and I wonder if the summer and winter variations on this station could not have been caused by reading the antenna meter at the tower and compensating for the increase in power as indicated on the tower meter caused, not by power out, but by temperature. I will admit that outside temperature causes some changes in field intensity but I think that the antenna ammeter should be taken into consideration also as this meter's reading also changes with temperature.

This station is a remote controlled directional station and we have to take monitor point readings each month. I have noticed the summer-winter variation and it is about 10% average.

I looked up my meter and find that the variation with temperature is about 1% per 10°F change so a change of 60° will give an error of 6%, or using 4.5 A, a change of 0.27 A. Quite a bit I'd say.

Burton Landry
Chief Engineer, WARE (AM)
Ware, Massachusetts

Mr. Godley's comment:

The RF meter variations Mr. Landry found at WARE can be disconcerting when the calibration stability between the antenna meter and the remote meter is checked. Variations in antenna meter accuracy with temperature also contribute to the antenna loading changes often noted between sign-on and noon time and then sometimes returning part way to the early morning values by sign-off time.

Mr. Landry found that the temperature variations at WARE could be as much as 60°F and on this basis he determined that the antenna meter would vary six percent from its initial reading. A six percent variation in antenna current will change the field intensity six percent. Antenna meter changes of this order should be taken into account. However the summer-winter signal intensity changes discussed were as great as three to one. In these circumstances the temperature affect on the antenna meter is relatively minor. In about half of the examples given in the Summer-to-Winter article the common point meter which determines antenna power is housed in the transmitter building where temperature variations would normally be at a minimum.



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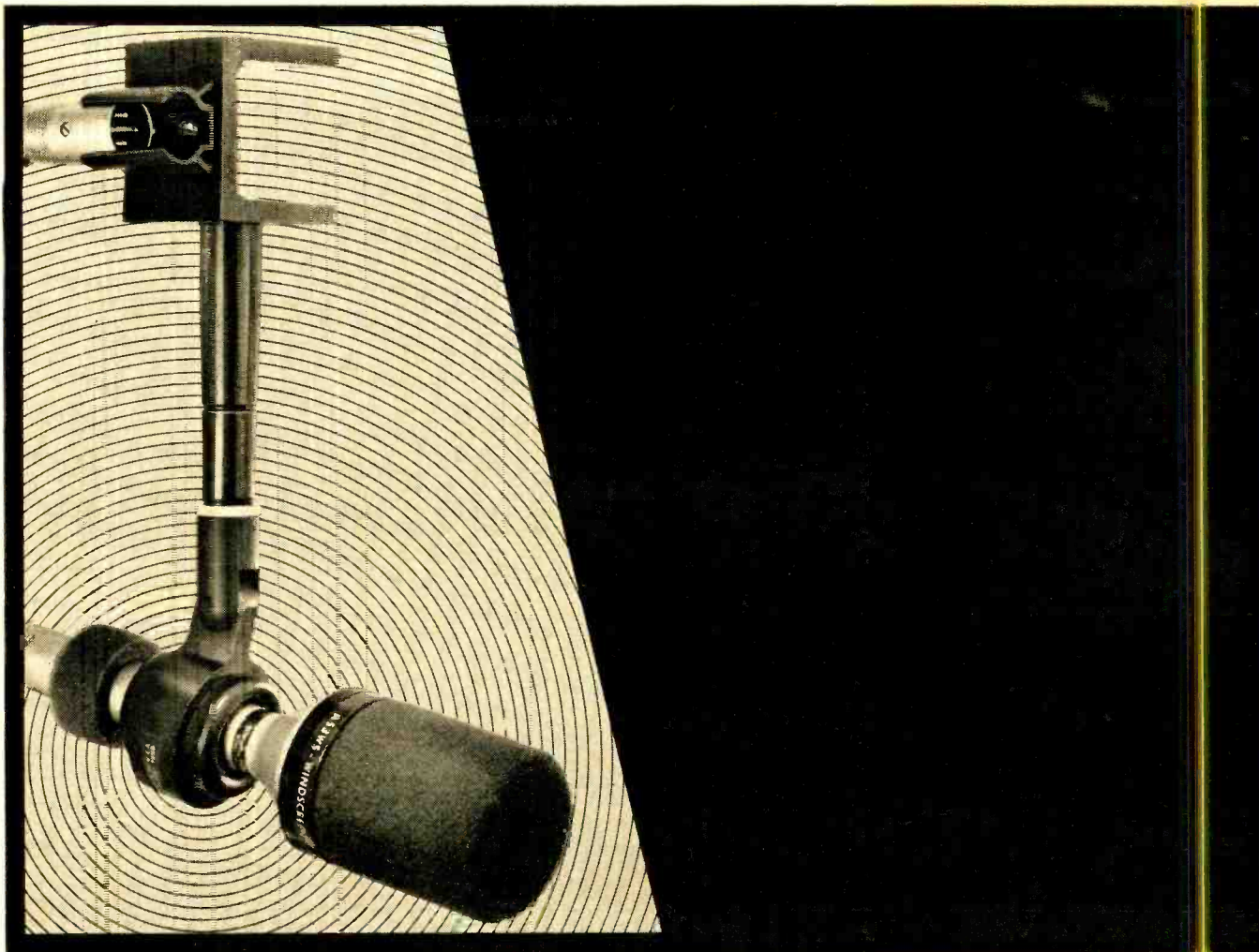


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CALL CFWC

Continued from page 21

Five Days' Log

This excerpt from a CFWC Workshop Log last year covers training done near the beginning of the six-week session—working with silent filming techniques. The 1971 programs will last nine weeks, will add work in night shooting and concentrate in speedy editing, more editorial evaluation.

Monday Feb. 2, 1970—The trainees covered the Black Panther demonstration at the Criminal Court Building in Manhattan and the New York Harbor Tug Boat Strike. They returned in the afternoon and started to edit their stories. We had a screening at 3:30 of the rushes followed by the air show. Most of the edited stories went over the 30-second limit. The trainees are balking at the time limit and are reluctant to throw away good footage, even though it does nothing to enhance the finished story. There was a heated discussion on the necessity of conforming to rules of time, etc.

Sandy [Holmes] stayed after the air show to help two of the trainees with editing techniques.

Tuesday, Feb. 3, 1970—Because of inclement weather the trainees stayed in today and worked with their new meters, editing, testing cameras, etc. In the afternoon we screened dailies and edited stories. The results were not extremely encouraging.

In the late afternoon Shirley MacLaine visited the program and we again screened the air show for that evening. Miss MacLaine engaged in discussion with the trainees and staff drawing on her experience in film and what she feels to be the new trend in the movie industry regarding young film makers. We discussed the national and international implications of news reporting and how the news in other countries differs from the coverage in the United States. She emphasized the necessity for the views and feelings of new young newsmen and urged the trainees to use the skills that they learn in the program to tell the real story of their own people and to help their people get fair representation in the news media.

Wednesday, Feb. 4, 1970—As an outgrowth of the

discussion from the evening before, the trainees were asked to cover a story on Black people in Times Square. A few protested the assignment, saying that it was a punishment for airing their views the night before, but the staff felt that it would be a good exercise in seeing the diverse ways that a single subject in a familiar location can be photographed.

The dailies were screened and the edited shows followed. The show this evening was exceptionally good and the editing showed a lot of thought on the part of the trainees. Even the discussion seemed to be more relevant than usual and there was less "nit picking" and more concentration on the elements of good news coverage. The staff felt that the trainees had really reached a turning point in their training and would hopefully carry through the energy and high level displayed in tonight's show until the end of the program.

Thursday, Feb. 5, 1970—Les Dennis, producer of the Eleventh Hour News on NBC, visited the trainees this morning. He viewed the air show from the night before to get an idea of the kind of work the trainees have been doing. He spoke to the trainees mainly on narrations; how to best judge your own time, how to pare down your spot sheet; how narration should add to, not illustrate, the pictures on the screen. (Stay away from the Grizzly Bear.)

There was editing in the afternoon. Some visitors from OEO came to see the training center. Mel Good and Bob Rodwin from ABC visited in the late afternoon and viewed the air show. After the show, Mr. Rodwin spoke to the trainees. Mr. Good will return next week to speak to them more at length.

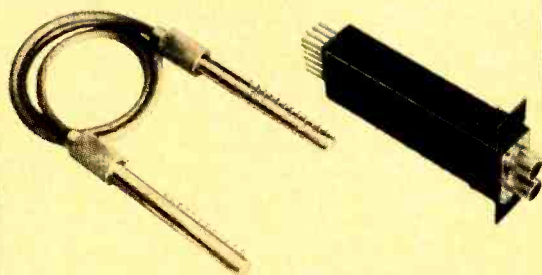
Friday, Feb. 6, 1970—The sound cameras will be delivered today so the trainees will stay at home base to edit and get the equipment ready for return. We screened the dailies from the Panther rally and the Tug strike. The shooting was, for the most part, exceptionally good.

In the afternoon some of the trainees edited their stories and the others were checked out on the new Auricon sound cameras.

We had the air show and discussion at 5 o'clock and the stories were good. The narrations are still weak and need more work by the trainees.

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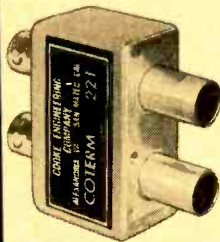
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FCC Rules

Continued from page 12

letters require a one-time fee of \$100.

CATV fees

All CATV systems must now pay an annual fee on April 1 of each year for the preceding calendar year (or a prorated fee for part thereof). This fee is 30 cents per subscriber during the calendar year. The number of subscribers, for fee-computation purposes, is the "average number of subscribers" on the last day of each quarter of the calendar year. For example, if on March 31 your system had 5600 subscribers; on June 30 6000 subscribers; on September 30 6200 subscribers; and on December 31 7000 subscriber connections—then you would have an "average number of subscribers" of 6200, and your annual fee would be \$1860.

Explanation: This fee is determined by averaging the number of subscribers on the last day of each quarter of the calendar year. For the example above, add 5600, 6000, 6200 and 7000; divide by four; this equals an average of 6200 subscribers. Then, multiply 6200 by 30 cents to arrive at the annual fee (payable on April 1) of \$1860.

Remember, the annual fee payable on April 1 is for the preceding calendar year. Since the CATV annual fee schedule went into effect on August 1, 1970, the amount payable on April 1, 1971, will be prorated to apply only to the last five months of 1970. The fee that you must pay

on April 1, 1971, will be for the five-month period between August 1, 1970 and December 31, 1970. To determine this fee, you must determine the annual fee for all four quarters of 1970 by the procedure outlined above; then, a total of five-twelfths (the prorated fee) of your computed 1970 "Annual Fee" must be filed with the Commission on or before April 1, 1971.

The Federal Communications Commission initially proposed to exempt from the annual fee all CATV systems with less than 200 subscribers. However, in adopting its final order the Commission has eliminated this exemption; the annual fee is now required of all CATV systems.

Similarly, in view of the administrative burden entailed by Petitions For Special Relief filed pursuant to Section 74.1109 of the Rules, the FCC originally proposed a filing fee of \$300 per petitioner. That fee has now been reduced to \$25 per petition.

Conclusion

*The new schedule of fees adopted by the Commission means that broadcasters and CATV operators will pay for the operation of the FCC. The new fee schedule raises many questions as to the applicability of certain fees in unique situations. Your counsel should be consulted in all matters relating to FCC fees, especially with respect to potential assignments or transfers. **BM/E***

This section, providing broad interpretation of FCC rules and policies, does not substitute for competent legal counsel. Legal advice on any given problem is predicated on the particular facts of each case. Therefore, when specific problems arise, you would be well advised to consult your own legal counsel.

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NAEB Sessions

Continued from page 24

ducer of NET's Black Journal, charged that public television is the playtoy of white racists. He declared "Public television has failed in its effort to effect public change. If public television can't address itself to the needs of its various publics, then it deserves its own demise."

The assemblage was castigated (and later boycotted) by Domingo Nick Reyes, head of the Mexican-American Anti-Defamation Committee, when it failed to pass two

resolutions—one calling for a Freedom of Broadcasting Committee to defend attacks on educational broadcasters and the other asking NAEB to censure the Alabama Educational Television Commission for disregard for its Black population.

Student leaders who were invited to comment on public broadcasting said that both commercial and non-commercial communicators failed to report the true scene on American campuses last spring. Forty-five-second segments of violence and inflammatory quotes have created a gap in understanding, the students charged.

There were some things to cheer about: *Sesame Street* is by all measures a howling success. By next October a new show designed to teach reading will be ready, said Joan Ganz Cooney, president of the Children's Television Workshop.

The Public Broadcasting Service (PBS) is now in operation, giving the nation a fourth national network.

Next spring National Public Radio (NPR) could be functioning—and would eventually interconnect some 100 public radio stations, feeding them daily current affairs.

By February a series of eight TV programs on drugs, prepared by WQED, Pittsburgh, could be ready for national distribution.

People are watching. Louis Harris polled the nation late in 1969 and found 74% could receive PTV—39% actually watch it. Since that measurement, *Sesame Street* further increased viewing in 25 cities by at least 42%.

Critical acclaim has been heaped on such PBS-released offerings as *Hospital*, *The Andersonville Trial*, *The Advocates*, *Soul* and *The Forsyte Saga*.

For some, the high points of the last 12 months were sufficient to offset any feelings of guilt or failure. And further, had not NAEB established an Office of Minority Affairs to meet the racial challenge? But those who took time to visit the reception put on by the Central Brooklyn Model Cities group realized that there was a spirit, an elan, at work there that was sorely missing at other convention activities.

The group's program has a two-fold purpose: producing TV programs that are meaningful to the community and at the same time training local residents to do all the professional jobs in television.

In a sense, the project is the first totally minority-group oriented

station in the country. The programs in planning will cover remedial education, adult literacy, budgeting for the household, information on employment, social services, legal rights, etc. Other programs will give residents an opportunity to express their feelings and grievances—the whole effort will help residents see how they can participate to effect change.

Other challenges and responses

How to deal with a vulgar world without using vulgar language was a problem that confused educational broadcasters. NAEB President William G. Harley said it was no longer possible "to deal with the real problems and issues of this world without using language and other expressions that some people consider lewd, vulgar, obscene, profane or repulsive." Broadcasters can't avoid offending the taste of one group, Harley said, because to do so would be to avoid the issues that are distasteful realities of others.

In a session on Program Control and Responsibility, the audience showed divided opinion on obscenity. A plea from the floor asking for high standards to be held drew applause, but only about one-third of the audience joined in.

William B. Ray, chief of the FCC's Complaints and Compliance Division, showed no reluctance in using objectionable four-letter words before his "private" audience, but he opined that if they were to be permitted over the air, it would close down radio. Some program directors present queried by *BM/E* thought such words could be used "after 10:30 pm" and after the listeners had been warned of what would be forthcoming. Ray asked that the next educational broadcaster fined for an obscenity refuse to pay so that courts could make a ruling.

Prexy Harley, in his keynote remarks, also challenged broadcasters to get involved in "effecting significant educational reform" and to prepare to "take advantage of all the new technologies" that break away from the notion of a one-channel system of standard broadcasting.

But the sessions on "Does Local ITV Have a Future" and "Accountability in Instructional Design" were nonsubstantive and desultory. And the session on ITFS revealed that service was going begging for the most part. Most engineering sessions were "old-hat." **BM/E**



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NAEB Exhibit Floor

Continued from page 24

signal of ± 1.5 microseconds and reduce this to less than ± 75 nanoseconds. The IVC 1402, intended for color, included a variable delay control to minimize phase difference of color burst. The combination of an IVC-960 insert and assemble edit recorder with the TBC unit makes dubbing to quadruplex possible, IVC said.

Processing systems for helical scan VTRs were shown by Vital Industries, Central Dynamics and Grass Valley. Vital's entries were not new, but CDL's and Grass Valley's were. CDL said its VPA-083 unit would regenerate all pulses (H&V) and replace dropouts and missing pulses up to 10 lines. Grass Valley said its unit would replace sync blanks and dropout pulses at the lowest cost—\$1880.

Not only had the number of NAEB exhibitors shrunk to that of an earlier year, but some of the products shown were a shadow of an earlier era. The name Dage reappeared on a new line of cameras at Visual Educom's booth and all vestiges of Raytheon as a TV equipment name were gone. The new Dage 800 camera system traces its lineage back to the once popular 320. The 800 system is completely modular and expandable.

Production switchers and special-effect generators were in ample supply. New switcher models were displayed by Alma, Dynair, Central Dynamics, Shintron, Viscount and others. JFD, subsidiary of Riker-Maxson, showed a new unit priced at \$3500. At the same booth Riker showed off its super-8mm camera chain previously introduced at the NCTA Convention.

A new exhibitor drawing considerable attention was World Video Inc. Its one-gun color monitor looked good.

McMartin could by no means be called a new exhibitor, but the company unveiled a new product line at NAEB: audio consoles. Jerrold achieved fresh attention with its 2500-MHz beam-bender.

A new editing tool exhibited was Edit-Aid, a programming unit that would permit a VTR operator to edit-in and edit-out precisely at the same place automatically. The \$950 device, developed by Video Aids Corp. of Loveland, Colorado, operates by applying pulses to the existing cue audio head. These pulses then control the VTR mode.

BM/E

NEW LIT

For copies of these literature offerings, circle numbers for appropriate items on Reader Service Card.

Sound systems for sports and entertainment are subject of 12-page brochure covering public-address equipment; includes description of Acousta-Voicing hall-equalization technique. Altec Lansing. 200

Professional audio equipment is covered in 128-page catalog from Audio Distributors Inc. Includes equipment and accessories for broadcast, theater, school, auditorium, recording, from some 30 manufacturers. 201

CATV antennas and systems shown in series of catalog pages. Complete electrical and mechanical specifications on Astrocat, Miniscat, Astrolog, and Astro Yagi antennas for TV and FM. RF Systems. 202

Engineered MATV Systems in 16-page catalog including specifications, descriptions, photos of single-channel amplifiers, low-noise preamps converters, tapoffs, and 75-ohm test gear. Blonder-Tongue. 203

Customer training in uses of broadcast, CCTV, CATV, audio and instrumentation equipment are covered in 12-page brochure from Ampex. 204

Video production switcher is described in six-page data sheet; details include two basic switchers with 14 and 21 inputs, block diagram, photos, and tech specs. Cohu. 205

CATV antennas are listed in eight-page brochure. Line includes vhf, uhf, FM, yagi, parabolic, log periodic, both broadband and cut-to-channel. TACO. 206

Census tract data described in 24-page catalog. Covers 1970 U.S. census, which is available in condensed form on tape or microfilm. National Planning Data Corp. 207

TV pan and tilt heads and remote camera control systems for CATV/CCTV service are described in six-sheet File 2123-40. Includes data on motorized and servo-operated heads for cameras from 30 to 400 lb. Equipment provides preset shots for zoom, focus, iris, pan, tilt, and pedestal height. Power-Optics. 208

Translator antennas for vhf and uhf are described in bulletin. Antennas are complete with integrated support structures for top mounting on towers or buildings. RF Systems. 209

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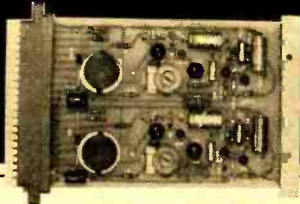
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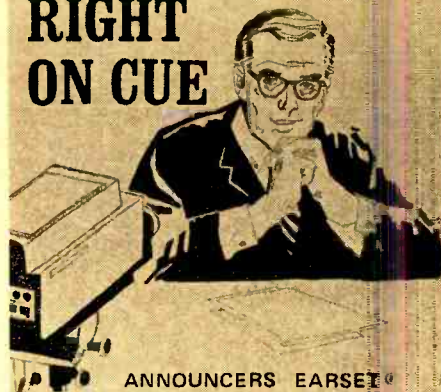
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FROM THE EDITOR

The Second Year in the Decade of the 70s

As broadcasting's 50th birthday year, 1970, drew to a close, few celebrants had spirit to reaffirm that which was earlier so loudly acclaimed: "The best is yet to come." The pundits were saying the bloom is off.

The gloom that has befallen so many of us was sufficient to cause NBC president Julian Goodman to issue a memo to his staff ridiculing the notion that TV is passed its prime. Other services—cable, cassettes—would do no more than supplement a healthy broadcast industry, he said.

Nevertheless the industry is filled with uncertainties. Will revenues go up with the loss of cigarette ads and reduced prime-time support by networks? Will one-to-a-market regulation be passed? Will competition between CATV and broadcasters become hurtful? Will licenses be lost to challengers? Will the resolution of access-to-the-spectrum lead to excesses in regulation?

Rather than bemoaning uncertainty, it's time for the entire industry to think positively. It is the appropriate time of year for making new resolutions to solve some of the crises in communications. It's time for managers preoccupied with loss of profits or reduced profits to stop thinking retrenchment and to think instead of innovation.

It's time to channel the restiveness of the immense talent within the industry—newsmen, programmers, directors, writers, engineers, salesmen—toward one clear goal: The best in public service.

This is a goal as important as profitability. It may be the only true means to profitability. So in 1971 put increased public service in your programming budget. Your staff is ready to rise to the challenge. Ask more of your newsmen. But help them by sending them to some stimulating seminars. Give them new equipment to help do the job. Reduce your clutter; raise rates if necessary and throw your salesmen the challenge. Get your engineers to improve your quality. Approve some expenditures for needed improvements. Stop worrying about having to take over an hour of network prime time. The objective is relevant community programming. If CBS threatens to drop the documentary *60 Minutes*, from a consortium and hire CBS's staff.

If this sounds like brave talk from an editor once removed from the real action, let me hasten to add that publishers' revenues have suffered more than broadcasters'. But at *BM/E* we're through lamenting that we don't have enough space or money to cover the subjects in the way we'd like. In 1971 we are going to do more in fewer pages. Our pages will concentrate on using available resources, technical and human, in the best possible way. Our focus will be sharper than it has been in the past. We've been great on covering new ideas, but this coming year we're going to hold ourselves more accountable.

In 1971, for example, our article reviewers will ask two questions: What is the objective of the action described? How are results (in terms of profit and loss and service to the public) measured? If these questions are unanswered, the article will be unacceptable. But this is a dynamic industry and we can't rest on publishing only the proven. We must anticipate what *should be* in the future. We pledge to do this in 1971. With your help we look forward to sustaining a useful dialogue. It's time to get started on "the best is yet to come."

James A. Lippke
Editor

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A quick reference to products mentioned editorially or in advertisements. Page number is listed first (light face type) followed by reader service number (bold face.)

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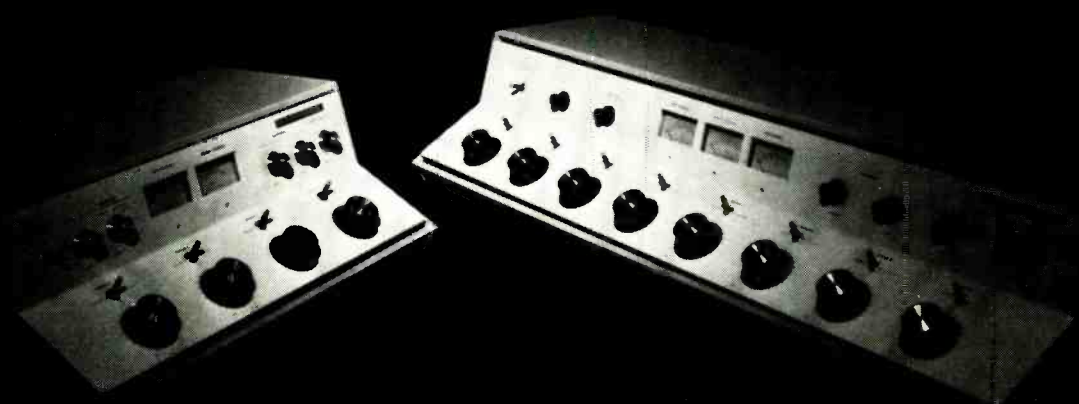
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For more information, see your Collins representative or contact
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COMMUNICATION/COMPUTATION/CONTROL

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...and for sporting events, location TV and motion picture sound track recording, and any other situation where you want to get crisp, clear, "close-up" sound from a distance.

Crisp and clear because the C-77 uses three condenser capsules for minimum distortion, smoothest frequency response, and unbeatable transient characteristics.

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The Sony C-77 comes complete with windscreen, shock mount, and an ingenious pocket-size boost/monitor amplifier which lets you hear where you're aiming.

The C-77 is available at select Superscope Special Application Products dealers for just \$495.00 including all required accessories. For the dealers' names, as well as complete details and specifications, please write: Special Application Products Division, Sony/Superscope, 8150 Vineland Avenue, Sun Valley, California 91352.

SONY SUPERSCOPE